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Psychology Applications & Developments VI

Edited by Clara Pracana & Michael Wang



Advances in Psychology and Psychological Trends

Psychology Applications & Developments VI
Advances in Psychology and Psychological Trends Series

Edited by: Prof. Dr. Clara Pracana and Prof. Dr. Michael Wang



Edited by:

Prof. Dr. Clara Pracana
Portuguese Association of Psychoanalysis and Psychoanalytic Psychotherapy
Portugal

Prof. Dr. Michael Wang
Emeritus Professor of Clinical Psychology, University of Leicester
United Kingdom

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FOREWORD

inScience Press is pleased to publish the book entitled *Psychology Applications & Developments VI* as part of the Advances in Psychology and Psychological Trends series. These series of books comprise authors' and editors' work to address generalized research, focused on specific sections in the Psychology area.

In this sixth volume, a committed set of authors explore the Psychology field, therefore contributing to reach the frontiers of knowledge. Success depends on the participation of those who wish to find creative solutions and believe in their potential to change the world, altogether, to increase public engagement and cooperation from communities. Part of our mission is to serve society with these initiatives and promote knowledge. Therefore, it is necessary the strengthening of research efforts in all fields and cooperation between the most assorted studies and backgrounds.

In particular, this book explores five major areas (divided into five sections) within the broad context of Psychology: Social Psychology, Cognitive and Experimental Psychology, Clinical Psychology, Legal Psychology and Educational Psychology. Each section comprises chapters that have emerged from extended and peer reviewed selected papers originally published in the proceedings of the International Psychological Applications Conference and Trends (InPACT 2020) conference series (<http://www.inpact-psychologyconference.org/>). This conference occurs annually with successful outcomes. Original papers have been selected and its authors were invited to extend them significantly to once again undergo an evaluation process, afterwards the authors of the accepted chapters were requested to make corrections and improve the final submitted chapters. This process has resulted in the final publication of 33 high quality chapters. The following sections' small description and chapters' abstracts provide information on this book contents.

Section 1, entitled "Social Psychology", gives a glance on projects from a psycho-social perspective.

Chapter 1: *Organizational Practices of Career Management and Thriving at Work: The Mediation Role of Psychological Capital*; by Julia Aubouin-Bonnaventure, Séverine Chevalier, Fadi Joseph Lahiani, & Evelyne Fouquereau. In the 1980s, globalization and business competition led to an instability in work organizations which were no longer able to ensure stable and predictable careers. Responsibility of career management was then transferred to workers. Consequently, research on the role of individuals in their career management became popular, while work investigating the role of organizations gradually declined. However, some studies have indicated that it remains beneficial for organizations to invest in practices of

career management (PCM) due to their link with positive outcomes for both employees and organizations, such as workers' well-being. While some studies have shown a link between PCM and indicators of hedonic well-being, work examining the links with indicators of eudemonic well-being, such as thriving at work, remains scarce. Moreover, previous studies have paid little attention to the psychological mechanisms linking PCM to well-being at work. To fill this gap, our study focused on the synergy of psychological resources (i.e., self-efficacy, hope, optimism and resilience) defined as a core construct, known as PsyCap. The sample consisted of 652 French people working in nonprofit, private and public organizations. Structural equation modeling and a bootstrapping procedure confirmed indirect effects of PCM on thriving at work through PsyCap. Limitations of the study are discussed.

Chapter 2: Basic Psychological Need Satisfaction in Arabic Learning - Development and validation of a new measure for Arabic learners in Japan; by Katsunori Sumi. The present study developed and validated a new 9-item measure called the Basic Psychological Need Satisfaction of Arabic Learners Scale (BPNSALS). This scale was designed to assess the satisfaction of three basic psychological needs (i.e., autonomy, competence, and relatedness), which is central to self-determination theory (SDT), of Arabic learners in Japan. A total of 314 students taking Arabic courses in Japanese universities participated in a study to examine the reliability and construct validity of the BPNSALS. Both exploratory and confirmatory factor analyses of the BPNSALS items confirmed the subscale structure corresponding to the three basic psychological needs. Each BPNSALS subscale displayed adequate internal consistency (Cronbach's alpha) and temporal stability over 4-week period. The construct validity of the BPNSALS was provided by support for the hypothesized relationships with the different forms of Arabic learning motivation as proposed by SDT. In addition, the self-determination of motivation and Arabic learning outcomes, namely, satisfaction, subjective comprehension, and subjective achievement were also considered. Based on the findings, the study concluded that the BPNSALS is a useful tool for assessing basic psychological need satisfaction of Arabic learners in Japan.

Chapter 3: Psychological Time in the Context of Globalization - Comparative study of Russia and Japan; by Wada Toshihiro, Ekaterina Zabelina, Yulia Chestyunina, & Irina Trushina. Because of the increasing flow of information in modern society, perceptions of personal time are changing. Psychological time becomes the universal aspect of life that allows marking changes in personality in the era of globalization. The purpose of this study is to identify similarities and differences of subjective (psychological) time in two countries Russia and Japan, which are quite different on the political, economic, and cultural levels. The theoretical basis of the study is the model of time perception, according to T. Nestik (2016). According to this model, cognitive, affective, motivational, and behavioral components of psychological time are studied among the students of regional

universities in Russia and Japan (N=593). The results revealed differences in all components of psychological time. However, the impact of globalization is noticeable in such aspects as the desire to avoid uncertainty and willingness to live the moment. The results of the study can be used in advising students on their future professional choices as well as on how to live a psychologically healthy life in modern society.

Chapter 4: *Dispositional Traits as Predictors of Self-Efficacy*; by Elena Lisá. Introduction: We started from Bandura's theory of self-efficacy, the onion model of achievement motivation according to Schuler & Prochaska, and the 5-factor personality theory by Costa & McCrae. The study aimed to analyze the predictive power of achievement motivation and personality traits on general self-efficacy and domain-specific career decision self-efficacy. We expected the more significant relationship of stable personality characteristics with general self-efficacy than with specific-domain career decision self-efficacy. Methods: 690 adult participants (university students and working adults) completed a career decision self-efficacy questionnaire, and 268 of them a general self-efficacy scale. All participants also fulfilled an achievement motivation questionnaire and a five-factor personality theory questionnaire. Results: All five personality traits, combined with four dimensions of achievement motivation (dominance, confidence in success, self-control, and competitiveness) explain 61% of general self-efficacy variability. Extraversion, agreeableness, and conscientiousness with six achievement motivation dimensions (dominance, engagement, confidence in success, fearlessness, competitiveness, and goal setting) explain 42.5% of career decision self-efficacy variability. Discussion: Stable traits and achievement motivation dimensions had more significant predictive power on general self-efficacy than on domain-specific career decision self-efficacy. For further research, there is a suggestion about a theoretically and empirically integrated model of dispositional and social-cognitive approaches.

Chapter 5: *Transitive and Virtual Spaces: Common and Different Features*; by Tatiana D. Martsinkovskaya & Svetlana V. Preobrazhenskaya. In recent decades, a new sphere has emerged, the sphere of virtuality, which a person constructs himself. Phenomenologically, one can speak about many similar features uniting real and virtual spaces. We can assume the similarity of different types of transitivity (crisis and fluid) with different types of work in virtuality (on-line and off-line). Therefore, it is important to understand the styles of behavior, the emotions of people in a situation of different changes, different types of transitivity and different types of Internet communication. These questions became the base of the empirical study which was carried out in 2018-2019 years and consisted of two stages. The study involved young people, students of Moscow universities. The obtained results showed that in general in the on-line situation the overall level of psychological well-being is lower than in an off-line situation. The similarities in the profiles obtained by presenting positive and negative words showed the similarity in emotional responses to crisis situations in the real and

virtual world. Thus, we can say that the constant on-line situation becomes a difficult life situation for many young people. The transparency of the network most negatively affects people who assess the situation as rigid transitivity.

Chapter 6: *Interpersonal Relations in a Cross-Cultural Team*; Konstantinov Vsevolod, Shumilkina Evgeniia, & Osin Roman. In the conditions of fragility of building interethnic relations, turning to the problem of developing interpersonal relations in mono-cultural and multi-cultural teams of employees of an enterprise in the period of reorganization is extremely relevant. The article presents the results of the empirical research conducted by the authors, the conclusions were made after processing data using mathematical statistics methods. The analysis of the obtained empirical data shows that in the period of reorganization the factor of cross-cultural composition of the employees teams under study actively manifests itself in interpersonal relations. Differences were found in the level of certain characteristics of employees in different types of ethnic environments. In general, more statistically significant connections between personal and behavioral characteristics were found in the sample of employees in a multi-ethnic environment compared to the employees in a mono-ethnic environment. The development of interpersonal interaction in a team of employees in a multi-ethnic environment in the period of reorganization should be based on the development of the most significant characteristics of their personality and behavior: positive ethnic identity, empathy, interpersonal trust and skills and abilities of building interpersonal interaction.

Chapter 7: *Evaluating the Effectiveness of Exposure to Counterstereotypic Fathers on Reducing Implicit Father and Mother Stereotypes in Japan*; by Mizuka Ohtaka. Lai et al. (2014) compared 17 intervention effects on implicit racial prejudice and concluded that exposure to counterstereotypic exemplars was most effective. Therefore, this study examined whether exposure to counterstereotypic fathers can reduce the implicit stereotype that 'fathers should work outside the home and mothers should keep the house'. The Go/No-Go Association Task (GNAT, Nosek & Banaji, 2001) was conducted among undergraduates (N = 44; Men = 26, Women = 18). The results indicated that, among men participants in the control condition, more fathers than mothers implicitly associated with work, and more mothers implicitly associated with home; however, such differences were not significant among men participants in the counterstereotypic fathers condition. Thus, for men, exposure to counterstereotypic fathers can reduce the implicit father and mother stereotypes. Further research that can generalise the findings must be conducted.

Chapter 8: *Transgenerational Effect of Attachment - What was I given as a child, what do I share with my partner and what do I give to my newborn?*; by Katarína Greškovičová & Kristína Mrázková. Attachment theory describes functioning through internal working models that guide expectations and behaviours in the

relationships. Our aim was to analyze transgenerational effect of attachment. We also wanted to map the attachment with respect to bonding and remembered attachment. Our sample consisted of 100 participants (26 men and 74 women) between 21 and 46 years from non-clinical population that were shortly postpartum. They filled 3 self-administered questionnaires: Egna Minnen Beträffande Uppfostran- short form (My memories of upbringing, sEMBU), The Experiences in Close Relationships-Revised (ECR-R), and The Mother-Infant Bonding Questionnaire (MIBQ). Emotional warmth shown by mother had prediction power to attachment in close relationship (avoidance in 9% and anxiety in 5%) which in turns correlated with the wish for physical contact with own infant (desire to touch or hold the infant). Furthermore, emotional warmth together with rejection by mother were predictors of acceptance of own parent's role in bonding in 8% and 5% respectively. We see several limits among which self-reported instruments, new questionnaire MIBQ, age range and smaller sample of men. Nevertheless, we consider our research to be important in slightly clarifying an importance of remembered emotional warmth of mother in functioning in actual relationships (attachment avoidance and anxiety) and in bonding (acceptance of own parent's role).

Chapter 9: *Attitudes Towards Money Among Small Indigenous Peoples of the Russian Arctic - Based on the survey of the Nenets*; by Olga Deyneka, Ekaterina Zabelina, Svetlana Kurnosova, & Marina Lukmanova. Negative effects of globalization are visible in the most remote parts of our planet today including human life in the Arctic. The active development of the fuel and energy sector causing environmental problems limits the opportunities for traditional farming and creates a need to change the economic behavior strategies of the indigenous peoples of the North. The attitude to money among the Nenets was studied (N = 150) using the scale of monetary perceptions and behavior (Furnham, 1984). The results of the factor analysis have showed a more fractional structure than in Furnham's studies (1984, 2014) indicating a complex and ambiguous (more diverse) picture of the reflection of money in the economic mind of northern peoples (9 factors). The main trends in the monetary attitudes of the Nenets were identified. They do not put money first in their values, do not use them as a tool of influence on other people, they respect those who know how to save money and do not spend it in vain. At the same time, there is a place for financial anxiety and pessimism, negative feelings related to money. The results should be taken into account in the program for the transformation of the economic behavior of the northern indigenous peoples.

Chapter 10: *Employee Voice: Moderators and Predictive Factors Enhancing Prosocial Organisational Behaviour in Educational Environments*; by Evangelia Papaloi. Employee voice is a key-factor which fosters both personal and organisational development. However, in recent years, there is a concern since it appears that employees do not feel confident enough to speak out at work and hide

their feelings and points. The scope of this research is to explore dimensions of organisational voice expressed by teachers at school, according to personal and contextual parameters. For our research purposes, 313 questionnaires were distributed to school teachers throughout Greece. The results reveal that teachers seem to express their own points and feelings actively and without fear. Moreover, they appear to vividly propose actions for the common good. Furthermore, it appears that there exists a strong relation between dimensions of voice, years in service, type of educational establishment and place of work while, gender does not affect the way teachers express themselves. We stress that, organisational voice as perceived and expressed in professional environments, constitutes an indicator and a valuable factor closely related to organisational effectiveness and development.

Chapter 11: *Country Matters: Well-Being and Emigration Plans Among University Students in Slovakia and Bulgaria: The Mediation Effect of Rootedness*; by Frederika Lučanská, Oľga Orosová, Vihra Naydenova, Jozef Benka, Marta Dobrowolska Kulanová, & Lenka Abrinková. The objective of this exploratory study was to examine the relationship between well-being, rootedness and emigration plans (EP) among university students in Slovakia and Bulgaria. It also explored the mediation effect of rootedness in the relationship between well-being and EP. The data were collected through an online survey (SLiCE 2016). The research sample consisted of 361 university students (M=22.4 years, SD=3.8) from Slovakia (141, 86.5% female) and Bulgaria (220, 69.1% female). Based on their emigration plans, the respondents were divided into two groups; those who do not plan to leave (n=218, 60.4%) and those who plan to leave in the long term (n=143, 39.6%) after they finish university. For Slovakia, all factors were significantly related to EP. Furthermore, the association between well-being and EP was fully mediated by two dimensions of rootedness with different psychological mechanisms. For Bulgaria, only well-being and one dimension of rootedness, desire for change, were significantly related to EP. It was also found that the association between well-being and EP was partially mediated by only one dimension of rootedness – desire for change. This study highlights that rootedness has a different relationship with other examined factors in different countries and also that it is necessary to respect the cultural and socio-economic features of a country.

Chapter 12: *Self-Review of Parenting Styles: Experiences in a Group of Socially Vulnerable Mothers in Northern Brazil*; by Rosângela Araújo Darwich, Ana Letícia de Moraes Nunes, & Agnes Caroline Alves de Souza. This study presents a group intervention with mothers of children from six to twelve years old in a situation of social vulnerability. We aimed to encourage the participants to identify the parenting style they adopt and alternatives for action, to test changes in behavior between group meetings and to evaluate the results of their efforts. The field research described corresponds to one of the focus groups created in 2018 in the context of an action research implemented at the University of Amazônia

(UNAMA), Belém, located in northern Brazil. We selected five participants who were present in at least 60% of the ten weekly meetings. Verbal exchanges in meetings and individual interviews supported the formation of analysis categories corresponding to three parenting styles: authoritative or democratic, authoritarian, and permissive. The Social Skills Rating System - Brazilian version (SSRS) and a second individual interview were applied at the end of the meetings. We have verified changes towards the adoption of an authoritative parenting style, which generated positive impacts on family relationships. Social skills led to developments in the behavior of children at school, indicating that it is a way to overcome the situation of social vulnerability in which they find themselves.'

Section 2, entitled "Cognitive Experimental Psychology", delivers chapters concerning, as the title indicates, studies and research in the area of behavior from the point of cognitive aspects.

Chapter 13: *Relation of Learning Style to Intercultural Sensitivity and International Attitudes Among Japanese Undergraduates*; by Yoshitaka Yamazaki & Michiko Toyama. This study empirically explored how learning style relates to intercultural sensitivity and international attitudes in the context of a Japanese university. A total of 109 undergraduate students completed three questionnaires: Kolb's Learning Style Inventory, Chen and Starosta's Intercultural Sensitivity Scale, and Yashima's International Posture as a measure for international attitudes. Because the factor structure with constituent items of the Intercultural Sensitivity Scale was unresolved, we first examined the configuration of its latent constructs and then identified four underlying components. In terms of intercultural sensitivity, results of regression analysis illustrated that a learning style with a focus on acting over reflecting significantly negatively related to Anxious Interaction and marginally related to Affirmative and Enjoyment Interaction. Results for international attitudes revealed that the same learning variable was significantly associated with Intercultural Approach Tendency, Interest in International Vocation, and Willingness to Communicate to the World, whereas the learning variable of thinking versus feeling was marginally negatively related to Intercultural Approach Tendency. In conclusion, the study suggests that the learning style dimension of action versus reflection has a stronger influence on intercultural sensitivity and international attitudes than the learning dimension of thinking versus feeling.

Chapter 14: *Wellbeing of Military Personnel as Reflected in Sleep Quality*; by Gabriela Kloudova, Vaclav Gerla, Kristyna Rusnakova, Jiri Mezulanik, & Miloslav Stehlik. Military service is both physically and mentally demanding, so the purpose of this text is to find the best selection of methods that can describe the wellbeing of soldiers. In this study, we chose two specific military groups that have very different tasks in the Czech Army to determine their actual physical and mental states. The first group was the military Castle Guard, and the second group was military paratroopers. Both of these groups underwent psychological testing of

personality, IQ, self-evaluation, cognitive abilities, and the motivation to perform the duties of military service. Physical health was tested by a body composition analysis, health-related biochemical parameters, sleep analysis, and diagnostics on the musculoskeletal apparatus. Our study aimed to find significant associations that have an impact on the wellbeing of elite Czech military units, and for this purpose, we used the association rule learning method. The results of this study demonstrate that the most significant associations were found between wellbeing reflected in life satisfaction and the health condition of soldiers and their quality of sleep.

Chapter 15: *Cognitive and Motivational Determinants of Intuition*; by Shulamith Kreitler & Carmit Benbenishty. The objective of the study was to identify cognitive and motivational components of intuition. The methodology was based on the meaning system, which enables identifying cognitive variables involved in a specific cognitive act, and on the cognitive orientation (CO) theory which enables assessing cognitions supporting specific behaviors. The hypotheses were that the findings would enable identifying cognitive and motivational variables unique for intuition. We expected that the cognitive and motivational variables separately would predict intuition and that both together would enable a better prediction than each separately. A set of cognitive variables related to intuition was identified and accounted for 29.2% of the variance. It included variables indicating interpersonally-shared and personal meanings, attending to overall general contexts and specific details, to the abstract and the concrete. The four belief types of the CO predicted intuition and accounted for 30.4% of the variance. The four types referred to the themes concerning emotions, opening-up, fast solutions, comprehensive view, and self reliance. Both sets of the cognitive and motivational variables together accounted for 39.19% of the variance. The findings show that both cognition and motivation contribute to intuition and need to be considered for predicting intuition, assessing it, and intervening for its improvement.

Section 3, entitled “Clinical Psychology”, provides reviews and studies within various fields concerning relationship processes in clinical practice. Each chapter is diversified, mainly addressing thematics related to individuals well-being and improvement of quality of life.

Chapter 16: *Positive Youth Development Perspective: The Interplay between the 5Cs and Anxiety*; by Ana Kozina, Nora Wium, & Tina Pivec. Anxiety-related difficulties, one of the most common psychological difficulties in childhood and adolescence (Neil & Christensen, 2009), are associated with numerous short and long-term negative consequences and are in the increase (Kozina, 2014; Twenge, 2000). Core elements of the PYD model are the 5Cs: competence, confidence, connection, character and caring (Lerner, 2007). There is ample evidence that the 5Cs are positively related to the adolescent's contribution and negatively related to risky behaviors and emotional difficulties. In the present study, we investigated the

relationship between the 5Cs and anxiety (and components of anxiety) in a sample of adolescents using the PYD questionnaire (Geldof et al., 2013) and the AN -UD anxiety scale (Kozina, 2012) in Slovenia (N = 449, Mage=17.10 years). The findings indicate the PYD dimensions of confidence and connection as negative predictors of anxiety (and components of anxiety) while caring is shown as a positive predictor of anxiety (and components of anxiety). The findings are informative for practice within an educational framework, where intervention strategies based on the 5Cs can be used to moderate high-risk behaviors and emotional difficulties, although with caring, some caution need to be taken due to its positive association with anxiety.

Chapter 17: *Work-Related Stress, Personal Resources and Mental Health in High-Risk Professions*; by Martina Chylova, Jana Nezkusilova, & Monika Seilerova. The importance of work-related stress and its consequences for mental health is underlined by the increasing prevalence of absence from work due to stress-related illnesses. The aim of this study was to explore how work-related stress and personal resources associate with the perceived anxiety and depression in high-risk professions. The study sample comprised a total of 276 police officers, prison guards, customs officers and physicians (72.1% men, an average age of 36.6) who filled out questionnaires concerning sociodemographic variables (age, gender, working time), work-related stress (occupational roles, personal resources), anxiety and depression. The multiple regression analysis was used to analyze data. A model consisting of gender, occupational roles and personal resources explained 39.5% of the variance in anxiety, and 48.7% of the variance in depression in the total sample. Gender ($\beta=.22$, $p\leq.001$), recreation ($\beta=-.26$, $p\leq.001$), social support ($\beta=-.17$, $p\leq.01$), and rational/cognitive coping ($\beta=-.17$, $p\leq.01$) were significant predictors of anxiety. Gender ($\beta=.26$, $p\leq.001$), insufficiency ($\beta=.11$, $p\leq.05$), ambiguity ($\beta=.13$, $p\leq.05$), recreation ($\beta=-.19$, $p\leq.001$), social support ($\beta=-.19$, $p\leq.001$), and rational/cognitive coping ($\beta=-.24$, $p\leq.001$) were significant predictors of depression. Higher levels of recreation, social support and rational/cognitive coping in the work of high-risk employees are important in diminishing the perceived anxiety and depression, and potentially protecting against work-related stress.

Chapter 18: *Are the 5Cs of Positive Youth Development Related to Risky Behaviours: Analysis Across Countries*; by Tina Pivec, Ana Kozina, Nora Wium, & Fitim Uka. The Positive Youth Development approach views youth development from a broader perspective by emphasizing strengths rather than deficits. If youth strengths are aligned with the resources in their environment, positive youth development outcomes (5Cs: Competence, Confidence, Character, Connection, and Caring) will be more probable, and risky behaviours less frequent. It is crucial to understand the relationship between possible protective factors (e.g., 5Cs) and risky behaviours to provide support for at-risk youth. An emphasis was put on the national contexts of Kosovo, Norway, and Slovenia in investigating the research questions: 1) Does the experience of 5Cs differ across countries? and 2) Does the

relation between 5Cs and risky behaviours vary across countries? The sample included 916 participants from Kosovo (66.3% girls; Mage = 16.32), 220 participants from Norway (47.7% girls; Mage = 17.30) and 218 participants from Slovenia (70.6% girls; Mage = 17.18). Results show that the 5Cs differ across countries, revealing that participants from Slovenia reported the lowest scores of the 5Cs in comparison with participants from other countries. In addition, a series of Factorial ANCOVAs revealed that relation between alcohol use and 5Cs varies across countries for Competence, Confidence, and Connection. Guidelines for interventions and future research are discussed.

Chapter 19: *The Predictive Roles of Perfectionism, Self-Handicapping and Self-Compassion on Psychological Well-Being*; by Gizem Alaloglu & Basak Bahtiyar. Perfectionism is a multidimensional concept and its role on psychological well-being has gained attention in recent literature. The aim of the current study was to examine the relationship of different dimensions of perfectionism with self-handicapping and self-compassion and to investigate their predictive roles on psychological well-being. For this purpose, 653 volunteered participants (360 females and 293 males) whose ages were between 18 and 50 ($M = 24.90$, $SD = 7.57$) were recruited from various cities in Turkey. For data collection, Multidimensional Perfectionism Scale (MPS), Self-Handicapping Scale (SHS), Self-Compassion Scale (SCS), Brief Symptom Inventory (BSI) and Satisfaction with Life Scale (SWLS) were administered. The findings indicated that self-compassion was negatively correlated with all perfectionism domains and self-handicapping. Moreover, self-handicapping was positively correlated with socially prescribed perfectionism, but negatively correlated with self-oriented perfectionism. The results of the hierarchical regression analyses revealed that psychological symptoms were positively associated with socially prescribed perfectionism and self-handicapping, but negatively associated with self-compassion. Finally, satisfaction with life was found to be positively associated with self-oriented perfectionism and self-compassion, while negatively associated with socially prescribed perfectionism. These findings highlighted the importance of different aspects of perfectionism regarding to psychological well-being and its related components.

Chapter 20: *Improving the Assessment of Children and Youth who Present with Gender Dysphoria: An investigation into patient and parent satisfaction*; by Kathleen Walsh, Melissa Jonnson, Wallace Wong, & Veronique Nguy. Practitioners working with gender non-conforming children and youth ascribe to general guidelines based on the World Professional Association for Transgender Health Standards of Care for the Health of Transsexual, Transgender, and Gender Nonconforming People (2012). These guidelines inform clinical practice and assessment and emphasize the need for gender affirming care, but they do not include strict treatment criteria. Consequently, there are multiple perspectives and approaches in the field regarding effective assessment and treatment of gender diverse and transgender clients. Given the ongoing debate around best practices,

the current exploratory research study investigates the perspectives and satisfaction of transgender youth and their parents actively seeking out gender health assessments (e.g., hormone readiness assessments). Twenty-five parents and 22 youth who were accessing gender health services through a community outpatient clinic completed a questionnaire about the gender health assessment process. Survey data was analyzed using descriptive statistics, and portions analyzed using thematic analysis. Similar response patterns were found between groups and themes emerged surrounding the need for an individualized approach to care. This study aims to increase clinical understanding of the experiences of those seeking gender health assessment services to inform and improve practices to better serve this community.

Chapter 21: *Stress, Exhaustion and Depression: The Central Variables in High-Risk Professions and the Role of Personal Resources*; by Jana Nezkusilova, Martina Chylova, & Monika Seilerova. The importance of personal resources in the context of high demanding work conditions is often being reported. However, when and what type of personal resources are the beneficial ones is not fully understood. The aim of this study is to apply network analysis and explore closeness of relationships between personal resources, occupational stressors, perceived stress, the three areas of burnout, depressive symptoms and self-rated health in individuals working in high-risk professions. The study sample comprised 277 police officers, prison guards, customs officers and NHS physicians and nurses (68,6% men, Mage = 36.97, SDage = 8.98). Observed variables included perceived stress (PSS), occupational stressors (OSI-R ORQ) and personal resources (OSI-R PRQ), depressive symptoms (SDS), burnout (MBI) and self-rated health (item from SF-36). The network analysis (EBICglasso) was performed. Network analysis revealed that the most central (degree indicator) variables were depressive symptoms, stress, emotional exhaustion and particular occupational stressor-role ambiguity. These variables are potentially the most useful to be directed by intervention programs. Activating recreation, rational coping and social support could be potentially beneficial strategy in alleviating depressive symptoms. Recreational activities could protect health deterioration. Self-care strategies did not have a strong position in the network model.

Section 4, entitled “Legal Psychology”, explored in this chapter, reports on dysfunctional attitudes in Intimate Partner Violence.

Chapter 22: *Parental Attachment and Physical Intimate Partner Violence in Young Adults: Mediation Role of Dysfunctional Attitudes*; by Chloe Cherrier, Catherine Potard, Alice Richard, Emmanuel Rusch, & Robert Courtois. Introduction. Physical Intimate Partner violence (PIPV) is a prevalent problem throughout the world, with serious negative impacts for the victims. A great deal of research is aimed at identifying vulnerability and protective factors among victims. Previous studies have associated PIPV victimization with insecure parental

attachment. However, little is known about the role of dysfunctional attitudes (DA) in Intimate Partner Violence (IPV). This study aimed to evaluate DA as a mediator between parental attachment and PIPV victimization of young adults. **Methods.** Self-report questionnaires were completed by 915 young French adults to assess their attachment styles, DA (related to sociotropy and autonomy), and history of physical assault. **Results.** Two hundred and six participants (21.1%) reported having been victims of PIPV. Path analyses confirmed the indirect effect of DA in the relationship between parental attachment styles and PIPV victimization in young adults. DA related to sociotropy appeared to be a partial mediator of attachment to the mother and PIPV victimization, while DA related to autonomy appeared to be a partial mediator of attachment to the father and PIPV victimization. **Conclusion.** Insecure parental attachment is associated with more DA and a risk of PIPV victimization in emerging adulthood.

Section 5, entitled “Educational Psychology”, offers a range of research about teachers and students and the learning process, as well as the behavior from a psycho-educational standpoint.

Chapter 23: *Examining how Positive and Negative Emotions Influence Cognitive Performance in Secondary Schools*; by Sonya Yakimova, Célia Maintenant, & Anne Taillandier-Schmitt. Few studies have examined the impact of emotions on cognitive (not only academic) performance among adolescents and this is the objective of our research. After ethic committee agreement and parents’ authorization, we asked 158 adolescents in secondary schools to respond to the French version of Differential Emotion Scale adapted for school context and to nineteen syllogisms which evaluated cognitive nonacademic performances. As results, we expected that negative emotions related to academic achievement would reduce performance in reasoning and positive emotions would improve it. Our hypotheses were partially validated. The impacts of the results as well as perspectives of future researches in relation with self-esteem, psychological disengagement, dropping out of school were discussed.

Chapter 24: *Improving the Health Behaviours of COPD Patients: Is Health Literacy the Answer?*; by Tracy A. Freeze, Leanne Skerry, Emily Kervin, Andrew Brilliant, Jennifer Woodland, & Natasha Hanson. Chronic Obstructive Pulmonary Disease (COPD) is a leading cause of morbidity and mortality (Vogelmeier et al., 2017). Adherence to prescribed medications and adequate medication inhalation technique (MIT) is critical for optimal management of COPD, as is the proper use of the medication delivery device. O’Conor et al. (2019) found that lower health literacy (HL) was associated with both poor medication adherence and MIT. HL, according to the Process-Knowledge Model, consists of both processing capacity and knowledge (Chin et al., 2017). COPD most commonly occurs in older adults (Cazzola, Donner, & Hanania, 2007). Older adults tend to have lower processing capacity (Chin et al., 2017). The purpose of this study was to determine if HL was

associated with medication refill adherence (MRA) and/or MIT. Fifty-seven participants completed a questionnaire package that included demographic questions, measures of HL, and assessments of MRA and MIT. A subset of twenty patients participated in qualitative interviews. Results indicated that lower HL was associated with both lower MRA and poor MIT, and qualitative findings revealed the need for further information. Future research should focus on testing educational materials that have been designed and/or reformatted to meet the lower processing capacity of older adults.

Chapter 25: *Critical Thinking Skills among Moroccan PhD Students of Health Sciences*; by Imane Ghazlane, Bouzekri Touri, Mohamed Bergadi, & Khalid Marnoufi. The significant weakness in problem solving and innovation continues to affect scientific production in Morocco. That's why, many reforms are set up to address the various problems raised. The national strategy for the development of scientific research by 2025 indicates the proper conduct and methodological integrity of research work. Literature states that critical thinking is the intellectual basis of the scientific research method. Furthermore, it has been empirically demonstrated that students with strong critical thinking skills (CTS) perform well in research methodology subjects. Therefore, the close relationship between critical thinking skills and performance in the research methodology application highlights the potential of young researchers in this area. The present work is the subject of an exploratory study that intends to reveal CTS, considered as an essential foundation for any research methodology, among 25 participants registered as researchers belonging to health sciences majors. The findings of this study scored moderate overall results of CTS. A significant correlation has been found between the overall score skills of the HSRT and the scores of the marks of their final projects. The correlation indicates that the success of their dissertation work was related to the deduction, evaluation, and inference subscales of the HSRT.

Chapter 26: *The Design of the Research Method in Graduate Research Work*; by Imane Ghazlane, Bouzekri Touri, Mohamed Bergadi, & Khalid Marnoufi. Regardless of the discipline or institution in which scientific research will be conducted, the "method" is present. It remains fundamental of all research work that can inevitably affect problem-solving, development of the nation, and threaten quality of life. This is an exploratory study on research methods used in graduation projects in the following disciplines (health sciences, engineering, biological and agronomic sciences, and social sciences). The method used in this work is based on: (a) semi-structured survey by interviewing supervisors of final dissertations and theses in different selected disciplines (b) systematic analysis of the fifty-research work of graduate students. The works obtained from the libraries of the University Hassan II of Casablanca in different disciplines, submitted between 2014 and 2018. The parts of the empirical phase were analyzed, according to the processes and concepts of each discipline, to highlight the elements of the research method. The

findings indicated the influence of the national scientific production by the design of the research method. The data collection and analysis are the sections that may affect the integrity of the research method. Our contribution is to remedy the standardization of the method and adapting it to the contexts of the needs of different disciplines.

Chapter 27: *Teachers' Awareness of Social, Emotional and Behavioural Difficulties in State Primary Schools in Malta: A Case Study*; by Victor Martinelli, Mario Cutajar, Martina Debattista, & Amira Mangion. This study explores teachers' awareness of social, emotional and behavioural difficulties (SEBD) in primary schools. Data was collected through questionnaires, and semi-structured interviews carried out with teachers teaching Years 2, 3, and 4. This study revealed that teachers who supported students with SEBD were more aware of strategies to be used in the classroom than those who never supported such students. However, the strategies adopted were largely self-devised. These included establishing a good relationship with the student and keeping daily routines consistent. All respondents expressed the desire to be provided with further training opportunities. Training would help teachers gain a deeper understanding of SEBD and develop strategies to manage such challenges more effectively.

Chapter 28: *Students' Empathy and Classroom Climate as Predictors of Attitudes Towards Immigrants - A case study in three EU countries*; by Manja Veldin, Ana Kozina, Mirta Mornar, & Helene Dahlström. The development of positive attitudes towards immigrants among students can be addressed at the individual level through their empathic abilities and at the school or classroom level, where the classroom climate plays an important role. In the present study, we have taken a closer look into the relationship between attitudes towards immigrants, two components of empathy (perspective taking, empathic concern), quality of student-teacher relations (both positive and negative) and inclusive classroom climate (presented as perceived intercultural sensitivity of teachers) in a sample of 814 8th-grade students in three EU countries (Slovenia, Croatia, and Sweden). The findings show only empathy (especially perspective taking) was associated with better attitudes towards immigrants in all three countries. Additionally, in two out of three countries, the importance of the relationship with teachers and inclusive classroom climate was important as well. The results are discussed in the light of guidelines for school practice.

Chapter 29: *The Functionality Profile of Children with Autistic Spectrum Disorders (ASD) in the Azores – Communication, Learning and Autonomy*; by Tânia Botelho, Ana Matos, Pilar Mota, Bárbara Romão, Suzana N. Caldeira, Isabel E. Rego, Osvaldo Silva, & Áurea Sousa. Autism is a disorder of the neuro-development characterized by persistent difficulties in communication, cognitive processes, social interaction and also by restricted interests and repetitive and stereotyped behaviours. Regarding to the vision of Universal Design for Learning (UDL), the

educational approach should enhance not only the academic acquisitions but also the prognosis of the evolution of the clinical condition and of the functionality of children with Autistic Spectrum Disorders (ASD). Thus, it was considered important to know the perspective of educators / teachers and parents / guardians for the 121 children with ASD who participated in this study. These children, aged 3-11 years old, live in the Azores (ARA) and are enrolled in kindergarten and in primary schools. Data were collected with a questionnaire (educators/teachers) and in an interview (parents/caretakers). Results suggest that there are different perspectives between the two groups, with educators/teachers viewing the functionality profile of these children as being more aggravated. These differences are statistically significant, especially in terms of the functionalities assessed by the items of communication and learning. The analysis of these different perspectives evidences the importance of the communication between these educational providers regarding the work developed by them.

Chapter 30: *Attitudes toward Learning Preference: The Relation with Personality*; by Lilly E. Both. In this study, 106 women (M age = 23 years) completed a series of questionnaires online assessing personality traits and facets (subscales), learning preferences (Activist, Reflector, Theorist, Pragmatist), and attitudes toward learning preferences. The vast majority of participants in this study believed that students are more likely to have academic success when teaching and learning strategies match their learning style. However, the results of several hierarchical regression analyses found that a large proportion of variance in learning style was accounted for by personality traits or facets. For example, 43% of the variance in the Activist Learning Style was accounted for by higher scores on Extraversion, and lower scores on Conscientiousness and Negative Emotionality. When personality facet scores were used as predictors, the proportion of variance jumped to 55%. Similarly, between 27-31% of the variance in Reflector, Theorist and Pragmatist Learning Style was accounted for by personality facet scores alone. The results are discussed in terms of learning style attitudes and myths pervasive in the literature, and the need for evidence-based practices.

Chapter 31: *Using the Attachment Lens and the Dyadic Expansion of Consciousness Approach to Increase School Adjustment*; by Oana Dănilă. When in danger, either we refer to menaces or just novel situations, the brain needs firstly to connect to another human brain in order to coregulate; only after, can that brain continue process/ learn, regulate behaviors and thus adjust to the environment. The purpose of this study was to explore the connection between the quality of the pupil-teacher relationship, assessed from the attachment perspective and different school adjustment aspects. A sample of 40 educators were invited to evaluate their attachment strategies and then assess at least 3 children from their current classes (primary school); results for a total of 121 pupils were collected. First of all, educators assessed the pupil's attachment needs using the Student-Teacher Relationship Scale; then, they were asked to assess social competencies using the

Social Competence Scale and the Engagement versus Disaffection with Learning Scale, as facets of school adjustment. Results show that the strength of the pupil-teacher relationship is influenced by the particularities of the attachment strategies of both parties, and, in turn, this relationship, with its 3 dimensions (closeness, conflict and dependence) impacts adjustment. Results are discussed in the light of the Dyadic Expansion of Consciousness hypothesis – in a safe relationship, both the teacher and the pupil significantly expand the learning possibilities.

Chapter 32: *Evaluation of Intelligence Scores Among Students from Moroccan Urban Areas*; by Khalid Marnoufi, Bouzekri Touri, Mohammed Bergadi, Imane Ghazlane, & Fatima Zahra Soubhi. Our study carried on Moroccan students from urban areas. The basis will be for calculating the full-scale intelligence quotient FSIQ, which is positively, predicts school results, and determining the psychometric profiles of the samples participating in this study. By administering the fifteen subtests of the Wechsler Intelligence Scale for Children - 5th Edition WISC V and comparing the results to the average of the Wechsler tests. We have administered all subtests of WISC V, an individual general intelligence test for children aged between 6 and 16 based on the g-factor since the inception of the first Wechsler test. We ensure that every student participating in this study from the city of Safi has passed all the subtests. The participants are 101 students (59 girls and 42 boys) aged between 11 and 15 years old. The results of the samples who are urban public school students show a median of full-scale intelligence quotient, the average value of the verbal comprehension index is higher than the other four indexes of WISC V. In terms of correlations, the results show two types of relationships between the five indexes on the scale.

Chapter 33: *Intelligence Analysis Among Rural Learners in Morocco*; by Khalid Marnoufi, Bouzekri Touri, Mohammed Bergadi, & Imane Ghazlane. The full scale intelligence quotient is a strong predictor of educational success. The aim of this study was to calculate the full scale intelligence quotient (FSIQ) of Moroccan rural students in the Safi region. the psychometric test Wechsler intelligence scale for children and adolescents - 5th edition WISC V was used by administering the five indexes, namely the verbal comprehension index, visuospatial index, fluid reasoning index, working memory index and processing speed index, to compare them to the average of the Wechsler tests. The study carried on 104 students (46 girls and 58 boys) between the ages of 12 and 15 years old, 67% of the students were boarders and 33% were external students. We administered all the 15 subtests of WISC V on each participant. The results showed that the verbal comprehension index was higher than the other four indexes in WISC V. In terms of correlations among the five indexes, the results show different types of relationships among the test indexes.

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Prof. Dr. Clara Pracana
Portuguese Association of Psychoanalysis and Psychoanalytic Psychotherapy
Portugal

Prof. Dr. Michael Wang
Emeritus Professor of Clinical Psychology, University of Leicester
United Kingdom

CONTRIBUTORS

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Yoshitaka Yamazaki, *Bunkyo University, Japan*

Section 1
Social Psychology

Chapter #1

ORGANIZATIONAL PRACTICES OF CAREER MANAGEMENT AND THRIVING AT WORK: THE MEDIATIONAL ROLE OF PSYCHOLOGICAL CAPITAL

Julia Aubouin-Bonnaventure¹, Séverine Chevalier¹, Fadi Joseph Lahiani²,
& Evelyne Fouquereau¹

¹EE 1901 QualiPsy, University of Tours, France

²Cabinet AD Conseil, France

ABSTRACT

In the 1980s, globalization and business competition led to an instability in work organizations which were no longer able to ensure stable and predictable careers. Responsibility of career management was then transferred to workers. Consequently, research on the role of individuals in their career management became popular, while work investigating the role of organizations gradually declined. However, some studies have indicated that it remains beneficial for organizations to invest in practices of career management (PCM) due to their link with positive outcomes for both employees and organizations, such as workers' well-being. While some studies have shown a link between PCM and indicators of hedonic well-being, work examining the links with indicators of eudemonic well-being, such as thriving at work, remains scarce. Moreover, previous studies have paid little attention to the psychological mechanisms linking PCM to well-being at work. To fill this gap, our study focused on the synergy of psychological resources (i.e., self-efficacy, hope, optimism and resilience) defined as a core construct, known as PsyCap. The sample consisted of 652 French people working in nonprofit, private and public organizations. Structural equation modeling and a bootstrapping procedure confirmed indirect effects of PCM on thriving at work through PsyCap. Limitations of the study are discussed.

Keywords: organizational practices of career management, thriving at work, psychological capital.

1. INTRODUCTION

In the 1970s, the traditional career concept was characterized by stability, job security, and structural and vertical advancement in organizations. Ten years later, the emergence of competition brought instability into the environment of organizations that had to downsize and restructure. As a consequence, organizations were no longer able to provide structured careers with a clear and predictable linear upward trajectory and transferred responsibility for career management to workers (De Vos, Dewettinck, & Buyens, 2008). The study of the role of the individual in the management of his/her own career thus grew significantly (e.g., boundaryless careers, protean careers, kaleidoscope career) to the detriment of the role of the organization (De Vos & Cambré, 2017).

However, there is today a need to reconsider these practices because they are essential organizational resources for workers (e.g., Clarke, 2013; Sturges, Guest, Conway, & Davey, 2002). Specifically, these practices could be considered as signs revealing the value that organizations place on their workers by demonstrating their willingness to invest

in their careers for the long term (Paré & Tremblay, 2007). PCM also create a link between workers and their organization by matching their interests, inspirations and capacities with organizational possibilities. Consequently, studies have demonstrated that they are positively associated with workers' psychological health (De Vos, Dewettinck, & Buyens, 2009) and with objective (e.g., salary and promotion) and subjective career success (e.g., career satisfaction) (Moon & Choi, 2017; Ng, Eby, Sorensen, & Feldman, 2005). Practices of career management (PCM) also promote individual performance such as sales (Yahya, Othman, & Meruda, 2004). The implementation and effectiveness of these practices therefore involve substantial issues for both workers and organizations.

2. BACKGROUND

The field of study of PCM presents several challenges. First, there is a lack of consistency in the terms used to define them (e.g., organizational support for career development, organizational career management, traditional career management, perceived investment in worker development, prospects of career growth or development opportunities, (Baruch, Szűcs, & Gunz, 2015)). Secondly, although several typologies of practices have been developed, none are consensual (e.g., Bagdadli & Gianecchini, 2019; Baruch & Peiperl, 2000). Consequently, defining PCM is not easy. However, the most frequently used definition is the one proposed by Ng et al. (2005) who specified these practices as programs, processes, and other forms of assistance provided by organizations to support and enhance their workers' career success. These authors quote practices as diverse as training and skills development programs inside and outside the organization, skills management programs, career counseling, formal mentoring and coaching programs, individualized feedback, promotion, job rotation, outplacements, international assignments and retirement preparation programs (Ng et al., 2005).

According to the Job Demands-Resources model (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001), PCM can be considered as a job resource, defined as "*Physical, psychological, social, or organizational aspects of the job that may do any of the following: (a) be functional in achieving work goals, (b) reduce job demands at the associated physiological and psychological costs, (c) stimulate personal growth and development*" (p. 501). These organizational practices can also be perceived as the caravan passageways of Hobfoll's Conservation of Resources theory (2011), providing the environmental conditions that support, promote, enrich and protect the resources of individuals. For example, Rego and Cunha (2009) found that these practices were positively associated with indicators of psychological health such as emotional well-being, happiness and work-family balance. Other studies have also observed positive relationships with a set of attitudes such as job satisfaction and affective engagement (Kooij, Jansen, Dikkers, & De Lange, 2010), or positive behaviors such as organizational citizenship behaviors (Okurame, 2012). Finally, these practices have positive effects on subjective and objective indicators of career success, such as career satisfaction, promotion or wage progression (Ng et al., 2005). However, few studies have investigated the relationship between PCM and hedonic indicators of well-being. Nevertheless, several of these indicators are attracting growing interest among the scientific community, such as thriving at work (e.g., Kleine, Rudolph, & Zacher, 2019).

Spreitzer, Sutcliffe, Dutton, Sonenshein and Grant (2005) defined thriving at work as "the psychological state in which individuals experience both a sense of vitality and a sense of learning at work" (p. 538). This definition covers two basic elements. First, the authors point out that thriving at work is a temporary state and not a durable disposition, which is

therefore malleable. Then, they emphasize that this state comes from the combined psychological experience of vitality and learning. On the one hand, vitality refers to the feeling of having available energy and feeling alive at work. This occurs when workers feel enthusiasm for their work and are passionate about what they do. On the other hand, learning is "the acquisition and application of knowledge and skills" and is observed when workers feel that they are continuously improving in their professional activity (Porath, Spreitzer, Gibson, & Garnett, 2012). Thriving at work is considered as a key resource for workers as it is an indicator of personal growth (Porath et al., 2012; Spreitzer et al., 2005).

For Spreitzer et al. (2005), the central premise behind their model was that "when individuals are situated in particular work contexts, they are more likely to thrive" (p. 539). Research has emphasized the need to identify the influence of organizational factors on this psychological state (e.g., Walumbwa, Muchiri, Misati, Wu, & Meiliani, 2018). According to Demerouti et al. (2001), resources refer to the particular organizational characteristics of work that stimulate personal growth, learning and development. In this context, no study has focused specifically on the influence of PCM. However, PCM are essential for workers because they allow them to broaden their skills and knowledge, to apply them to new situations, provide them with challenges and help them develop their full potential (Armstrong-Stassen & Stassen, 2013). We therefore hypothesized that PCM would have a positive relationship with thriving at work (hypothesis 1).

The second aim of this study was to understand the mechanism underlying this relation. According to ten Brummelhuis and Bakker (2012), organizational resources can also promote key resources, a specific kind of personal resource, which refer to management resources that facilitate the development of other resources. PsyCap can be considered in this way. Luthans and Youssef (2007) defined the latter as: an individual's positive psychological state of development that is characterized by: (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals and, when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resiliency) to attain success (Luthans & Youssef, 2007, p. 334). Luthans and Youssef (2007) postulated that in theory the combination of these four personal resources generated a synergistic effect and formed the second-order factor of PsyCap. An individual with a strong sense of these four personal resources would expect good things to happen to them, make ambitious choices, perceive goals as challenges and failures as opportunities for growth (Luthans, 2002).

Several literature reviews and meta-analyses show that there is little knowledge about the organizational antecedents of PsyCap due to the lack of studies on the subject (Avey, 2014; Avey, Reichard, Luthans, & Mhatre, 2011; Newman, Ucbasaran, Zhu, & Hirst, 2014). However, Luthans (2002) explained that a professional environment that challenged workers and helped them to achieve their professional and personal goals would be favorable to the development of their PsyCap. In addition, PsyCap should be developed through mastery experiences and social persuasion like positive feed-back on work (Luthans, 2002). PCM represent organizational support and allow workers to plan their career, develop their skills and knowledge and advance in the hierarchy; therefore we postulated that they would promote the development of PsyCap.

Regarding the consequences of PsyCap on the individual, Youssef-Morgan and Luthans (2015) explain that these resources foster well-being because the latter is shaped by our cognitive and affective assessments. However, PsyCap is formed by positive evaluations of past, present and future events that are based on external expectations and

positive internal capacities. The availability of PsyCap resources serves as an indicator of an overall appraisal of well-being. Numerous studies have thus demonstrated the link between PsyCap and health indicators such as job satisfaction or psychological well-being (e.g., Avey et al., 2011). More precisely, Luthans, Avolio, Avey and Norman stated in 2007 that PsyCap is a "positive appraisal of circumstances and probability for success based on motivated effort and perseverance" (p. 550). Later, Paterson, Luthans and Jeung (2014) specified that this positive appraisal leads to the adoption of agentic work behaviors. Specifically, the perception of the probability of success would influence willingness to focus on a work task. Furthermore, according to Bandura (1982), the feeling of self-efficacy would influence the choice of which activities to undertake as well as the intensity and duration of the efforts generated over time. Thus, because workers with high PsyCap would be confident in their ability to carry out tasks and to have the energy to achieve them, they would invest more in agentic behaviors. Note that agentic behaviors, such as task focus or exploration, serve as the engine of thriving at work (Spreitzer et al., 2005). Thus, PsyCap should be positively associated with thriving at work.

Very recently, Kleine et al. (2019) conducted a meta-analysis in which they found a correlation of .47 between PsyCap and thriving at work in a sample of 3,985 workers. They suggested that this link could be explained by the fact that workers are more likely to experience thriving at work when they have significant psychological capital. High psychological capital, which leads to confidence in the achievement of one's objectives and in the development of action plans, and to an increase in positive expectations and to a greater likelihood of being motivated and making long-term efforts in the professional activity, would thus increase both the learning opportunities and the vitality of the workers.

Although several studies have already identified the mediating role of PsyCap between organizational resources and dimensions of well-being (e.g., Mazzetti, Guglielmi, Chiesa, & Mariani, 2016), to our knowledge its role linking PCM and thriving has never been tested. We therefore hypothesized that PsyCap mediated a positive relation between PCM and thriving at work (hypothesis 2).

3. METHODS

3.1. Procedure

Questionnaires were distributed in several French companies with both online and paper versions. A cover letter informed potential participants that this study was confidential and voluntary. The data were collected over approximately six weeks.

3.2. Participants

The sample consisted of 652 French workers of whom 524 were female (80.4%) and 128 male (19.6%). Their average age was 41.84 years ($SD = 11.01$; range 15 to 69 years) and with an average job tenure of 9.26 years ($SD = 9.18$). 473 participants lived with a partner and 179 were single. Regarding contracts, 82.8% were permanent and 16.8% temporary. Full-time and part-time work represented 79% and 21% respectively. There were 298 people who worked in nonprofit organizations (45.7%), 214 in private organizations (32.8 %) and 136 in public organizations (20.9%). Finally, 79.1% were non-managerial employees, 13.5% were middle managers and 6.9 % were senior managers.

3.3. Measures

Participants completed a self-report questionnaire using a five-point Likert scale (1 = totally disagree, 5 = totally agree).

Perceived practices of career management were assessed using a new scale (in progress; Aubouin-Bonnaventure, Fouquereau & Chevalier) composed of 3 items (e.g., *My company promotes internal mobility*). Results indicated an acceptable reliability (α .71).

Thriving at work was assessed using the 10-item scale of Porath et al. (2012) assessing the extent to which workers experience both a sense of vitality and a sense of learning at work. More precisely, learning and vitality were assessed with five items each. Like Porath et al. (2012), we computed a composite score for these two dimensions. Results indicated an acceptable reliability (α .89).

PsyCap was assessed with the short version (PCQ-12) of the Psychological Capital Questionnaire (PCQ-24) (Luthans et al., 2007). More precisely, hope was assessed with four items, self-efficacy with three items, resilience with three items and optimism with two items. Results indicated an acceptable reliability for hope (α =.70) and self-efficacy (α =.83), and a relative reliability for resilience (α =.50) and optimism (α =.42).

4. STATISTICAL ANALYSIS AND RESULTS

First, preliminary analyses demonstrated (*Table 1*) that PCM was positively related to thriving at work ($r = .45$, $p < .05$) and to PsyCap ($r = .36$, $p < .05$), and that PsyCap was positively related to thriving at work ($r = .58$, $p < .05$).

Table 1.
Means, standard deviations and correlations among the study variables.

	Mean	SD	1	2	3	4	5	6	7	8	9
1 PCM	3.59	0.72	–	.36	.18	.33	.41	.18	.45	.44	.39
2 PsyCap	3.71	0.48		–	.69	.83	.79	.76	.58	.49	.60
3 Self-efficacy	3.87	0.66			–	.47	.28	.37	.34	.27	.38
4 Hope	3.72	0.54				–	.60	.55	.59	.51	.58
5 Optimism	3.50	0.73					–	.48	.51	.44	.51
6 Resilience	3.75	0.57						–	.36	.28	.39
7 Thriving at work	3.75	0.61							–	.94	.92
8 Vitality	3.78	0.71								–	.72
9 Learning	3.71	0.60									–

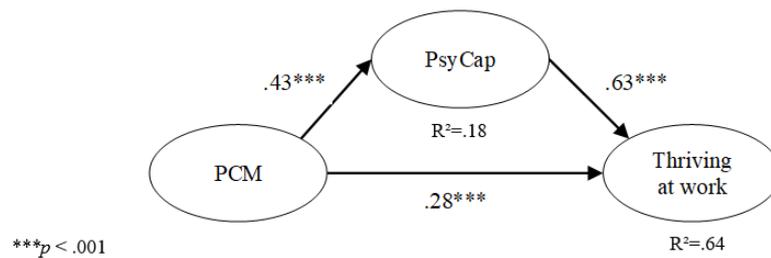
All correlations are significant at $p < .05$

Then, we performed structural equation modeling using AMOS Version 25. The model tested consisted of three latent variables and 25 observed variables. The SEM estimates were generated with the maximum-likelihood estimation method. The goodness-of-fit indices for our model were acceptable: $\chi^2 = 824.49$ (263), $p < .001$, CFI = .92, SRMR = .05, RMSEA = .06.

As shown in *Figure 1*, the results of structural equation modeling indicated that PCM was positively related to PsyCap ($\beta = .43$; $p < .001$), which was positively linked to thriving at work ($\beta = .63$; $p < .001$). The results also revealed that PCM had a direct significant positive effect on thriving at work ($\beta = .28$; $p < .001$). These results suggested an indirect effect of PCM on thriving at work through PsyCap (partial mediation). In order to assess the magnitude and significance of this indirect effect, we then adopted a bootstrap

procedure. A confidence interval (95%) was calculated using 5,000 generated samples. The results confirmed the indirect effect of PCM on thriving at work through PsyCap ($\beta = .27$, $SE = .05$, 95% $CI = [.19$ to $.38]$).

Figure 1.
The mediation model.



5. DISCUSSION, LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

The aim of this study was to identify the relationship between PCM and thriving at work, and to test an underlying explanatory mechanism, particularly the mediational role of PsyCap. The results validated our hypotheses. First, PCM was positively associated with thriving at work (hypothesis 1), and secondly, this relationship was partially mediated by PsyCap (hypothesis 2). In other words, PCM provide workers with opportunities to develop their personal resources (i.e., sense of self-efficacy, hope, optimism, resilience), which in turn have the power to foster their thriving at work.

The results of this study are innovative for the scientific community in the field of organizational practices. First, while few studies have investigated the relationship between PCM and heudemonic indicators of well-being, our results demonstrate that these organizational practices facilitate workers' thriving at work. Thus, this study completes a gap in the scientific literature. Secondly, they reveal one of the mechanisms explaining this relationship. Specifically, while recent studies have demonstrated the mediating role of psychological capital between *high performance work system* and workers' attitudes (e.g., Agarwal & Farndale, 2017), none have explored the link between workers' perception of PCM and their thriving at work. Thirdly, the results show that these practices promote psychological capital, thus responding to the need to identify its antecedents (Avey, 2014). Finally, the results are consistent with the theory of resource conservation (Hobfoll, 2011), which explains that the professional environment has the power to preserve and support the personal resources of workers.

This study presents two major limitations. First, participants were essentially female, and several studies have demonstrated that gender influences the perception of organizational practices and consequently their attitudinal and behavioral consequences. For example, Andersén and Andersén (2019) observed that the influence of organizational practices on affective engagement was significantly stronger for women than for men. Therefore, we recommend repeating this study with a more balanced sample. Secondly, this study used a cross-sectional protocol and it was therefore not possible to identify the

predictive character of PCM on PsyCap and on thriving at work. Future studies should therefore use a longitudinal or even an experimental protocol in order to explore the effects of PCM on PsyCap and on thriving at work. For example, PCM could be implemented in two departments of an organization, one constituting the experimental group, and the other the control group. Measures conducted upstream and downstream of the implementation of these organizational practices would then reveal any causal link with workers' PsyCap and thriving at work.

Finally, our results revealed that PsyCap only partially mediated PCM and thriving at work, suggesting that other underlying mechanisms may explain the relationship between them, including agentic work behaviors (Niessen, Sonnentag, & Sach, 2012), psychological contract fulfillment, or perceived organizational support (Chang & Busser, 2020). Identification of these potential mechanisms would help understand the effects of PCM on workers' psychological health.

6. CONCLUSION

The results of this study demonstrate that workers' psychological health is associated with PCM. Organizations should therefore consider these practices as a focus of company policy to promote psychological health and safety in the workplace. In addition, PCM is a way of satisfying the expectations of both employees and the organization by matching the interests, ideas and capacities of the employees with organizational possibilities. Concretely, organizations should carry out regular individual interviews with their employees in order to identify their career needs and offer them advice. They should implement practices such as training programs to enable their employees to develop their skills, internal upward mobility programs, job rotation and international assignments to maintain their motivation, and retirement preparation programs to show their employees that they support them until the end of their career. Finally, organizations should conduct regular employee satisfaction surveys to determine whether these practices need to be improved.

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AUTHORS' INFORMATION

Full name: Julia Aubouin Bonnaventure

Institutional affiliation: EE 1901 QualiPsy, University of Tours (France)

Institutional address: Université de Tours, UFR Arts et Sciences Humaines, Département de psychologie, 3 rue des Tanneurs, 37041 Tours Cedex 1, France

Short biographical sketch: Julia Aubouin Bonnaventure is a Ph.D student in work and organizational psychology at the University of Tours, under the supervision of Prof. Evelyne Fouquereau and Séverine Chevalier. Her current research focuses on the effects of organizational practices on psychological health, attitudes and behavior at work.

J. Aubouin-Bonnaventure, S. Chevalier, F. J. Lahiani, & E. Fouquereau

Full name: Séverine Chevalier

Institutional affiliation: EE 1901 QualiPsy, University of Tours (France)

Institutional address: Université de Tours, UFR Arts et Sciences Humaines, Département de psychologie, 3 rue des Tanneurs, 37041 Tours Cedex 1, France

Short biographical sketch: Séverine Chevalier is an Associate Professor in work and organizational psychology at the University of Tours (France). Her research interests include antecedents and outcomes of well-being and psychological health at work, career management and entrepreneurship.

Full name: Fadi Joseph Lahiani

Institutional affiliation: Cabinet AD Conseil (France)

Institutional address: 7 Allée Mirabeau, 92240 Malakoff, France

Short biographical sketch: Fadi Joseph LAHIANI heads AD CONSEIL, a social and solidarity enterprise supporting private and public employers in the improvement of working conditions and contributing to applied research projects in partnership with university and institutional players.

Full name: Evelyne Fouquereau

Institutional affiliation: EE 1901 QualiPsy, University of Tours (France)

Institutional address: Université de Tours, UFR Arts et Sciences Humaines, Département de psychologie, 3 rue des Tanneurs, 37041 Tours Cedex 1, France

Short biographical sketch: Evelyne Fouquereau is currently full Professor and the Director of the Psychology unit, "Quality of life and psychological health" (QualiPsy, EE 1901) at the University of Tours (France). She supervises research in Psychology of Work, Organizational Psychology and Applied Psychology. Her research mainly concerns workers' psychological health in various contexts, organizational behaviors, career management, leadership at work and entrepreneurship.

Chapter #2

BASIC PSYCHOLOGICAL NEED SATISFACTION IN ARABIC LEARNING

Development and validation of a new measure for Arabic learners in Japan

Katsunori Sumi

Nagoya Institute of Technology, Japan

ABSTRACT

The present study developed and validated a new 9-item measure called the Basic Psychological Need Satisfaction of Arabic Learners Scale (BPNSALS). This scale was designed to assess the satisfaction of three basic psychological needs (i.e., autonomy, competence, and relatedness), which is central to self-determination theory (SDT), of Arabic learners in Japan. A total of 314 students taking Arabic courses in Japanese universities participated in a study to examine the reliability and construct validity of the BPNSALS. Both exploratory and confirmatory factor analyses of the BPNSALS items confirmed the subscale structure corresponding to the three basic psychological needs. Each BPNSALS subscale displayed adequate internal consistency (Cronbach's alpha) and temporal stability over 4-week period. The construct validity of the BPNSALS was provided by support for the hypothesized relationships with the different forms of Arabic learning motivation as proposed by SDT. In addition, the self-determination of motivation and Arabic learning outcomes, namely, satisfaction, subjective comprehension, and subjective achievement were also considered. Based on the findings, the study concluded that the BPNSALS is a useful tool for assessing basic psychological need satisfaction of Arabic learners in Japan.

Keywords: basic psychological need, need satisfaction, self-determination theory, Arabic learning, Japanese measure.

1. INTRODUCTION

1.1. Arabic learners in Japanese universities

In Japan, Arabic is predominantly studied as a foreign language. Most Arabic learners in Japan are university students, although there also non-students learning Arabic for work purposes (Sumi & Sumi, 2016a, 2018). It is estimated that presently, more than 3,000 university students per year pursue courses in Arabic. The courses are offered by approximately 50 Japanese universities (Sumi & Sumi, 2016a, 2018). Although these universities accounted for less than 7% of all Japanese universities in 2016 (Ministry of Education, Culture, Sports, Science, and Technology of Japan, 2019), Arabic language instruction in higher education institutions in Japan has a history of over 90 years. However, scant attention has been paid to the psychological and behavioral characteristics of Arabic learners in Japanese universities. Some exceptions do exist, for instance, interest in Arabic culture (Sumi & Sumi, 2016b; Sumi & Sumi, 2015), orientation (Sumi & Sumi, 2016), and some learning outcomes including learning satisfaction, learning anxiety, and subjective achievement (Sumi & Sumi, 2015; Sumi & Sumi, 2016b). To improve Arabic teaching and learning methods, it is necessary to acquire knowledge of the characteristics of Arabic learners themselves.

1.2. Satisfaction of basic psychological needs within self-determination theory

One of the benefits of understanding Arabic learners in Japanese universities relates to basic psychological needs (BPN: Ryan & Deci, 2017; Vansteenkiste, Ryan, & Soenens, 2020) as a central construct in self-determination theory (SDT: Deci & Ryan, 1985; Ryan & Deci, 2000a, 2017). SDT is a leading theory of motivation, personality development, and well-being. SDT proposes five forms of motivation dependent on the degree of self-determination in a learner. These are, in increasing order of self-determination, as follows: amotivation, external regulation, introjected regulation, identified regulation, and intrinsic motivation. Amotivation and intrinsic motivation display the lowest and the highest degree of self-determination of motivation, respectively. SDT has also been widely applied to help understand motivations for foreign language learning (Busse & Walter, 2013; Davis, 2020; Jones, Llacer-Arrastia, & Newbill, 2009).

Within SDT, BPN is defined by three innate needs, specifically: autonomy, competence, and relatedness. There are indispensable nutrients required for psychological growth and well-being (Deci & Ryan, 1985; Ryan & Deci, 2000a, 2017). Autonomy refers to the need for feeling volitional and self-endorsed control of one's actions. Competence involves the need to feel mastery and effectance. Relatedness concerns the need to feel socially connected and being significant to others. In the SDT framework, although autonomy is presumed to be an essential psychological component of human nature (Reeve, Ryan, & Deci, 2018; Ryan & Deci, 2017), all three BPNs need to be satisfied to an approximately equal level to facilitate and maintain positive outcomes (Ryan & Deci, 2000a, 2017; Vansteenkiste et al., 2020). The satisfaction of BPN (i.e., need satisfaction) provides a broad range of benefits to individuals' lives. These include intrinsic motivation, internalization, engagement, personal growth, health, and well-being (Reeve, 2018; Ryan & Deci, 2017; Vansteenkiste et al., 2020). By contrast, poor satisfaction or frustration of BPN leads to various negative outcomes, such as passivity, psychopathology, and ill-being (Ryan & Deci, 2017; Vansteenkiste & Ryan, 2013).

Numerous theoretical and empirical studies have supported the positive effects of satisfaction with autonomy, competence, and relatedness (i.e., autonomy satisfaction, competence satisfaction, and relatedness, respectively) on various learning and academic outcomes, including academic motivation (Niemic & Ryan, 2009; Opdenakker & Minnaert, 2014; Raižienė, Gabrielavičiūtė, & Garckija, 2017; Ryan & Deci, 2000b; Tian, Han, & Huebner, 2014). Greater need satisfaction has been found to be associated with more self-determined forms of academic motivation (e.g., Carreira, 2012; Gnambs & Hanfstingl, 2016; Liu, Wang, Tan, Koh, & Ee, 2009; Wang, Liu, Kee, & Chian, 2019) and better learning outcomes, including academic satisfaction, achievement, and comprehension (e.g., Cerasoli, Nicklin, & Nassrelgawati, 2016; Leach & Patall, 2013; Yu & Levesque-Bristol, 2020).

Therefore, measuring and understanding the need satisfaction of Arabic learners would be beneficial for both Arabic teachers and learners. Many different measures have been used to assess need satisfaction (e.g., Chen et al., 2015, Deci et al., 2001; Sheldon & Hilpert, 2012). There are a few Japanese measures of need satisfaction (e.g., Nishimura & Suzuki, 2016; Hiromori, 2005); however, there is no appropriate nor convenient measure of need satisfaction for Arabic learners.

1.3. Purpose of the study

The purpose of this study was to develop a reliable and valid measure to assess the need satisfaction of Arabic learners in Japan. Data from university students learning Arabic were used to develop the measure. The temporal stability of the measure was examined over a 4-week period. The construct validity of the measure was examined by correlating scores for

Arabic learning motivation based on SDT, self-determination of motivation, and learning outcomes. These included satisfaction with Arabic learning, subjective comprehension of Arabic learning content, and subjective achievement in Arabic learning.

To construct validity for the new measure, it was expected that scores on the measure would be negatively related to scores for less self-determined forms, and be weakly or not related to moderate self-determined forms. It was also expected that scores would be positively related to more self-determined forms of motivation. Furthermore, in light of SDT, scores for need satisfaction were expected to be positively correlated with the degree of self-determination of motivation. Moreover, construct validity of the measure could be also supported by positive correlations with scores on the measures of the Arabic learning outcomes.

2. METHOD

2.1. Participants

The participants were 314 students recruited from students taking an Arabic course that were taught by an instructor who agreed to administer the questionnaire. The participants consisted of 196 women and 118 men with a mean age of 20.18 years ($SD = 2.23$, range = 19 to 39). They came from various majors, including 131 with Arabic majors, which were in each of the seven Japanese universities.

2.2. Measures

2.2.1. Basic psychological need satisfaction in Arabic learning

The first step in the procedure to develop a measure to assess the need satisfaction of Arabic learners in Japan was to generate an item pool to tap the construct. The item pool was primarily derived from the following measures: the Japanese version of the 24-item Basic Psychological Need Satisfaction and Frustration Scale (Chen et al., 2015, Nishimura & Suzuki, 2016), the 24-item Basic Psychological Need Satisfaction and Frustration Scale in training (Aelterman, Vansteenkiste, Van Keer, & Haerens, 2016), the 12-item Need Satisfaction and Frustration scale (Mabbe, Soenens, Vansteenkiste, Van der Kaap-Deeder, & Mouratidis, 2018), the 18-item Balanced Measure of Psychological Needs (Sheldon & Hilpert, 2012), the 9-item subscales of the need satisfaction scale (Sheldon, Elliot, Kim, & Kasser, 2001), the 9-item Need Satisfaction Scale (La Guardia, Ryan, Couchman, & Deci, 2000), the 21-item Intrinsic Need Satisfaction scale (Deci et al., 2001), the 9-item Autonomy, Competence & Relatedness scale (Kobau, Snizek, Zack, Lucas, & Burns, 2010), the 18-item Work-related Basic Need Satisfaction scale (Van den Broeck, Vansteenkiste, De Witte, Soenens, & Lens, 2010), the 18-item Psychological Need Satisfaction in Exercise scale (Wilson, Rogers, Rodgers, & Wild, 2006), the 15-item Adolescent Students' Basic Psychological Needs at School Scale (Tian et al., 2014), and the 12-item scale of psychological needs of English students (Hiromori, 2005).

Two researchers who were familiar with SDT and bilingual in English and Japanese carefully selected items appropriate for the three types of need satisfaction in the item pool. If the selected items were in English, they were translated into Japanese. Next, all the selected items were modified to refer to the Arabic learners in Japan and were then inspected by the researchers. Each of the 18 resulting items was a short sentence that clearly and concisely expressed the need satisfaction of the Arabic learners using plain Japanese. Following this, four Arabic students in Japanese universities checked and commented on the items. Based on their comments, the items were revised and further examined by the researchers. Finally,

several students learning Arabic checked the items and found no problem in the expression of the items. A total of nine items, which consisted of three items each for the types of need satisfaction, were identified. These were autonomy satisfaction (e.g., “I am satisfied with deciding the content and ways of learning Arabic language by myself” in Japanese), competence satisfaction (e.g., “I am satisfied with demonstrating my ability in learning Arabic language” in Japanese), and relatedness satisfaction (e.g., “I am satisfied with exchanges with the people involved in Arabic language learning” in Japanese). The nine items were rated on a 7-point Likert scale, ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). There were no reverse worded items. This measure was subsequently named the Basic Psychological Need Satisfaction of Arabic Learners Scale (BPNSALS).

2.2.2. Arabic learning motivation

To assess Arabic learning motivation, the Arabic Learning Motivation Questionnaire (ALMQ; Sumi & Sumi, 2019) was used. This is a 15-item measure consisting of five subscales that was designed to assess the five forms of motivation based on SDT. The items were rated on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Each subscale has a single factor structure as expected, good internal consistency reliability (Cronbach’s alphas = .86 to .90), and test–retest reliability over four weeks ($r_s = .69$ to $.79$). As evidence of construct validity, the results confirmed the expected correlations between scores on learning outcome measures as well as the simplex structure between the ALMQ subscales which is a theoretically hypothesized correlational pattern between them (Gagné, et al., 2010; Noels, Pelletier, Clément, & Vallerand, 2000; Ryan & Connell, 1989).

Furthermore, composite scores for controlled and autonomous motivation were calculated by averaging across external and introjected regulation items and averaging across identified regulation and intrinsic motivation items, respectively. This followed the procedure of the previous studies (e.g., Bidee et al., , 2013; Pelletier, Fortier, Vallerand, & Briere, 2001; Vansteenkiste, Sierens, Soenens, Luyckx, & Lens, 2009). Additionally, researchers assessed individuals’ overall self-determination of motivation using a single score that was calculated using scores for the motivation forms. This score was called the Relative Autonomy Index (RAI) score (Grolnick & Ryan, 1987; Howard, Gagné, & Bureau, 2017), and was calculated using the following equation: $RAI = (\text{intrinsic motivation scale scores} \times 2) + (\text{identified regulation scale scores} \times 1) + (\text{introjected regulation scale scores} \times 1) + (\text{external regulation scale scores} \times 2)$.

2.2.3. Arabic learning outcomes

The Japanese measures that were used to assess three Arabic learning-related outcomes were learning satisfaction, subjective comprehension, and subjective achievement. Each of the measures consisted of three items with a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Good internal consistency reliability (Cronbach’s alpha = .88 to .96) and single factor structure were found for the measures (Sumi & Sumi, 2016b; Sumi & Sumi, 2015, 2016). Each of these measures scores showed the expected correlations with the ALMQ subscales scores (Sumi & Sumi, 2019). The measures are more fully described below.

(1) Learning satisfaction

The Arabic Learning Satisfaction Scale (Sumi & Sumi, 2015) was used to assess overall satisfaction while learning Arabic (e.g., “I am satisfied with my Arabic lessons” in Japanese). Higher scores indicate greater satisfaction with Arabic learning.

(2) Subjective comprehension

The Arabic Learning Comprehension Scale (Sumi & Sumi, 2016b) was used to assess general understanding of the content of Arabic learning, which was evaluated by the students themselves (e.g., “I understand the content of Arabic well” in Japanese). Higher scores indicate greater subjective comprehension of Arabic learning content.

(3) Subjective achievement

The Arabic Learning Achievement Scale (Sumi & Sumi, 2015) was used to measure general achievements or grades on tasks and tests in the Arabic class, which were evaluated by the students themselves (e.g., “I think my grade in Arabic is good” in Japanese). Higher scores indicate greater subjective achievement in Arabic learning.

2.3. Procedure of the questionnaire administration

After obtaining informed consent from the participants, they were asked to participate in two questionnaire sessions, four weeks apart (i.e., Time 1 and Time 2). The participants completed the BPNSALS and other measures at Time 1, but only BPNSALS at Time 2. The questionnaires were administered anonymously to participants when they were outside the class. Ethical clearance for the study was obtained from the ethical committee of the institutions involved in the study.

2.4. Data analysis

First, the factor analyses were performed to examine the hypothesized factor structure of the BPNSALS. After the exploratory factor analysis was conducted on the data of half of the sample to identify the underlying factor structure of the BPNSALS, a confirmatory factor analysis was then conducted on the data of the other half to confirm the factor structure. Second, to assess the reliability of the BPNSALS, Cronbach’s alphas and test–retest correlations over a 4–week period were calculated. Finally, correlations between scores on the BPNSALS subscales and Arabic learning-related scales were examined to evaluate the construct validity of the BPNSALS.

3. RESULTS

3.1. Factor structure

For factor analysis, the sample was randomly divided into two sub-samples of equal size: Sample 1 ($n = 157$) and Sample 2 ($n = 157$). There were no significant differences between the groups with regards to sex, $\chi^2(1, N = 314) = .49$, and age, $t(312) = .43$. For Samples 1 and 2, the results of the Kaiser–Meyer–Olkin test of sampling adequacy was good (.87 for both samples), and the Bartlett’s test of sphericity was significant (χ^2 s = 1306.24 and 1422.84, $dfs = 36$ and 36 , $ps < .01$, respectively). These results suggested that both datasets from the two samples were suitable for factor analysis of the BPNSAL scale.

Exploratory factor analysis using principal component analysis was performed on the data from Sample 1. The eigenvalues for the first five factors were 5.74, 1.17, 1.05, 0.30, and 0.21. Based on eigenvalues greater than 1.0, the scree test, and factor interpretability, three factors were retained, accounting for 88.92% of the total variance. The promax rotation method was applied to these extracted factors, which were expected to be interrelated. As shown in Table 1, all items had factor loadings of .87 or higher on a single factor and .13 or lower for all other factors. The items that loaded highly on each factor were the same as those were previously hypothesized to constitute the corresponding subscales. The first,

second, and third factors corresponded to subscales for the satisfaction of relatedness, autonomy, and competence, respectively.

To test the three-factor structure of the BPNSALS, confirmatory factor analysis was performed on Sample 2. The goodness of fit indices indicated a good fit for the three-factor model, $\chi^2(24, N = 157) = 34.35, p > .05$, GFI = .96, AGFI = .92, RMSEA = .05, SRMR = .03, NFI = .97, and CFI = .99. As shown in Table 2, all the standardized factor loadings were over .85 and significant at the .01 level. Correlations between factor scores ranged from .52 to .68. Based on the results of the factor analyses, the items that loaded on each factor formed the three subscales of the BPNSALS corresponding to the three types of need satisfaction: autonomy satisfaction scale, the competence satisfaction scale, and the relatedness satisfaction scale. Each subscale score was calculated by summing the responses across the subscale items, with higher scores indicating greater levels of satisfaction.

Table 1.
Factor Loadings for Exploratory Factor Analysis for Sample 1.

Item	Factor 1	Factor 2	Factor 3
1	.13	.92	-.08
2	-.01	.95	.03
3	-.08	.93	.08
4	.04	.02	.90
5	-.07	.04	.97
6	.10	-.04	.87
7	.91	.08	.02
8	.98	.02	-.04
9	.95	-.06	.06
Eigenvalue	5.78	1.17	1.05
% of variance	64.26	12.97	11.69

Note: $n = 157$. Factor loadings in bold indicate the factor in which the item was judged to belong.

Table 2.
Standardized Factor Loadings for Confirmatory Factor Analysis for Sample 2.

Item	Autonomy satisfaction	Competence satisfaction	Relatedness satisfaction
1	.91		
2	.94		
3	.87		
4		.91	
5		.88	
6		.85	
7			.95
8			.91
9			.89

Note. $n = 157$. All factor loadings are significant, $p < .01$.

3.2. Internal consistency and temporal stability

Table 3 presents the means, standard deviations, range of corrected item-total correlations, and Cronbach's alphas for the BPNSALS subscales at Time 1. Corrected item-total correlations and Cronbach's alphas were sufficiently high. Test-retest correlations

between the BPNSALS subscale scores at Time 1 and Time 2 are also presented. These correlations were greater than .80. The intercorrelations contained in Table 3 indicate that the BPNSALS subscale scores were highly and positively correlated with one another.

Table 3.
Means, Standard Deviations, Range of Scores, Cronbach's alphas, Test-Retest Correlations and Intercorrelations for BPNSALS at Time 1.

BPNSALS subscale	<i>M</i>	<i>SD</i>	CITC	α	Test-retest <i>r</i>	<i>r</i>	
						1	2
1. Autonomy satisfaction	13.81	4.25	.83 – .87	.88	.90		
2. Competence satisfaction	14.10	3.86	.80 – .84	.90	.82	.58**	
3. Relatedness satisfaction	10.09	4.70	.88 – .90	.85	.90	.54**	.61**

Note: Test-retest correlations are calculated using the BPNSALS subscale scores at Time 1 and Time 2. CITC = Corrected item-total correlation. α = Cronbach's alpha.

** $p < .01$.

3.3. Correlations with scores on other measures

Correlations between scores on the BPNSALS subscales and other learning-related scales are presented in Table 4. Scores for the three subscales of the BPNSALS had similar correlations with scores on the Arabic learning motivation and outcomes scales. Scores on the amotivation and external regulation scales were moderately and negatively correlated with BPNSALS subscale scores. Although scores on the introjected regulation scale were not significantly correlated with BPNSALS subscale scores, they were significantly and positively correlated with scores on the identified regulation and intrinsic motivation scales. BPNSALS subscales scores were weakly and negatively correlated with controlling motivation scores and, in contrast, highly and positively correlated with autonomous motivation scores. The RAI scores were highly and positively correlated with the BPNSALS subscale scores. Furthermore, there were positive correlations between scores on the BPNSALS subscale and learning outcome scales.

4. DISCUSSION

The purpose of the present study was to develop and validate a new measure (the BPNSALS) for assessing need satisfaction in Arabic learners in Japan based on the SDT framework. The results of this study provide preliminary support for the BPNSALS, which consists of three subscales: autonomy, competence, and relatedness satisfaction scales. The subscale structure of the BPNSALS which was derived from the exploratory and confirmatory factor analyses revealed a strong correspondence with the theoretical subscale structure.

The present findings suggest that BPNSALS is a highly reliable measure. All the subscales indicated good internal consistency reliability with suitable Cronbach's alphas, which were high, but not too high, for a three-item short scale (Cohen, 2018; Nunnally & Bernstein, 1994; Streiner, 2003). The test-retest correlations over a 4-week interval were very high. These correlations are higher than test-retest correlations (.66 to .76) over a 3-week interval for the Japanese version of the Basic Psychological Need Satisfaction and Frustration Scale (Nishimura & Suzuki, 2016), which assesses need satisfaction in life in general. That said, for Japanese university students, Arabic learning settings are more likely to be stable than for general life settings.

Table 4.
Correlations between Scores on BPNSALS Subscales and Arabic Learning Motivation and Outcome Scales.

Measure	<i>M</i>	<i>SD</i>	<i>r</i>		
			Autonomy satisfaction	Competence satisfaction	Relatedness satisfaction
Amotivation	5.14	2.67	-.50**	-.49**	-.42**
External regulation	6.03	3.37	-.44**	-.39**	-.31**
Introjected regulation	8.59	3.88	-.04	.02	.03
Identified regulation	15.03	3.87	.46**	.52**	.38**
Intrinsic motivation	2.53	18.65	.67**	.57**	.50**
Controlling motivation	7.31	2.93	-.28**	-.21**	-.16**
Autonomous motivation	17.78	4.10	.64**	.61**	.50**
RAI	35.44	5.23	.64**	.56**	.47**
Satisfaction with Arabic learning	13.99	4.05	.40**	.41**	.25**
Subjective comprehension	13.09	3.84	.45**	.29**	.21**
Subjective achievement	13.18	3.65	.58**	.45**	.43**

** $p < .01$.

The results preliminarily support the construct validity of BPNSALS. The hypothesized correlations between scores on the BPNSALS subscales and ALMQ subscales were supported. All the BPNSALS subscale scores were negatively correlated with the scores for less self-determined forms of motivation (i.e., amotivation and external regulation). They were not significantly correlated with the scores for a moderate self-determined form of motivation (i.e., introjected regulation). They were positively correlated with scores for more self-determined forms of motivation (i.e., identified regulation and intrinsic motivation). The difference in the correlations due to the level of self-determination in the form of motivation clearly appeared in the correlations with composite scores for controlled and autonomous motivation. As expected, the scores on the BPNSALS subscales were negatively and positively correlated with the scores for controlled and autonomous motivation, respectively. Furthermore, this tendency is also supported by positive correlations with the RAI scores measuring learners' overall self-determination. Each of these are the relationships that have been theoretically (Deci & Ryan, 1985; Ryan & Deci, 2000a, 2017) and empirically (e.g., Carreira, 2012; Gnambs & Hanfstingl, 2016; Liu et al., 2009; Wang et al., 2019) supported. Thus, the correlations with forms of Arabic learning motivation and self-determination indicate the construct validity of the BPNSALS.

The BPNSALS also showed adequate construct validity through significant correlations with scores for subjective learning outcomes. The results showed that the BPNSALS subscale scores were positively correlated with scores for satisfaction, comprehension, and achievement in relation to Arabic learning as predicted by SDT (Deci & Ryan, 1985; Ryan & Deci, 2000a, 2017) and as have been supported by previous empirical studies (e.g., Cerasoli et al., 2016; Leach & Patall, 2013; Yu & Levesque-Bristol, 2020). Additionally, these correlations were lower than .70, which is considered the upper bound of the correlation between scores on measures assessing different constructs (Van den Broeck et al, 2010). Hence, the discriminant validity of the BPNSALS was supported by their correlations with the scores for the Arabic learning outcomes.

Before concluding this article, it is necessary to note the limitations of this study. First, as the sample was limited to university students, further research is required to assess the generalizability of the BPNSALS with other groups, such as workers learning Arabic for

work purposes. Second, it is necessary to examine test–retest correlations over a longer interval to further clarify the temporal stability of the BPNSALS. Third, to assess construct validity of the BPNSALS more widely, the relationships to learning-related attitudes and well-being other than the learning outcomes that were addressed in this study should also be examined. Fourth, future research to examine the other psychometric properties of the BPNSALS, such as predictive validity, is warranted. Finally, the BPNSALS have no reverse items which could bring some bias in participants' answers. In future studies, it might be better to improve the BPNSALS in this regard.

In conclusion, despite the limitations mentioned above, this study provides preliminary evidence for the good psychometric properties of the BPNSALS, which was designed to measure the need satisfaction of Arabic learners in Japan from the perspective of SDT. The BPNSALS is a useful need satisfaction measure, like the existing measures (e.g., Chen et al., 2015, Deci et al., 2001; Nishimura & Suzuki, 2016; Sheldon & Hilpert, 2012), and a convenient measure that could become readily available in various research settings to Arabic learners. It can be expected that through the practical use of the BPNSALS, an understanding of the Arabic learners in Japan will be advanced: in turn, their learning environments and well-being will be enhanced.

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AUTHOR INFORMATION

Full name: Katsunori Sumi

Institutional affiliation: Nagoya Institute of Technology

Institutional address: Gokiso, Showa, Nagoya, Aichi, Japan

Biographical sketch: Katsunori Sumi is a Professor of the Graduate School of Engineering at Nagoya Institute of Technology (Japan) from 2007. He received his Ph.D. from Nagoya Institute of Technology. He teaches Behavioral Science, Organizational Behavior, and Applied Psychology. He is currently engaged in the research on well-being and academic motivation. His latest publication includes an article in *Positive psychology and positive education in Asia: Understanding and fostering well-being in schools* (Springer, 2020).

Chapter #3

PSYCHOLOGICAL TIME IN THE CONTEXT OF GLOBALIZATION

Comparative study of Russia and Japan

Wada Toshihiro¹, Ekaterina Zabelina², Yulia Chestyunina², & Irina Trushina²

¹*Department of Law, Ehime University, Japan*

²*Department of Psychology and Pedagogics, Chelyabinsk State University, Russia*

ABSTRACT

Because of the increasing flow of information in modern society, perceptions of personal time are changing. Psychological time becomes the universal aspect of life that allows marking changes in personality in the era of globalization. The purpose of this study is to identify similarities and differences of subjective (psychological) time in two countries Russia and Japan, which are quite different on the political, economic, and cultural levels. The theoretical basis of the study is the model of time perception, according to T. Nestik (2016). According to this model, cognitive, affective, motivational, and behavioral components of psychological time are studied among the students of regional universities in Russia and Japan (N=593). The results revealed differences in all components of psychological time. However, the impact of globalization is noticeable in such aspects as the desire to avoid uncertainty and willingness to live the moment. The results of the study can be used in advising students on their future professional choices as well as on how to live a psychologically healthy life in modern society.

Keywords: psychological time, Russia, Japan, future, past positive.

1. INTRODUCTION

Time has always been and remains one of the most mysterious phenomena. Although the resilience of the characteristics of objective, subjective, or psychological time is experienced very differently in various cultures and situations. The study of the psychological time of a person becomes especially important in the so-called era of globalization. The extensive use of Internet technologies has completely changed the perception of time and attitudes towards it. Today the emphasis on universal acceleration prevails in social and cultural theory (Weissman, 2019). This new temporality is described as the temporality of "immediacy, instantaneity, simultaneity, timelessness, chronoscopy or network time" (Weissman, 2019, p. 12). This time is also referred to as "iTime," and is described as manic, intrusive, heavily compressed, and carrying a heavy burden on the individual (Agger, 2011).

Because of the inflation of traditional values, the openness of social systems, unification of forms relations, and behavior under the influence of globalization, modern societies face certain mobility of perception and attitude toward time. Time and its subjective perception become a marker that highlights the trends of the global society: acceleration of the pace of life, erasure of the boundaries of the personal and professional sphere, and a permanent deficit of time as a life resource (Zabelina, Smirnov, & Chestyunina, 2016). In this regard, the study of psychological time in the conditions of globalization becomes more and more significant in terms of human wellbeing in modern society.

In particular, the research on the subjective (psychological) time of young generations of various countries is relevant, because young people are involved in globalization faster and more actively. At the same time, the more different cultural patterns of social communities, the more significant the evidence of globalization trends will be. That is why, for this study, we chose two countries with different, largely contrasting cultures - Japan and Russia. The aim of this study is to identify similarities and differences in the subjective (psychological) time of young people in these countries.

2. BACKGROUND

Psychological time has a wide definition. In this study, it is defined as "a perception and experience of the objective time of one's life, representations of time, caused both by personal experience of individual and group life, and by learned social, historical and cultural experience, awareness of time, personal attitude to time, psychological organization and regulation of lifetime" (Kovalev, 1988, p. 217). Psychological time also incorporates the past, present, and future of the ethnos, the state, and humanity to the extent that a particular person accommodates the national and universal culture in his consciousness (Mukhina, 2007).

One of the first attempts to develop the structure of the psychological time of a person was made by K.A. Abulkhanova and her colleagues. They advanced and proved the hypothesis of the three-component structure of the personal organization of time: 1) awareness of time; 2) emotional experience of time; 3) practical organization of time or organization of activity time (Abulhanova & Berezina, 2001, p. 19). Awareness of time consists of a set of time values, a generalized reflection of the mode of action in time, and the result of an activity. The component of emotional experience is represented by personal and situational anxiety that affects the speed and errors in an activity. Personal organizational strategies of dealing with time reflect the content of the third component – the organization of time of activity (Abulhanova & Berezina, 2001).

In many ways, a similar but more detailed model of the attitude towards time was later suggested by T.A. Nestik (2015). This model explains the structure of psychological time, both on an individual and group (social) level. This model includes four components of the relation to time. The value and motivational component include the subjective importance of time as an irreplaceable resource. The cognitive component is illustrated by time perspective, temporal aspects of identity, etc. Affective component reflects emotional relation to time, and behavioral one describes preferred methods of time organization (Nestik, 2015, p.100). In the present study, this model was taken as a conceptual theoretical basis.

Modern researchers agree that time in the perception of an individual may differ significantly from objectively existing (historical), by taking a subjective (personal, social) character. The social nature of time perceived by an individual is largely determined by the ethnic and cultural characteristics of the society of which he is a part. The basis for human perception of time seems to be laid in childhood, during the process of acquiring cultural values and, especially, through language acquisition. Some researchers believe that the attitude towards time developed in different cultures reflects the values of human existence (Boroditsky, 2015). On the other hand, cultural characteristics of perception of time are formed historically, during everyday activities, and depend on the type of occupation, beliefs, geographical characteristics of the area, experience of interaction with nature, etc.

The cultural markers that characterize psychological time in Japan are considered by researchers to be complex attitudes toward time such as "forever now" focusing on the present moment (a set of all possibilities in a single moment), fatalism, monochronicity, adherence to rituals (appropriateness) in the transition from one phase to another, and uncertainty and uncontrollability of the future (Iskagulova, 2018; Parieva, 2017). The peculiarities of psychological time in Russia can be considered as linear perception, fractionality and individualization of events, polychrony (existence in several chronotopes simultaneously), utilitarian attitude towards time, and orientation to the future (Zabelina, 2018).

3. METHOD AND SAMPLE

The theoretical model was verified in the study of students from regional Russian and Japanese universities. The sample included 593 people: 293 students aged from 18 up to 23 years from Russia, 75 males, 218 females, and 279 students from Japan, aged from 18 up to 24 years, 121 males and 158 females. All the students study in full-time faculties of humanities.

Inventory of Time Value as an Economic Resource by Usunier (Nestik, 2015) was used to explore the content of the value and motivational component of psychological time. To study the cognitive component of psychological time, the Zimbardo Time Perspective Inventory (Mitina & Sircova, 2008) was used. In order to identify the content of the affective component of psychological time, Attitudes towards Time (Nuttin, 2004) was used. This technique is based on a semantic differential, allowing us to study emotional attitude to the past, present, and future. Inventory of Polychronic Values (Bluedorn, adapted by Nestik, 2015) was used to study the content of the behavioral component of psychological time.

The signs of globalization were not the subject of special study. We consider them as a given reality, as a social background in which young people are immersed, regardless of their location.

Before the main study, the techniques were translated from Russian into Japanese (direct and reverse translation), and all necessary validation procedures were performed. The forms of the questionnaires were presented to the respondents in hand copy. The data were processed using SPSS 24.0. statistical package. For the comparative analysis, the Mann-Whitney U criterion was used.

4. RESULTS

The results of the comparative analysis revealed differences in all components of psychological time. The results of the comparison of the cognitive component of psychological time are shown in Table 1.

Table 1.
Results of comparative analysis of a cognitive component of psychological time for Russians and Japanese.

	Mean rank		U	p
	Russians	Japanese		
Past Negative	262.53	344.08	34130	0.000
Present Hedonistic	279.37	781.50	38878.5	0.000
Future	303.82	308.79	45775.5	0.729
Past Positive	335.92	281.36	38234.5	0.000
Present Fatalistic	277.16	331.57	38256	0.000

The results show that Japanese students are more involved in the past, both positive and negative. They are more attentive to their experience, perceive joyful and sad events emotionally. At the same time, they are more focused on the present, on getting positive emotions from current events, to live the very moment fully. Furthermore, Japanese students more share the belief that what happens to them in the present is predetermined and does not depend on their efforts. At the same time, there were no differences in perception of the future: students, regardless of their cultural affiliation, worry about their future, make plans, seek to introduce certainty into them, and make their future more understandable.

The analysis of the differences in the affective component of psychological time showed that Japanese students as a whole are more restrained in positive emotions when assessing their time. Russian students, on the contrary, are more optimistic in regards to the past, present, and future (Table 2).

Table 2.
Results of comparative analysis of an affective component of psychological time for Russians and Japanese.

	Mean rank		U	p
	Russians	Japanese		
Attitude toward the past	254,33	364,32	31408.5	0.000
Attitude toward the present	279,02	342,33	38667	0.000
Attitude toward the future	236,03	380,63	26026.5	0.000

Japanese students assess their past, present, and future more neutrally: time appears as emotionally balanced (causing neither pleasant feelings nor unpleasant ones), quite eventful, passing at an average pace (neither quickly nor slowly). It is moderately difficult, moderately successful, and moderately interesting. For the Russian sample, the sense of personal control over the past, present, and future is more typical. They perceive their time as more meaningful, active, belonging to themselves. For the Japanese sample, on the contrary, such control is less expressed. In their minds, time is less meaningful, more passive, and refers, first of all, not to an individual, but to a certain social space.

The behavioral component of psychological time showed significant differences either. Russian students are more prone to the polychromic way of life than the Japanese ($U = 42940$; $p = 0.013$). If Russians are used to doing several things at the same time, pay attention to many things in one stage, the Japanese prefer to finish one task before taking on another.

The value and motivational component of psychological time also showed some differences ($U = 40766.5$; $p = 0.001$). Russian students more accurately determine the value of time as an economic resource, easily translate time into money, can count the cost of their time. For Japanese students, time is not linked so tough with money. For example, they are calmer about standing in line (a waste of time) because it is a part of the public rules.

5. DISCUSSION

The observed differences of psychological time in Japan and Russia, on the one hand, confirm the available data on the relationship between psychological time and culture (Graham, 1981; Hall & Hall, 1990; Levine, 1997; Trompenaars & Hampden-Turner, 1997; Vale, Flynn, & Kendal, 2012), and on the other, clarify these data in the light of the processes of globalization.

Peculiarities of time perspective of the Japanese demonstrate the manifestations of perception of time due to culture. For example, for Japanese, time acts as a certain force which is not controlled by a person, and which subordinates a person to its will 時はすべてのものを貪り食う – «time devours everything» (Parieva, 2017). Moreover, one can observe such feature of the Japanese attitude as a focus on the present moment which is much more important, than the past or the future 昨日は今日の昔 "yesterday is the past of today." (Smirnov & Smirnova, 2019).

E. Iskagulova (2018) stresses the importance of the past for the Japanese. The existence here and now owes above all to the past, the history, and the experience of previous generations. In particular, in Japanese national self-awareness, linguistic analysis traces the treatment of the past as something sacral. In Japanese culture, a person is a debtor of the past, and every day the contact with other people increases his debt in the present (Iskagulova, 2018).

The results of the study indicate that culture continues to play an important differentiating role in the world, despite the processes of globalization. However, the impact of globalization is noticeable in such aspects as the desire to avoid uncertainty, the desire to live the moment. The results of the study can be used in advising students on professional choices, psychologically healthy lives in modern society.

6. CONCLUSION

This research enriches science with new empirical data on the features of the psychological time of an individual in a global society. The hypothesis about the similarity in the perception of psychological time in Russia and Japan has not been confirmed. Most probably, culture is that powerful factor which opposes globalization.

On the basis of the findings, we can offer a number of recommendations for parents, teachers, and psychologists in the field of education. In the context of increased polychronicity of the modern global world, it is necessary for the youth to develop the skills to understand and structure the events of their lives. It would be a good habit to occasionally "rethink" the value of specific events and set priorities between them. It is

important to teach young people how to use personal resources to the fullest extent in the events of the present, so that they would not be passive observers of events, but would participate creatively in their implementation. Before planning the future, young people need to deal with their past. It is important to reflect on past events from the perspective of what they provide for personal development. Young people need to develop a sense of gratitude for the past and the value of their experience as a resource for success in the future.

Cultural differences of perception and attitude to time as the most profound and basic ideas about the world could be a potential barrier to intercultural communication. It is necessary to take into account the differences in psychological time when building relations between countries.

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AUTHORS' INFORMATION

Full name: Wada Toshihiro

Institutional affiliation: Ehime University,

Institutional address: 10-13 Dogo-Himata, Matsuyama, Ehime, 790-8577, Japan,

Short biographical sketch: Wada Toshihiro – Expert in the field of international law and international relations. Research interests: processes of global economy, possibilities of peaceful coexistence between nations in a global world.

Full name: Ekaterina Zabelina

Institutional affiliation: Chelyabinsk State University,

Institutional address: 129 Bratiev Kashirinykh, Chelyabinsk, Russia, 454001

Short biographical sketch: Ekaterina Zabelina – Candidate of Psychological Sciences, Associate Professor at the Department of Psychology and Pedagogy at the Chelyabinsk State University. Research interests: psychology of time, economic psychology, cross-cultural psychology, social psychology.

Full name: Yulia Chestyunina

Institutional affiliation: Chelyabinsk State University,

Institutional address: 129 Bratiev Kashirinykh, Chelyabinsk, Russia, 454001

Short biographical sketch: Yulia Chestyunina – Candidate of Psychological Sciences, Associate Professor at the Department of Psychology and Pedagogy at the Chelyabinsk State University. Research interests: economic psychology, cross-cultural psychology, social psychology, methodology of psychology.

Full name: Irina Trushina

Institutional affiliation: Chelyabinsk State University,

Institutional address: 129 Bratiev Kashirinykh, Chelyabinsk, Russia, 454001

Short biographical sketch: Irina Trushina – Candidate of Pedagogical Sciences, Acting Dean of the Department of Psychology and Pedagogy at the Chelyabinsk State University. Research interests: consulting psychology, family psychology, pedagogical psychology, cross-cultural psychology, social psychology.

Chapter #4

DISPOSITIONAL TRAITS AS PREDICTORS OF SELF-EFFICACY

Elena Lisá

Institute of Applied Psychology, Faculty of Social and Economic Sciences, Comenius University, Slovakia

ABSTRACT

Introduction: We started from Bandura's theory of self-efficacy, the onion model of achievement motivation according to Schuler & Prochaska, and the 5-factor personality theory by Costa & McCrae. The study aimed to analyze the predictive power of achievement motivation and personality traits on general self-efficacy and domain-specific career decision self-efficacy. We expected the more significant relationship of stable personality characteristics with general self-efficacy than with specific-domain career decision self-efficacy. Methods: 690 adult participants (university students and working adults) completed a career decision self-efficacy questionnaire, and 268 of them a general self-efficacy scale. All participants also fulfilled an achievement motivation questionnaire and a five-factor personality theory questionnaire. Results: All five personality traits, combined with four dimensions of achievement motivation (dominance, confidence in success, self-control, and competitiveness) explain 61% of general self-efficacy variability. Extraversion, agreeableness, and conscientiousness with six achievement motivation dimensions (dominance, engagement, confidence in success, fearlessness, competitiveness, and goal setting) explain 42.5% of career decision self-efficacy variability. Discussion: Stable traits and achievement motivation dimensions had more significant predictive power on general self-efficacy than on domain-specific career decision self-efficacy. For further research, there is a suggestion about a theoretically and empirically integrated model of dispositional and social-cognitive approaches.

Keywords: achievement motivation, traits, general self-efficacy, career self-efficacy.

1. INTRODUCTION

The chapter brings the topic of stable dispositional variables: personality traits, achievement motivation, and the topic of dynamic social-cognitive variables: general self-efficacy, career self-efficacy. It introduces the fundamental starting theories and empirically examines the relationships between the stable and dynamic characteristics of personality. The results of the chapter indicate possible directions for research into the future. They start from the need for an integrative theoretical model to applied research in the field of self-efficacy development.

2. BACKGROUND

Self-efficacy refers to personal beliefs or an individual's confidence in his ability to perform effectively specified tasks. It affects behavior and motivation. The self-efficacy theory states that there are four primary sources of efficacy expectations: previous performance accomplishments, vicarious experiences, verbal persuasion, and physiological states (Bandura, 1977). These sources show the dynamic nature of self-efficacy. Efficacy

beliefs influence how people feel, think, motivate themselves, and behave (Bandura, 1993). Bandura stated that beliefs about the nature of ability could make a difference in a group's performance. For example, people who believed that ability has an inherent intellectual nature failed in group problem-solving. They who believed that ability is an acquired skill achieved the group goals more efficiently. They managed better by fostering a "highly resilient sense of personal efficacy" (p. 121).

Self-efficacy theory (Bandura, 1982) says that perceived self-efficacy is a major motivational factor contributing to successful task performance. Research showed that self-efficacy is the most critical predictor of university student achievement (Bartimote-Aufflick, Bridgeman, Walker, Sharma, & Smith, 2016). Bandura understands motivation as a cognitive phenomenon and the self-efficacy in the same way. He said: "Expectations of personal efficacy do not operate as dispositional determinants independently of contextual factors." (Bandura, 1977, p. 203). Hence, it is necessary for a subject to identify the circumstance and to determine the required behavior. Therefore, the dynamic nature of self-efficacy applies to developmental goals in various settings, e.g., schools (Bartimote-Aufflick et al., 2016). An example of a domain-specific self-efficacy is a career self efficacy. It is broadly defined as "confidence in one's ability to manage career development and work-related tasks" (O'Brien, 2003, p. 110).

Self-efficacy beliefs are rooted in support of a sense of confidence provided by the caregiver; as children develop positive attitudes, they receive support from adults' tolerant behavior (Bandura, 1997). General self-efficacy is affected by early memories of warmth and safeness (Yilmaz Bingöl, 2018). Research studies show that also some other dynamic variables can influence the overall score of self-efficacy. E.g., Gardner's musical and linguistic intelligence were predictors of general self-efficacy (Zarei & Taheri, 2013). Knowledge of diabetes and insulin injection, insulin injection skills, senior high school or above education, and diabetes duration were predictors of self-efficacy in administering insulin injection, which explained 41% of the total variance in self-efficacy (Huang, Hung, Huang, & Yang, 2019). Psychological resilience and positivity together explained 33% of the total variance in self-efficacy (Yilmaz Bingöl, Vural Batik, Hoşoğlu, & Kodaz, 2018). Although self-efficacy is the dynamic cognitive construct, research in recent years showed that personality traits contribute as antecedents to several domain-specific kinds of self-efficacy. E.g., career self-efficacy (Hartman & Betz, 2007; Bullock-Yowell, Andrews, & Buzzetta, 2011), professional choice self-efficacy (Ambiel & Noronha, 2016), vocational self-efficacy (Larson & Borgen, 2006), leadership self-efficacy (Huszczko & Lee Endres, 2017), computer self-efficacy (Saleem, Beaudry, & Croteau, 2011), creative self-efficacy (Karwowski, Lebeda, Wisniewska, & Gralowski, 2013), entrepreneurial self-efficacy (Şahin, Karadağ, & Tuncer, 2019), self-efficacy in selecting a high school major (Brown & Cinamon, 2016). These findings are essential in light of the integration of trait/dispositional and social-cognitive perspectives. Reciprocal influences of traits and self-efficacy are still incompletely understood (Stajkovic, Bandura, Locke, Lee, & Sergent, 2018).

According to motivation, Bandura says that self-efficacy beliefs play a crucial role in the self-regulation of motivation through cognition. He distinguishes three different forms of cognitive motivators: casual attributions, outcome expectancies, and cognized goals. Self-efficacy works with all three forms of cognitive motivators. It causes the difference in mental performance between children with the same level of cognitive ability but a different level of self-efficacy. The research in university students' samples proved the mediational role of self-efficacy on achievement motivation and learning strategies (Yusuf, 2011a) and a considerable correlation between self-efficacy and achievement motivation

(Yusuf, 2011b). More research studies empirically confirm a positive association between self-efficacy and achievement motivation (Mouloud & Elkader, 2016; Mohamadi et al., 2014; Habibah, Noordin, & Mahyuddin, 2010; Zhang et al. 2015; Abbasianfard, Bahrami, & Ahghar, 2010).

However, when speaking about achievement and motivation, we cannot forget dispositional theories. From that point of view, achievement motivation is a personality variable that explains individual differences in various contexts. It is a complex construct consisting of different layers of dimensions, something as onion. Schuler & Prochaska (2011) view the achievement motivation model as an onion model. Layers of onion are layers of personality: background variables (neuroticism, conscientiousness), theoretical compounds (locus of control, attribution style, self-confidence), peripheral facets (independence, status orientation), core facets (hope of success, goal setting, persistence). Therefore "it is regarded as a general orientation of the person towards the achievement" (p.9).

According to the stated recent research, we conclude that self-efficacy constructs grow from situational and dispositional roots.

2.1. Objectives

We expect a significant relationship between the stable characteristics of personality and self-efficacy constructs. When considering the power of the situation in the case of domain-specific self-efficacy constructs, we expect that the relationship between stable personality characteristics (achievement motivation, personality traits) and generalized efficacy will be more significant than between stable personality characteristics (achievement motivation, personality traits) and career self-efficacy.

3. METHODS

Six hundred and ninety university students and adults participated in the research. All participants took achievement motivation inventory and career efficacy questionnaire, 600 of them fulfilled the five-factor personality inventory, and 268 general self-efficacy scale. The research participants participated in the research study by the snowball method. The first contact - psychology students collected the data, and they received the credits for a research practice course. The data were collected and processed anonymously. Participation in the research was voluntary.

Achievement motivation inventory (LMI; Schuler & Prochaska, 2011) in the Slovak language contains 170 items in a 7-point Likert format from (1) "Does not apply at all" to (7) "Applies fully to me." The final questionnaire consists of 17 dimensions - fearlessness, flexibility, independence, preference for difficult tasks, confidence in success, dominance, goal setting, eagerness to learn, competitiveness, compensatory effort, engagement, pride in productivity, status orientation, flow, internality, persistence, self-control.

Generalized Self-Efficacy Scale (GSES) is an independent cultural questionnaire in 25 countries globally (Luszczynska, Scholz, & Schwarzer, 2005; Scholz, Gutiérrez-Doña, Sud, & Schwarzer, 2002). For the research purpose, we used the Slovak version of the GSES (Košč, Heftyová, Schwarzer, & Jerusalem, 1993). It contains ten items in a 4-point Likert format from (1) "Not true" to (7) "The truth."

The Career Decision Self-Efficacy scale-Short Form (CDSES-SF; Betz, Klein, & Taylor in O'Brien, 2003) is a self-report, 25-item inventory developed to assess confidence in career-related decisions and engagement in tasks related to career decision making. A 5-point continuum, ranging from no confidence at all (1) to complete confidence

(5), was used. All items sum in the total score on the CDSES–SF. High scores reflect intense levels of confidence in completing career-related tasks.

NEO, the five-factor personality inventory NEO-FFI represents a shortened version of the five-factor personality theory questionnaire (Ruisel & Halama, 2007) that measures five main personality traits: neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness (McCrae & Costa, 2006). The dimensions represent the sum of answers for 12 questions using ratings from 1 to 5.

The data were analyzed by JASP 0.11.1.0 (correlation, and regression analysis).

4. RESULTS

Correlation analysis showed small to large correlation coefficients between self-efficacy, personality traits, and achievement motivation dimensions (Table 1 a,b).

Most of the strong relationships among personality traits and achievement motivation scales exist in neuroticism and conscientiousness. The most related to neuroticism are fearlessness, independence, perseverance, confidence in success, flexibility, and internality. Also, dominance and preference for difficulty indicate a clear relationship to neuroticism (negative). The conscientiousness factor correlates with the dimensions of self-control, perseverance, confidence in success, engagement, pride in productivity, and independence. These results are consistent with the background theories of the current research.

Except for two, all correlations between self-efficacy and personality traits plus motivation dimensions are statistically significant

Table 1a.
Correlations and Cronbach' alphas for measured variables - continue.

	1	2	3	4	5	6	7	8	9	10	11	12
1 CDSES	0.91											
2 GSES	0.648***	0.88										
3 N	-0.381***	-0.456***	0.82									
4 E	0.386***	0.464***	-0.409***	0.78								
5 O	0.162***	0.212***	-0.042	0.207***	0.68							
6 P	-0.004	-0.158*	-0.178***	0.154***	0.100*	0.71						
7 S	0.424***	0.456***	-0.366***	0.298***	0.036	0.229***	0.85					
8 PE	0.392***	0.421***	-0.478***	0.301***	0.003	0.045	0.531***	0.74				
9 DO	0.461***	0.548***	-0.348***	0.475***	0.241***	-0.214***	0.263***	0.415***	0.84			
10 EN	0.248***	0.266***	-0.126**	0.180***	0.032	-0.080	0.410***	0.449***	0.396***	0.76		
11 CS	0.514***	0.592***	-0.452***	0.394***	0.180***	0.007	0.427***	0.534***	0.594***	0.409***	0.83	
12 FX	0.458***	0.493***	-0.425***	0.460***	0.257***	0.035	0.306***	0.447***	0.495***	0.208***	0.559***	0.73
13 FL	0.219***	0.238***	-0.050	0.159***	0.213***	-0.070	0.224***	0.243***	0.345***	0.446***	0.398***	0.320***
14 F	0.427***	0.423***	-0.575***	0.280***	0.110**	0.003	0.320***	0.603***	0.377***	0.195***	0.490***	0.539***
15 IN	0.310***	0.180**	-0.395***	0.172***	0.150***	0.254***	0.359***	0.441***	0.165***	0.125***	0.285***	0.351
16 CE	0.115**	0.084	0.121**	-0.026	0.012	0.008	0.256***	0.155***	0.178***	0.394***	0.274***	0.057***
17 PP	0.279***	0.245***	-0.064	0.194***	0.120**	0.039	0.411***	0.296***	0.404***	0.421***	0.475***	0.319***
18 EL	0.394***	0.301***	-0.230***	0.209***	0.334***	0.008	0.332***	0.349***	0.471***	0.443***	0.519***	0.471***
19 PT	0.392***	0.455***	-0.380***	0.245***	0.178***	-0.051	0.371***	0.556***	0.484***	0.482***	0.628***	0.602***
20 ID	0.461***	0.528***	-0.508***	0.326***	0.167***	-0.020	0.401***	0.534***	0.531***	0.322***	0.539***	0.566***
21 SC	0.260***	0.167**	-0.255***	0.086*	0.016	0.207***	0.613***	0.543***	0.159***	0.402***	0.307***	0.198***
22 OS	0.226***	0.235***	0.024	0.242***	0.117**	-0.243***	0.050	0.069	0.478***	0.245***	0.348***	0.249***
23 CO	0.132***	0.084	0.093*	0.178***	0.064	-0.313***	0.008	0.074*	0.456***	0.304***	0.255***	0.142***
24 GS	0.407***	0.382***	-0.157***	0.264***	0.226***	-0.037	0.328***	0.282***	0.467***	0.426***	0.492***	0.451***

Table 1b.
Correlations and Cronbach' alphas for measured variables.

	12	13	14	15	16	17	18	19	20	21	22	23	
13 FL	0.320***	0.78											
14 F	0.539***	0.044	0.82										
15 IN	0.351***	0.124***	0.476***	0.66									
16 CE	0.057	0.373***	-0.218***	-0.010	0.76								
17 PP	0.319***	0.593***	-0.006	0.186***	0.578***	0.77							
18 EL	0.471***	0.391***	0.297***	0.217***	0.287***	0.408***	0.66						
19 PT	0.602***	0.491***	0.537***	0.296***	0.193***	0.349***	0.547***	0.85					
20 ID	0.566***	0.283***	0.626***	0.416***	0.007	0.260***	0.409***	0.584***	0.67				
21 SC	0.198***	0.131***	0.318***	0.398***	0.274***	0.283***	0.267***	0.313***	0.298***	0.67			
22 OS	0.249***	0.344***	-0.059	-0.077*	0.372***	0.527***	0.345***	0.209***	0.129***	-0.012	0.85		
23 CO	0.142***	0.384***	-0.068	-0.098**	0.373***	0.445***	0.287***	0.221***	0.099**	-0.018	0.666***	0.81	
24 GS	0.451***	0.406***	0.201***	0.182***	0.361***	0.517***	0.547***	0.475***	0.379***	0.232***	0.578***	0.445***	0.65

* $p < .05$, ** $p < .01$, *** $p < .001$

CDSES = career self-efficacy; GSES = general self-efficacy; N = neuroticism; E = extraversion; O = openness to experience; A = agreeableness; C = conscientiousness; F = fearlessness; FX = flexibility; ID = independence; PT = preference for difficult tasks; CS = confidence in success; DO = dominance; GS = goal setting; EL = eagerness to learn; CO = competitiveness; CE = compensatory effort; EN = engagement; PP = pride in productivity; OS = status orientation; FL = flow; IN = internality; PE = persistence; SC = self-control.

4.1. Prediction of general self-efficacy (GSE)

All five personality traits significantly predict GSE (table 2). The regression model explains 51,9 % of GSE score variability ($R = 0,721$; $R^2 = 0,519$; $F(5, 252) = 54,473$; $p < .001$).

Table 2.
Linear Regression (dependent variable: GSE; independent variables: personality traits).

Model	Unstandardized	Standard Error	Standardized	t	p
1 (Intercept)	30.595	2.405		12.722	< .001
Neuroticism	-0.255	0.038	-0.329	-6.783	< .001
Extraversion	0.211	0.043	0.241	4.947	< .001
Openness	0.198	0.038	0.230	5.133	< .001
Agreeableness	-0.323	0.045	-0.327	-7.217	< .001
Conscientiousness	0.272	0.037	0.346	7.443	< .001

Five achievement motivation dimensions predict GSE: dominance, confidence in success, flexibility, competitiveness, and goal setting (table 3). The regression model explains 48,3 % of GSE score variability ($R = 0,695$; $R^2 = 0,483$; $F(17, 240) = 13,192$; $p < .001$).

All five personality traits in combination with four dimensions of achievement motivation (dominance, confidence in success, self-control, and competitiveness) significantly predict GSE (table 4). The regression model explains 61,3 % of GSE score variability ($R = 0,783$; $R^2 = 0,613$; $F(22, 226) = 16,297$; $p < .001$).

Table 3.
Linear Regression (dependent variable: GSE; independent variables: achievement motivation dimensions).

Model		Unstandardized	Standard Error	Standardized	t	p
1	(Intercept)	14.284	3.110		4.592	< .001
	Dominance	0.174	0.043	0.291	4.072	< .001
	Confidence in Success	0.193	0.051	0.279	3.789	< .001
	Flexibility	0.099	0.052	0.129	1.896	0.059
	Competitiveness	-0.088	0.038	-0.150	-2.288	0.023
	Goal Setting	0.093	0.051	0.125	1.822	0.070

Table 4.
Linear Regression (dependent variable: GSE; independent variables: achievement motivation dimensions, and personality traits).

Coefficients Model		Unstandardized	Standard Error	Standardized	t	p
1	(Intercept)	24.841	3.671		6.768	< .001
	Conscientiousness	0.281	0.046	0.354	6.116	< .001
	Agreeableness	-0.227	0.051	-0.229	-4.477	< .001
	Neuroticism	-0.138	0.045	-0.179	-3.094	0.002
	Openness	0.124	0.042	0.144	2.947	0.004
	Dominance	0.111	0.041	0.184	2.679	0.008
	Confidence in Success	0.108	0.048	0.154	2.269	0.024
	Extraversion	0.105	0.048	0.119	2.159	0.032
	Self-Control	-0.087	0.041	-0.123	-2.105	0.036
	Competitiveness	-0.083	0.035	-0.140	-2.363	0.019

4.2. Prediction of career decision self-efficacy (CDSE)

All five personality traits significantly predict CDSE (table 5). The regression model explains 31,3 % of CDSE score variability ($R = 0,560$; $R^2 = 0,313$; $F(5, 570) = 51,973$; $p < .001$).

Table 5.
Linear Regression (dependent variable: CDSE; independent variables: personality traits).

Model		Unstandardized	Standard Error	Standardized	t	p
1	(Intercept)	71.282	4.788		14.889	< .001
	Neuroticism	-0.383	0.074	-0.204	-5.150	< .001
	Extraversion	0.448	0.085	0.209	5.289	< .001
	Openness	0.241	0.077	0.112	3.138	< .001
	Agreeableness	-0.385	0.088	-0.158	-4.386	< .001
	Conscientiousness	0.618	0.074	0.320	8.361	< .001

Nine achievement motivation dimensions (dominance, confidence in success, flexibility, fearlessness, internality, eagerness to learn, preference for difficult tasks, competitiveness, and goal setting) significantly predict CDSE (table 6). The regression model explains 39,7 % of CDSE score variability ($R = 0,630$; $R^2 = 0,397$; $F(17\ 655) = 25,380$; $p < .001$).

Three traits of personality (extraversion, agreeableness, and conscientiousness) with six achievement motivation dimensions (dominance, engagement, confidence in success, fearlessness, competitiveness, and goal setting) significantly predict CDSE score (table 7). The regression model explains 44,4 % of CDSE score variability ($R = 0,666$; $R^2 = 0,444$; $F(22\ 537) = 19,467$; $p < .001$).

Table 6.
Linear Regression (dependent variable: CDSE; independent variables: achievement motivation dimensions).

Coefficients Model	Unstandardized	Standard Error	Standardized	t	p
1 (Intercept)	30.192	4.179		7.225	< .001
Dominance	0.242	0.063	0.180	3.860	< .001
Confidence in Success	0.307	0.076	0.196	4.020	< .001
Flexibility	0.138	0.076	0.081	1.799	0.072
Fearlessness	0.183	0.070	0.139	2.624	0.009
Internality	0.126	0.067	0.072	1.878	0.061
Eagerness to Learn	0.129	0.071	0.075	1.822	0.069
Preference for Difficult Tasks	-0.145	0.069	-0.108	2.097	0.036
Competitiveness	-0.110	0.061	-0.080	1.785	0.075
Goal Setting	0.261	0.077	0.152	3.369	< .001

Table 7.
Linear Regression (dependent variable: CDSE; independent variables: achievement motivation dimensions, and personality traits).

Model	Unstandardized	Standard Error	Standardized	t	p
1 (Intercept)	34.836	6.625		5.259	< .001
Dominance	0.215	0.073	0.154	2.931	0.004
Engagement	-0.107	0.064	-0.078	-1.682	0.093
Confidence in Success	0.167	0.084	0.105	1.991	0.047
Fearlessness	0.195	0.078	0.147	2.480	0.013
Competitiveness	-0.160	0.068	-0.113	-2.346	0.019
Goal Setting	0.284	0.086	0.164	3.313	< .001
Extraversion	0.304	0.092	0.144	3.310	< .001
Agreeableness	-0.230	0.096	-0.095	-2.381	0.018
Conscientiousness	0.368	0.092	0.191	4.014	< .001

5. FUTURE RESEARCH DIRECTIONS

Recent research results show that various dispositional traits could determine the various domain-specific models of self-efficacy. As Stajkovic et al. (2018) mentioned, we need to look for ways to use limited resources effectively. There is a need to explore these relationships to develop the selected domain-specific self-efficacies adequately. Future research, therefore, may bring the theoretical or empirical model which integrates dispositional and social-cognitive approaches (Hartman & Betz, 2007; Larson & Borgen, 2006). There are some suggestions for applied research aims in the field. Because of dispositional antecedents of self-efficacy, the applied research could focus on the right way of self-efficacy development. E.g., to explore how to choose the goals of performance concerning individual dispositions, or what kind of performance is suitable/more comfortable for an individual. The chosen goals should reflect the dispositional conditionality of the personality. For example, if an individual has a higher score of dominance, competitiveness, and disagreeableness, he or she should choose appropriate career goals and performance. Strategies for the development of self-efficacy could depend on the nature of the personality. For example, agreeable people may consider solutions uncomfortable for them due to the risk of interpersonal conflicts and non-acceptance on their path to success/performance. People with low achievement motivation may look for goals/performances that bring them, above all, joy and fulfillment, because they will not be able to rely on the driving force of the desire for success.

The limit of the current study could lay in the type of research group. The research participants were people mostly with university education. The results could depend on the composition of the research sample. Some studies suggest the critical nature of gender in regression models of self-efficacy (Huszczko & Lee Endres, 2017; Saleem, Beaudry, & Croteau, 2011). However, in the current study, we did not confirm the differences in regression models between men and women.

The self-efficacy is currently in focus as the mediator in the relationship between performance and personality traits (Stajkovic et al., 2018). Some other moderator variables are in these analyses important too, e.g., work task complexity (Judge, Jackson, Shaw, Scott, & Rich, 2007), extreme groups (Ambiel & Noronha, 2016); potentially traumatic event (Bosmans, van der Knaap, & van der Velden, 2015). For further research, we recommend verifying relationships between self-efficacy constructs, performance, and attachment (Klanduchová & Greškovičová, 2019; Greškovičová & Hřešová, 2019).

6. DISCUSSION

Stable traits and achievement motivation dimensions significantly predict both general and career self-efficacy. They had more significant predictive power when speaking about general self-efficacy (62%) than about domain-specific career self-efficacy (44%).

Personality traits alone explain 52% of GSE score variability. The achievement motivation dimensions alone explain 48% of GSE score variability. After combining personality traits with achievement motivation dimensions, these dispositional traits explain up to 62% of GSE score variability. Within the big five, positive conscientiousness and negative agreeableness and neuroticism contribute the most. The more conscientious, emotionally stable, disagreeable, open, and extraverted an individual is, the higher his GSE level. Within the achievement motivation, dimensions of dominance, confidence in success, self-control, and competitiveness proved to be important as predictors combined with personality traits. The coefficient of stability (3 months distance) in these dimensions

ranged between the values of 0.78 by 0.84 (Schuler & Prochaska, 2011). These stable dimensions altogether express independence. It represents general confidence in striving for success. They are typical for efforts to achieve the objective, and in particular, for their inner source of confidence to succeed even in unknown situations. The individuals with a high level of these qualities manifest themselves independently and dominantly with others. They reject attempts at dominance by other people and in social contacts. They are motivated by competitive situations (Schuler & Prochaska, 2011).

Five personality traits all alone significantly predict CDSE (31,3%). When speaking only about achievement motivation, nine achievement motivation dimensions (dominance, confidence in success, flexibility, fearlessness, internality, eagerness to learn, preference for challenging tasks, competitiveness, and goal setting) significantly predict CDSE (39,7 %). When combining the personality traits with achievement motivation dimensions, three traits of personality - extraversion, agreeableness, and conscientiousness (Ambiel & Noronha, 2016) with six achievement motivation dimensions (dominance, engagement, confidence in success, fearlessness, competitiveness, and goal setting) significantly predict CDSE score (44%). The more conscientious, extraverted, and disagreeable, the more convinced about their dominance, confidence in success, fearlessness, competitiveness, engagement, and future orientation individuals are, the higher their level of career decision self-efficacy. Less number of dispositional variables in the combined regression model of career decision self-efficacy than the GSE regression model speaks for Bandura's (1993) statement that domain-specific efficacy constructs depend more on the situation. Dimension fearlessness was significant in both CDSE predictive models, and it was not significant in the GSE regression model. Fearlessness expresses a lack of fear of failing at difficult tasks of being judged by others (Schuler & Prochaska, 2011), and it has a strong correlation with neuroticism (-0,575). Openness was not a significant predictor. The added achievement motivation dimensions are characteristics of an ambition. They mean future orientation (goal setting) and desire to be regularly engaged in an activity (engagement).

When speaking about personality traits, the most significant predictor of GSE and CDSE is conscientiousness (Stajkovic et al., 2018). Conscientiousness and neuroticism are the most relevant predictors of GSE, similar as in other research studies (Stajkovic et al., 2018; Judge & Ilies, 2002).

Dominance, confidence in success, and competitiveness as the achievement motivation dimensions can be general motivational predictors of self-efficacy, whether general or career. These motivational dimensions of the LMI questionnaire belong to the most stable ones (Schuler & Prochaska, 2011). Dominance reflects a tendency to exercise power and influence others. Confidence in success reflects a tendency to achieve success even when there are obstacles to overcome. This phenomenon described Bandura (1993) as a critical behavioral strategy of highly efficient thinking. Competitiveness expresses the desire to win and be better and faster than others (Prochaska & Schuler, 2011).

Research studies showed a significant relationship between self-efficacy and achievement motivation. Small to a medium correlation between self-efficacy and achievement motivation exist (Liqin & Lesen, 2018; Harahsheh, 2017; Jalal, Mansor, & Arshadi, 2016), but also no significant correlation (Sharma, 2015; Zhang et al., 2015). The stable nature of LMI achievement motivation dimensions and their medium to strong correlations with either conscientiousness or neuroticism in the current study could be the reason for the regression models' considerable predictive power. Researchers also analyzed relationships between self-efficacy and achievement motivation in the context of various variables, e. g. negligence (Jalal et al., 2016), self-identity, and hope (Liqin & Lesen, 2018).

6.1. Conclusion

The results of this study, as well as other authors' studies, confirm that self-efficacy is significantly related to dispositional personality traits, whether they are big five traits (Brown & Cinamon, 2016; Huszczo & Lee Endres, 2017; Ambiel & Noronha, 2016; Karwowski et al., 2013) or achievement motivation (Liqin & Lesen, 2018; Harahsheh, 2017; Jalal et al., 2016). Personality matters in general and career self-efficacy (Larson & Borgen, 2006; Hartman & Betz, 2007). The results further confirm the importance of taking into account innate dispositions in defining the goals/performances that one wants to achieve, in a general sense or career decision-making (Larson & Borgen, 2006). We agree with the findings of Stajkovic et al. (2018) that individual differences in traits are more effective in achieving performance with the active participation of social cognition.

The results support the importance of integrating the personality and social-cognitive approach in explaining self-efficacy. Knowledge of personality characteristics could be essential for a choice of goals. People are not the same in orientation to achievement. People with lower levels of personality traits toward performance could profit from the social-cognitive approach when achieving their goals. The new results about collective efficacy, for example, could offer the answer on how to increase the individual level of self-efficacy beliefs (Veiskarami, Ghadampour, & Mottaghinia, 2017).

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E. Lisá

KEY TERMS & DEFINITIONS

Self-efficacy: the conviction that one can successfully execute the behavior required to produce outcomes.

Career self-efficacy: the confidence in one's ability to manage career development and work-related tasks.

Career decision self-efficacy: the confidence in career-related decisions and engagement in tasks related to career decision making.

Achievement motivation: the general orientation of the person towards the achievement.

Personality traits: dimensions of individual differences in tendencies to show consistent patterns of thoughts, feelings, and actions.

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AUTHOR INFORMATION

Full name: Elena Lisá

Institutional affiliation: Institute of Applied Psychology, Faculty of Social and Economic Sciences, Comenius University

Institutional address: Faculty of Social and Economic Sciences, Comenius University, Mlynské luhy 4, 821 05 Bratislava, Slovakia

Short biographical sketch: Elena Lisá is an associate professor at the Institute of Applied Psychology, Faculty of Social and Economic Sciences, Comenius University. Her research focused on well-being, coping, motivation, psychometrics, and personality at work. She is the author of the program for children's social competences development, books about psychometrics in HR, or psychological aspects of employers' expectations on graduates' competencies and psychological aspects of graduates' employability skills. In the HR field, she helped with the implementation of new organizational projects (e.g., performance management, employee engagement surveys, selection, and development processes). More recently, she focuses her research on self-efficacy, leadership, workplace attachment, and personality.

Chapter #5

TRANSITIVE AND VIRTUAL SPACES: COMMON AND DIFFERENT FEATURES

Tatiana D. Martsinkovskaya & Svetlana V. Preobrazhenskaya

Russian State University for the Humanities, Russia

ABSTRACT

In recent decades, a new sphere has emerged, the sphere of virtuality, which a person constructs himself. Phenomenologically, one can speak about many similar features uniting real and virtual spaces. We can assume the similarity of different types of transitivity (crisis and fluid) with different types of work in virtuality (on-line and off-line). Therefore, it is important to understand the styles of behavior, the emotions of people in a situation of different changes, different types of transitivity and different types of Internet communication. These questions became the base of the empirical study which was carried out in 2018-2019 years and consisted of two stages. The study involved young people, students of Moscow universities. The obtained results showed that in general in the on-line situation the overall level of psychological well-being is lower than in an off-line situation. The similarities in the profiles obtained by presenting positive and negative words showed the similarity in emotional responses to crisis situations in the real and virtual world. Thus, we can say that the constant on-line situation becomes a difficult life situation for many young people. The transparency of the network most negatively affects people who assess the situation as rigid transitivity.

Keywords: virtual space; transitive space; on-line and off-line; rigid and fluid transitivity.

1. INTRODUCTION

The space and time in the modern world are rapidly changing. These changes affect people's lives in several temporal and spatial dimensions. Life passes in parallel in the social (objective) and personal (subjective) space and time. Such multidimensional number of possible combinations not only strengthens the mismatch between the different components of space and time, but often leads to disharmony between a personal assessment of the situation, attitude to what is happening in the present or what has happened in the past, foreboding of future changes.

Naturally, for each person, it is precisely his own attitude to objective space and time, however, subjective space-time - a personal chronotope, must always correlate with external, social changes. Of course, a person can fence himself off from the outside world with barriers of varying degrees of rigidity, he can build his own exist-sphere (Grishina, 2017), but however, awareness of disharmony (serious or small) is always present.

In recent decades, a new sphere has emerged, covering precisely personal space and time, the sphere of virtuality, which a person builds himself and for him-self. The appearance of a virtual parameter gives greater freedom for self-realization and, at the same time, increases disharmony of different spheres of life. We can state that sphere of virtual life transfer into new mode the process of identification and enhances the borders of possible selves (Markus & Nurius, 1986). It can also be assumed that the degree of self-awareness

and awareness of interpersonal contacts affects the balance of harmony-disharmony of different spheres of life - real and network (Gackenbach & Karpen, 2007).

The estrangement of reality, the barriers which person built in virtual space-time are much more impenetrable to the outside world than the exosphere barriers. Such a “departure” from reality into a virtual world is not only more cardinal than in real world, but it is also much easier. It does not require a high degree of spirituality and / or reflection, and that’s why makes this path quite common and possible even for children. The ability to construct one’s own reality is one of the advantages and one of the dangers of virtual space-time.

No less important at the present time and the study of instability, transitivity of the world. We can say that modernity, both real and virtual, is characterized by the continuity of changes that occur in parallel in the network and in reality and always with an uncertain outcome. At the same time, many options and contexts, many possible choices feed the transitivity, which is constantly changing from fluid, to crisis and vice versa.

Currently, the influence of transitivity is increasing significantly, affecting all areas of everyday life. The role of the information space is also growing because information sets not only the trajectory of socialization, but also patterns of behavior, identification standards for a large group of people (Benkler, 2006; Barker & Bornstein, 2010; Chan-Hoong & Soon, 2011). The fact that broadcast media samples are constantly changing in accordance with the variability and multiplicity of social contexts of the environment helps people, especially children and adolescents, to cope with uncertainty (DePaulo & Morris, 2005). Changing and therefore remaining relevant information enables people to preserve themselves, their individuality and integrity in the ever-changing circumstances of everyday life (Grishina, 2017; Borkeanu & Mauer, 2006).

The connection between network and transitive spaces appears, first of all, in the uncertainty and multiplicity of contexts, groups, languages, and variants of identity. The uncertainty of these spaces is closely related to variability. The criteria by which people evaluate and present themselves to others are constantly changing. It’s “likes” and reposts, social status or the number of citations (h-index). At the same time, the number of socialization groups is an important indicator both in a transitive real society and in a networked, virtual space.

It is possible to distinguish two interconnected phases - hard, crisis and fluid, soft transitivity. But uncertainty, multiplicity and variability remain dominants of the general direction of development of society, changing the degree of their cardinality (Martsinkovskaya, 2018, 2019; Astrid, Bernd, & Machilek, 2006).

From a psychological point of view, we can say that crisis hard transitivity is a specific shock situation for people, with high demands on their vitality and emotional stability. But psychologically, fluid transitivity becomes much more severe. Changes occur, varying lives, values, communication, information streams and the technological environment of people. And the confidence is arising that these changes are inevitable and unstoppable (Osman, 2018).

In recent years, the phases of crisis and fluid transitivity coexist with each other, and, most importantly, their relationship is closely connected with the information flow. At the same time, constant inclusion in the information flow reduces uncertainty, making variability a familiar component of the world. Therefore, the new generation connects the real and network spaces into a single whole, which actualizes the problem of studying the determinations of mental development simultaneously in two spaces.

Along with different types of transitivity, we can talk about different forms of virtuality - on-line and off-line. We can also see the relationship between crisis and on-line situations. These situations are similar because in both cases it is difficult to change something and a

quick reaction to the situation is needed. There is also a certain similarity between fluid transitivity and off-line in virtual space. Here you can slightly change the reaction, evaluation, standards. Therefore, these situations are reversible within certain limits.

It is possible to say that the transitions from crisis to fluid transitivity and vice versa reflect changes in society. Changes that occur when various styles of work dominate in virtuality may reflect changes that occur in the worldview of a particular person.

Therefore, it is important to understand the trajectories of behavior, the emotional state of people in situations of different changes, different types of transitivity and different types of Internet communication. The determinants that define these individual styles of behavior and condition can be social, cultural, and personal. If social factors are more or less investigated, then personal trajectories and styles of activity on the Internet have not been studied well enough. And almost completely unexplored are the emotional experiences of people included in different styles of real and network communication and different phases of transitivity.

Therefore, it is important to understand the styles of behavior, the emotions of people in a situation of different changes, different types of transitivity and different types of Internet communication.

2. PROBLEM

Theoretical and empirical works show that the emergence of a new technological space, the Internet, social networks and gadgets poses several questions that are closely related to each other and with an analysis of the impact of information socialization on the mental development and emotional well-being of children, adolescents and youth. At the same time, the question arises of how on-line and off-line options for using gadgets affect the psychological well-being of young people and what factors help to overcome the psychological, emotional discomfort and tension associated with the constant positioning of young people simultaneously in network and real spaces.

3. DESIGN, METHODS, STUDY PARTICIPANTS

Based on the posed questions, an empirical study was carried out. The study involved young people (N = 140, age 18-21), students of Moscow universities. At the first stage, students were asked to answer questions of the C.D. Riff "Scale of psychological well-being" in different versions - on-line and off-line (Lepeshinskiy, 2007). After that, they were offered two series of stimuli - words related to positive and negative events occurring in the real and virtual world with the fixation of RAG.

All study participants were aware of its objectives and agreed to participate in the work.

4. RESULTS

At the first stage students were asked whether they consider the actual social situation as a transitive, crisis situation. Based on their answers to a number of direct and indirect questions that help to reflect the environment, a conclusion was made whether they consider the changes that are taking place abrupt or gradual. Based on the content of the answers, two groups of students were selected – those who considered the situation rigid or fluid in terms of variability and uncertainty.

Then the students were asked to answer the C.D. Riff scale questions, the on-line option was proposed, and after three days the off-line option. Thus, re-testing was carried out in an obviously more favorable variant for the participants. The answers are presented in table 1.

*Table 1.
Results of different scales of C.D. Riff's questionnaire.*

Scales						
Positive relations	Environmental management	Self-acceptance	Personal growth	Autonomy	Life goals	Overall level of psychological well-being
67	64	58	64	52	68	373
58	56	64	59	58	60	365
66	51	63	63	50	65	358
65	66	57	60	59	63	370

The results of the correlation analysis of the components of psychological well-being by groups according to the Spearman criterion showed statistically significant differences on the scales:

Positive relations	Environmental management	Self-acceptance	Psychological well-being	Life goals
p = 0.042	p = 0.001	p = 0.016	P = 0,038	p = 0,015

At the second stage, the general background of the skin-galvanic reaction was measured, and then stimulus blocks of words were presented with a break of 2 seconds between words and 5 seconds between blocks. In total, five blocks of stimulus words were used: positive; neutral; negative; transitive; virtual. Blocks were formed on the basis of the most frequent assessment of the word as bearing the positive / neutral / negative meaning by the expert group of psychologists.

It was measured the general background of the skin-galvanic reaction of the subject for 40 seconds; then stimulus blocks of words were presented with a break of two seconds between block words and five seconds between blocks.

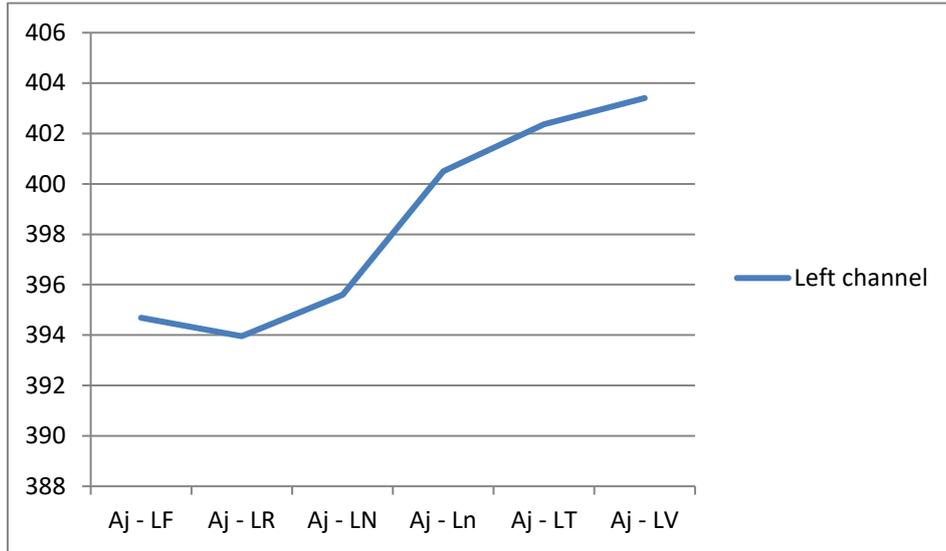
Processing of the obtained data was carried out using the statistical software package STATISTICA 12.0.

At the first stage of the analysis, we divided the sample by gender in order to identify differences in reactions according to the Mann-Whitney U-test criterion. No significant differences were found in the reactions of boys and girls. Then we compared all sets within the group for the presence of reaction changes according to the Friedman test criterion. According to the analysis, it can be seen that, compared with the background activity of RAG, in the group of students were recognized changes both in the left recording channel and in the right channel during the presentation of verbal stimuli.

It can be seen a decrease in activity upon presentation of positive stimuli compared to recording the background activity. When neutral stimuli are presented, the activity is equal to the initial background. A noticeable surge in RAG activity is observed upon presentation of negative stimuli and increases significantly upon presentation of special blocks reflecting network and real transitivity. As expected, negatively charged stimuli cause a more emotionally vivid reaction than positive ones.

It can be seen that obtained data is equal both in the left and right channels (see figures 1 and 2).

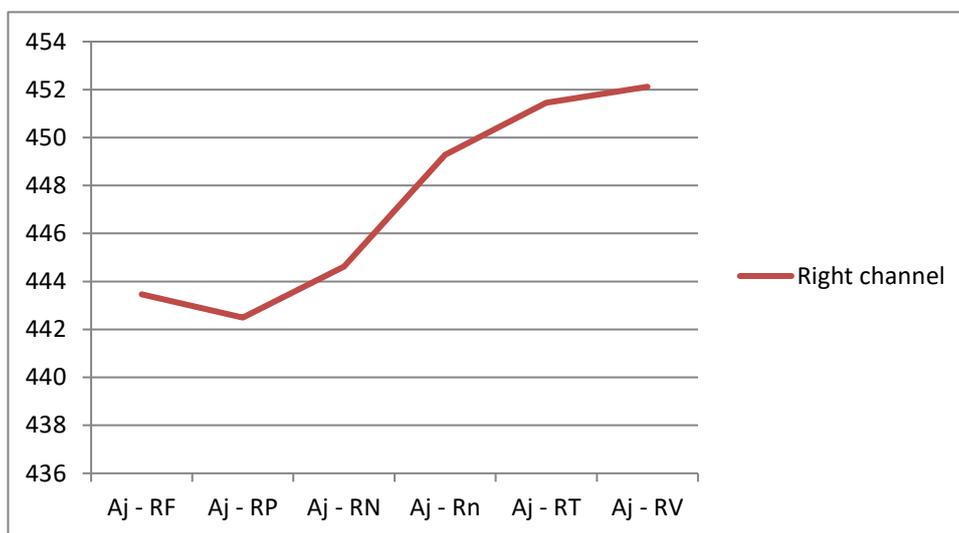
Figure 1.
Data of RAG activity on different stimuli from the left channel.



Measurements of the parameter A_j by the Friedman method:

LF - left channel - background	LR - left channel - positive stimulus	LN - left channel - neutral stimulus	Ln - left channel - negative stimulus	LT - left channel - "transitive" stimulus	LV - left channel - "virtual" stimulus
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Figure 2.
Data of RAG activity on different stimuli from the right channel.



Measurements of the parameter Aj by the Friedman method:

RF - right channel - background	RP - right channel - positive stimulus	RN - right channel - neutral stimulus	- Rn - right channel - negative stimulus	RT - right channel - "transitive" stimulus	RV - right channel - "virtual" stimulus
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5. DISCUSSION

We can see that for the students of the first group (rigid transitivity) the in on-line situation the overall level of psychological well-being is slightly higher than in the off-line situation. Of particular interest are indicators on separate scales. In the on-line situation are higher indicators: Environmental management; Personal growth; Positive relationship; Life goals. Considering that a permanent stay in the network is a common situation for most students, these data show that the online situation stimulates their desire for personal growth and self-realization, as well as to establish empathic relationships with others. These data show the exigence of close connection between well-being and self-assessment in situations of rigid transitivity and online.

As can be predict in offline situation the level of autonomy is higher. However, it is troubling that self-acceptance is also higher outside the network. That is, the constant "transparency" of communication and the openness to others, possibly stimulates personal development, but reduces self-esteem and self-acceptance.

In the second group (fluid transitivity), the situation is somewhat different - here the general level of psychological well-being is higher precisely outside the network. Perhaps this is associated with an assessment of the general situation - with fluid transitivity it is easier to give answers not immediately, but, perhaps, to change something after a while.

Of particular interest in this case is also the data on separate scales. The connection between off-line and fluid transitivity is confirmed by the fact that environmental management in this group is higher outside the network. At the same time, Positive relationship; Life goals and Personal growth are also higher “online”.

Based on comprehension of answers of two groups we can conclude that for young people on-line is a familiar, natural environment in which they are constantly open to new experiences and can evaluate their actions with others. Therefore, such “transparency” is somewhat annoying for users. No less interesting is the analysis of differences in the responses assessing the “environmental management” parameter. If in the first variant they must manage situation quickly, since it can radically change, then in the second, on the contrary, the focus on the long-term fixation of changes that do not need to be forced becomes obvious.

Apparently, the situation of constant changes exhausts some students and leads to a decrease in the indicators Environmental Management and Life goals. Thus, we can assume that the situation of transitivity in the network and in reality becomes a difficult life situation, reducing subjective well-being.

The data obtained at the second part of the work with RAG fixation showed the decrease in overall activity at the moment of presenting a positive background. It reflects a feeling of calm and acceptance of images caused by verbal stimuli, and also confirms that for the selected audience, the set of suggested words evokes positive associations. Neutral stimuli do not carry any emotional charge and are comparable in quantitative and qualitative values with background activity recorded at rest. As expected, negatively charged stimuli cause a more emotionally vivid reaction than positive ones. Verbal blocks during the experiment caused the participants in the study the most emotionally vivid reaction, especially the stimuli that describe network transitivity.

The data of the skin-galvanic reaction confirmed a positive reaction to the words of the network transitivity block as reflecting the daily activity of students. Young people noted that in the network space they not only chat with friends, but also find very quickly the necessary information. Words reflecting the transitivity of time-space also caused a high skin-galvanic reaction. This reaction was caused by the individual attitude of students to the words of the block, which are important for them.

6. CONCLUSION

The obtained data confirm that there is a relationship between rigid and fluid transitivity situations and network and non-network operation. This similarity is associated with a lack of time and the need for a quick response to environmental influences.

The similarities in the profiles obtained by presenting positive and negative words showed the similarity in emotional responses to crisis situations in the real and virtual world. In this case, a steady increase in excitation from stimulus to stimulus occurs.

The incapacity to manage the environment, including positive contacts with others, the inability quickly navigate information and the harshness of the situation negatively affect attitude to one-self, reducing self-esteem and intention to self-development, which generally reduces the subjective feeling of emotional comfort and well-being. Thus, we can say that the constant situation on-line becomes a difficult life situation for many young people.

The mixture of network and real situations is constant for most students. This becomes the reason for the close connection of the virtual and transitive worlds.

The problems arising from the active spread of the digital information space are associated not only with difficulties in the intergenerational transmission, but also with the fact that the constant on-line situation, fubbing and “transparency” of the network become a difficult life situation for many young people. The phubbing and “transparency” of the network most negatively affects people who assess the situation as rigid transitivity.

The prospects associated with the expansion of digital information socialization, in many respects become the flip side of the problems. Expanding the world-image, obtaining new experience leads to the development of intellectual and social activity and helps to understand the world. This fact reduces the fear of uncertainty and increase the willingness to change.

7. LIMITATIONS OF EMPIRICAL RESEARCH

Inequality in presentation of C.D. Riff test in different situations.

Subjective parameters of assessment situations as situations of rigid and fluid transitivity.

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AUTHORS' INFORMATION

Full name: Tatiana Davidovna Martsinkovskaya

Institutional affiliation: Russian State University for the Humanities (RSUH); Psychological Institute of the Russian Academy of Education

Institutional address: Miusskaya sq. 6, Moscow, GPS-3, 125993, Russia; 125009, Moscow, st. Mokhovaya, 9, building 4.

Short biographical scetch: famous Russian professor, Doctor of Psychology, Director of the Institute of Psychology named after L.S. Vygotsky RSUH

Full name: Svetlana Vladimirovna Preobrazhenskaya

Institutional affiliation: Russian State University for the Humanities (RSUH)

Institutional address: Miusskaya sq. 6, Moscow, GPS-3, 125993, Russia

Short biographical scetch: postgraduate student of the Psychological Faculty of the Institute of Psychology named after L.S. Vygotsky RSUH

Chapter #6

INTERPERSONAL RELATIONS IN A CROSS-CULTURAL TEAM

Konstantinov Vsevolod¹, Shumilkina Evgeniia², & Osin Roman³

¹*Department of General Psychology, Penza State University, Russia*

²*Research department, Penza State University, Russia*

³*Department of General Psychology, Penza State University, Russia*

ABSTRACT

In the conditions of fragility of building interethnic relations, turning to the problem of developing interpersonal relations in mono-cultural and multi-cultural teams of employees of an enterprise in the period of reorganization is extremely relevant. The article presents the results of the empirical research conducted by the authors, the conclusions were made after processing data using mathematical statistics methods. The analysis of the obtained empirical data shows that in the period of reorganization the factor of cross-cultural composition of the employees teams under study actively manifests itself in interpersonal relations. Differences were found in the level of certain characteristics of employees in different types of ethnic environments. In general, more statistically significant connections between personal and behavioral characteristics were found in the sample of employees in a multi-ethnic environment compared to the employees in a mono-ethnic environment. The development of interpersonal interaction in a team of employees in a multi-ethnic environment in the period of reorganization should be based on the development of the most significant characteristics of their personality and behavior: positive ethnic identity, empathy, interpersonal trust and skills and abilities of building interpersonal interaction.

Keywords: interpersonal relationships, cross-cultural communication, multi-ethnic environment, quality of relationships at work, labor collectives, interethnic relations.

1. INTRODUCTION

At present the issues of cross-cultural management and intercultural communications are becoming more and more relevant: business and intercultural relations are expanding, multinational teams are being formed. Among the theories that describe the essence of cultural differences and explain their impact on organizational behavior, the following concepts are distinguished: Values Orientation Theory (Kluckhohn & Strodtbeck, 1961); Context of Culture (Hall & Hall, 1990); Cultural Dimensions Theory (Hofstede, Hofstede, & Minkov, 2010; Konstantinov, 2017). Differences between cultures in the attitude to the world were empirically confirmed. There are individualistic (competitive relations and each worker's values are at the heart of management) and collectivist (hierarchically built models of management, values of the team are more important) cultures (Bono & Yoon, 2012; Ryzhova, Konstantinov, Gritsenko, & Khukhlaev, 2018; Khukhlaev et al., 2019; Konstantinov & Kovaleva, 2013).

In scientific literature there are different interpretations of the concept of "cross-culture": interaction, communication between representatives of different cultures, "intersection of cultures of different nationalities", communication and cooperation, "at the intersection of cultures", "at the clash of cultures." This variety of definitions is evidence of the complexity of the research problem. The basic axioms of cross-cultural interaction are

the following: the absence of "bad" cultures; culture is learned by comparison; different but equal cultures meet (Vasilenko, 2013).

At first, in the 1970s the world smaller countries (Finland, Denmark, Sweden, and the Netherlands) started to study the problems of cross-cultural differences in international business. Later these countries were joined by the leading world powers (Germany, Great Britain, the USA), and later on by Italy, Spain, and France.

R. Lewis emphasizes the fact that as in the context of globalization modern business requires both great knowledge and good relationships, it is necessary to take into account cross-cultural aspects (Lewis, 2000). At the same time, problems in intercultural communication arise not because of the difficulties of communication, but because of the differences of individuals.

The quality of interpersonal relationships determines the way employees behave both at work and in personal life (Allen & Eby, 2012; Dutton, 2014). Typically, high-quality relationships lead, among other things, to their commitment, productivity, motivation, innovation, error detection, favorable employee behavior, teamwork, helping others, effective internal and external organizational communication, avoiding conflicts, and resistance to negative events. Conversely, poor employee relationships have a detrimental impact on these aspects of the organization (Bono & Yoon, 2012; Ryzhova et al., 2018; Khukhlaev et al., 2019; Konstantinov & Kovaleva, 2013).

Within the framework of the personnel management system, two approaches to the management of cross-cultural groups are distinguished: "freedom from culture" and "dependence on culture". The first approach argues that human resource management is less dependent on the culture of the country than on the size of the company, the industrial environment and the production technology used. The adherents of the second approach focus on different cultural conditions in different societies, which form specific relatively stable models of thinking and behavior. These cultural circumstances influence the use of structures and leadership styles that are consistent with the existing cultural forces in society (Dikhtyar, 2012).

As a result of the intersection of different cultures, negative (conflicts) and positive (mutual cultural enrichment, new discoveries, interesting ideas, useful knowledge) consequences are possible. The influence of cultural differences is often latent. Therefore, they can be detected by interaction and comparison (Vasilenko, 2013).

Cross-cultural management is designed not only to manage cultural differences, but also to form the skills of managing culture shock (difficulties in entering a new culture when interacting with representatives of other business cultures; "a person's response to new cultural conditions of life, a certain psychological disorientation" (Soltitskaya, 2002, p. 65).

Cross-cultural teams are groups formed from representatives of different cultures with the aim of performing common tasks. In contrast to monocultural teams, they are characterized by the predominance of different cultures, mixed languages of communication and styles of interpersonal interaction. Accordingly, in order to ensure the work effectiveness of such a team, one should understand the degree of influence of the key distinctive features of each unit of the group on the work of the team as a whole. In cross-cultural teams, two scenarios for the development of relations within a group are possible: the establishment of cultural unity and cohesion, or subgroup dominance and the effect of exclusion from intragroup interaction (Vedernikova, 2017). In the field of team architecture, the following three most important factors for the inclusion of an individual in a multicultural team dominate: professional qualities, the ability to work in a team, respect, and tolerance. Leaders of cross-cultural teams, as well as their members, can solve these

problems in different ways based on their cultural affiliation, which determines the specifics of their approaches and team management strategies (Zenchenko, 2016). Representatives of different business cultures in cross-cultural groups have different motives, incentives, rules, norms, traditions, communication styles, and can also perceive work situations in different ways (Zenchenko, 2016). Research in the field of managing cross-cultural groups proves that “difficulties arise in the communication of representatives of different cultures due to the national characteristics of their communicative behavior, which is defined as verbal and non-verbal behavior, people, individuals, groups of people in the process of communication, regulated by norms and traditions of communication in this society” (Grishaeva, 2009). It seems that in the subject of cross-cultural studies, the problem of social and cultural distance (the measure of the similarity and difference in social positions, elements of culture in specific conditions) acquires a special meaning. The closer the values and basic attitudes of cultures, the less the cultural distance and, accordingly, the easier it is to build relationships in a cross-cultural community. The main factors for the effectiveness of a cross-cultural team are tolerance, empathy, knowledge of other cultures, foreign languages.

G. A. Soltitskaya identifies a number of problems of intercultural communication in organizations: first, the belonging of the team members to different cultures, secondly, different verbal / non-verbal interpretation, and thirdly, “fitting” into different contexts. Each culture has its own model of ideal communication, which is consciously / unconsciously realized during communication (Soltitskaya, 2002). Culture also determines the choice of the communication form (oral or written). So, for example, some cultures gravitate more towards written speech (England), others towards oral speech (Russia), and still others towards their combination (Thailand). The selection of specific words is also very important, since they have different connotations in different cultures (Soltitskaya, 2002). Cross-cultural competence is closely related to cross-cultural communication (Myasoedov & Borisova, 2015). In scientific literature, there are different variations in the understanding of cross-cultural competence, for example, intercultural, multicultural competence, cross-cultural literacy, etc. Cross-cultural competence is considered as an integral quality of a person (knowledge about the characteristics of other cultures, the ability to interpret foreign cultural information, experience of intercultural interaction, personal qualities: empathy, tolerance (Shakhnazarova, 2012).

Considering the specifics of managing cross-cultural teams requires addressing the cross-cultural aspects of organizational conflicts. Thus, in collectivist cultures, direct confrontation is avoided, and in individualist cultures, expressing one's opinion is an integral characteristic of an honest person. In cultures with a large power distance, conflict between levels is normal and expected. In cultures with a small power distance, harmony between the powerful and the powerless is valued, and colleagues tend to cooperate (Soltitskaya, 2002). Cultural differences influence the choice of strategy and tactics for resolving organizational conflicts. In masculine cultures, conflict is resolved through struggle, in feminine cultures, through negotiation and compromise. In English-speaking cultures, the desire for confrontation is prized. The Japanese and Chinese seek to resolve conflicts through compromise and consensus. The cultural factor influences the choice of an action strategy in a conflict situation. Thus, in cultures with a large power distance, the leader prefers not to intervene in the conflict. Arbitration is valued in collectivist cultures (Soltitskaya, 2002). Among the main causes of cross-cultural conflicts, the following should be highlighted: inconsistency and consistency of legal and institutional norms governing relations in different countries; factors of cross-cultural communication; interpersonal conflicts (Ma & Maksimova, 2018).

Perceptions of the degree to which an organization provides its employees with appropriate, fair and respectful treatment, adequate and accurate information, resources and rewards are conceptualized as perceptions of organizational justice (Bell, Wiechmann, & Ryan, 2006; Chernyak-Hai & Tziner, 2012; Cropanzano, Prehar, & Chen, 2002; Tyler & Bies, 1990). Employees establish their perceptions of organizational justice through (1) overall impressions that are a consequence of random organizational occurrences and (2) personal evaluations based on specific "organizational components," such as leaders and co-workers (Hollensbe, Khazanchi, & Masterson, 2008). Perceptions of organizational justice may be broken down into perceptions of distributive justice (fairness in resources and products allocation), procedural justice (fairness of organizational procedures and ways in which decisions are reached vis-à-vis the distribution of resources), and interactional justice (fairness of organizational inter-personal relations and accessibility of equal opportunities) (Kernan & Hanges, 2002; Miller & Lee, 2001; Tang & Sarsfield-Baldwin, 1996). Previous research has pointed to positive associations between perceptions of organizational justice and organizational citizenship behavior (employees' actions defined as behaviors that benefit the organization by contributing to its environment and beyond formal job) (Chernyak-Hai & Tziner, 2012; Organ, Podsakoff, & MacKenzie, 2006; Podsakoff, MacKenzie, Paine, & Bachrach, 2000; Rotundo & Sackett, 2002), overall high job motivation and satisfaction (Hubbell & Chory-Assad, 2005; Latham & Pinder, 2005), trust, commitment, and productivity (Karriker & Williams, 2009), and loyalty and readiness to accept organizational consequences (Joy & Witt, 1992).

Organizational climate is defined as the social climate or atmosphere in a workplace relevant to policies, practices, and procedures in organizations (see Schneider, 2000; Schulte, Ostroff, & Kinicki, 2006; Park, Lee, Park, Lee & Lee, 2019; Fernández-Salineró, Navarro & Topa, 2019). Perceptions of organizational climate are part of an active psychological process that helps employees recognize what behaviors are expected and rewarded (Armstrong, 2003; Zohar & Luria, 2005). These perceptions not only reflect employees' impressions of the work environment, they also influence their levels of stress, job satisfaction, commitment, and performance which, in turn, have implications for overall organizational productivity (Ostroff, Kinicki, & Tamkins, 2003; Schulte et al., 2006). Measures used to investigate perceptions of organizational climate are similar, in many ways, to those used to investigate perceptions of "organizational culture", insofar as they are measures of what has been termed the "deep structure of organizations" (e.g., Reichers & Schneider, 1990; Payne, 2000; May, 2020). Although at face value, perceived organizational climate may be seen as a mainly cognitively acquired attitude, it should be noted that significant evaluative and affective components are reflected in employees' perceptions of organizational values and processes (Patterson, Warr, & West, 2004), such that both intellectual and emotional factors impinge on employee job behavior and social interactions at the workplace (Schneider, 2000). And with respect to social action, it has been proposed that employee attitudes and behaviors are not only influenced by perceptions of organizational climate but also by the perceptions of co-workers (Mathieu & Kohler, 1990; Erkmen, Günsel & Altındağ, 2020).

Instrumental climate is considered a negative type of climate as it focuses on self-interest, while the other types of ethical climate are considered to be positive, insofar as they promote the emergence of positive organizational attitudes following concern for the well-being of others, for laws or organizational policies and procedures to be followed, and adherence to one's personal ethical beliefs (Leung, 2007; Martin & Cullen, 2006; Wimbush, Shepard, & Markham, 1997). The ethical climate provides cues to employees as to the behavior that is appropriate in a certain work environment. Specifically, employees are

supposed to be less likely to exhibit unethical behaviors if the ethical climate emphasizes ethical behaviors (Mayer, Kuenzi, & Greenbaum, 2010). Previous research has shown support for the notion that an ethical work climate is associated with unethical organizational behaviors. Results of a meta-analysis (Martin & Cullen, 2006) indicated that positive ethical climates are negatively related to organizational behavior. It was found that organizational deviance is lower in ethical caring climates (Mayer et al., 2010).

The level of efficiency and development of an organization is largely determined by the ability of employees to interact and cooperate with each other, which can be traced in a cross-cultural context.

The impact of the ethno-cultural factor, which leads to the formation of a special environment for building interpersonal relations, was studied by a number of domestic and foreign psychologists. But the data on the influence of ethnic characteristics of individuals on their interpersonal relationships are insufficient to build a holistic view of this process (Berry, Galyapina, Lebedeva, Lepshokova, & Ryabichenko, 2019; Grigoryev, van de Vijver, & Batkhina, 2018; Khukhlaev, Kuznetsov, & Chibisova, 2013; Raman, Sambasivan, & Kumar, 2016).

Interpersonal relationships are subjectively experienced relationships between people, mutually influencing each other in the process of cooperation and communication. They differ in a number of parameters: their origin, stability, duration, openness of the parties, etc. The process of initiating, maintaining and terminating interpersonal relationships is determined by a number of factors. These include individual psychological and typological features of the interpersonal interaction, as well as the conditions for this interpersonal interaction.

The ethnic factor is an important factor for maintaining efficient interpersonal relations. Researchers note that the ethnic environment includes many modifications of the surrounding reality, accumulated by members of the ethnic community in the course of its historical development. The ethnic factor sets the context for interpersonal relations, determines the behavioral patterns of their individuals and the readiness to maintain relations with a member of another ethnic group. At the personal level, ethnicity is manifested at the level of the person's ethnic identity, ethnic self-consciousness, the ability to acquire ethnic attitudes, stereotypes, prejudices, etc.

2. SAMPLING, TECHNIQUES AND METHODS OF THE RESEARCH

426 employees (from 18 to 56 years of age) of enterprises of the Penza region and the Republic of Mordovia participated in our empirical study. We assumed that interpersonal relationships of employees in the period of reorganization are a complex phenomenon determined by the ethnotype of the working environment and characterized by a number of features that influence their qualitative and quantitative parameters.

Verification of the proposed hypotheses was carried out by solving a number of theoretical, methodological and empirical problems. The empirical study aimed at comparing the distribution of status positions among members in mono- and multi-ethnic groups, identifying the level of conflict in their relations, studying the examples of the phenomena of empathy and trust in mono - and multi-ethnic environment, establishing the type of the relationship between ethnic identity and response/feedback strategies in conflict situations (compromise, cooperation).

In the course of the study, the following methods and techniques were used: "The Interpersonal Trust Scale" by J. B. Rotter, "The technique of empathic abilities diagnosis" by V. V. Boyko, "Types of ethnic identity" by G. U. Soldatova, "The level of conflict" by

A. M. Ganeev and L. S. Tronova, "The features of handling conflict styles" by C. Thomas. To process the results of the study, mathematical procedures of indicators and statistical data reliability assessment were used (Raygorodsky, 2017; Tatarko & Lebedeva, 2011).

3. THE RESEARCH RESULTS, THEIR DISCUSSION

In the course of the empirical study, it was found that employees of mono-ethnic professional environments are much more likely ($p < 0.01$) to come into contact with each other than workers of multi-ethnic professional environments. Contacts of people belonging to different ethnic groups are usually limited to issues connected with business or job responsibilities.

Workers in mono-ethnic environments maintain interpersonal contacts for a longer period than workers in multi-ethnic environments ($p < 0.05$). Interpersonal relations of workers in mono-ethnic groups are more dynamic by nature and prolonged in time. Considerable length of interpersonal contacts in mono-ethnic environments is caused by numerous reasons and grounds to establish and maintain such relationships, by greater interest in each other, their desire to communicate, and their openness to interaction.

There is a difference in the modality of interpersonal relationships between the workers of the two samples (at a statistically reliable level of $p < 0.01$). Workers from a mono-ethnic professional environment show more enthusiasm than workers in multi-ethnic environments. These observations indicate that in multi-ethnic environments there is certain tension and reticence in contacts and interpersonal relations between employees of different ethnic groups. At the same time, they are more sensitive to issues concerning ethnicity and ethnic background, so they are more likely to engage in conflict with each other.

The percentage of workers with the average status in mono- and multi-ethnic environments is approximately the same (75.9% and 70.4%, respectively). Differences were found in the percentage of workers with high and low sociometric status depending on the environment they belong to. The percentage of high status workers in mono- and multi-ethnic professional environments was 19.1% and 11.7% respectively ($p < 0.05$). More fundamental differences were found in the subsamples of workers with low sociometric status in mono- and multi-ethnic environments (5.0% and 17.9% respectively). The percentage difference is characterized by statistical significance ($p < 0.01$), i.e. in multi-ethnic environments the proportion/percentage of workers with low sociometric status is much higher than in mono-ethnic environments.

In mono-ethnic groups the number of workers with a low level of conflict exceeds (18.1%) the proportion of such workers in multi-ethnic environments (13.1%). The same trend is observed with the percentage of workers who are characterized by an average level of conflict: there are slightly more of them in mono-ethnic groups (68.2%) than in multi-ethnic groups (61.9%). The level of statistical significance $p < 0.05$, indicating certain differences between the compared samples, does not allow us to note their stability.

According to the results, workers in multi-ethnic professional environments show a higher level of conflict than workers in mono-ethnic environments. The reason is that the multi-ethnic environment requires the workers to meet additional challenges, e.g. choosing life priorities. In contrast to workers from mono-ethnic environments, who are faced only with the task of personal self-assertion, professional and life choices, workers from multi-ethnic environments need to self-identify in their own ethnic environment, to correlate their personal, professional, and life priorities with ethnic attitudes, norms, and customs. At the same time, they have to interact with representatives of other ethnic groups, with an ethnically different culture, attitudes and customs. The complexity and diversity of

the tasks, which workers from multi-ethnic environments are faced with, create tension, make them more aggressive and contentious in interpersonal interaction. To the greatest extent, it is this kind of behavior that is used with people belonging to other ethnic groups.

Workers from mono-and multi-ethnic environments have statistically significant differences ($p < 0.01$) in the degree of manifestation of the high and low levels of interpersonal trust. In the sub-samples of workers, there was a significant excess of the number of employees with a high level of interpersonal trust (the average value is 27.0 %) over the number of employees with a low level of interpersonal trust (14.0 %). In sub-samples of workers in multi-ethnic environments, a statistically significant excess of the number of employees with a low level of interpersonal trust (27.6 %) over the number of employees with a high level of interpersonal trust (13.3%) was found. In the sample of workers working in a mono-ethnic environment, the average value of interpersonal trust is 6.5 units, in the sample of workers in a multi-ethnic environment it is 4.3 units. The obtained discrepancy in the quantity of manifestation of the trait indicates statistically significant differences in its manifestation in workers, depending on what environment (mono- or multi-ethnic) the employee belongs to. In a multi-ethnic environment, interpersonal trust between workers is much less manifested than among workers working in a mono-ethnic environment.

In the sample of workers from a multi-ethnic environment, there tends to be more workers with a low level of empathy. However, the differences in the level of empathy were somewhat more smoothed, not so vividly manifested. This can be explained by the specific functioning of the phenomena under consideration. It is obvious that empathy has more opportunities for its development, regardless of the ethnic and national characteristics of the people around. Trust is based on knowledge of a wider range of background information that characterizes the subject of potential interaction. Accordingly, it may be easier for a person to show empathy than interpersonal trust. At the same time, it is interpersonal trust that has the greatest influence on the quality and intensity of building interpersonal relationships in the environment.

In multi-ethnic environments in all sub-samples tested by the "Types of ethnic identity" by G. U. Soldatova, the proportion of workers characterized by ethno-egoism, which can be expressed either in a harmless form or by a very aggressive behavior, predominates. In the first case, the perception of the surrounding world through the semantic prism of "my people" comes first. In the second case, employees demonstrate sufficient tension/aggression in interpersonal relationships with people belonging to other ethnic groups. It can be supposed the high level of conflict and low levels of empathy and interpersonal trust in multi-ethnic environments is caused by the dominance of this type of ethnic identity.

Studying the types of response to a conflict situation allowed us to find out that in the samples of workers in mono-ethnic environments, cooperation is the most widely-used strategy of behavior in conflict situations (27.5 %). This type of behavior manifests itself in adopting the decision that fully satisfies the interests of both parties to the conflict. Trying to achieve a compromise is another type of widespread behavior in a conflict of employees in a mono-ethnic environment (23.6 %). The behavior of employees who follow this pattern of behavior is manifested in the establishment of an agreement between the parties to the conflict. Competition/rivalry is another form of behavior in a conflict situation (22.2 %). This type of behavior in a conflict situation is manifested in the desire of workers to forward their own interests at the expense of the interests of the partners in interpersonal interaction. In the samples of workers under study adaptation (14.4 %) and avoidance

behavior (12.3%) come next. These strategies of behavior in a conflict situation are chosen by approximately 10% of the entire sample of employees in a mono-ethnic environment.

In the sample of workers in multi-ethnic environments other behavioral preferences in conflict situations were detected. However, we note that the preferred behavioral patterns in the sample of employees were distributed more evenly in this group. The evident type of behavior in the sample of workers in a multi-ethnic environment was avoidance behavior (23.8 %). Accordingly, we can say that approximately 25% of the employees, in this case, are focused on avoiding a conflict situation. At the same time, they do not demonstrate the desire to ensure cooperation with the subject of interaction and are not focused on achieving any of their own goals in a conflict situation. Approximately the same percentage of employees in the sample of employees in a multi-ethnic environment was focused on the strategy of competition in a conflict situation (23.1 %). This type of behavior, associated with the desire to achieve the satisfaction of their interests at the expense of the interests of the partner in interpersonal relations, was demonstrated by about a quarter of all employees in a multi-ethnic environment. In a multi-ethnic environment the strategy of adaptation to the current situation was mostly expressed. This type of behavior was chosen by 21.6 % of workers, i.e. about 1/5 of the entire sample. This type of behavior is characterized by sacrificing one's own interests for the sake of the interaction partner. This behavior is the opposite of rivalry/competition in a conflict situation, which is the second most commonly demonstrated behavioral pattern in this sample. The cooperation strategy (20.6%) turned out to be significant for employees in a multi-ethnic environment. This type of behavior in a conflict situation was a priority for about 1/5 of the workers in the sample. This suggests that a fairly large proportion of workers in a multi-ethnic environment are ready to accept an alternative that would fully satisfy the interests of both sides in interpersonal relations.

The most evident differences between workers in mono- and multi-ethnic environments were revealed in the two types of behavior in a conflict situation – trying to achieve a compromise and avoidance behavior. Workers who study in a mono-ethnic environment are more inclined to use the first type, while workers in a multi-ethnic environment tend to follow the second behavioral pattern. A difference in the propensity to use adaptation strategy and to cooperate was revealed only as a trend. The first type of behavior (adaptation) is characteristic of workers in a multi-ethnic environment, while the second (cooperation) characterizes workers in a mono-ethnic environment.

The analysis of the obtained empirical data shows that the factor of cross-cultural composition of the groups has a great impact on interpersonal relationships in their teams under study in the period of reorganization. The method of correlation analysis made it possible to establish differences in the level of intensity of interconnection of employees belonging to different types of ethnic environments. In mono-ethnic environments several trends characterizing their interpersonal relationships are observed: trust goes with a tendency to compromise ($p < 0.001$); ethnic nihilism is directly combined with conflict, on the one hand, and with a tendency to compromise, on the other hand, ($p < 0.01$); ethnic nihilism goes with ethnic fanaticism (feedback) ($p < 0.01$); ethnic indifference is combined with a tendency to cooperate (feedback) ($p < 0.05$); avoidance behavior is not compatible with the tendency of an individual to compete in a conflict situation of interpersonal interaction ($p < 0.01$).

In the multi-ethnic environment the following relationships were observed: those between a positive ethnic identity and a tendency to cooperate (direct link) ($p < 0.01$), as well as tendency to ethnic isolationism and conflict (feedback) ($p < 0.001$); empathy and a person's desire to cooperate (direct link) and ethnic isolationism (feedback) ($p < 0.01$); interpersonal trust and inclination to adapt (direct link) ($p < 0.01$); a tendency to

compromise and avoidance behavior (feedback) ($p < 0.05$). The development of interpersonal interaction in a multi-ethnic environment in a team of employees in the period of reorganization should be based on the development of the most significant characteristics of their personality and behavior: positive ethnic identity, empathy, interpersonal trust and skills and abilities of building interpersonal interaction.

4. CONCLUSIONS

In the sample of employees of a multi-ethnic environment, the positive ethnic identity of an individual was the most informative. The great number of statistically significant connections of personality traits and types of behavior was found out. Such characteristics of employees' personality as empathy and ethnic isolation (two correlations) were also quite informative. On the whole, there are more statistically significant correlations between personal and behavioral characteristics in the sample of employees in a multi-ethnic environment than in a mono-ethnic environment. The development of interpersonal interaction in a multi-ethnic environment in teams of employees in the period of reorganization should be based on the development of the most significant characteristics of their personality and behavior: the positive ethnic identity, empathy, interpersonal trust and skills of building interpersonal interaction.

The greatest problems in intercultural communication among team members and conflicts are caused by cultural differences. The solution to these problems depends on the use of cross-cultural management strategies. In order to form an effective management system of a multinational company, the following points should be taken into account: the type of multinational company, the influence of corporate and national cultures, the dominant position of one national culture in the team over others, the necessity to acculturate new members of the organization, training managers of multinational companies to work within a different national culture, being aware of a communication code of this foreign culture (the language, customs and rules of behavior, psychology and mentality, etc.).

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AUTHORS' INFORMATION

Full name: Vsevolod Konstantinov

Institutional affiliation: Penza State University

Institutional address: Krasnaya Street, 40, Penza, 440026, Russia

Short biographical sketch: Doctor of Psychology, Professor, Head of the Department of General Psychology. Vsevolod V. Konstantinov graduated from the Faculty of Psychology and Social Work of Penza State Pedagogical University named after V.G. Belinsky in 1999. In 2004, V. Konstantinov defended his thesis on the topic "Dependence of the success of the socio-psychological adaptation of forced migrants to new living conditions on the type of residence". In 2018, he defended his thesis for the degree of Doctor of Psychological Sciences on the topic "Socio-psychological adaptation of migrants in a host multicultural society." V. Konstantinov is the editor-in-chief of the electronic scientific journal Penza Psychological Newsletter. V. Konstantinov is a member of the reviewer board of the journal Behavioral Sciences. Under the scientific supervision of V. Konstantinov, nine theses for the degree of candidate of psychological sciences have been defended.

Full name: Evgeniia Shumilkina

Institutional affiliation: Penza State University

Institutional address: Krasnaya Street, 40, Penza, 440026, Russia

Short biographical sketch: Evgeniia Shumilkina is a head of research department of Penza State University and attached to Saratov State University to write the thesis. Her current research focuses on specifics of interpersonal relations in poly- and mono-ethnic groups and cross-cultural aspect of interpersonal relationships in the workplace in the period of reorganization.

Full name: Roman Osin

Institutional affiliation: Penza State University

Institutional address: Krasnaya Street, 40, Penza, 440026, Russia

Short biographical sketch: Ph.D., Associate Professor of the Department of General Psychology. In 2015, Osin R. defended his thesis on the topic "Features of the attitude to the image of a labor migrant under the conditions of media exposure by representatives of various socio-demographic groups" in the dissertation council on the basis of Kursk State University. Research interests: image psychology, media psychology, history of psychology, social psychology, psychology of sexuality, ethnopscychology.

Chapter #7

EVALUATING THE EFFECTIVENESS OF EXPOSURE TO COUNTERSTEREOTYPIC FATHERS ON REDUCING IMPLICIT FATHER AND MOTHER STEREOTYPES IN JAPAN

Mizuka Ohtaka

Department of Politics and Public Administration, Faculty of Law, Yamanashi Gakuin University, Japan

ABSTRACT

Lai et al. (2014) compared 17 intervention effects on implicit racial prejudice and concluded that exposure to counterstereotypic exemplars was most effective. Therefore, this study examined whether exposure to counterstereotypic fathers can reduce the implicit stereotype that ‘fathers should work outside the home and mothers should keep the house’. The Go/No-Go Association Task (GNAT, Nosek & Banaji, 2001) was conducted among undergraduates ($N = 44$; Men = 26, Women = 18). The results indicated that, among men participants in the control condition, more fathers than mothers implicitly associated with work, and more mothers implicitly associated with home; however, such differences were not significant among men participants in the counterstereotypic fathers condition. Thus, for men, exposure to counterstereotypic fathers can reduce the implicit father and mother stereotypes. Further research that can generalise the findings must be conducted.

Keywords: stereotype, father, mother.

1. INTRODUCTION

In Japan, there are still many cases of gender inequality, and ‘gender stereotypes’ have been mentioned as one of the psychological factors leading to gender inequality at work and in the family (Suzuki, 2017). In this connection, a family is a group of people who are related to one another by marriage, blood, or adoption and basically consists of a father, a mother and their children. However, it has been verified that the content of the father stereotype is different to that for men (Troilo, 2013) and the content of the mother stereotype differs from that for women in the U.S.A. (Ganong & Coleman, 1995). Furthermore, Ohtaka (2019) investigated the difference between the parent stereotypes and the overall gender stereotypes in Japan and found that the content of the former differed from that of the latter. Ohtaka (2019) suggested that Japanese have the idea that ‘fathers (rather than men) should work outside the home, and mothers (rather than women) should keep the house’. Therefore, to solve gender inequality in Japan, the efficient approach may be to focus on parent stereotypes rather than the overall gender stereotypes.

Meanwhile, Park, Smith, and Correll (2010) examined not explicit but implicit stereotypes and showed that fathers are strongly associated with professional images and mothers, with childcare images. Moreover, explicit prejudice predicts deliberative behaviour, whereas implicit prejudice predicts spontaneous behaviour (Dovidio, Kawakami, Johnson, Johnson, & Howard, 1997). Similarly, explicit prejudice predicts verbal behaviour, whereas implicit prejudice predicts non-verbal behaviour (Dovidio, Kawakami, & Gaertner,

2002). Especially, gender stereotypes are not explicitly expressed by social desirability; they persist implicitly (Blair & Banaji, 1996). Thus, this study centered on implicit parent stereotypes and attempted to identify ways of reducing them.

Lai et al (2014) meta-analysed 17 intervention effects on implicit racial prejudice and concluded that exposure to counterstereotypic exemplars is the most efficient. Although it was verified the effect of exposure to counterstereotypic women exemplars on the implicit stereotype about women among only women (Dasgupta & Asgari, 2004), it remains unsolved the effect of exposure to counterstereotypic men or fathers exemplars on the implicit stereotype about men and women or fathers and mothers among both men and women. Therefore, this study investigated whether exposure to counterstereotypic fathers can reduce the implicit stereotype that ‘fathers should work outside the home and mothers should keep the house’.

2. METHODS

Forty-four undergraduates participated in this study. They were 18 to 25 years old, of both genders, unmarried, born and raised in Japan, and spoke Japanese as their native language.

The first study was conducted as a study on memory based on Dasgupta and Asgari (2004). Participants were shown pictures and descriptions of either counterstereotypic fathers or flowers. After reading the descriptions, the participants saw the pictures again with an abbreviated correct and incorrect description of each individual (or flower) placed below each picture. They were asked to identify the correct description. This memory test was administered to ensure that the participants had paid attention to the information as well as to strengthen the memory cover story. After identifying the correct description, the participants in the counterstereotypic fathers condition were asked to rate the extent to which they thought most other fathers could enjoy childrearing as these fathers on a five-point scale ranging from 0 (impossible) to 4 (possible). The participants in the flowers control condition were asked to indicate the flowers they liked most.

In addition, four famous fathers who enjoy childrearing were selected from ‘Ikumen (fathers who enjoy childrearing) of the year’ prize winners. The pictures were culled, and the descriptions of each individual were created from the internet site of ‘Ikumen of the year’ (Executive committee of ikumen of the year, 2020). Meanwhile, four flowers were collected for the control condition. The pictures were culled, and the descriptions of each flower were created from the internet site of ‘gardening for pleasure’ (NHK publishing, 2020).

In the second study, the Go/No-go Association Task (GNAT, Nosek & Banaji, 2001) was conducted as a study on judgment based on Park et al. (2010). On the computer, the participants were presented with items from a number of different categories and instructed to press a button (go) whenever an item from one of two focal categories (e.g. ‘dad’ and ‘home’) appeared and to make no response (no-go) when the item was not from those two categories. Stimuli were presented for a 500-ms response window. Error feedback (X) was provided. Each d' (Green & Swets, 1966) (where as higher d' indicates a strong association between two categories) was calculated (the proportion of correct go response minus the proportion of incorrect go response, after transforming these proportions to their respective z values from the standard normal distribution) for four combinations of categories (‘father’ and ‘home’, ‘mother’ and ‘home’, ‘father’ and ‘work’, ‘mother’ and ‘work’).

The ‘father’ (N = 5) and ‘mother’ (N = 5) words were selected from fathers’ and mothers’ names called by their children (e.g. ‘father’, ‘dad’, and ‘papa’ / ‘mother’, ‘mom’, and ‘mama’) (Benesse, 2009). The ‘home’ (N = 5) words were ‘cleaning’, ‘washing’, ‘housework’, ‘childrearing’, and ‘cooking’; the ‘work’ (N = 5) words were ‘meeting’, ‘workplace’, ‘commuting’, ‘working’, and ‘company’ (Hanita & Murata, 2013). Distractor categories were ‘surnames’ and ‘bird names’. The ‘surname’ (N = 5) words were selected from three-character surnames taken from the most frequently used surnames in Japan (Origin Production Committee, 2020). The ‘bird name’ (N = 5) words were selected from three-character bird names taken from the most familiar bird names in Japan (Wild Bird Society of Japan, 2020).

Finally, the participants answered self-reported questionnaires on demographic measures on the computer.

3. RESULTS

3.1. Participants

The participants’ mean age was 20.16 ($SD = 1.35$) years. The participants were 26 men and 18 women. Among their parents, 2 fathers and 7 mothers didn’t have paid work. Twenty-three (13 men and 10 women) participants were randomly assigned to the counterstereotypic fathers condition, and 21 (13 men and 8 women) to the flowers control condition.

3.2. Analysis of variance

The data were analysed using four-way analysis of variance. The analysis design used four independent variables: the counterstereotypic fathers condition or the flowers control condition (between factor) [condition], being man or woman (between factor) [participants’ gender], the category of either fathers or mothers (within factor) [parents’ gender], and the category of either home or work (within factor) [domain]. Dependent variables were the d ’s for the four combinations of categories (‘father’ and ‘home’, ‘mother’ and ‘home’, ‘father’ and ‘work’, ‘mother’ and ‘work’).

First, the four-way interaction effect of [condition]×[participants’ gender]×[parents’ gender]×[domain] was significant ($F(1, 40) = 4.81, p < .05$). Then, the simple effects were as follows.

Second, the simple three-way interaction effect of [condition]×[participants’ gender]×[domain] was significant in the fathers category ($F(1, 80) = 4.26, p < .05$).

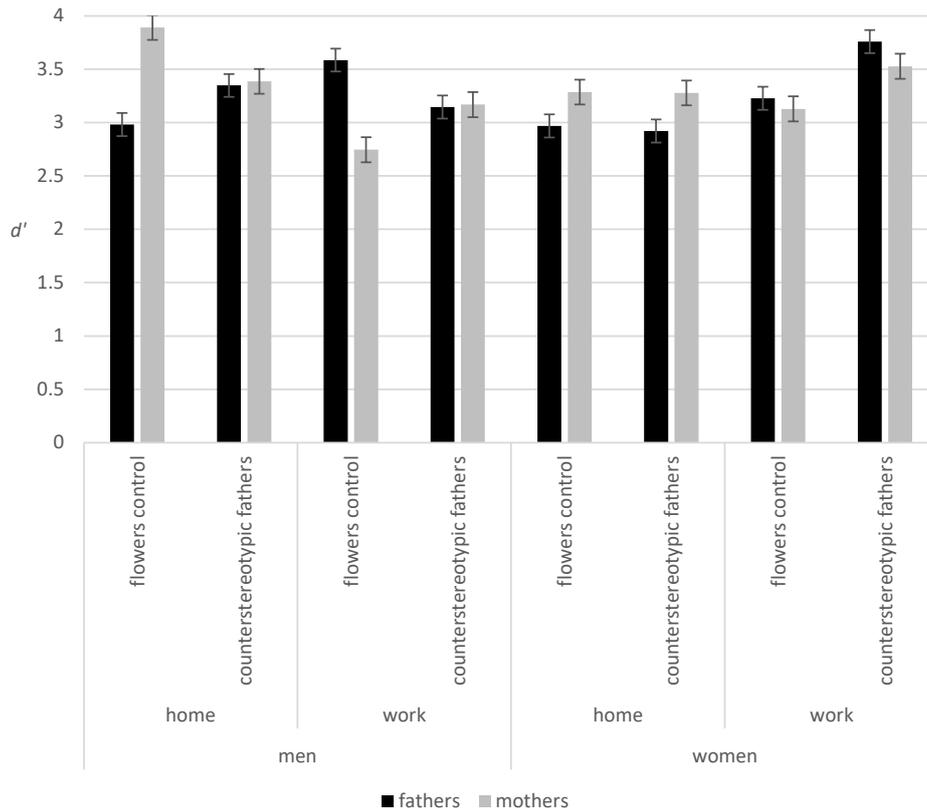
Third, the simple-simple two-way interaction effect of [condition]×[parents’ gender] was significant among men participants in the home category ($F(1, 80) = 4.97, p < .05$) and in the work category ($F(1, 80) = 4.88, p < .05$).

Fourth, the simple-simple-simple main effect of [parents’ gender] was significant among men participants in the flowers control condition in the home category ($F(1, 80) = 10.84, p < .01$). Men participants in the flowers control condition associated mothers ($d' = 3.89$) more strongly with home compared with fathers ($d' = 2.98$). Such significant effect was not found among men participants in the counterstereotypic fathers condition in the home category. As such, men participants might have associated fathers and mothers equally with home after exposure to counterstereotypic fathers.

The simple-simple-simple main effect of [parents’ gender] was significant among men participants in the flowers control condition in the work category ($F(1, 80) = 9.26, p < .01$). Men participants in the flowers control condition associated fathers ($d' = 3.59$) more strongly with work compared with mothers ($d' = 2.75$). Such significant effect was

not found among men participants in the counterstereotypic fathers condition in the work category. As such, men participants might have associated fathers and mothers equally with work after exposure to counterstereotypic fathers.

Figure 1.
Average d' scores.



4. DISCUSSION/ FUTURE RESEARCH DIRECTIONS

The results imply that exposure to counterstereotypic fathers can reduce the implicit stereotype that ‘fathers should work outside the home and mothers should keep the house’ among men. About one of potential mechanisms, Dasgupta and Greenwald (2001) argued that exemplars are activated, highly accessible, and applied to judgement, and change the implicit stereotype.

In contrast, among women, exposure to counterstereotypic fathers could not reduce the implicit stereotype. In this connection, Dasgupta and Asgari (2004) showed that women who are exposed to counterstereotypic women leaders are less likely to express implicit stereotypic beliefs about women. To reduce implicit stereotypes, an affective measure for men and women is exposure to counterstereotypic men and women, respectively. Therefore, it might be beneficial to investigate whether exposure to counterstereotypic not only fathers

but also mothers exemplars can reduce the implicit stereotype that ‘fathers should work outside the home and mothers should keep the house’.

On the other hand, even when women were exposed to counterstereotypic fathers, their implicit stereotypes were not reduced because they might have considered counterstereotypic fathers a subtype of fathers. This study selected famous fathers who enjoy childrearing as counterstereotypic fathers following previous studies (Dasgupta and Asgari, 2004, Study 1; Dasgupta & Greenwald, 2001, Study 1, Study 2; Dasgupta & Rivera, 2008; Hanita, 2015, Study 1-2). Famous fathers, however, might tend to be considered a subtype of fathers distinct from ordinary fathers. Therefore, research including ordinary fathers who enjoy childrearing as counterstereotypic fathers can be helpful in investigating how to reduce implicit stereotypes among women.

This study, however, verified them among only 44 undergraduates. Because gender stereotypes vary according to socio-economic factors (Suzuki, 2017), the future study should target not only undergraduates but also older and/or less educated people in a larger sample. It can generalise these findings.

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AUTHOR INFORMATION

Full name: Mizuka Ohtaka

Institutional affiliation: Department of Politics and Public Administration, Faculty of Law, Yamanashi Gakuin University

Institutional address: 2-4-5 Sakaori, Kofu-shi, Yamanashi, Japan

Short biographical sketch: Mizuka Ohtaka is an associate professor of the Department of Politics and Public Administration, Faculty of Law, at Yamanashi Gakuin University, Japan. She graduated in educational psychology from Osaka University in 2003 and received her PhD in social psychology from the University of Tokyo in 2013. She teaches social psychology and social survey mainly. Her research interest is interpersonal relationships and support.

Chapter #8

TRANSGENERATIONAL EFFECT OF ATTACHMENT

What was I given as a child, what do I share with my partner and what do I give to my newborn?

Katarína Greškovičová & Kristína Mrázková

Institute of Applied Psychology, Faculty of Social and Economic Sciences, Comenius University in Bratislava, Slovakia

ABSTRACT

Attachment theory describes functioning through internal working models that guide expectations and behaviours in the relationships. Our aim was to analyze transgenerational effect of attachment. We also wanted to map the attachment with respect to bonding and remembered attachment. Our sample consisted of 100 participants (26 men and 74 women) between 21 and 46 years from non-clinical population that were shortly postpartum. They filled 3 self-administered questionnaires: Egna Minnen Beträffande Uppfostran- short form (My memories of upbringing, sEMBU), The Experiences in Close Relationships-Revised (ECR-R), and The Mother-Infant Bonding Questionnaire (MIBQ). Emotional warmth shown by mother had prediction power to attachment in close relationship (avoidance in 9% and anxiety in 5%) which in turns correlated with the wish for physical contact with own infant (desire to touch or hold the infant). Furthermore, emotional warmth together with rejection by mother were predictors of acceptance of own parent's role in bonding in 8% and 5% respectively. We see several limits among which self-reported instruments, new questionnaire MIBQ, age range and smaller sample of men. Nevertheless, we consider our research to be important in slightly clarifying an importance of remembered emotional warmth of mother in functioning in actual relationships (attachment avoidance and anxiety) and in bonding (acceptance of own parent's role).

Keywords: bonding, attachment, parent, newborn, transgenerational transmission, transgenerational effect.

1. INTRODUCTION

Attachment stems from child's innate need to attach to a primary person (Bowlby, 2010). From a life span perspective (Hennelová, 2014), attachment behaviour manifests all one's life and its main goal- feeling of security- is constant (Bowlby, 2010). Only the needs of the attachment, the event of its triggering, the forms of acquiring a closeness and attachment figures are subjects to change (Mikulincer & Shaver, 2007). Attachment runs on "internal working models" that store scenes with attachment situations and they create interpretation filters that affect behaviour, thinking, and perception in attachment relationships (Bretherton & Munholland, 2008).

Thanks to internal working models, attachment types are resistant to change. Researches have reported that the consistency rate was minimum 70% (Crowell, Treboux, & Waters, 2002; Hamilton, 2000; Sundin, Wiberg, & Eklöf, 2002; Waters, Merrick, Treboux, Crowell, & Albersheim, 2000). But the internal working models of attachment can shatter and break when an adversity happens. When children experienced the loss of a parent, divorce of the parents, life-threatening illness, psychiatric disease, or sexual abuse

by a family member, 44% of them changed the attachment type in the adulthood (Waters et al., 2000; Waters & Cummings, 2000).

An absorbing and explanatory concept of attachment functioning in adulthood is the one delineated by Mikulincer and Shaver (2008). It consists of three modules. The first assesses the degree of threat, the second one focuses on the availability, sensitivity, and responses of the attachment figure, and the third one on the possibilities of approaching to the attachment figure. There are two strategies how to approach the attachment figure- hyperactivation and deactivation, that are related to emotion regulation and behavioral attachment system. Hyperactivating strategies lead to the formation of an anxious relationship (indecisive or resistant) and excessive sensitivity to threat, while deactivating strategies induced by relationship figure rejection lead to avoidant relationship and rejection of the attachment figure. Combination of these hyper/deactivating strategies gives four types or styles of attachment and they are recognized both in the childhood and the adulthood (Bartholomew & Horowitz, 1991; Brennan, Clark, & Shaver, 1998). We differentiate secure style and insecure style that namely includes three subcategories- insecure-dismissive (avoidant), insecure-preoccupied (anxious) and insecure-unresolved. In the research, both approaches- dimensions and typology- are used to explore attachment manifestations.

Adult attachment has been traditionally associated with partnership, marriage, and parenthood. Insecurely attached individuals differed in regulating their emotions- individuals higher in attachment anxiety were more likely to control their emotions by using others and by relying on them while those higher in avoidance were less likely to do so, tended to distance themselves and suppressed their feelings (Pietromonaco, Barrett, & Powers, 2006). Moreover, partners that possessed positive perceptions about their partner were more satisfied with the relationship (Cobb, Davila, & Bradbury, 2001). Attachment anxiety was in positive relation with relational dissatisfaction (Birnbaum, 2016). Furthermore, research also confirms the connection between attachment styles and love styles, where insecure attachment was associated with relationship problems (Mikulincer & Shaver, 2007). Anxious and avoidant individuals experienced lower sexual satisfactions (Birnbaum, Reis, Mikulincer, Gillath, & Orpaz, 2006; Butzer & Campbell, 2018). Attachment avoidance was in strong negative relationship with relation intimacy, passion, and commitment (Greskovičová & Sakačová, 2019).

When transitioning to parenthood, 83% of individuals kept their attachment style (Crowell et al., 2002). Additionally, insecure individuals feel uncertain about their parenthood abilities. Insecure-dismissive individuals were more uncertain about their relationships toward young children and about the possibility of becoming a parent. Avoidant mothers did not even feel so close to their children than securely attachment mothers. (Rholes, Simpson, & Blakely, 1995). Insecure-dismissive and preoccupied individuals kept more negative models of parenthood and parent-child relationships than securely attached individuals (Rholes, Simpson, Blakely, Lanigan, & Allen, 1997). Insecure-dismissive individuals perceived themselves as well as their parents negatively and they did not feel like having kids. On the other hand, insecure-preoccupied individuals wanted to have kids very much, but they also had a negative perception of their parents.

One of the vexing questions in attachment research dedicates to intergenerational transmission of attachment, and especially on its effect size (Verhage et al., 2016). Intergenerational/transgenerational transmission involves two or three objects (generations) of research sample (grandparents, parents, children) and the results confirmed concordance of attachment styles (Behrens, Haltigan, & Bahm, 2016; Bretherton & Munholland, 2008; Feeney & Woodhouse, 2016). But what about having just one object of research? Let's

illuminate this transmission within one person. We call this transgenerational effect of attachment (what was I given- remembered attachment, what do I share with my partner- attachment in close relationships, what do I give to my newborn- bonding) and there are researches that have partially devoted to this effect.

There were several weak to moderate relationships between remembered attachment and attachment in close relationships (Priel & Besser, 2000; Rozvadský Gugová, Heretik, & Hajdúk, 2014). Furthermore, researchers provide invincible evidence that parent representations are empirically linked to parenting (Feeney & Woodhouse, 2016; Van Ijzendoorn, 1995) with a moderate relationship between parent attachment representations and his/her sensitivity (Feeney & Woodhouse, 2016). Remembered attachment with mother combined with anxiety, parental competence, received support, fetal attachment, marital status explained 41% of variance of early postpartum relationship between mother and the baby (Mercer & Ferkehch, 1990). Furthermore, this relationship between mother and the baby was associated with mother's own remembered attachment (Behrendt et al., 2016). When talking about relationship towards own newborn, we take parent-to-infant relationship or bonding to be our conceptual frame. Bonding is a type of emotional relationship that is unique, specific, and long-lasting (Ainsworth, 2006). Bonding relationship is dyadic, bidirected (since it fulfils needs of both partners involved in the interaction- the parent and the child), but it is hierarchical since the parent is bigger, more competent than and protective toward the child (Greškovičová, 2016; Greškovičová, Szobiová, & Zdechovanová, 2018).

There is also robust evidence that adult romantic attachment styles are empirically linked to parenting (Feeney & Woodhouse, 2016; Priel & Besser, 2000) with moderate negative correlations found between dimensions of anxiety/avoidance and maternal bonding toward her children (Şen & Kavlak, 2012). Especially insecure-preoccupied and insecure-unresolved mothers reported lower bonding toward children (Wilkinson & Mulcahy, 2010). Maternal bonding was in moderate/strong negative association with attachment avoidance (Rholes et al., 1995; Sierau, Jungmann, & Herzberg, 2013).

But there is little evidence that transgenerational effect of attachment (what was I given, what do I share with my partner, what do I give to my newborn) within one object (mother or father) is congruent, not to mentioned that fathers are usually excluded or rather that domain of attachment is strongly matriarchal when tackling the issue of parenting.

At the same time, we notice "new" fathers who want to be present in the upbringing of their children and want to participate in everyday care activities (Kačániová, 2012). In the father-child relationship there are important these areas: the father's involvement (Lamb & Tamis-Lemonda, 2004; Kačániová, 2012), the relationship with the child's mother (Dudová, 2008; Možný, 1990) as well as barriers that do not allow fathers to fully manifest in paternity (Potančok, 2011). Father's external bonding behavior and their involvement in daily care is supported by their early contact with the newborn (Toney, 1983; Taubenheim, 1981). Therefore, our interest was to include fathers in our research.

The bonding measurement is usually carried out in the hospital, and ours was the same. But most of the researches rely heavily on observation of parental sensitivity therefore we chose only self-reported instruments to catch the inner world of our participants and their representations. We formulated the following research questions:

- RQ1 Will remembered attachment be a predictor of attachment in close relationships?
- RQ2 Will remembered attachment be a predictor of bonding?
- RQ3 Will attachment in close relationships be a predictor of bonding?
- RQ4 How is the typology in attachment in close relationships manifested in remembered attachment and bonding?
- RQ5 Will there be any transgenerational effect of attachment?

2. DESIGN, METHODS

Our sample consisted of 100 participants ($M_{\text{age}}=31,11$, min 21, max 46 years; 26 men and 74 women,) from non-clinical population who recently gave birth (from 1 to 14 days postpartum). 68% of participants were married, 32% were single. More than half of the participants (63%) had a natural childbirth, 37% gave birth by caesarean section. In 66% it was the first parity for participants, in 26% second parity, and in 8% third parity. They were approached at obstetrics and gynaecology clinic in Bratislava, Slovakia, from November 2018 till January 2019. We used 3 self-administered questionnaires: sEMBU (remembered attachment), ECR-R (attachment in close relationships), and MIBQ (bonding towards infant). The research project was approved by the Ethic committee at the obstetrics and gynaecology clinic. Subsequently, after recruiting some midwives, they distributed overall 200 questionnaires to mothers and their partners. Rate of return was 60.5%. We excluded 21 questionnaires because of incompleteness.

The Slovak version (Poliaková, Mojžišová, & Hašto, 2007) of the Egnä Minnen Beträffande Uppfostran- short form (My memories of upbringing, s-EMBU) by Arrindell et al. (1999) measures remembered parental rearing behaviour. 23 items are distributed into three dimensions: rejection (7 items), emotional warmth (6 items including item no. 9) and overprotection (9 items). The items are scored on a 4-point scale ranging from “no, never” to “yes, most of the time”. In case of missing answers (7 cases- they were only children and they could not respond to items referring their siblings), we granted the participants 2.5 points on the responding scale. Summary indices are computed for each dimension regarding mother and father rearing approach. Higher summary index score indicates increased dimensions. In our research, esteem of reliability ranged between $\alpha = .798$ and $.595$ for the dimensions.

The Slovak version (Bieščad & Hašto, 2010) of the ECR-R (The Experiences in Close Relationships-Revised) by Brennan et al. (1998) is a 36-item measure of adult romantic attachment style. It consists of two dimensions (avoidance and anxiety) with 18 items in each. The items are scored on a 7-point scale ranging from “strongly disagree” to “strongly agree”. Average scores are computed for both dimensions. Higher average score indicates increased avoidance/anxiety. Internal consistency for avoidance was $\alpha = .865$ and for anxiety $\alpha = .773$. By combining these two dimensions, 4 types of attachment style will be created. We assigned people to these types based on the empirical median score of the dimension. A securely attached individual has a lower score than median in anxiety and avoidance, an insecurely dismissive one has a lower score than median in anxiety and a higher score than median in avoidance. Insecurely preoccupied one is vice versa and finally insecurely unresolved type scores higher than medium in both dimensions.

The MIBQ (The Mother Infant Bonding Questionnaire) by Laohapensang (1988 in Eksirinimit, 2012) measures mother-to-infant bonding. It includes 31 items divided into 6 dimensions: perception of infant features (5 items), attention and connection to the infant (6), acceptance of the infant's individuality (5), acceptance of the parent's role (4), preparation for nurturing the infant (7) and desire to touch or hold the infant (4). The items are scored on a 5-point scale ranging from “strongly disagree” to “strongly agree”. Summary indices are computed for each dimension regarding mother and father rearing approach. Higher summary index score indicates increased dimensions. In our study, there was a low estimate of reliability in the dimension acceptance of the infant's individuality. Thus, we removed item no. 16 (After childbirth I feel like I have lost some parts of my body) to correct it. Internal consistency of MIBQ questionnaire dimensions ranged $\alpha = .493$ - $.801$.

3. RESULTS

3.1. Univariable analysis

Basic descriptive statistics are displayed in table 1. Histograms and boxplots are available at authors. The distribution of bonding variables is skewed to the left, with several outliers. On the other hand, the distribution of remembered attachment variables is skewed to the right (except two dimensions that were left-skewed). In attachment in close relationships Anxiety is symmetrically distributed, while Avoidance is skewed to the right with one outlier. Based on graphs, descriptive statistics, and normality tests we concluded that the variables except Anxiety are all non-Gaussian distributed.

Table 1.
Descriptive statistics of remembered attachment (sEMBU), attachment in close relationships (ECR-R) and bonding (MIBQ), source: authors.

Remembered attachment	M	Mdn	Mod	SD	Min	Max	Skwe	Kurt	Range
Father's rejection	10.18	9	8	3.31	7	24	2.01	4.60	17
Mother's rejection	10.19	9	8	3.08	7	22	1.52	2.33	15
Father's emotional warmth	20.49	21	21	4.46	8	28	-0.59	0.07	20
Mother's emotional warmth	21.74	22	20	4.33	8	28	-0.88	0.76	20
Father's overprotection	18.79	18.79	15	3.81	11	30	0.33	0.01	19
Mother's overprotection	20.47	20	20	4.14	11	30	0.26	-0.37	19
Attachment in close relationships	M	Mdn	Mod	SD	Min	Max	Skwe	Kurt	Range
Avoidance	2.40	2.06	1.89	0.97	1	5.06	0.86	-0.07	4.06
Anxiety	2.92	2.89	2.94	0.83	1.33	5.17	0.20	-0.25	3.83
Bonding	M	Mdn	Mod	SD	Min	Max	Skwe	Kurt	Range
Acceptance of the infant's individuality	16.13	17	20	3.39	4	20	-1.06	1.19	16
Preparation for nurturing the infant	28.41	29	31	4.84	10	35	-1.67	3.65	25
Perception of infant features	21.77	23	25	3.74	5	25	-2.63	8.43	20
Attention and connection to the infant	24.69	25	24	4.52	11	30	-1.27	1.75	19
Acceptance of the parent's role	15.77	16	20	3.25	8	20	-0.20	-0.95	12
Desire to touch or hold the infant	17.36	18	16	2.80	5	20	-2.62	9.01	15

3.2. Correlations and predictions

Assumption of linearity between attachment variables was checked with scatterplots and it was met in all cases, if any. Then we analysed correlations and calculated a stepwise multiple regression to predict attachment in close relationships and bonding.

In remembered attachment and attachment in close relationships, Mother's emotional warmth negatively correlated with both Avoidance ($\rho = -.342$) and Anxiety ($\rho = -0.266$). Mother's emotional warmth also proved to be a predictor for attachment in close relationships (RQ1). It predicted Avoidance ($F = 10.917$, $p < .01$) with adjusted $R^2 = .091$, ($\beta = -.317$; $p = .001$). and Anxiety ($F = 5.641$; $p < .05$) with adjusted $R^2 = .045$, ($\beta = -.233$; $p = .019$).

Secondly, both Avoidance and Anxiety in attachment in close relationships negatively correlated with the Desire to touch or hold the infant ($\rho = -.263 / -.235$ respectively). But we did not find any significant regression model (RQ2).

With regard to remembered attachment and bonding, Rejection by both parents was positively correlated with Desire to touch or hold the infant ($\rho = .200$, $p = .046$). Father's rejection was negatively associated with Perception of infant features ($\rho = -.219$, $p = .029$). There were several correlations with Acceptance of the parent's role: with Father's rejection ($\rho = -.219$, $p = .028$), Mother's rejection ($\rho = -.285$, $p = .004$), and Mother's emotional warmth ($\rho = .314$, $p = .001$). Acceptance of the parent's role was predicted by remembered attachment (RQ1), namely by both Mother's emotional warmth ($F = 10.312$; $p < .01$), with adjusted $R^2 = .086$, ($\beta = .309$; $p = .002$), and Mother's rejection ($F = 6.325$, $p < .05$), with adjusted $R^2 = .051$, ($\beta = -.246$, $p = .014$).

3.3. Attachment typology

The largest part (40%) of our participants ($N = 100$) was referred to secure attachment style. Insecurely unresolved participants were closely behind (37%). Insecurely dismissive (11%) and preoccupied (12%) reached almost the same occurrence. Since the variables were non-Gaussian distributed, we chose grouped median to show the differences and we used modified eta to explore relationships between attachment styles and other variables (table 2).

Table 2.
Attachment styles, source: authors.

Attachment style	Secure	Dismissive	Preoccupied	Unresolved	Eta	Eta ²
Father's rejection	8.7	10.0	9.3	9.6	.127	.016
Mother's rejection	9.0	9.0	9.0	9.7	.119	.014
Father's emotional warmth	22.3	20.5	21.5	20.4	.215	.046
Mother's emotional warmth	24.4	20.0	22.7	20.9	.333	.111
Father's overprotection	18.3	19.7	19.0	18.8	.116	.013
Mother's overprotection	19.9	20.0	20.3	21.0	.098	.010
Perception of infant features	22.5	21.5	23.0	22.9	.156	.024
Attention and connection to the infant	25.3	24.3	27.3	25.0	.175	.031
Acceptance of the infant's individuality	16.3	17.5	17.4	16.4	.185	.034
Acceptance of the parent's role	17.0	15.0	13.8	15.1	.213	.046
Desire to touch or hold the infant	18.3	18.0	18.5	17.0	.311	.096
Preparation for nurturing the infant	30.0	28.8	27.7	29.3	.268	.072

The strongest relationship between attachment styles and bonding was a moderate relationship with Desire to touch or hold the infant ($\eta = .311$, $\eta^2 = .096$ with 9,6% variance), (RH3). The strongest relationship between attachment styles and remembered attachment was with Mother's emotional warmth ($\eta = .333$, $\eta^2 = .111$ with 11.1% variance).

4. DISCUSSION/CONCLUSION

Transgenerational transmission is an intriguing area to study. We defined so-called transgenerational effect of attachment that stands for one-object-attachment-representation transmission and we explored it with three self-reported tools (for remembered attachment, attachment in close relationships, and bonding). We formulated five research questions.

4.1. Remembered attachment and attachment in close relationships

We found out that the more avoidant and anxious participants were, the less mother's emotional warmth they felt. This relationship was moderate, and it is in accordance with other researchers (Priel & Besser, 2000; Rozvadský Gugová et al., 2014). Mother's emotional warmth was actually also a predictor of both anxiety (5%) and avoidance (9%) in close relationships (RQ1), that is also in line with other researches (Priel & Besser, 2000; Rholes et al., 1995).

When we performed attachment typology, we explored a moderate relationship between styles and mother's emotional warmth with securely attached individuals feeling most emotional warmth by their mother's and insecure-dismissive ones feeling least (RQ4). Such a concordance of attachment styles has been confirmed by previous research (Behrens et al., 2016; Bretherton & Munholland, 2008; Feeney & Woodhouse, 2016) where insecurely attached individuals negatively perceived their parents (Rholes et al., 1997).

4.2. Remembered attachment and bonding

The research has shown that parent representations are empirically linked to parenting (Behrendt et al., 2016; Feeney & Woodhouse, 2016; Van Ijzendoorn, 1995) with a moderate relationship between parent attachment representations and his/her sensitivity (Feeney & Woodhouse, 2016). In our research the most important dimension in bonding regarding remembered attachment was acceptance of the parent's role which was linked to mother's emotional warmth and rejection by both parents. The more mother's emotional warmth participants felt during their upbringing, the more they accepted their parent's role. On the other hand, if the participants felt rejected by either their mother or father, they were less able to accept their own parent's role. We also confirmed the prediction model - mother's emotional warmth (9%) and rejection (5%) were predictors of how women or men accepted their role as being a parent (RQ2).

Acceptation of the parent's role seems very important. Parent role and its attainment comprises of two processes- attainment of parent's identity and role competency (Barnard & Solchany, 2002). Attainment is indeed a slow process that starts months before childbirth and is usually anchored at 1 year postpartum. Moreover, self-efficacy theory states that competent people are more likely to act as competent. So, we can assume that if a parent accepts the parent's role, s/he feels more competent and therefore acts more competently in parenting as well. Parental competence was a major predictor of parental bonding for various groups of parents (low or high risk, women, or their partners) (Mercer & Ferkehch, 1990). Combination of anxiety, parental competence, received support, fetal attachment, marital status, and relationship with own mother as a child can explain 41% of variance of bonding early postpartum (Mercer & Ferkehch, 1990).

4.3. Attachment in close relationships and bonding

Parent representations/adult romantic attachment styles are recognizably associated with parenting (Benoit & Parker, 1994; Feeney & Woodhouse, 2016; Priel & Besser, 2000; Şen & Kavlak, 2012; Van Ijzendoorn, 1995) and the same was in our research, even though we found only weak negative relationships and only with one of the bonding dimensions (desire to touch or hold the infant). Consequently, regression analysis did not confirm prediction power of attachment in close relationships to bonding (RQ3).

When finding overlapping areas between attachment typology and bonding (RQ4), individuals with secure attachment style most accepted their parent's role and were least neglectful in preparing for child nurture. On the contrary, insecure-dismissive individuals were least prepared for the parent's role. This can be reflected in closeness to children when

mothers with dismissive attachment style feels more distant from their child (Rholes et al., 1995). Moreover, individuals with preoccupied attachment style mostly perceived the infant's features, but they least accepted their parent's role. Unresolved attachment style was characterized with unacceptance of infant's individuality. The most noted associations between attachment styles and bonding were two- moderate relationship with desire to touch and hold the baby (physical closeness toward the infant) and weak relationship with preparation for nurturing the infant (consciously getting ready for the infant's coming and setting up for its needs). We can assume that the MIBQ does not tap the three compounds of bonding- behavioral, affective and cognitive compounds (Greškovičová, 2016) and it misses one of the very important compound- affective one that is intensely studied when dealing with parent-to-infant relationship (Behrens et al., 2016; Brockington, Fraser, & Wilson, 2006; Brockington et al., 2001).

4.4. Transgenerational effect

Let's now consider transgenerational effect (RQ5) from the correlations and predictions that we calculated. When we continue the rails of attachment, we can trace back that emotional warmth shown by mother has prediction power to attachment in close relationship (avoidance in 9% and anxiety in 5%) which in turns correlated with the wish for physical contact with own infant (desire to touch or hold the infant). Furthermore, the emotional warmth together with rejection by mother are predictors of acceptance of own parent's role in bonding in 8% and 5% respectively. We can conclude that emotional warmth shown by own mother that is remembered by an adult is further transmitted and expressed in attachment in partnership and then also in bonding.

4.5. Limits and future research

We see several limits among which self-reported instruments, new questionnaire MIBQ in Slovak language, relatively big age range of our participants, smaller sample of men are the most serious ones. Furthermore, we wanted to include fathers in parenting issue, but fathers of our participants are still "missing" in our results. We can assume that mothers hold the top and strong position in attachment pyramid (Brisch, 2011). We also noted that during participants recruit men were not so willing to participate and when so, their feedback was also negative. They themselves saw bonding as being a kingdom solely for women and they did not feel comfortable to answer the bonding questions. We see here a huge misconception in the society even though that "new" fathers are "real" (Kačániová, 2012). Therefore, we should support men in being more involved and underline the benefits of bonding, we should empower them in their relationships with children.

Transgenerational effect of attachment is difficult to capture and our methods were potentially not the best ones in doing so. It looks like the questionnaire sEMBU for remembered attachment taps very important areas of parenting but still does not cover whole area of remembered attachment toward parents because two dimensions- rejection and hyperprotectivity slipped out from the important results and were not differentiative in attachment typology. We can also assume that the MIBQ does not tap the three compounds of bonding- behavioral, affective, and cognitive compounds (Greškovičová, 2016) and it misses necessary affective one. In the future, we would therefore like to match the instrument assessing attachment and bonding and thus to have comparable results for parental behavior, partnership, and bonding. We should deliberate whether other concepts such as psychological types /traits (Lisá, 2017; Lisá & Kališ, 2019) or parenting styles (Dvorská, 2017) are not involved in the manifested/ measured behaviours too.

4.6. Highlights and conclusion

Despite limits, we consider our research to be important in slightly clarifying attachment transmission and transgenerational effect of attachment within one object. What was I given, what do I share with my partner and what do I give to my newborn are very important questions in everyday life of parents. Via attachment theory perspective, we expected to gradually unwind an attachment thread- starting with remembered attachment, then continue with attachment in close relationships and ending with bonding. Remembered attachments did manifest in attachment in close relationship and bonding separately, but we missed the connection between attachment in close relationship and bonding. Based on our results and interpretations, we conclude that namely mother's emotional warmth in remembered attachment seems to be important and helpful in romantic relationships as well as in bonding (accepting the parent's role). Mothers usually stand on a pedestal in the pyramid of attachment figures and it seems that in our research it was not differently. Mothers are primary caregivers and therefore are important providers of emotional warmth.

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AUTHORS' INFORMATION

Full name: Katarína Greškovičová, Mgr., PhD.

Institutional affiliation: Institute of Applied Psychology, Faculty of Social and Economic Sciences, Comenius University in Bratislava

Institutional address: Mlynské luhy 4, Bratislava, 82105, Slovakia

Email address: katarina.greskovicova@uniba.sk

Short biographical sketch: Katarina is a psychologist that earned her master's degree in psychology at the Comenius University in Bratislava. Then she pursued her studies and finished her PhD. study at the Pan-European University in Bratislava where she dedicated to study attachment and bonding within parenthood. Currently, she works as an assistant professor at the Faculty of Social and Economic Sciences, Comenius University. Her research interests cover various areas including peri- and post-natal period, bonding, and attachment in different settings (parenthood, partnership, workplace, health area). In 2018, she represented Slovakia as a member of the commission in the international project COST Action BIRTH 1405 "Building Intrapartum Research Through Health - an interdisciplinary whole system approach to understanding and contextualizing physiological labor and birth (BIRTH)". She is National Coordinator for Slovakia in the international project Babies Born Better (www.babiesbornbetter.org).

Full name: Kristína Mrázková

Institutional affiliation: Institute of Applied Psychology, Faculty of Social and Economic Sciences, Comenius University in Bratislava

Institutional address: Mlynské luhy 4, Bratislava, 82105, Slovakia

Email address: kristina.mrazkova@uniba.sk

Short biographical sketch: Kristina started her study at the Faculty of Psychology at the University of New York in Prague. After moving back to Slovakia, she continued her studies in psychology at the Faculty of Psychology at the Pan-European University where she finished her master's degree. After school she worked as a behavioural therapist with autistic children aged from 2 to 10. Her scientific focus includes various areas, mainly attachment and its connections with other interesting variables, such as sexual behaviours, remembered attachment, bonding, organizational behaviour and effectiveness. She is currently studying PhD. at the Faculty of Social and Economic Sciences at the Comenius University in Bratislava.

Chapter #9

ATTITUDES TOWARDS MONEY AMONG SMALL INDIGENOUS PEOPLES OF THE RUSSIAN ARCTIC

Based on the survey of the Nenets

Olga Deyneka¹, Ekaterina Zabelina², Svetlana Kurnosova², & Marina Lukmanova³

¹Department of Political Psychology, Saint Petersburg State University, Russia

²Department of Psychology and Pedagogics, Chelyabinsk State University, Russia

³Department of Economics and Management, Rudny Industrial Institute, Kazakhstan

ABSTRACT

Negative effects of globalization are visible in the most remote parts of our planet today including human life in the Arctic. The active development of the fuel and energy sector causing environmental problems limits the opportunities for traditional farming and creates a need to change the economic behavior strategies of the indigenous peoples of the North. The attitude to money among the Nenets was studied (N = 150) using the scale of monetary perceptions and behavior (Furnham, 1984). The results of the factor analysis have showed a more fractional structure than in Furnham's studies (1984, 2014) indicating a complex and ambiguous (more diverse) picture of the reflection of money in the economic mind of northern peoples (9 factors). The main trends in the monetary attitudes of the Nenets were identified. They do not put money first in their values, do not use them as a tool of influence on other people, they respect those who know how to save money and do not spend it in vain. At the same time, there is a place for financial anxiety and pessimism, negative feelings related to money. The results should be taken into account in the program for the transformation of the economic behavior of the northern indigenous peoples.

Keywords: money attitudes, small indigenous peoples, economic mind, Russian Arctic, economic behavior.

1. INTRODUCTION

The increased attention to the Arctic zone has historically been determined mainly by the political and economic interests of using its rich resource potential, ensuring national security, and strengthening international political influence (Frolov, 2015; Borisov & Pochukaeva, 2016).

These days the effects of globalization are visible in the most remote corners of our planet including the changes in human life in the Arctic. Perhaps, changes in the economy were the most harmful for the indigenous peoples of the North. The active development of the fuel and energy complex causing environmental problems limits the possibilities of traditional farming and reveals the need to change the strategies for the economic behavior of the indigenous peoples of the northern territories (Detter, 2017; Pavlenko, Petrov, Kutsenko, & Detter, 2019; Sukneva, 2010, etc.). The industrialization of the northern part of Russia had an enormous impact on the life of the indigenous peoples, whose well-being directly depends on the environmental situation in the region, the fishing potential of the territory as well as the external impact on their social way of life, customs and traditions (Leksin & Porfiriyev, 2015). At the same time, the economic behavior of the indigenous peoples of the Russian Arctic including their attitude to money has not been studied enough (Zabelina & Kurnosova, 2018).

1.1. Purpose of the study

The revealed contradictions initiated this study, the purpose of which is to identify the specific and the structure of the attitude toward money among representatives of the indigenous peoples of the Russian Arctic, in particular, on the example of the Nenets.

2. BACKGROUND

Traditionally, economic psychology studies the attitude to money in the context of economic behavior, which, in turn, has a complex socio-cultural determination. Features of ideology, culture, religion, and psychology of various ethnic groups have a significant impact on economic behavior (Pavlov, 2016). Along with the existence of individual characteristics of economic behavior and economic mind that are inherent in a person regardless of race, nationality or culture the specific features of national psychology have always had a profound effect on economic activity, economic behavior and determined the motivation and ethics of work as well as the attitude to social and income inequality, property and wealth (Brega, 2018).

The main factor reflecting the specifics of the national economy and determining the economic situation is the economic culture. Economic culture is “a set of social values and norms that are regulators of economic behavior and fulfill the role of the social memory of economic development: contributing (or interfering) to the transmission, selection and updating of values, norms and needs functioning in the economy and orienting its subjects to those or other forms of economic activity” (Arkhipova, 2001, p.62).

The Arctic economy is based on two different ways of life - the ancient one, represented by the indigenous peoples of the North (in many Arctic communities they continue to dominate numerically) and the relatively new one - represented by settlers from other regions of Russia. This feature creates a peculiar multi-ethnic, multicultural dimension. In the traditional way of life of indigenous peoples of the North, the prestige of generosity, informal rules for the distribution of prey by hunters among the entire community, implicit knowledge of the methods of hunting sea whales, walruses and seals and deer grazing are still preserved. The indigenous system for monitoring and using biological resources is holistic, in contrast to a clear separation of the governmental environmental monitoring services and the nature management agencies.

Economic behavior, as well as economic mind (Lewis, Webley, & Furnham, 1995), are the subjects of study of economic psychology. As relatively independent areas in economic psychology, the studies of attitudes to money of representatives of various social groups are traditionally distinguished from the features of "monetary behavior" (Yamamuchi & Temper, 1982, Furnham, 1987); saving behavior (Furnham, 1985), attitudes to debt and credit (Lea, Webley, & Levine, 1993; Mewse, Lea, & Wrapson, 2010), entrepreneurship psychology (Baron, 2007). Money attitude is an important component of economic mind, and money is an instrument of real economic management (Deyneka, 1999, p. 85). Monetary attributes and their relationship with other psychological and economic factors have been partially studied. For instance, the impact of the work values and demographic variables on the money attitude was revealed (Furnham, 1996). Besides, the influence of financial ability, money attitudes and socioeconomic status on risk in financial decision-making was studied (Von Stumm, Fenton O'Creevy, &Furnham, 2013). Finally, there are some studies of gender differences in attitudes to money (Yamamuchi & Temper, 1982), and influence of personal features on attitude towards money (Deyneka, 1999, etc.). However, the studies of economic mind of the Arctic's indigenous small peoples are very limited.

This paper examines the cultural and psychological aspects of the problem, which will enable finding new approaches to improving negative socio-economic trends.

H1: The structure and severity of attitudes towards money among the Nenets has a qualitative distinctiveness in comparison with representatives of the Russian and European peoples living according to the laws of a market economy (not engaged in traditional types of management).

3. METHOD AND SAMPLE

The indigenous northern peoples in the Yamal-Nenets Autonomous Okrug are the Nenets, Selkups and Northern Khanty. The titular nation among the indigenous peoples are representatives of the Samoyed group of the Uralic language family - the Nenets (Nenets, Nenei Nenets).

This study has involved 150 people: 75 representatives of the Nenets nationality aged 17 to 35 years (average age 28.6) living in the Yamal-Nenets Autonomous District (Aksarka village, Yar-Sale village) and the Nenets Autonomous District (Naryan-Mar city, Nes village, Krasnoye village). The questionnaire was presented to the respondents in hard copy during the Reindeer Breeder Day celebration. To compare the Nenets' attitudes towards money we selected another group of respondents. The second group included students from a university in central Russia: 75 people (33% male, 67% female, mean age is 19.6 years).

The respondents' behavior, the clarification questions they asked, and the time of completion were fixed (the average time for filling the questionnaire was 20 minutes).

Attitude toward money was studied using A. Furnham's questionnaire "Money Beliefs and Behavior Scale" in the adaptation of O.S. Deyneka (1999). Furnham was the first who proposed to explore money attitudes through the multifactorial questionnaire instead of using standardized techniques (Furnham, 1984) because of the flexibility that characterizes attitudes. The questionnaire consists of 45 items that characterize various aspects of the attitude towards money. The respondents had to rate the degree of their agreement with these statements on a 5-point scale (1 - absolutely disagree, 5 - completely agree). The questionnaire was presented in paper format, respondents could ask additional questions to clarify the content of the statements. The average time to complete the questionnaire was 16 minutes.

To substantiate the structure of money attitudes of the Nenets, an exploratory factor analysis was performed based on the method of principal components with Varimax rotation. The Mann-Whitney U criterion was used to study the specificity of attitudes towards money among the Nenets. When processing the data, a statistical package SPSS 24.0 was used (IBM Corporation, Armonk, NY, USA).

4. RESULTS

At the first stage of the study, to identify the structure of attitude towards money among the representatives of the Nenets, exploratory factor analysis was carried out.

A factor analysis of the questionnaires made it possible to identify 9 factors in the structure of the Nenets' monetary attitudes supported by strong correlations that reflect the main trends in their attitude to money.

The first factor (4,9%), "Money - power," includes various ways of influencing people by dint of money (in competition, in friendship and love, through demonstrative behavior and play). According to the descriptive statistics, the respondents mostly deny

manifestations of financial behavior of this type. This factor included with a negative sign the aggregate opinions of respondents on the following statements:

- “I often use money to influence rivals or enemies”;
- “I usually feel better than those who have less money”;
- “I think money is the only thing I can rely on”;
- “I play lotteries”;
- “Sometimes I buy things I don’t need to impress my friends”;
- “Questions about my personal money bother or annoy me”.

It can be assumed that money is not an instrument of influence on other people for the Nenets or a means of achieving goals in personal relationships. In addition, money is not a priority in the value system of these peoples, nor is it a matter of concern or evident care.

The second factor (4,1%), “Money as an indicator in social comparison” (envy, pleasure in spending) combines the commonality of opinion (also with a negative sign) according to the following statements:

- “I do not conceal from others the amount of money I have”;
- “I feel worse than those who have more money than me”;
- “My financial situation is worse than most of my friends think”;
- “I often leave small change to the seller”;
- “It is a pleasure for me to spend money”;
- “Most of my friends have more money than me”.

Negative values of these statements may indicate that the financial situation of the representatives of the indigenous peoples of the Russian Arctic is neither a subject of demonstration for other people nor a secret. They are not inclined to compare their financial status with the status of other people from their environment, the envy of money is also not typical for them.

The third factor (3,8%) of respect for money (ability to save) includes a respect for the ability to save money, not to waste money, accuracy in dealing with money and thereby to increase one's financial well-being. At the same time, this factor reflects the fact that money is not the main value in the lives of these peoples, there are more important things, such as helping another person in need, or the quality and reliability of the goods or services purchased.

- “I am proud of my ability to save money”;
- “My financial situation is better than most of my friends think”;
- “When shopping, I primarily think about the price (with a negative sign)”;
- “I give alms”;
- “I lay out the money in my wallet neatly in order of increasing value”.

The fourth factor (3,5%) combines the idea of oniomania with contempt for money (or “Money is evil”). This factor includes controversial but generally negative opinions about money. On the one hand, this is an irrational desire to spend money, a lack of readiness to clearly realize one’s financial situation. On the other hand, this factor reflects negative feelings associated with money - contempt, expectations of deception, anxiety, etc.

- “I always know how much I have saved (with a negative sign)”;
- “If I have any amount of money, I feel uncomfortable until I spend it”;
- “I despise money and those who possess it”;
- “I feel cheated if I pay for something more than others”;
- “I think about money more often than others”.

The fifth is the “Factor of fetishization of money” (3,3 %). According to this factor, money for the representatives of the indigenous peoples is a symbol of freedom, a force that can solve all human problems. However, the Nenets do not believe that the presence of

money is an indicator of one's moral qualities, and they think that most people share this opinion.

"In our country, a person is judged by the amount of money he has (with a negative sign)";

"I feel freer when I have money";

"The best gift is money";

"I strongly believe that money can solve all my problems".

The sixth factor (2,8%) - the "Factor of restrictive behavior" - reflects the presence of psychological attitudes, mechanisms that restrain monetary spending, among representatives of the indigenous peoples of the North.

"Even if I have a lot of money, I feel guilty spending money";

"I find it difficult to make decisions about spending money, regardless of their amount";

"I like to count money".

The seventh factor (2,8%) - the "Factor of financial control" - indicates the need for a clear, consistent calculation of one's funds and the control of savings, as well as a careful attitude to money.

"I always know how much I have accumulated"

"I keep track of my expenses and income"

"I always know exactly how much money I have with me".

"I lay out the money in my wallet neatly in order of increasing value".

The eighth factor (2,7%) is the "Factor of financial anxiety". This factor also reflects a careful attitude to money and focus on them, as well as the expectation of a financial failure in the future, financial pessimism.

"I carefully examine the design of notes and coins";

"I always recount change";

"I am saving money for a rainy day".

The eighth factor like the sixth one is essentially a reflection of the financial anxiety of the respondents.

The ninth factor (2,6%) is the "Factor of financial success / failure". The core of this factor is the connection of earnings with the abilities and efforts of a person. Lack of confidence in this connection leads to failure in financial affairs, inability to resist their own greed.

"I believe that people's earnings depend on their abilities and efforts (with a negative sign)";

"My financial situation is worse than most of my friends think";

"I often buy unnecessary things only because the price of them is reduced".

Further, we used a nonparametric comparison criterion to test the assumption about differences in the severity of attitudes towards money among the Nenets and non-indigenous peoples. The comparative analysis revealed contradictions in the respondents' attitudes towards money presented in table 1.

Table 1.
Attitudes towards money among young representatives of indigenous peoples of the Arctic zone and Central Russia.

Questions	Average rank		U	p
	Nenets	Control sample		
<i>I do not like to borrow money</i>	42,9	51,5	894	0,107
I always know how much I have saved	41,7	52,4	846	0,057
I often use money to influence rivals or enemies	51,9	45,3	942	0,210
<i>I think money is the only thing I can rely on</i>	53,1	44,5	894,5	0,126
I save money for a rainy day	56,7	41,9	751,5	0,009
If I have any amount of money, I feel uncomfortable until I spend it	54,2	43,70	851	0,049
I give alms	39,6	53,9	763	0,012
I often leave small change to the seller	55,1	43,0	813,5	0,029
I often discuss the issue of money with my parents or friends	41,7	52,4	845,5	0,058
I like to count money	42,0	52,2	859,5	0,074
I despise money and those who possess it	55,8	42,5	786	0,015
I feel more free when I have money	39,9	53,6	777	0,015
I play lottery	57,3	41,5	729	0,001
Sometimes I buy things I don't need to impress friends	55,9	42,5	785	0,008
<i>I make friends by means of spending my money on them</i>	53,9	43,9	864	0,064

Note. Italics indicate differences at the trend level.

Thus, on the one hand, the Nenets are less rational, naiver in dealing with their personal finances than the respondents from the Central part of Russia. For example, they are willing to participate in lotteries, and borrow money easier. Additionally, they do not like to count and plan their money accurately. On the other hand, the Nenets perceive money as something stable that can be relied upon, and, at the same time, associated with negative emotions. Perhaps, due to the revealed contradictions in the economic mind, the Nenets subconsciously seek to get rid of money. They can use money as a tool in building relationships. Perhaps, the Nenets do not completely separate the economic and personal sphere.

5. DISCUSSION

The results of factor analysis showed a more fragmented structure of attitude towards money than in the previous studies (Furnham, 1984), which indicates a complex and ambiguous (more diverse) picture of the reflection of money among representatives of the northern peoples. A. Furnham, while developing the questionnaire, identified 6 scales characterizing attitudes towards money: anxiety about money, using money to manage other people, saving (saving) money, controlling money, insufficient money, and the relationship between efforts and money (Furnham, 1984). The results of this study demonstrate that some of the factors can also be found in the sample: these are money anxiety (factor 8), the use of money to manage people (with a negative sign, factor 1), financial control (factor 7), saving money (factor 3), and the relationship between efforts and money (factor 9).

At the same time, the study on the Nenets sample allowed us to identify four additional factors:

1. factor 5 - fetishizing money (money is identified with the positive characteristics of people - freedom, responsibility, the ability to solve problems);
2. factor 6 - restrictive financial strategy (probably due to low living standards);
3. factor 4 - negative attitude towards money;
4. factor 2 - money as an indicator of social comparison.

The content of these factors leads to the conclusion that their identification is due to the processes of globalization, namely, the forced transition from traditional farming (reindeer herding) to market realities.

The studies based on the Russian sample also showed a more holistic structure of attitudes towards money with fewer scales than in the study by Furnham (Furnham, 1984). For example, the study (Semenov, 2010) identified five factors indicating an integrative assessment of attitude towards money, positive or negative. The first factor reflects a positive and rational attitude towards money, the second - savings, the third - anxiety about money, and the fourth - a negative attitude towards money, tension and a subconscious desire to get rid of them, the fifth - the therapeutic function of money (money as pleasure). In comparison with these data, the structure of the attitude towards money among the Nenets also seems to be more fractional and specific. For example, the study (Semenov, 2010) does not include the factors of fetishizing money and social comparison. On the contrary, the factor of the therapeutic function of money was not found in the structure of the Nenets' attitude towards money, which indicates a weak manifestation of this function in them and the lack of formation of the mechanisms of the consumer society in the studied group.

Despite the large number of factors in the structure, one can see the main trends in the attitude to money among the representatives of the indigenous peoples of the Russian Arctic. They do not put money in the first place in their lives, they are not inclined to use it as an instrument of influence on other people, they respect those who know how to save money and do not waste money in vain. At the same time, the representatives demonstrate financial anxiety and pessimism, negative feelings associated with money (contempt, expectations of fraud, anxiety), the desire to quickly part with money.

The study proves the thesis that the influence of the factor based on the social class overlaps the influence of the level of income on the attitude to money (Deyneka, 1999). The data obtained also agree well with the conclusions about the tendency of the indigenous peoples of the Arctic zone to passive, safe, low-risk financial strategies (Luzan, Koptseva, Zabelina, Kurnosova, & Trushina, 2019), possibly due to increased financial anxiety. These trends highlight the risks of adaptation of the young Nenets to modern economic realities and are confirmed in other studies (Luzan et al., 2019).

6. CONCLUSION

The formulated conclusions about the diverse and contradictory structure of the attitude to money among the indigenous peoples of the Russian Federation on the example of the Nenets indicate alarming factors in terms of the effective economic behavior of these peoples in the changing economic conditions in the Arctic.

The main limitation of the study is associated with a small sample size, which can be explained by the difficulties in the data collection (difficult accessibility of nomadic peoples). Nevertheless, the surveyed sample is representative and includes the respondents varying in age, gender, and socio-demographic characteristics.

The next step in the study of the economic mind and behavior of the indigenous peoples of the Russian Arctic should be the study of other economic attitudes - attitudes towards financial institutions, towards entrepreneurs, towards investments, and towards employment.

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AUTHORS' INFORMATION

Full name: Olga Deyneka

Institutional affiliation: Department of Political Psychology, Saint Petersburg State University (Russia)

Institutional address: 7/9 Universitetskaya emb., St. Petersburg, 199034, Russia

Short biographical sketch: Olga is a Doctor of Science in Psychology, Full Professor, Acting Head of the Department of Political Psychology of St. Petersburg State University, a leading expert in the field of Economic Psychology and Political Psychology of transition in Russia. Olga has developed methods to study the dynamics of everyday consciousness. She has organized a Master program "Economic Psychology". She is an author of 196 scientific publications including monographs and handbooks. Member of some Dissertation Councils. Olga has participated in educational programs for psychologists and economists in Russia, Estonia, Ukraine, Kyrgyzstan, Germany and Italy. She participates in analytic programs on television and radio. Olga serves as an Editor of the journal "Bulletin of Political Psychology" and the international journal "Psychology & Economics", a member of the Editorial Board of the journal "Institute of Psychology Russian Academy of Sciences. Social and Economic Psychology" and the journal "Society: Sociology, Psychology, Pedagogy".

O. Deyneka, E. Zabelina, S. Kurnosova, & M. Lukmanova

Full name: Ekaterina Zabelina

Institutional affiliation: Department of Psychology and Pedagogics, Chelyabinsk State University (Russia)

Institutional address: 129 Bratiev Kashirinykh st., 454001 Chelyabinsk, the Russian Federation

Short biographical sketch: Ekaterina Zabelina is an Associate Professor at the Department of Psychology of the Chelyabinsk State University, Russia. She is a Candidate of Science in Psychology, her thesis was defended at Yaroslavl State Pedagogical University, Russia. E. Zabelina has a non-academic experience as a business trainer and consultant. The area of research interest is related to economic psychology, consumer behavior in the global world.

Full name: Svetlana Kurnosova

Institutional affiliation: Department of Psychology and Pedagogics, Chelyabinsk State University (Russia)

Institutional address: 129 Bratiev Kashirinykh st., 454001 Chelyabinsk, the Russian Federation

Short biographical sketch: Candidate of Pedagogical Sciences (2001), Associate Professor (2006), a Head of the Department of General and Professional Pedagogy. Scientific interests: pedagogical design and design of inclusive information and educational environment; economic behavior of indigenous small peoples of the Arctic zone. Head of scientific project "Transformation of economic behavior of indigenous small peoples of the Arctic zone in globalization" (19'-013'-00394, RFBR). Author of more than 80 publications (SPIN code: 4476-1799, Authentic: 362206). Member of the 50th International Scientific Conference on Economics and Social Development Committee Development (Chelyabinsk, February 13-14, 2020).

Full name: Marina Lukmanova

Institutional affiliation: Department of Economics and Management, Rudny Industrial Institute (Kazakhstan)

Institutional address: 50 Let Oktyabrya str., 58, Rudny, Kostanay province, Kazakhstan

Short biographical sketch: Marina Lukmanova received a Candidate of Science degree in Economics from Chelyabinsk State University in Russia and is currently teaching Economics at the undergraduate level at Rudny Industrial Institute, Kazakhstan. Her professional interests focus on efficiency of privatization in countries in transition (comparative analysis of privatization in Russia and Kazakhstan), interplay of efficiency of governance and demand for it in small and medium business sector in Kazakhstan, economic behavior of indigenous small peoples of the Arctic zone. She has 48 publications. In addition, since 2011 she has been a member of the Central Eurasian Studies Society (CESS), a North America-based organization of scholars, and the Association for Studies in Public Economics (ASPE).

Chapter #10

EMPLOYEE VOICE: MODERATORS AND PREDICTIVE FACTORS ENHANCING PROSOCIAL ORGANISATIONAL BEHAVIOUR IN EDUCATIONAL ENVIRONMENTS

Evangelia Papaloi

Adjunct Lecturer- Hellenic Open University, Greece

ABSTRACT

Employee voice is a key-factor which fosters both personal and organisational development. However, in recent years, there is a concern since it appears that employees do not feel confident enough to speak out at work and hide their feelings and points. The scope of this research is to explore dimensions of organisational voice expressed by teachers at school, according to personal and contextual parameters. For our research purposes, 313 questionnaires were distributed to school teachers throughout Greece. The results reveal that teachers seem to express their own points and feelings actively and without fear. Moreover, they appear to vividly propose actions for the common good. Furthermore, it appears that there exists a strong relation between dimensions of voice, years in service, type of educational establishment and place of work while, gender does not affect the way teachers express themselves. We stress that, organisational voice as perceived and expressed in professional environments, constitutes an indicator and a valuable factor closely related to organisational effectiveness and development.

Keywords: organisational voice, dimensions, variables, educational context.

1. INTRODUCTION

Although one's identity is based on individual characteristics and also on one's affiliation with the social groups one considers as important (Tajfel, 1978), the reduced margins of action imposed by modern society appear to change employees' prioritisations, marking a shift from collectivism to individualism (Papastylianou & Lambridis, 2014). Interestingly, organisational norms, culture and rituals seem to *change people by altering their spatial, temporal, and bodily dimensions; weakening their emotional life and undermining their identity* (Foucault, 1978, op. cit. in Englebert, 2013).

Recent research reveals that both personal and contextual variables may affect employees' attitude and behaviour (Pinder & Harlos, 2001) and, may be seen as predictive factors of employees' genuine expression of feelings and points (Tangirala & Ramanujam, 2008), affecting their ethical choices (Bok, 1983, creativity (Organ, 1988) as well as prosocial behaviour (Shahjehan, 2016; Robinson & Morrison, 1995; Van Dyne, Ang, & Botero, 2003).

In this sense, in the field of education, we posit that, understanding and decoding this social phenomenon may enlighten aspects of school life and serve decision-making in the interest of the common good.

2. LITERATURE REVIEW

Organisational voice is a multi-dimensional and complicated phenomenon which severely affects and has a great impact (positive and negative) on both employees and organisations. It is characterised by scholars as an “organisational paradox” (Cameron & Quinn, 2005; Smith & Lewis, 2011) which seems to be elusive (Van Dyne et al., 2003). Challenging the simplistic statement that employee’s voice is the opposite of silence, recent research considers voice as a result of employee’s motives, aspirations, past experiences, ethical choices as well as employee’s perceived importance of the issue under discussion and the margins for action. More specific, given that power relations affect organisational communication and its channels (Papastamou & Mugny, 2001), it seems that the employee feels the necessity to filter emitted messages, through an auto-censure mechanism so as to comply with the specific characteristics of the organisational context. According to Shahjehan (2016), there are two major theoretical conceptualisations of employee’s voice: the one exploring voice as a behaviour and the other as a tool which orientates employee’s action and levels of participation in the decision-making process.

Recent research has revealed the importance of motivation in speaking up or withholding opinions. According to Van Dyne et al. (2003), employee’s levels of motivation can be expressed through disengagement, self-protection and/or other-oriented behaviour and, may lead to the expression of three fundamental dimensions of voice:

- acquiescent voice: it reflects employee’s disappointment and dissatisfaction and is expressed by conformity, passive attitude and/or low organisational engagement. Undeniably, this form of voice has negative effects on a personal and organisational level since problems and dysfunctions are accumulated and the flow of information is inhibited.
- defensive voice: it refers to one’s necessity to defend one’s self. According to Maurer, *if employees fear punitive consequences as a result of discussing problems, they will typically react by engaging in defensive behaviours intended to protect the self* (Maurer, 1996, op.cit. in Van Dyne et al., 2003).
- prosocial voice: this aspect of voice originates from a concern for the other and a desire to be helpful. It represents on the one hand, employee’s concern so as to protect collective good and well-being and, on the other hand, management participative practices concerning decision-making processes

Based on the aforementioned assumptions, voice may reflect employees’ intentions, conscious decision and desire for active contribution to organisational prosperity, and may have various consequences for both the individual and the organisation. More specific, when organisational context does not foster authentic communication, may appear negative emotions, disappointment and resentment, blocking creativity and organisational improvement (Perlow & Williams, 2003). In such working environments, employees feel trapped and, either they partially deny aspects of their personality and respond selectively to organisational stimuli with a view to strengthen their role and position, either they get accustomed not to react in order to maintain current *modus operandi*, preferring being in a state of organisational anhedonia. Consequently, employees’ non-genuine expression of personal points may propagate serious organisational dysfunctions and, enhance groupthink, conformity (Asch, 1951; Sherif, 1936), and/or pluralistic ignorance, depriving the organisation from evolving and innovating (Pinder & Harlos, 2001; Morrison & Milliken, 2000; Argyris & Schon, 1978).

In this sense, in the field of education, when teachers cannot express themselves authentically and feel they are speechless, facets of organisational well-being and commitment are negatively affected. On the contrary, when they are engaged in prosocial organisational behaviour, there may be fostered processes and practices contributing to employee's effectiveness (Yen & Niehoff, 2004), organisational citizenship behaviour, positive psychological capital and organisational prosperity (Walumbwa, Luthans, Avey, & Oke, 2011), organisational meaningfulness (Karakatsani & Papaloi, 2018), fairness (MacKenzie 1993) and organisational success (Podsakoff et al. 1996).

Concluding, positive aspects of organisational voice may be considered as a key factor which may affect teachers' engagement, foster the creation of open and trusting relationships between teachers and educational management, enabling the cultivation of a strong school culture and organisational effectiveness (Karakatsani & Papaloi, 2018).

3. METHODOLOGY

3.1. Scope, sample and instrument

Our main scope is to explore teachers' perception and expression of different dimensions of organisational voice at school. Based on the aforementioned three-dimensional model of Van Dyne et al. (2003), we examine the associations and correlations between different forms of voice with personal and organisational variables. More specific, we analyse acquiescent, defensive and prosocial voice with teachers' gender, professional experience, place of work (big city vs. small town/village) as well as with the type of educational establishment (primary school, secondary school-gymnasium, secondary school-lyceum).

Respectively, our main research questions are as following:

- What are the levels and forms of voice expressed by teachers at school?
- Are there exist any correlations among dimensions of voice expressed by the sample?
- Are there exist any correlations between teachers' voice and personal characteristics such as professional experience and gender?
- Are there exist any correlations between teachers' voice and contextual parametres such as type of organisational establishment and place of working activity?

Our sample consists of 313 teachers working at primary and secondary schools in Greece. We translated in Greek language the 7-degree scale (1-totally disagree, 7-totally agree) for organisational voice created by Van Dyne et al. (2003). More specific, our sample had to answer 15 closed questions (five questions for each of the three types of voice) covering the following aspects of voice:

- Acquiescent Voice: 5 statements related to passive attitude towards the group such as passive support of others' ideas due to disengagement, passive contribution to group effectiveness, passive agreement based on resignation, agreement with the group based on low self-efficacy to make suggestions, passive contribution to problem solving
- Defensive Voice: 5 statements related to defensive attitude towards the group such as low expression due to fear, expression of ideas that shift attention to others, expression of statements that focus the discussion on others in order to protect

oneself, expression of support towards the group based on self-protection, expression of agreement with the group due to fear

- Prosocial Voice: 5 statements related to prosocial behaviour and cooperative attitude towards the group and the organisation such as the expression of solutions to problems with the cooperative motive of benefiting the organisation, expression of recommendations concerning issues that affect the organisation, expression of personal opinions about work issues even if others disagree, suggestion of ideas which could benefit the organisation, suggestion of ideas for change based on constructive concern for the organisation

Out of 313 questionnaires competed, 157 questionnaires were collected in hard copy whereas, 156 questionnaires were completed on an on-line Google form which was created for the purposes of this research.

Data were analysed with SPSS and our first concern was to proceed to the necessary reliability statistics (Cronbach's Alpha ,850). Nevertheless, we have to admit that, in social researches, there exist certain limitations related to the way participants interpreted questionnaire's statements as well as participants' necessity to answer in a socially correct and accepted way (Podsakoff & Organ, 1986).

3.2. Results

3.2.1. Descriptive statistics

Gender, professional experience, type of educational establishment and place of work

Our sample consists of 117 males (37%) and 196 females (63%). This proportion is explained by the fact that education is a professional field mostly preferred by women. Regarding teachers' professional experience, 26,5% of our sample (N=83) have 1-5 years in service, 38,3% (N=120) have 6-10 years in service, 26,8% (N=84) have 11-20 years in service, 7,7% (N=24) have 21-30 years in service, whereas, 0,6% (N=2) have more than 31 years in service.

As far as the type of the educational establishment is concerned, the 43% of our sample (N=134) works at a primary school, 25% (N=80) at secondary school-gymnasium and, 32% (N=99) at a secondary school-lyceum. Finally, the 57% of our sample (N=177) works at big cities and 43% (N=136) at small towns and/or villages.

Gender

Male	Female
37% (N=117)	63% (N=196)

Professional Experience

1-5 y	26,5% (N=83)
6-10y	38,3% (N=120)
11-20y	26,8% (N=84)
21-30y	7,7% (N=24)
31+y	0,6% (N=2)

Type of educational establishment

Primary school	43% (N=134)
Secondary school - gymnasium	25% (N=80)
Secondary school- lyceum	32% (N=99)

Place of working activity

Big city	57% (N=177)
Small town/village	43% (N=136)

Dimensions and levels of Organisational Voice

According to our data frequency tables, our results are as following:

- **Acquiescent Voice:** acquiescent voice levels appear extremely low. More specific, teachers feel considerably engaged and actively express their points (81,5%), they vividly contribute to collective decision-making (86,3%), they do not feel resigned (86,8%), they express their disagreement (87,2%) and their consent (86%).
- **Defensive Voice:** regarding our sample's defensive voice, it appears that it is also expressed in low levels. When argumenting, teachers are not afraid to express their points (89,9%), do not orientate the conversation to others due to fear (93,2%) or in order to protect themselves (93%), express their disagreement (90,3%) without feeling the necessity to protect themselves (87,2).
- **Prosocial Voice:** teachers appear to express significant high levels of prosocial voice. They seem to actively express their points due to their commitment to the common good (82,7%), they develop ideas for the common good (81,7%), they do not hesitate to express their own ideas even if all others disagree (76,7%), they develop ideas for projects from which the school could benefit (83%), they propose innovative ideas for change due to their great interest for their school (82,5%).

Interestingly, descriptive statistics analysis reveals that, all statements regarding teachers' prosocial voice have a considerable significance (prosocial voice1,2,3,4,5 mean=5,55) whereas, teachers' answers to statements regarding acquiescent and defensive voice have a rather low statistical significance(acquiescent voice1,2,3,4,5 mean=2,032 , defensive voice1,2,3,4,5 mean=1,8) . Indicatively, for prosocial voice1,2,3,4,5 respectively, mean= 5,62, 5,57, 5,37, 5,64, 5,57, acquiescent voice1 mean=2,3, acquiescent voice4 mean=1,87, defensive voice2 mean=1,64.

3.2.2. Correlations

Dimensions of organisational voice

Kendall's tau analysis, which was used for a non-parametric measure of relationships between columns of ranked data concerning the three dimensions of organisational voice, revealed that there is a positive statistical significance with all dimensions of organisational voice. More specific:

- **Acquiescent Voice (av) 1,2,3,4,5:** there is a strong relation between av1 & av2 ($\tau=,653^{**}$), av2 & av3 ($\tau=,652^{**}$), av3 & av4($\tau=,652^{**}$), av5 & av3, av4 ($\tau=,611^{**}$ & ,682^{**} respectively), whereas there exist positive correlation among all other statements of av (τ ranges from ,444^{**} to ,596^{**}).

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- Defensive Voice (dv)1,2,3,4,5: there is a strong relation between dv 1 & dv5($\tau=,709^{**}$) and dv1 &dv2 ($\tau=,679^{**}$), dv3 &dv2 ($\tau=,670^{**}$), dv4 & dv5 ($\tau=,653^{**}$), dv5 & dv4 ($\tau=,653^{**}$), dv2 & dv5 ($\tau=,638^{**}$), whereas there exist positive correlation with the majority of other statements of dv (τ ranges from ,448** to 558**).
- Prosocial Voice (pv) 1,2,3,4,5: there is a very strong relation between pv4 & pv5 ($\tau=,844^{**}$), pv2 & pv4 ($\tau= ,763^{**}$), pv 1 & pv2 ($\tau=,743^{**}$) , pv2 & pv5 ($\tau=,739^{**}$) whereas there exist positive correlation among all other statements of pv (τ ranges from ,559** to ,686**).
- Acquiescent voice (av) & Defensive voice (dv): there exist positive correlation between these two variables in the majority of statements (indicatively, $\tau=,558^{**}$ for av5 & dv5, $\tau=,546^{**}$ for av5 & dv1, $\tau=,520^{**}$ for av5 &dv4, $\tau=,516^{**}$ for av5 &dv2, $\tau=,544^{**}$ for av2 & dv 1, $\tau=509^{**}$ for av3 & dv1, $\tau=,491^{**}$ for av 1 & dv1)
- Acquiescent Voice (av) & Prosocial Voice (pv): it appears that there exist an interesting negative correlation between av2 & pv4 ($\tau= -,444^{**}$),
- Defensive & Prosocial Voice: it appears that there is no correlation between statements of Defensive & Prosocial Voice.

Correlations between voice and professional experience

Crosstab analysis regarding dimensions of voice, scales of voice (1-7) mostly preferred and professional experience, revealed a great interdependence between these factors. More specific, teachers of all categories of professional experience, answered by using the lowest scales of acquiescent and defensive voice (1st,2nd & 3rd grade of the scale) as well as the highest levels of prosocial voice (5th, 6th & 7th grade), as depicted in the following table 1:

*Table 1.
Years in Service & Dimensions of Voice.*

Years in service	Acquiescent Voice (answers in the lower grades of the scale 1-7)	Defensive Voice (answers in the lower grades of the scale 1-7)	Prosocial Voice (answers in the higher grades of the scale 1-7)
1-5 years	82,4%	86,92%	74,7%
6-10 years	85,48%	90,96%	83,18%
11-20 years	85,72%	91,48%	80,68%
21-30 years	98,32%	100%	95,82%
31+ years	100%	100%	100%

Correlations between voice and type of educational establishment

Crosstab analysis regarding dimensions of voice, scales of voice (1-7) mostly preferred and type of educational establishment, revealed that in their majority, teachers of all types of educational establishment, answered by using the lowest scales of acquiescent and defensive voice (1st,2nd & 3rd grade of the scale) as well as the highest levels of prosocial voice (5th, 6th & 7th grade), as following:

Table 2.
Type of Educational Establishment & Dimensions of Voice.

Type of educational establishment	Acquiescent Voice (answers in the lower grades of the scale 1-7)	Defensive Voice (answers in the lower grades of the scale 1-7)	Prosocial Voice (answers in the higher grades of the scale 1-7)
Primary school	87,64%	93,9%	88,2%
Secondary school (gymnasium)	81,52%	85,82%	80,08%
Secondary school (lyceum)	86,46%	90,72%	73,14%

Correlations between voice and place of working activity

Crosstab analysis regarding types of voice, scales of voice mostly preferred and place of working activity, showed that, in general, working place, does not affect considerably teachers' voice. More specific, teachers who work at small towns/villages seem to feel slightly freer to express themselves than their colleagues at big cities and are slightly more committed and take initiatives for the common good as following:

Table 3.
Place of Working Activity & Dimensions of Voice.

Place of working activity	Acquiescent Voice (answers in the lower grades of the scale 1-7)	Defensive Voice (answers in the lower grades of the scale 1-7)	Prosocial Voice (answers in the higher grades of the scale 1-7)
Big city	84,74%	90,96%	77,44
Small town/village	88,78%	90,54%	86,58

Correlations between voice and gender

Levine's test and t-test revealed a strong statistical significance only between the 4th statement of defensive voice and teachers' gender (,006). More specific, this statement regards in-group communication and teachers' practices to comply with the others in order to protect themselves.

4. DISCUSSION/CONCLUSION

Despite the general sense that voice may be observed more easily than silence, recent research stresses that employees voice has different aspects and may have either beneficial or detrimental implications for both individuals and their organisation (Wang & Hsieh, 2012; Van Dyne et al., 2003). Given that this multi-dimensional social phenomenon seems to be rather under-explored in the educational management literature, we tried to analyse organisational voice at schools taking into consideration specific personal and contextual factors (gender, professional experience, type of establishment, place of work). Hence, based on the conceptual model of Van Dyne et al. (2003) proposing three types of employee voice

(acquiescent voice, defensive voice, and prosocial voice), we conducted a research with 313 teachers in Greece.

As far as the levels and dimensions of voice are concerned, teachers' answers reflect extremely low levels of acquiescent and defensive voice whereas; the levels of their prosocial voice appear to be considerably high. This latter dimension of voice is connected with authentic communication, active participation to decision-making processes, as well as mechanisms allowing employees to redress grievances. The results of this research seem to be in accordance with literature in this topic (Shahjehan, 2016; Detert & Burris, 2007; Van Dyne et al., 2003; LePine & Van Dyne, 1998; Spencer, 1986).

In general, our research data reveal very high levels of proactive forms of employees' voice and extremely low levels of passive forms. Furthermore, the results revealed an extremely strong connection between the three dimensions of voice with teachers' professional experience. Interestingly, teachers who have more than 21 years in service seem to very actively participate at organisational processes without feeling fear or resentment; they express freely their points and are highly committed to organisational well-being. This correlation is very strong also in all other categories of professional experience, especially as far as acquiescent and defensive voice are concerned. To be noted that, although levels of prosocial voice are considerably high for all categories of professional experience, it appears that the less experience a teacher has, the less commitment he/she has in order to contribute to organisational targets and collective well-being. Hence, for a teacher, the absence of negative emotions such as fear and resentment as well as the feeling of security is not enough so as to develop highest levels of engagement and commitment and take proactive initiatives for the benefit of the organisation. Research underlines the complicity of employees' thinking, feeling and acting (Forgas, 2000), which have to be estimated according to various contextual parameters such as organisational structure, culture, management strategic choice, etc.

As far as voice and gender are concerned, it appears that there not exist any strong correlation between dimensions of teachers' voice and gender.

Regarding the type of educational establishment, data analysis revealed that, primary school, in all dimensions of voice, teachers express their points more freely than their colleagues, while, lyceum teachers' scores regarding prosocial voice are lower than in the other categories of establishment. Finally, gymnasium teachers' scores regarding defensive voice are lower than in the other two categories of establishment (primary school and lyceum).

An interesting result regards dimensions of voice and place of working activity. Scores are very high in all dimensions of voice, both in big cities and small towns/villages. Nevertheless, it appears that teachers who work in small towns and/or villages appear to take more initiatives and express their ideas for the common good in a higher level than their colleagues in big cities.

These results seem to be very optimistic as long as, positive dimensions of employees' voice may foster creativity, commitment, productivity and organisational sustainability (Ramlall, Al-Kahtani, & Damanhour, 2014; De Cremer, & Van Lange, 2001; Kahn, 1990) whereas, negative aspects, especially when occurring on a large-scale may, may lead to the overall drop in performance and to further significant organisational disfunctions (Moaşa, 2013; Pinder & Harlos, 2001; Vakola, & Bouradas, 2005). Sustainable organisational change is connected to transparency and honesty and, when employees feel able to speak out, job satisfaction, well-being and psychological contract are fostered (Spencer, 1986; Verhezen, 2010). Moreover, organisational knowledge is encouraged and organisations become more

adaptable and agile to current societal demands (Detert & Burris, 2007; Haskins & Freeman, 2015; Cameron, & Quinn, 2005).

Concluding, it is obvious that, organisational phenomena are dependent to time and space variables as well as to actors' characteristics and, constitute a great challenge for leadership. It is true that, an organisation is transformed into an institution only when its instrumental character is reduced and everyday life of its members is meaningful and fosters a wide framework of values (...) deliberating the creative energy of its members (Tsoukas, 2004). Under this perspective, understanding and decoding teachers' voice could shed light into implicit aspects of school reality, enhance pluralism and the cultivation of prosocial organisational constructs, strengthen cooperative culture (Knoll & van Dick, 2013; Miller, 1992) and, thus, orientate school to prosperity.

5. LIMITATIONS

This research is not without limitations nor does it provide a complete understanding of this social phenomenon, as long as it explored levels and dimensions of teachers' voice in correlation with specific personal and organisational factors. A further analysis of employee's voice according to other contextual parameters as well as in comparison with levels of silence expressed could enlighten different aspects of school reality, enhancing our awareness about organisational complicity and, advancing our perspective regarding educational leadership. Moreover, qualitative methods such as interviews with teachers might enrich our understanding regarding the impact of this social phenomenon both on individuals and the organisation.

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KEY TERMS & DEFINITIONS

Anhedonia: the term is used to define reduced motivation as well as reduced anticipatory pleasure. It also refers to the fact that, one cannot feel the pleasure the moment one achieves one's goal, due to extreme stress. Based on this assumption, we introduce the term organisational anhedonia so as to depict implicit aspects of employees' voice potentially related to their past professional experiences and future aspirations as far as their professional development and well-being are concerned.

Conformity: it can be described as one's act of matching attitudes, beliefs, and behaviours to group rules and norms. It may derive from one's desire to feel secure within a group by adopting attitudes and behaviours which permit a better social interaction without the risk of social rejection and/or marginalization.

Groupthink: very often, it appears that, within social/professional groups, members avoid raising controversial issues and, tend to have the same point of view with the group. This social phenomenon may reflect group's cohesiveness, or its members' desire for cohesiveness. Under these conditions, conflict is minimised but, there is also a considerable loss of individual creativity and members' interdependence.

OCB: it involves participation in activities or actions that are not formally a part of the job description, but that benefit others and the organization as a whole (Borman 2004). In general, OCB reflects a concern for other individuals or organisational welfare (Podsakoff, MacKenzie, Paine and Bachrach 2000).

Pluralistic Ignorance: the term describes situations in which group members, out of fear for being seen as different, keep silent. Interestingly, within a group, very often, although the majority of the members on a personal level reject a norm, when they interact with the group, they go along with it and are afraid to voice their opposition because they assume (incorrectly) that the others accept it.

Positive psychological capital: is a term deriving from Positive Psychology. It is defined as one's positive and developmental state and, is characterised by high levels of self-efficacy, resilience, optimism and hope

APPENDIX

The 7scale tool for organisational voice (Van Dyne et al, 2003)

Acquiescent Voice

1. This employee passively supports the ideas of others because he/she is disengaged.
2. This employee passively expresses agreement and rarely offers a new idea.
3. This employee agrees and goes along with the group, based on resignation.
4. This employee only expresses agreement with the group based on low self-efficacy to make suggestions.
5. This employee passively agrees with others about solutions to problems.

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Defensive Voice

1. This employee doesn't express much except agreement with the group, based on fear.
2. This employee expresses ideas that shift attention to others, because he/she is afraid.
3. This employee provides explanations that focus the discussion on others in order to protect him/her self.
4. This employee goes along and communicates support for the group, based on self-protection.
5. This employee usually expresses agreement with the group, because he/she is motivated by fear.

ProSocial Voice

1. This employee expresses solutions to problems with the cooperative motive of benefiting the organisation.
2. This employee develops and makes recommendations concerning issues that affect the organisation.
3. This employee communicates his/her opinions about work issues even if others disagree.
4. This employee speaks up with ideas for new projects that might benefit the organisation.
5. This employee suggests ideas for change, based on constructive concern for the organisation.

AUTHOR INFORMATION

Full name: Evangelia Papaloi

Institutional affiliation: Adjunct Lecturer- Hellenic Open University

Institutional address: 18 Parodos Aristotelous, 26335 Patra, Greece

Email address: evipapaloi@gmail.com

Short biographical sketch: Evangelia Papaloi received a PhD with a cross-disciplinary focus on Education Sciences, Social Organisational Psychology and Adult Learning and Development from University Toulouse II (France). She works as an Adjunct Lecturer at post-graduate courses in Educational Management at various Universities in Greece. She is a research associate and a trainer at various Public Research Institutes and Training Centres in Greece and has conducted cross-disciplinary researches in the area of organisational behaviour, educational leadership, leadership ethics, social justice, stereotypes, etc. She serves as a reviewer at the Academy of Management Conference in Organisational Behaviour and in Organisational Development & Change Departments and, she is at the editorial board of the International Journal BEL (Business, Ethics Leadership). She has published papers in scientific journals and has written chapters in collective tomes both in Greece and abroad (Cambridge Scholars, Routledge, Emerald, Bloomsbury Publishing, etc.).

Chapter #11

COUNTRY MATTERS: WELL-BEING AND EMIGRATION PLANS AMONG UNIVERSITY STUDENTS IN SLOVAKIA AND BULGARIA: THE MEDIATION EFFECT OF ROOTEDNESS

Frederika Lučanská¹, Olga Orosová², Vihra Naydenova³, Jozef Benka²,
Marta Dobrowolska Kulanová², & Lenka Abrinková¹

¹*Department of Psychology, Faculty of Arts, P.J. Šafárik University in Košice, Slovakia*

²*Department of Educational Psychology and Psychology of Health, Faculty of Arts, P.J. Šafárik University in Košice, Slovakia*

³*Department of Social, Work and Educational Psychology, Sofia University "St. Kliment Ohridski", Bulgaria*

ABSTRACT

The objective of this exploratory study was to examine the relationship between well-being, rootedness and emigration plans (EP) among university students in Slovakia and Bulgaria. It also explored the mediation effect of rootedness in the relationship between well-being and EP. The data were collected through an online survey (SLiCE 2016). The research sample consisted of 361 university students (M=22.4 years, SD=3.8) from Slovakia (141, 86.5% female) and Bulgaria (220, 69.1% female). Based on their emigration plans, the respondents were divided into two groups; those who do not plan to leave (n=218, 60.4%) and those who plan to leave in the long term (n=143, 39.6%) after they finish university. For Slovakia, all factors were significantly related to EP. Furthermore, the association between well-being and EP was fully mediated by two dimensions of rootedness with different psychological mechanisms. For Bulgaria, only well-being and one dimension of rootedness, desire for change, were significantly related to EP. It was also found that the association between well-being and EP was partially mediated by only one dimension of rootedness – desire for change. This study highlights that rootedness has a different relationship with other examined factors in different countries and also that it is necessary to respect the cultural and socio-economic features of a country.

Keywords: emigration plans, well-being, rootedness, university students.

1. INTRODUCTION

Migration is a phenomenon driven by different causes and presents itself in various forms around the world. Rather than being static, it is a dynamic phenomenon which naturally develops as the result of new and high quality ways of transport, supported by new technologies and high interconnectedness via the Internet. Some parts of Europe are more affected by this phenomenon than others. In order to understand this issue in general, international comparisons and identification of specific factors related to emigration behavior in individual countries is important. According to Manafi, Marinescu, Roman and Hemming (2017), it is possible to identify three groups of European countries with regard to emigration. These are based on geographical position within Europe and the trends in net migration flows over the years. The first group is the EU/EFTA center-receiving countries; these are the favorite destination countries located in the center of Europe. The second

group consists of EU/EFTA periphery-sending countries; countries from Eastern Europe, which struggle with a greater outflow of the skilled population. The last group consists of EU/EFTA outlier countries (e.g. Luxembourg, Norway). These are the countries with the best socio-economic indicators. In respect to skilled migration, Battistella and Liao (2013) often use the terms brain drain and brain gain. Brain drain can be defined as a big outflow of highly educated people, especially skilled young people usually migrating from less developed to more developed or highly industrialized countries. Brain gain is defined as gaining potential benefits for the development of the country through the migration of its citizens. This perspective supposes that skilled migrants also contribute to the development of the receiving country (Battistella & Liao, 2013). Therefore, it can be said that migration is perceived differently with different consequences for different countries.

Slovakia has long been known as a country of origin of many migrants. Even today's numbers remain quite high. According to Káčerová and Horváthová (2014), 1863 residents left Slovakia in 2011. The migration from Slovakia can be categorized into three groups: highly qualified individuals (who are unable to find work with adequate financial remuneration), students and those who have retired (Baláž, 2009). In terms of education, Slovakia loses many people with secondary school education and university graduates every year. In 2011, 53.68% of those leaving Slovakia had secondary school education and 21.55% had higher education (Káčerová & Horváthová, 2014). Haluš, Hlaváč, Harvan, and Hidas (2017) have pointed out that Slovakia is facing both a demographic crisis and a significant brain drain due to the exodus of the younger generation. Overall, Slovakia has lost about 300,000 of its citizens since 2000, which is about 5% of the population. This number increases every year and more than half these people are under the age of 30. The authors have also pointed out that approximately one in 10 students who has completed their higher education leaves abroad. Bahna (2009) has described the profile of a Slovak migrant based on previous research. He found that the most fundamental factors are age and gender. The older a person is, the less willing he is to travel abroad. In addition, men are more willing to travel abroad than women. Slovakia belongs to one of the EU/EFTA periphery-sending countries together with Romania, Estonia, Bulgaria, Croatia, Hungary, the Czech Republic, Latvia, Lithuania, Slovenia, Spain, Greece, and Portugal (Manafi et al., 2017). Based on that, it can be assumed that the migration trend in Bulgaria is similar to that in Slovakia. Therefore, this study will attempt to compare Slovakia and Bulgaria.

Initially, the most qualified people (e.g. research associates and university professors) emigrated from Bulgaria although nowadays it is young and less experienced people with university degrees who leave more often (Beleva & Kotzeva, 2001). In general, all groups of potential emigrants in Bulgaria have increasing intentions to emigrate in comparison to 1996 (International Organization for Migration [IOM], 2001). According to this study, permanent emigration increased from 3% to 6.1%, temporary emigration from 6% to 17.1% and more than 25% of people showed intentions for future emigration in the next year (IOM, 2001). Beleva and Kotzeva (2001) only focused on Bulgarian student migration. They found that more than a third of students planned to find a job outside Bulgaria while almost half of the students had not known what they would do after graduation. Only 15% of students wanted to stay in Bulgaria. These authors highlight that most students who wanted to find a job abroad also wanted to study abroad. This was because students considered searching for a job in the destination country as a natural step after finishing their studies. Therefore, Beleva and Kotzeva (2001) suggest that leaving the country can be prevented by proper policy aimed at improving living and working conditions for young people in Bulgaria. Bulgarian migrants can be described as highly mobile, well-educated, single and living in the capital city or in another large town. Similarly to Slovakia migrants,

they are more likely to be young men (IOM, 2001). According to Sheikh, Naqvi, Sheikh, Naqvi and Bandukda (2012), only 24% of young students are willing to reconsider their decision to go abroad. Surprisingly, it was not possible to find more recent information on this issue. However, we believe that the available information is still relevant for the purpose of this article.

Silventoinen et al. (2007) have pointed out that overall life satisfaction in the home country has a direct impact on emigration tendencies. According to Diener, Suh, and Oishi (1997), life satisfaction can be addressed in terms of subjective well-being. This can be understood to be a multidimensional construct which consists of three separate components: (1) the presence of positive emotions, (2) the absence of negative emotions and (3) the cognitive evaluation of life conditions (also known as life satisfaction). Hřebíčková, Blatný, and Jelínek (2010) point out that this is a cognitive assessment of one's own life, while the emotional dimension is a summary of moods and emotions, even at an unconscious level. Silventoinen et al. (2007) found that there is an increasing tendency to emigrate with increasing dissatisfaction with the living situation in the home country. Other research has found that individuals with higher subjective well-being have lower international migration desires (Cai, Esipova, Oppenheimer, & Feng, 2014). The same findings concerning Slovak students have been shown in a study by Hajduch, Orosová, and Kulanová (2018). The authors confirmed that life satisfaction and emigration intentions are related. Indeed, university students who were characterized by lower life satisfaction showed stronger intentions to emigrate. According to Ivlevs (2014) however, it can be the other way around. He believes that some countries attract migrants who have high life satisfaction because these people tend to be more productive, healthy and sociable. These characteristics probably help them to integrate more successfully into the host society. His study showed that for lower levels of life satisfaction, the probability of reporting intentions to migrate decreases with higher life satisfaction. However, for higher levels of life satisfaction, the probability of reporting intentions to migrate increases with higher life satisfaction. Thus, this study revealed that higher life satisfaction may increase the likelihood of reporting emigration intentions. A similar finding is reported by Polgreen and Simpson (2011) who found that the highest emigration rates were observed in the most and the least happy countries. It is assumed that this could also be the case with Bulgaria. According to Beleva and Kotzeva (2001), unemployment is still a major problem for this country even after better work placement of highly educated in the labor market. The share of these people in the total emigration flow is still increasing.

Like Slovakia, Americans have always been perceived as a society of migrants (Cooke, 2011). However, their migration rates are at record lows, with only 3.7% of Americans moving from one country to another. Cooke (2011) concludes that approximately 63% of this decline in the migration rate between 1999 and 2009 can be attributed to the 2007 economic crisis, a further 17% to demographic changes (e.g. aging population) and the remaining 20% to increased rootedness. He assumes that with the possible stability of housing markets and the effects of economic recovery, the migration rate will likely increase over several years although the long-term effects of the aging population and rootedness will keep the migration rate lower than otherwise. The role of rootedness in developing emigration intentions has been investigated by Hricová, Janovská, Orosová, and Kulanová (2017) among Slovak university students. They found that rootedness with its two subscales – desire for change and home/family rootedness was significantly related to emigration intentions. Therefore, the lower the desire for change and the higher the desire for family rootedness, the less likely it is that students will consider moving abroad. However, family rootedness was not significantly related to emigration

intentions of students studying teaching unlike other students (Hricová et al., 2017). In another study, Orosová, Benka, Hricová, and Kulanová (2018) also found that the desire for change was significantly positively associated with emigration intentions. The home/family rootedness contributed to the emigration intentions only among females. A recent study by Gajdošová and Orosová (2019) showed similar results. The exploration of emigration intentions of the voluntary permanent migration of university students showed that there was a direct positive association of desire for change and a direct negative association of home/family rootedness observed.

The current study aimed to explore this topic and investigate the degree to which well-being constitutes a relevant factor affecting the formation of emigration plans among Slovak and Bulgarian university students and whether rootedness has an impact on this relationship.

2. OBJECTIVES

The main objective of this exploratory study was to examine the relationship between emigration plans and well-being and rootedness among Slovak and Bulgarian students. It also explored the psychological mechanism of this relationship in terms of the mediation effect of rootedness in the relationship between well-being and emigration plans in both countries.

3. METHODS

3.1. Sample and procedure

The data were collected through an online survey as part of the Student Life Cohort Study (SLiCE 2016). This focuses on emigration/migration intentions and risk behavior of university students. In the current study we worked separately with 2 research samples. The first sample consisted of 141 university students from Slovakia (86.5% female) where the mean age of the students was 22.6 years ($SD = 2.9$). The second sample consisted of 220 university students from Bulgaria (69.1% female) where the mean age of the students was 22.2 years ($SD = 4.3$). First, the emigration plans for all respondents in both countries were examined. Based on these plans, the respondents were subsequently divided into two groups in each sample: those who do not plan to leave (for Slovakia $n = 77$, 54.6%, $M = 23$ years, $SD = 3.2$; for Bulgaria $n = 141$, 64.1%, $M = 22.3$ years, $SD = 4.4$) and those who plan to leave in the long term (for Slovakia $n = 64$, 45.4%, $M = 22.1$ years, $SD = 2.4$; for Bulgaria $n = 79$, 35.9%, $M = 22$ years, $SD = 4.2$).

3.2. Measures

All students were asked to fill in an online questionnaire. Participation in the study was voluntary and anonymous. For the purpose of this study, emigration plans and factors related to emigration plans were measured by the following measures:

- **Emigration plans** were identified by a single item measure: "Do you plan to leave Slovakia/Bulgaria after you finish university" with 8 answer options: (1) No, I am not planning to leave; (2) I do not know, I have not thought about it; (3) I do not know, I have not decided yet; (4) I am planning to go abroad for six months; (5) I am planning to go abroad for six to twelve months; (6) I am planning to leave for more than a year; (7) I am planning to leave for more than five years; (8) I am planning to leave permanently. Based on the answer, the respondents were divided into two groups: (a) those who do not plan to

leave Slovakia/Bulgaria (answer 1); (b) those who plan to leave Slovakia/Bulgaria in the long term (answer 6, 7 or 8).

- **Well-being** was addressed using the construct of subjective well-being. This consists of the cognitive aspect in terms of life satisfaction (Diener, Emmons, Larsen, & Griffin, 1985) and experiencing positive and negative emotions (Džuka & Dalbet, 2002). Respondents were asked to indicate the extent to which they agreed with 5 statements (e.g. "In most ways my life is close to my ideal.") on a seven-point Likert scale ranging from 1 – strongly disagree to 7 – strongly agree. The score ranges from 5 to 35 points with a higher score indicating a higher level of well-being. Cronbach's alpha for well-being was 0.828 for Slovakia and 0.852 for Bulgaria.

- **Rootedness** was measured by the Rootedness scale (McAndrew, 1998) which assesses rootedness as a construct focusing on individual's psychological attachment to the place and social environment where one lives. The Rootedness scale captures this construct in two dimensions by focusing on the desire to change one's living environment ("Desire for change" subscale) and attachment to one's family and home ("Home/Family" subscale). Respondents were asked to indicate the extent to which they agreed with 6 statements for the "Desire for change" subscale (e.g. "Moving from place to place is exciting and fun.") and with 4 statements for the "Home/Family" subscale (e.g. "I am extremely satisfied with my present home.") on a five-point Likert scale ranging from 1 – strongly disagree to 5 – strongly agree. The score ranges from 6 to 30 points for "Desire for change" subscale and from 4 to 20 points for the "Home/Family" subscale. A higher score in the "Desire for change" subscale indicates a higher level of a respondent's desire to change their living environment. Cronbach's alpha for this subscale was 0.528 for Slovakia and 0.506 for Bulgaria. A higher score for the "Home/Family" subscale indicates a higher level of a respondent's attachment to their family and home. Cronbach's alpha for this subscale was 0.604 for Slovakia and 0.442 for Bulgaria.

3.3. Statistical analyses

A binary logistic regression analysis was applied in two steps. The first model was used to examine the relationship between well-being and emigration plans. In the second model, two dimensions of rootedness were added as independent variables. After using these regression models, we explored whether these two dimensions of rootedness would mediate the relationship between well-being and emigration plans. The Hayes' PROCESS tool was used to perform this analysis. There were two samples so all analyzes were conducted separately for Slovakia and Bulgaria. Given the fact that in the theoretical part gender was shown to be an important predictor of emigration plans, all analyzes were controlled for gender.

4. RESULTS

The results showed that 54.6% of students in Slovakia (56.6% female) do not plan to leave Slovakia after they finish university and 45.4% of students (43.4% female) plan to leave in the long term. In Bulgaria, 64.1% of students (63.2% female) do not plan to leave Bulgaria after they finish university and 35.9% of students (36.8% female) plan to leave in the long term. The emigration plans among students with respect to gender can be seen in Table 1 for Slovakia and in Table 2 for Bulgaria. A Chi-square test of independence (with Yates Continuity Correction) indicated no significant association between gender and emigration plans, $\chi^2(1, n = 141) = .864, p = .353$ for Slovakia and $\chi^2(1, n = 220) = .078, p = .780$ for Bulgaria.

Table 1.
Emigration plans among university students in Slovakia.

Emigration plan	Among sample (n=141)	Among female (n=122)	Among men (n=19)
Not planning to leave	77 (54.6%)	69 (56.6%)	8 (42.1%)
Planning to leave in the long-term	64 (45.4%)	53 (43.4%)	11 (57.9%)

Table 2.
Emigration plans among university students in Bulgaria.

Emigration plan	Among sample (n=220)	Among female (n=152)	Among men (n=68)
Not planning to leave	141 (64.1%)	96 (63.2%)	45 (66.2%)
Planning to leave in the long-term	79 (35.9%)	56 (36.8%)	23 (33.8%)

A descriptive analysis of all the explored variables regarding emigration plans for both countries are presented in Table 3. In the case of Slovakia, those who do not plan to leave scored higher in well-being and family rootedness and lower in desire for change, compared to those who plan to leave in the long term. However, in the case of Bulgaria, those who do not plan to leave scored higher in well-being and lower in desire for change, compared to those who plan to leave in the long term. The Bulgarian students did not significantly differ in family rootedness.

Table 3.
Descriptive characteristics in the measured variables according to emigration plans for both countries.

Variable	Theoretical range	Not planning to leave	Planning to leave in the long-term	T-test value
SLOVAKIA				
Well-being	5 – 35	M = 17.84 (SD = 3.78)	M = 14.75 (SD = 4.38)	4.497***
Rootedness – Home/Family	4 – 20	M = 16.76 (SD = 2.38)	M = 14.42 (SD = 3.03)	5.021***
Rootedness – Desire for change	6 – 30	M = 17.36 (SD = 3.71)	M = 22.31 (SD = 3.30)	- 8.275***
BULGARIA				
Well-being	5 – 35	M = 17.12 (SD = 4.96)	M = 13.75 (SD = 4.94)	4.840***
Rootedness – Home/Family	4 – 20	M = 13.69 (SD = 3.79)	M = 14.43 (SD = 3.08)	-1.559
Rootedness – Desire for change	6 – 30	M = 19.70 (SD = 5.23)	M = 21.63 (SD = 4.05)	-3.110**

*M – Mean; SD – Standard deviation; *p < 0.05, **p < 0.01, ***p < 0.001*

For Slovakia, the first model explained 16.8% of the variance in emigration plans. As predicted, higher well-being was significantly associated with a lower probability of having emigration plans ($b = - 0.183$, $p\alpha < 0.001$). The relationship between gender and emigration plans was not statistically significant. In the second model, rootedness was added which then explained 51.6% of the variance in emigration plans. The two dimensions of rootedness were found to make the largest contribution in explaining emigration plans. Therefore, a greater desire for change was significantly associated with a higher probability of emigration plans ($b = 0.367$, $p\alpha < 0.001$) while higher family rootedness was significantly associated with a lower probability of emigration plans ($b = - 0.240$, $p\alpha < 0.05$). Interestingly, well-being was not shown to be a factor significantly related to emigration plans. Gender was not found to be significant either (see Table 4 for more details).

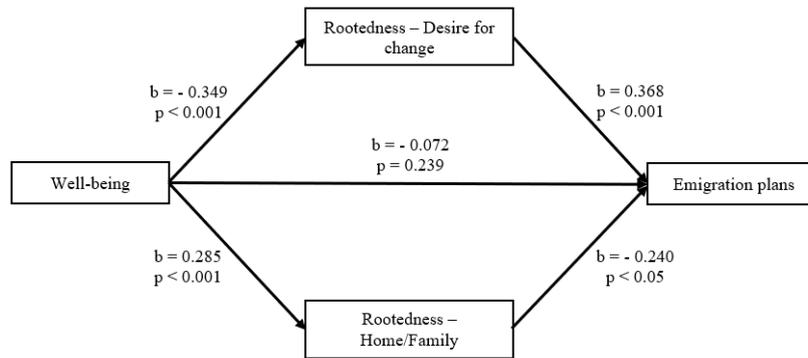
Table 4.
Regression model 1 and 2 – factors related to emigration plans among Slovak university students.

Model 1 (R² = 0.168)						
Predictors	B	S. E.	Exp(B)	95 % C. I for Exp(B)		Sig.
				Lower	Upper	
Gender*	0.108	0.543	1.114	0.385	3.226	0.843
Well-being	- 0.183	0.048	0.833	0.758	0.914	< 0.001
Model 2 (R² = 0.516)						
Gender*	0.102	0.666	1.108	0.301	4.082	0.878
Well-being	- 0.072	0.061	0.931	0.826	1.049	0.239
Rootedness – Home/Family	- 0.240	0.098	0.787	0.649	0.953	< 0.05
Rootedness – Desire for change	0.367	0.073	1.444	1.252	1.666	< 0.001

*Note: * female as a reference group*

The mediation analysis showed that there was a significant indirect effect of well-being on emigration plans through rootedness – desire for change, $b = - 0.128$, BCa CI [- 0.240, - 0.064] and rootedness – family rootedness, $b = - 0.068$, BCa CI [- 0.149, - 0.015]. Therefore, the association between well-being and emigration plans was fully mediated by the two dimensions of rootedness. The current results also show that there are different psychological mechanisms. On one hand, the higher the well-being, the lower the desire for change and the lower the desire for change, the more likely it is that Slovak students will not plan to leave Slovakia. On the other hand, the higher the well-being, the higher the family rootedness and the higher the family rootedness, the more likely it is that Slovak students will not plan to leave Slovakia (for further details see Figure 1).

Figure 1.
The mediation effect of rootedness in the relationship between well-being and emigration plans in Slovakia.



For Bulgaria, the first model explained 13.3% of the variance in emigration plans. Similarly to Slovakia, higher well-being was significantly associated with a lower probability of having emigration plans ($b = -0.136$, $p < 0.001$). The relationship between gender and emigration plans was also not statistically significant. The second model, where rootedness was added, explained 29.6% of the variance in emigration plans. Unlike Slovakia however, well-being was still significantly associated with a lower probability of having emigration plans ($b = -0.240$, $p < 0.001$). For Bulgaria, only one dimension of rootedness – desire for change was found to make the largest contribution in explaining emigration plans. A greater desire for change was significantly associated with a higher probability of emigration plans ($b = 0.183$, $p < 0.001$). Interestingly, the second dimension of rootedness – family rootedness was not shown to be a factor significantly related to emigration plans. Gender was not found to be significant either (see Table 5 for further details).

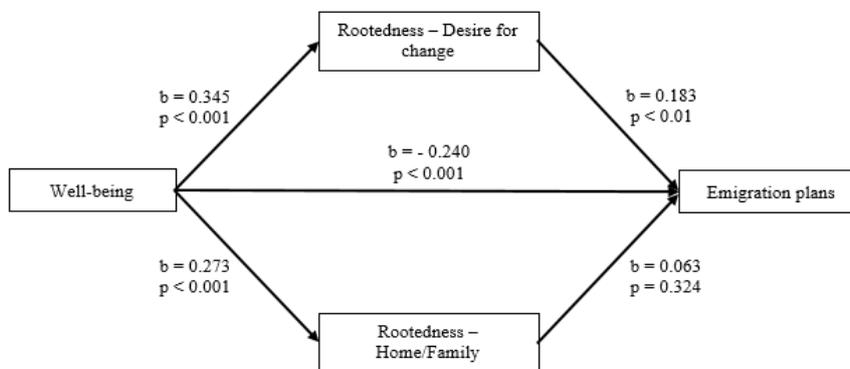
Table 5.
Regression model 1 and 2 - factors related to emigration plans among Bulgarian university students.

Model 1 ($R^2 = 0.133$)						
Predictors	B	S. E.	Exp(B)	95 % C. I for Exp(B)		Sig.
				Lower	Upper	
Gender*	- 0.249	0.326	0.780	0.411	1.477	0.445
Well-being	- 0.136	0.031	0.873	0.821	0.928	< 0.001
Model 2 ($R^2 = 0.296$)						
Gender*	- 0.205	0.353	0.815	0.408	1.627	0.561
Well-being	- 0.240	0.042	0.787	0.724	0.854	< 0.001
Rootedness – Home/Family	0.063	0.063	1.065	0.940	1.205	0.324
Rootedness – Desire for change	0.183	0.049	1.201	1.091	1.322	< 0.001

Note: *female as a reference group

The mediation analysis for Bulgaria showed that there was a significant direct effect of well-being on emigration plans, $b = -0.2402$, $p < 0.001$. The results also show that there was a significant indirect effect of well-being on emigration plans through rootedness – desire for change, $b = 0.0631$, BCa CI [0.0202, 0.1223]. In the case of rootedness – family rootedness, there was no statistically significant indirect effect observed. Therefore, the association between well-being and emigration plans was partially mediated by only one dimension of rootedness. This means that the higher the well-being, the higher the desire for change and the higher the desire for change, the more likely it is that Bulgarian students will plan to leave Bulgaria (see Figure 2 for further details).

Figure 2.
The mediation effect of rootedness in the relationship between well-being and emigration plans in Bulgaria



5. CONCLUSION/DISCUSSION

Although many theories of migration speak of the importance of economic and demographic factors in understanding migration behavior (Massey et al., 1998), the results of this exploratory study point to the fact that gender plays no role in developing emigration plans in either of the examined countries. Given this, Cai et al. (2014) have pointed out that there may be something else that needs to be considered. Like many others (e.g. Silventoinen et al., 2007; Hajduch et al., 2018), these authors found that people with higher well-being have a lower desire to emigrate. According to Cai et al. (2014), this is so because the relationship between subjective well-being and migration is more robust than the income-migration relationship.

It is of interest to see that well-being is perhaps not as important in creating student emigration plans as previously thought. This is not in line with previous findings, however. When considering the current results, it is important to take the country into account as we observed a discrepancy in the relationships between the examined factors and emigration plans in different countries. For Slovakia, the research has shown that rootedness has a much stronger relationship than well-being to developing emigration plans. In particular, a high desire for change can encourage (in the case of low well-being) the creation of emigration plans while high family rootedness can prevent (in the case of high well-being) the creation of emigration plans. This is in line with Cooke (2011) who found out that rootedness has an impact on migration in America. However, it is different for Bulgaria in

that well-being is still a strong predictor of emigration plans together with one dimension of rootedness – desire for change. High levels of well-being can prevent the development of emigration plans but surprisingly the high desire for change can encourage (despite high levels of well-being) the development of emigration plans. In Bulgaria, family rootedness had no impact on the formation of emigration plans. This is not in line with Hricová et al. (2017) who found that both dimensions of rootedness are significant predictors of emigration intentions.

The finding of most interest was that high levels of well-being among Bulgarian university students can simultaneously prevent and also encourage (through rootedness – desire for change) emigration. This is in line with Polgreen and Simpson (2011) or Ivlevs (2014) who found that the highest emigration rates have been observed in the most and the least happy countries. There are several reasons for this finding. Ivlevs (2014) tried to explain it through the Neoclassical model which predicts that the least happy people are more likely to migrate because they can get the most of it. He believes that some income is needed to deal with migration costs and that is the reason why it can be hypothesized that some level of happiness is needed to overcome the psychological barriers to migration. Beleva and Kotzeva (2001), who studied skilled migration in Bulgaria, have a different view on this issue. Since emigration is seen as a reasonable solution for many unemployed people, lower life satisfaction has been considered to explain this issue. Despite the fact that educated people in Bulgaria are in a better position in the labor market and thus more satisfied, their share in the total emigration flow is constantly increasing. According to these authors, Bulgaria tries to solve this problem by increasing the number of students but it has had a controversial influence on emigration. It is true that this has improved the position of more people in the internal labor market, thus reducing emigration intentions. However, the persistent social and economic problems that young people face after school support their emigration intentions (Beleva & Kotzeva, 2001).

Based on this, it can be hypothesized that even though people are satisfied at some point in their lives and have a high level of well-being, this does not mean that they expect such an experience in the future. Therefore, we believe that it is important to examine not only general well-being but also satisfaction with individual areas of life, the lack of which could potentially lead to emigration intentions.

The biggest limitation of this study concerns working with a small sample for both countries and also the gender imbalance. It is also important to mention that the sample was only made up of university students who comprise a small amount of the migrating population. Indeed, the majority of people migrate after they finish university. Nevertheless, we believe that looking at this particular section of the population makes sense as we follow emigration plans which are known to be reliable predictors of future migration behavior. Moreover, this study focuses on examining the psychological mechanism of migration, not the migratory population. Thus, our results provide a background for the formulation of further research intentions. Moreover, because the Cronbach's alpha coefficients for the rootedness subscales are relatively low, the psychometric limitations of this scale must be considered. However, there are several studies in which this scale has been used with similar values (Jorgensen & Stedman, 2001; Orosová et al., 2018). Rioux and Mokoukolo (2010) confirmed good psychometric quality of this scale in their study. Given the current situation in the world, it is necessary to note that data for this study were collected in the period before the outbreak of the COVID-19 pandemic. Thus, this research does not capture migration behavior during such a pandemic.

In this study, the focus was only on two countries – Slovakia and Bulgaria, so there is still an opportunity to extend this research to other countries. The country of a potential migrant has shown itself to be an important factor in developing emigration plans. Furthermore, this study only focused on part of the migrating population, so there is still an opportunity to extend this research by using a more complex sample.

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AUTHORS' INFORMATION

Full name: Frederika Lučanská, Mgr.

Institutional affiliation: Department of Psychology, Faculty of Arts, PJ Safarik University in Kosice (Slovakia)

Institutional address: Moyzesova 9, 040 59 Košice, Slovak Republic

Short biographical sketch: Frederika Lučanská is an internal PhD student in social psychology and work psychology studies at Pavol Jozef Šafárik University in Košice. She is currently working on the research project “Resilience and life satisfaction among Slovak university students studying in Slovakia and abroad”. Moreover, she is lecturing a prevention program mostly for the future teachers. The main goal is to educate them about the dangers of drug abuse and sexual risk behavior and also how to prevent it.

Full name: Oľga Orosová, Prof. PhDr., CSc.

Institutional affiliation: Department of Educational Psychology and Psychology of Health, Faculty of Arts, PJ Safarik University in Kosice (Slovakia)

Institutional address: Moyzesova 9, 040 59 Košice, Slovak Republic

Short biographical sketch: Oľga Orosová is a professor of Educational, Counselling, and School Psychology. She is a principal investigator of personal and interpersonal factors of changes in the risk behavior of university students, as well as the psychological mechanism of changes in the risk behavior of schoolchildren and university students and emigration / migration intentions. Moreover, she is a member in several scientific and professional societies: International School Psychology Association (ISPA), European Health Psychology Society (EHPS), The European Society for Prevention Research (EUSPR) and The International Society of Substance Use Prevention and Treatment Professionals (ISSUP).

Country Matters: Well-Being and Emigration Plans Among University Students in Slovakia
and Bulgaria: The Mediation Effect of Rootedness

Full name: Vihra Naydenova, Ass. Professor, PhD

Institutional affiliation: Department of Social, Work and Educational Psychology, Sofia University "St. Kliment Ohridski"

Institutional address: Sofia 1504, 115 Tsar Osvoboditel Blvd.

Short biographical sketch: Vihra Naydenova completed PhD program in Activities and Societies at Bielefeld University, Germany. At the same time she completed specialization in Human Resources, in Stress & Health Management and also participated in recruitment projects. Currently she is a lecturer in HR Management, Organizational psychology and Organizational Behavior at Sofia University "St. Kliment Ohridski". Moreover, she has certification and Practitioner Coach Diploma from Noble Manhattan Coaching, accreditation by the International Institute IIC&M and the Institute of Leadership and Management.

Full name: Jozef Benka, Mgr., PhD.

Institutional affiliation: Department of Educational Psychology and Psychology of Health, Faculty of Arts, PJ Safarik University in Kosice (Slovakia)

Institutional address: Moyzesova 9, 040 59 Košice, Slovak Republic

Short biographical sketch: Jozef Benka completed two PhD programs in Health Sciences at University of Groningen, the Netherlands and in Social Psychology at Pavol Jozef Šafárik University in Košice, Slovakia. While his teaching activities focuses especially on Personality psychology, Psychology of emotion and motivation and Self-determination theory, his research interests are mainly about quality of life in chronic disease and also about life perspective, wellbeing and risk behaviours of students and young adults.

Full name: Marta Dobrowolska Kulanová, Mgr. , PhD.

Institutional affiliation: Department of Educational Psychology and Psychology of Health, Faculty of Arts, PJ Safarik University in Kosice (Slovakia)

Institutional address: Moyzesova 9, 040 59 Košice, Slovak Republic

Short biographical sketch: Marta Dobrowolska Kulanová completed PhD program in Social psychology and organization psychology at Pavol Jozef Šafárik University in Košice, Slovakia. Her teaching activities are focused in particular on drug prevention. Furthermore, she is also involved in project concerning the psychological mechanism of changes in the risk behavior of schoolchildren. Risk behavior and emigration, migration intentions.

Full name: Lenka Abrinková, Mgr.

Institutional affiliation: Department of Psychology, Faculty of Arts, PJ Safarik University in Kosice (Slovakia)

Institutional address: Moyzesova 9, 040 59 Košice, Slovak Republic

Short biographical sketch: Lenka Abrinková is an internal PhD student in social psychology and work psychology studies at Pavol Jozef Šafárik University in Košice. She is currently responsible researcher of grant project "Intrapersonal and interpersonal factors of health-related behavior of high school students". She is also lecturing a prevention program of university students.

Chapter #12

SELF-REVIEW OF PARENTING STYLES: Experiences in a group of socially vulnerable mothers in Northern Brazil

**Rosângela Araújo Darwich¹, Ana Letícia de Moraes Nunes²,
& Agnes Caroline Alves de Souza³**

¹Graduate Program in Communication, Languages and Culture; Center for Health and Biological Sciences, Universidade da Amazônia, Brazil

²Center for Health and Biological Sciences, Universidade da Amazônia, Brazil

³Graduate Program in Communication, Languages and Culture, Universidade da Amazônia, Brazil

ABSTRACT

This study presents a group intervention with mothers of children from six to twelve years old in a situation of social vulnerability. We aimed to encourage the participants to identify the parenting style they adopt and alternatives for action, to test changes in behavior between group meetings and to evaluate the results of their efforts. The field research described corresponds to one of the focus groups created in 2018 in the context of an action research implemented at the University of Amazônia (UNAMA), Belém, located in northern Brazil. We selected five participants who were present in at least 60% of the ten weekly meetings. Verbal exchanges in meetings and individual interviews supported the formation of analysis categories corresponding to three parenting styles: authoritative or democratic, authoritarian, and permissive. The Social Skills Rating System - Brazilian version (SSRS) and a second individual interview were applied at the end of the meetings. We have verified changes towards the adoption of an authoritative parenting style, which generated positive impacts on family relationships. Social skills led to developments in the behavior of children at school, indicating that it is a way to overcome the situation of social vulnerability in which they find themselves.

Keywords: social vulnerability, parenting styles, non-coercion, social skills, resilience, group interventions.

1. INTRODUCTION

Situations of social vulnerability have specific features depending on the social contexts evaluated. Thus, the inequality of opportunity between different sectors of the population is not limited to the so-called Global-South. According to Fischer and Fröhlich-Gildhoff (2019), even in the case of Germany, a country that represents the Global North or the West very well, foreigners and their descendants are considered socially vulnerable, being the focus of different interventions since starting preschool.

Childhood is usually seen as a fundamental period for individual development. Longitudinal studies started in the 1950s on Kauai, an island in Hawaii, explain the importance of protective factors for the healthy development of children. Even when exposed to risk factors since birth, the presence of a significant adult in childhood, supporting and trusting them, favors the development of resilience and the overcoming of different challenges throughout development (Werner & Smith, 1982).

Protection and risk factors are being studied in different contexts (Buka, Stichick, Birdthistle, & Earls, 2001; Del Prette & Del Prette, 2017; Fischer & Fröhlich-Gildhoff, 2019). In this work, we highlight those related to parenting styles, considering that the way parents act to educate their children can have predictable positive and negative effects, although not always by themselves.

Parental styles were differentiated considering two dimensions of disciplinary practices - responsiveness to children's needs and parental demand. One of the styles is considered the most appropriate, as it represents the presence of the two dimensions (authoritative style). In the others, therefore, there is absence of both (negligent style) or the most striking presence of one of them, such as responsiveness (indulgent style) or demand (authoritarian style) (Weber, Prado, Viezzer, & Brandenburg, 2004). It is worth noting that Baumrind (1966) previously categorized only three parenting styles. Indulgent and negligent styles are a development of what he identified as permissive style.

On the other hand, aggressiveness, passivity and assertiveness are broad classes of interpersonal performances (Del Prette & Del Prette, 2011; Sigler, Burnett, & Child, 2008) that allow the establishment of the following statements: authoritative parents would be more assertive, while authoritarian parents would tend to be more imposing and even aggressive, and indulgent and negligent parents would be closer to passivity regarding their children's wishes and demands.

We consider this reasoning useful to evaluate parental behavior, to understand the educational style adopted in their families and, consequently, the degree of coercion in the family relationships. Therefore, we aimed to encourage the participants to watch the children and their family relationships, identifying the parenting style adopted and alternatives for action, test changes in behavior between group meetings and evaluate the results of their efforts.

2. BACKGROUND

Coercion and non-coercion are opposite terms. The former describes where punishment and the threat of punishment exists, and thus, escape and avoidance. Aggressivity tends to generate passivity over time or, on the other hand, mimicry of violent stances. The emotional effects are obviously negative. It is difficult to learn and apply self-control within a social relationship in which obedience is achieved with shouting. Creativity, spontaneity, self-confidence and trust in others are often compromised and, with them, the development of self-care and critical sense. On the other hand, non-coercion is present in the relationships in which all the involved parties have the right to speak and listen, as when the parents adopt an authoritative education style, with assertive stances (Sidman, 1989).

There is vast literature that highlights the value of assertiveness for the quality of interpersonal relationships and even for the quality of life. The assertive individual would be better able to express his thoughts and feelings, respectfully sharing his internal world. Being assertive also involves gathering words and acting consistently with them, favoring an alliance between understanding and being understood (Bolsoni-Silva & Loureiro, 2018; Sigler et al. 2008). According to Teixeira, Del Prette, and Del Prette (2016), one of the most widely used theories concerning assertiveness define it as an "ability to express feelings and desires appropriately, defend one's own rights and respect those of the other" (p. 57).

Considering that the authoritative parenting style results in relationships between parents and children (Weber et al., 2004), children who live with parents adopting it have assertiveness models at home since the beginning of life. Closing the argument, the positive

exchanges would favor social skills, the support, and the confidence necessary for the development of resilience.

Resilience is a term that can be opposed to vulnerability, although social vulnerability implies disadvantages that are widely distributed to a certain segment of the population. Such people are exposed to the continuation of the underprivileged situation in which they currently find themselves - and beyond, in the case of their descendants (Fischer & Fröhlich-Gildhoff, 2019; Silva, Cunha, Ramos, Pontes, & Silva, 2021; Wünsche & Fischer, 2020). Although strengthening individuals is not enough to reverse generalized social injustices, it is easy to see the doubly destructive effect of both social vulnerability and emotional fragility, especially in the family environment, where the protection of children's healthy development should be based.

Adverse childhood experiences (ACEs) are worth mentioning. As a source of the development of problems of all kinds, they reflect conflicts experienced in the family that can be directly related to the educational style adopted by parents, whether authoritarian or negligent. According to Overstreet and Chafouleas (2016), "children with higher numbers of adverse family experiences were more likely to have higher numbers of mental health diagnoses, and those with higher numbers of diagnoses were less likely to be engaged in school and more likely to be retained" (p. 2).

ACEs also correspond to situations of vulnerability that result from precarious access to social rights of all kinds (Woodbridge et al., 2015). In Brazil, differences between socioeconomic classes are considered natural and reproduced across generations. As well as among people, there are also differences between the regions of the country, with the north being a place of great poverty and helplessness (Almeida, 2010; Bertonecelo, 2016).

On the other hand, it would be a mistake to consider that the occurrence of vulnerability or even of coercion - with domestic violence being one of its most cruel faces - is restricted to the lower social classes or even to Brazil because it constitutes a serious problem at a global level that has become even more frequent in 2020, with the COVID-19 pandemic. While nature was able to restore itself, in the absence of human beings, the home space has often become violent, with demonstrations of strength and power from the strongest to the most fragile in the most varied countries (Marques, Moraes, Hasselmann, Deslandes, & Reichenheim, 2020; Sánchez, Vale, Rodrigues, & Surita, 2020).

Social dilemmas are difficult to reverse, but given the serious situation of domestic violence against women and also against children and teenagers, we are investing in research that seeks strategies to favor non-coercive social relationships, with emphasis on the family context. Social relationships are human creations, so that personal changes can have broad effects (Brito, Zanetta, Mendonça, Barison, & Andrade, 2005; Sidman, 1989).

With this field study we describe procedures that are being investigated and refined in an action research that combines non-coercion, social skills and resilience. We present group interventions with mothers in situations of social vulnerability. In the action research the procedures used are evaluated and improved to allow future advances.

3. PRESENTING THE RESEARCH WITH A GROUP OF MOTHERS

This field study corresponds to a group of mothers formed at UNAMA's school-clinic of psychology (CLIPSI) in 2018 in the context by a research implemented at the Universidade da Amazônia (UNAMA), in Belém, in northern Brazil, entitled "Experiential Groups and Life in Society: An Interdisciplinary Intervention" (Darwich & Garcia, 2019). The activities regarding the group of mothers were initially described by three researchers, Psychology students (Braga, Santos, & Santos, 2018).

Fifteen mothers made up the group described in this study, selected from their children's enrollment form at CLIPSI. They agreed to participate in weekly exchanges and reflections with other mothers, via telephone communication, under the coordination of two psychologists and support from psychology students. Details of the research were also passed on to them.

Those families are considered poor and are therefore in a situation of social vulnerability. This implies that they live on about one minimum wage and that children attend public schools where the failure and dropout rate is high, while the probability of accessing professions that would guarantee an improvement in purchasing power is low. According to Fornari (2010), school failure and dropout are a social problem because they represent exclusion. The absence of mothers at group meetings is indicative of the difficulties they face on a daily basis. None of them had 100% participation.

3.1. Methods

Five mothers out of a group of fifteen participated in the study. The inclusion criterion was an attendance in at least 60% of the ten weekly meetings held. The mothers had a total of six children, as two of them were siblings (two boys, 10 years old and 12 years old). The mothers' ages ranged from 20 to 40 years and the children's, from 6 to 12 years.

The participants' identification is made by the letter "B" or "G", meaning respectively "boy" or "girl", accompanied by the child's age. So, we have B6, G7, B9, B10, B11 and B12 (just one girl). As needed, we use B10/12 to indicate a sibling's mother.

The sample is inconsistent in terms of family relationships, gender and children's and mother's age because of two factors: mothers were invited to participate because they needed free assistance for children and because a more consistent sample would mean including mothers who participated in a small number of meetings. Thus, we present the intervention that was possible, valuing, above all, the participants' need for help.

We also believe that a group of mothers is a much more favorable alternative than subjecting their children to individual psychotherapies, not least because the waiting list is a reality that can make people wait for long periods. Only one of the fifteen mothers in the larger group remained in favor of child therapy.

Before the beginning of the meetings, the mothers were submitted to an individual, semi-structured interview where they were asked what types of behavioral problems they identify in their children.

During the meetings, the conversation circle started with the shared reading of a poem, followed by reflections on themes brought up by the participants, such as general information on the positive effects of assertiveness and coping with problems through dialogue; negative effects of punishments, escapes and avoidances; relationships between actions, thoughts and feelings; and how to favor self-esteem and self-confidence (Del Prette & Del Prette, 2017; Guilhardi, 2002; Sidman, 1989, Skinner, 1965). Reading poems together turned out to be a form of greeting from which a first question was derived, initiating the exchange of impressions and information. Moreover, a conversation script was prepared in advance, based on the literary text and allowing reflection on the participants' life context.

Using the content analysis methodology (Bardin, 2011), three categories of analysis were created, corresponding to the authoritarian, permissive and authoritative parenting styles. In order to analyze the results, we considered that such categories represent, respectively, the adoption of mainly aggressive, passive and assertive attitudes in disciplinary practices, according to examples that are presented in the results section.

After the meetings, the Social Skills Rating System - Brazilian version (SSRS) was used with the mothers. It is a tool for reporting social skills, behavior problems and academic competence in children produced by Gresham and Elliott (1990), with translation and semantic validation into Portuguese (Bandeira, Del Prette, Del Prette, & Magalhães, 2009). It is worth mentioning that this version was submitted to validation processes through the “Principal Components” data reduction method (Freita, Bandeira, Del Prette, & Del Prette, 2016). In addition, a second semi-structured interview was applied, this time focusing on the behavioral changes of the children and themselves and on the contribution of the focus group to behavioral changes. Both instruments were applied individually.

3.2. Results

In response to the semi-structured interview conducted prior to the start of the meetings, the mothers reported four types of behavioral problems of their children: aggression (always in the presence of disobedience), difficulty in studies, difficulty in socializing, and anxiety and sadness. The types of problems presented by the children correspond to demands that led the mothers to seek help in a psychology clinic. They did not add specific difficulties in educating their children that resulted from their own problems or deficiencies. However, as they accepted to participate in a group of mothers, we believe that they have recognized themselves as part of the solution to the problems faced with their children - even though they still did not perceive themselves clearly as parts of such problems.

When the meetings started, four out of the five participants described attitudes typical of the authoritarian parenting style, with several examples of aggressive posture and difficulty regarding responsiveness, also pointing out situations in which they showed little empathy towards their children’s demands. The reports can be exemplified as “he only obeys when I shout” and “I have no patience with him because he doesn’t want to study”. One of the participants, G7, on the contrary, adopted the permissive parenting style, being frequently passive towards child’s demands, according to reports like “she only does what she wants” and “I can’t keep insisting”. Only at the end of the meetings was it possible to identify the adoption of the authoritative style through reports such as “I explain the rules better and I can talk to him in a friendly and peaceable manner” and “we are much closer to each other”.

Figure 1 shows children’s behavioral problems before and after the mothers’ participation in the group, their social abilities and behavioral changes, as well as mothers’ behavioral changes. The data were collected through the initial and the final interviews, and of the standardized instrument (SSRS).

Figure 1.

Behaviors	B6	G7	B9	B10	B11	B12
Children's problems (initial interview)	Aggression	Aggression; difficulty in studies and in socialization	Aggression; difficulty in studies	Aggression; difficulty in socialization	Aggression; difficulty in studies	Aggression; difficulty in studies; anxiety and sadness
Children's problems (SSRS)	Average	Above upper average	Above upper average	Above upper average	Above upper average	Above upper average
Children's social abilities (SSRS)	Above average	Way below average	Above average	Below average	Below average	Below average
Children's changes (final interview)	More sociable; attentive to rules	More sociable; improvement in studying	More sociable; improvement in studying	More sociable	More obedient	More sociable
Mothers' changes (final interview)	Positive	Positive	Slightly more positive	Positive	Positive	Positive

According to the mothers, all children showed aggression and disobedience, four of them showed difficulty in studies (children of G7, B9, B11 and B12) and two of them, difficulty in socialization (children of G7 and B10). The 12-year-old son of B12, already entering adolescence, was the only one reporting anxiety and sadness. His case, along with that of the only girl participant, were the most serious, with a total of three types of problem. Furthermore, only one type of problem was identified by B6's son, the youngest child (aggression and disobedience).

When it comes to the behavioral problems identified through the application of the standardized instrument, only B6's son showed an average result. The balance between resources and deficits in such items and subscales was an indicator of the need for preventive care by those responsible (parents and teachers). The other children showed results above the upper average, suggesting serious problems and the need for social skills training. Considering the percentiles, the oldest son of B10/12 is below the son of B6, yet with a reasonable result when compared to the others.

Still using the standardized instrument, regarding social skills, the children of B6 and B9 obtained results above average, indicating an elaborate behavioral repertoire, while the other children obtained results below average, indicating the need for social skills training. The lowest result, considered much below average, was obtained by the girl.

Thus, the children of B6 and B9 obtained good results in terms of social skills, but only the son of B6 obtained a better result than the other children in terms of behavioral problems. On the other hand, although with similar results to most children in terms of behavioral problems, G7's daughter differed negatively from all other children in terms of social skills.

In the final interview, in a situation of spontaneous speech, an important contradiction was perceived in relation to results achieved through the standardized instrument, as it was possible to identify positive changes in the behavior of all children, regarding even social skills. In addition, mothers reported positive changes in their own behaviors. The disparity

between the information draws attention to the use of standardized instruments with participants not familiar with the use of Likert scales.

The comparison between the mothers' responses in the two interviews shows that the behavior problems that B6's son had initially presented, he overcome, as disobedience and aggression gave way to the adoption of a more sociable posture and greater attention to rules. In the case of G7's daughter, the problems were also solved, as greater sociability at home and with colleagues constrained the postures of disobedience, aggressiveness and socialization deficits initially pointed out, in addition to the improvement in studies. B9's son did not have relationship problems with other children, but otherwise his case was like that of the girl, just as his advances became. B10's son also had problems similar to the girl's, but without the difficulties in studies so his advances occurred in two problem areas, of family interaction and with children. B11's son had the same problems as B9's and, despite having become more obedient, did not improve in his studies. The older son of B12 does not seem to have overcome emotional problems, such as sadness and anxiety, nor his difficulties in studies, but he has become more sociable, which can be considered as an important step for the realization of other changes, mainly when one takes into account that the family context has changed positively with the advances of the mother and brother.

As for the behavior changes of the participants, B6, initially authoritarian, reported to have adopted the authoritative style. B9, although giving examples of less aggressive and more assertive exchanges with her son, still shouted at his son when being disobeyed. The other participants, two of which with previously aggressive posture (B10/12 and B11) and one with passive posture (G7), started to talk more with the children, reproducing the dialogue and the assertive reflections characteristic of the group's meetings.

It is worth pointing out that, despite having the same mother, the 10-year-old child presented more positive results than the 12-year-old, which may be due to the fact that the mother described, in the beginning, more generalized and profound problems in the case of the older child.

A short case study of a child concerning parenting style of the mother before and after the intervention is added in order to provide an overview of the results of behavior changes in the family. B9's son was chosen because he surpassed the group's results in SSRS in reference to the high score both in social skills and in behavior problems. His mother was also the one who most oscillated between assertive and aggressive attitudes in relation to her son at the end of the interventions, but this represented a significant improvement over her initial aggressive postures.

Initially, B9 indicated that her son had problems such as aggressivity, disobedience and difficulty in studies and, at the end of the meetings, pointed out his advances in these areas. According to her, the child has communicated and interacted better with her and his friends. For example, at a birthday party, he served another child a piece of cake, something he had never done before.

The son's results seem to reflect the mother's results. B9 became more assertive - and so did he. However, he still disobeys her, and in those situations, she continues to react with screams. Thus, it became easier for him to be assertive in his relationships with friends and, moreover, with himself, in the sense of greater investment in the school area, where he started to show more interest. He even learned to read.

4. FUTURE RESEARCH DIRECTIONS

It is necessary to investigate the parallel formation of groups of mothers and groups of children, as well as the formation of groups of parents and, to establish closer relations with schools, groups of teachers and with the technical staff. Besides investigating parenting educational styles with a focus on adult reporting and interpretation, procedures should be designed to conduct data gathering directly with children.

With the COVID-19 pandemic, we have decided to hold focus groups meetings via internet, with the participation of parents. The composition of groups of children, however, was not possible, as they needed to be accompanied by parents. This way, direct exchange between children and researchers became unfeasible. However, we developed family intervention strategies, with the creation of storytelling videos, available on the YouTube platform, accompanied by Google forms with conversation scripts. When parents watch videos together with their children and then talk to them about the impact of stories on them, both parties can establish fun and non-coercive exchanges. Contact with parents through groups formed on WhatsApp and privately allows researchers to monitor established family relationships. Advances and problems that arise and persist are also the focus of dialogue.

“Quero colo!” is an example of a video created based on a children’s book (Barbieri & Vilela, 2016) that is available in our playlist “Lendo com os Grupos Vivenciais” (“Reading with the Experiential Groups”). As the images correspond to different places and cultures, the reading was performed by eight people, two from each of the following countries: Portugal, Germany, Mexico and the United States.

A possible future direction of research is the realization of both types of meeting, in person and online, in the context of the formation of focus groups. The contact with the stories can also favor the pleasure of reading and thus, more directly the children’s school activities, as pointed out by Peres, Naves, and Borges (2018).

5. CONCLUSION

The participants in this research were encouraged to observe their children and to report their behavior to identify the impacts caused by the way the children treated them. The perception of oneself through the perception of the other is important for the understanding that relational problems can be solved when one of those involved takes the initiative to review and change himself or herself. In cases of relationships between parents and children, being aware of the parenting style may favor the adoption of attitudes that correspond to the description of rules and limits in an empathic and flexible way. Prior to the group meetings, all mothers were far from adopting an authoritative parenting style. By the end of them, they have reversed that.

It is important to note that in all five cases there was more dialogue and flexibility in the families, and also less shouting, more attention, greater affection, and a greater focus on the child, accompanied by praise. We verified that only one participant managed to change towards the adoption of the authoritative style because in her case there was a clear balance between the assertive presentation of rules and limits through active listening to the child and flexibility. In other cases, rules and limits continued to be imposed in a less flexible or less consistent manner, although the positions adopted have become more affectionate and all participants have reported important advances in the quality of the family relationship.

In other words, with the exchanges established in the meetings and the gradual construction of greater self-knowledge and sensitivity in the face of different perspectives, changes towards the adoption of an authoritative parenting style were observed in varying degrees among the participants. If adults are role models for children, they are also for other adults. Thus, the focus group became a place of speech and care; being part of it meant an opportunity to listen and be heard, to agree and disagree, and to receive the necessary support to apply the knowledge acquired in the family's daily life. According to Bethell et al. (2017), "advances in human development sciences point to tremendous possibilities to promote healthy child development and well-being throughout life by proactively supporting safe, stable and nurturing family relationships (SSNRs), teaching resilience, and intervening early to promote healing the trauma and stress" (p. 51).

It is worth mentioning the "domino effect" of the changes the participants have made. Assertiveness and empathy in the family environment generated positive impacts on the children's school life. The new attitudes of mothers also tend to encourage children to develop resilience. Altogether, we can foresee the encouragement of personal resources construction, with necessary social consequences in the fight to overcome the situation of social vulnerability in which a large portion of the population of Brazil finds itself.

Procedures designed for groups of mothers in a situation of social vulnerability in northern Brazil through face-to-face or internet-mediated meetings can be a starting point for future research in other states and even in other countries. We made use of poems and other literary texts, as well as stories for children that can be read to them or watched in a family setting with the aim of valuing the beauty in literature and, thus, encouraging both pleasure in reading, as well as reflections on one's own life history. We believe that the instruments used in the meetings can be adapted to the peculiarities of each other group, since the original idea of our research is precisely to develop interventional technology adapted to our region, and remaining open to exchanges with other cultures.

As an example, in one of our studies we used six storytelling videos for children, three of them included text in Portuguese and in German. We use the foreign language as a way of causing strangeness and then the possibility of reflection about what represents everything that we initially do not know and classify as "different from us".

Another possible development corresponds to building a transnational understanding of social vulnerability in international research groups (Darwich, Fischer, Souza, & Costa, 2019; Waldis & Duff, 2017). Research groups have a great challenge: to continue forming alliances and strengthening perspectives that favor the struggle against the global perspective of oppression and estrangement between countries and people.

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AUTHORS' INFORMATION

Full name: Rosângela Araújo Darwich

Institutional affiliation: Graduate Program in Communication, Languages and Culture; Center for Health and Biological Sciences, Universidade da Amazônia (Brazil)

Institutional address: 287, Av. Alcindo Cacela. Belém, Pará, Brazil

Short biographical sketch: Psychologist and professor of the Post-Graduate Program in Communication, Languages and Culture (PPGCLC) and graduate of the Psychology School at the Universidade da Amazônia (UNAMA). Doctor in Psychology: Theory and Research of Behavior (Universidade Federal do Pará, 2007) and specialist in Cognitive-Behavioral Therapy (CENSUPEG, 2019). Postdoctoral internship at the Protestant University of Applied Sciences Freiburg, Germany (2019). Coordinator of the action-research project "Poetry in Daily Life: Experiential Groups and Resilience" (UNAMA, 2020-2022) and member of the research group "Narrative and Media Events: methodological challenges for the apprehension of 'glocal' Amazonian experiences" (PPGCLC/UNAMA, PPGCOM/UFT and PPGCOM/UFGM), contemplated by the CAPES Notice 21/2018 (PROCAD-Amazônia).

Self-Review of Parenting Styles:
Experiences in a group of socially vulnerable mothers in Northern Brazil

Full name: Ana Letícia de Moraes Nunes

Institutional affiliation: Center for Health and Biological Sciences, Universidade da Amazônia (Brazil)

Institutional address: 287, Av. Alcindo Cacela. Belém, Pará, Brazil

Short biographical sketch: Specialization in Teaching of Higher Education (2008), Master's (2005) and Doctorate (2010) in Psychology: Theory and Research of Behavior (Universidade Federal do Pará). Experience in caring for children with chronic diseases and their families in the context of health (Reference Service in Neonatal Screening of Pará - UEPA), school and educational psychology / inclusive education (Special Ed. Coordination - SEDUC). Professor of the Psychology course (Universidade da Amazônia). Participates in the research and extension project: "Poetry in Daily Life: Experiential Groups and Resilience" (UNAMA, 2020-2022).

Full name: Agnes Caroline Alves de Souza

Institutional affiliation: Graduate Program in Communication, Languages and Culture, Universidade da Amazônia (Brazil)

Institutional address: 287, Av. Alcindo Cacela. Belém, Pará, Brazil

Short biographical sketch: Masters in the Post-Graduate Program in Communication, Languages and Culture at the Universidade da Amazônia (UNAMA), with a scholarship from the Coordination for the Improvement of Higher Education Personnel (CAPES). Specialist in People Management from Faculdade Integrada Brasil Amazônia (FIBRA) and Psychologist graduated from Centro Universitário do Vale do Ipojuca (UNIFAVIP).

Section 2
Cognitive Experimental Psychology

Chapter #13

RELATION OF LEARNING STYLE TO INTERCULTURAL SENSITIVITY AND INTERNATIONAL ATTITUDES AMONG JAPANESE UNDERGRADUATES

Yoshitaka Yamazaki & Michiko Toyama

Bunkyo University, Japan

ABSTRACT

This study empirically explored how learning style relates to intercultural sensitivity and international attitudes in the context of a Japanese university. A total of 109 undergraduate students completed three questionnaires: Kolb's Learning Style Inventory, Chen and Starosta's Intercultural Sensitivity Scale, and Yashima's International Posture as a measure for international attitudes. Because the factor structure with constituent items of the Intercultural Sensitivity Scale was unresolved, we first examined the configuration of its latent constructs and then identified four underlying components. In terms of intercultural sensitivity, results of regression analysis illustrated that a learning style with a focus on acting over reflecting significantly negatively related to Anxious Interaction and marginally related to Affirmative and Enjoyment Interaction. Results for international attitudes revealed that the same learning variable was significantly associated with Intercultural Approach Tendency, Interest in International Vocation, and Willingness to Communicate to the World, whereas the learning variable of thinking versus feeling was marginally negatively related to Intercultural Approach Tendency. In conclusion, the study suggests that the learning style dimension of action versus reflection has a stronger influence on intercultural sensitivity and international attitudes than the learning dimension of thinking versus feeling.

Keywords: learning style, intercultural sensitivity, international attitudes, Japanese undergraduates.

1. INTRODUCTION

Through various initiatives over the past 25 years, the Japanese government has worked to internationalize Japanese higher education. The first initiative involved an increase in the number of international students from 10,000 in 1983 to 100,000 (Rothman, 2020). That goal was achieved in 2003 (MEXT, 2004). The subsequent initiative established the goal of receiving 300,000 international students from foreign countries until 2020 and increasing the number of Japanese students who study abroad (MEXT, 2008). In line with this initiative, the Japanese government offered a global human resource development program through selected Japanese universities. Since the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT) articulated the magnitude of shifting towards globalization of Japanese higher education, many universities have continued to advance initiatives to prepare their students for globalized contexts. To facilitate the government initiative, the Japan Student Service Organization with the cooperation of Japanese firms launched a study abroad program for Japanese students in 2014. The program intends to send abroad a total of 180,000 Japanese university and high school students (MEXT, 2020a).

The implementation of the government strategy has allowed Japanese educational institutions to help Japanese students develop English proficiency (Toyama & Yamazaki, 2019a) with an emphasis on frequent communication (MacWhinnie & Mitchell, 2017). Although the number of foreign students in Japan has increased in higher educational institutions over the past few decades (MEXT, 2020b), the communication orientation in the strategy may be challenging for Japanese students due to their feeling of shyness in classroom situations (Doyon, 2000), which is a Japanese cultural tendency (Yamazaki, 2005), and more generally, due to Japanese ethnic identity (Goharimehr, 2018). Recent studies have further indicated that Japanese students have various complex perceptions related to the importance of intercultural understanding (Numata, 2013) and not one-size-fits-all attitudes towards cross-cultural matters (Kurahashi, 2017). It is crucial to foster students' capability to deal with cross-cultural and international situations based on a social psychological perspective of interpersonal relations, communications, behaviors, and attitudes (Yashima, 2001). It is thought that Japanese students need to learn in cross-cultural contexts where they feel, think, and act to acquire demanding competencies and knowledge that address intercultural situations. In line with this perspective, our study sought to understand if there is a relationship between a way of learning, which is called *learning style*, and psychological aspects of Japanese university students in terms of cross-cultural communication.

Research on the relationship between learning style and cross-cultural psychological aspects is not new. Indeed, literature in the domain of cross-cultural studies has shown that learning style is related to cross-cultural communications of high-context versus low-context dimensions (Yamazaki, 2005), cross-cultural psychologies of independent self versus interdependent self (Yamazaki, 2005), work satisfaction in an international context (Yamazaki & Kayes, 2010), and cultural intelligence (Li, Mobley, & Kelly, 2013). More generally, Barmeyer (2004) discussed that "learning styles are culture-bound cognitive schemes" (p. 591). However, when turning our attention to intercultural sensitivities and international attitudes examined in Japanese educational contexts (see Elwood & Monoi, 2015; Suzuki & Saito, 2016; Yashima & Zenuk-Nishide, 2008), we found very little research on how learning style relates to those psychological variables. The current study attempted to fill this gap.

In this study, we assumed that individuals learn, shape, and develop intercultural sensitivity and international attitudes according to their environment. Since individuals' intercultural sensitivity changes and develops over time in cross-cultural circumstances (Straffon, 2003), several studies have examined the effect of cultural sensitivity training on counselors' relationship with clients (Wade & Bernstein, 1991), on foreign language teaching (Bordie, 1970), and on health care workers (Bohanon, 2018). Similarly, with regards to international attitudes, the literature has suggested that individuals change their attitudes through diversity training where they learn attitudes. For example, the study of Tan, Morris, and Romero (1996) revealed that diversity training was effective in changing participants' attitudes and knowledge. Thus, it can be thought that intercultural sensitivity and international attitudes are learned based on experiences from participating in training programs. As learning involves "a holistic process of adaptation to the world" (Kolb, 1984, p. 31; Kolb & Kolb, 2017), it seems possible that a particular style of learning is related to intercultural sensitivity and international attitudes that can be learned in order to adapt to an international environment. Yet, we do not know much about how learning style is associated with these two cross-cultural psychological variables in the context of Japanese higher education. Accordingly, this study explored two research questions:

- How is learning style related to intercultural sensitivity in Japanese higher education?
- How is learning style related to international attitudes in Japanese higher education?

2. LITERATURE REVIEW

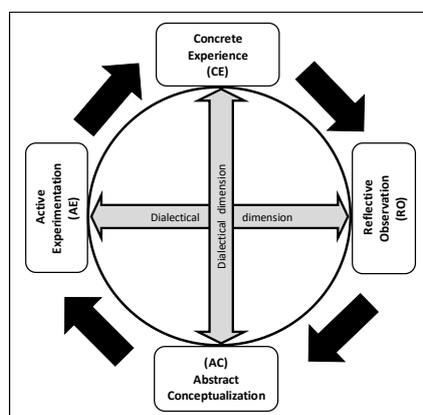
2.1. Learning style

Learning style is defined as “an individual’s preferred way of responding (cognitively and behaviourally) to learning tasks which change depending on the environment or context” (Peterson, Rayner, & Armstrong, 2009, p. 520). Over decades, many scholars, educators, and practitioners have focused on learning style (Kolb & Kolb, 2017), and various types of learning styles have been theorized (Peterson et al., 2009). Hawk and Shah (2007) argued that there are six learning models represented as a typical learning style paradigm (see Dunn & Dunn, 1978; Entwistle & Tait, 1995; Felder & Silverman, 1988; Fleming, 2001; Gregorc, 1979; Kolb, 1984). For example, learning style is relevant to individuals’ human function in order to process information through concentration, internalization, and retention (Dunn & Dunn, 1978). In addition, it is related to individuals’ skills or capabilities such as kinesthetic, aural, visual, reading, and writing (Fleming, 2001)—which was called the VARK learning style model (Fleming, 2001). Kolb (1984) illustrated that learning style describes individuals’ preferred approach to knowledge creation and skill acquisition through interaction between the person and the environment. Although different models of learning style exist with different definitions (Honigsfeld & Schiering, 2004), Demirbas and Demirkan (2007) explained that the approaches to the development of a learning style model used by theorists and researchers have been similar. Among multiple learning models proposed in the literature (Cassidy, 2004), we used Kolb’s (Kolb, 1984; Kolb & Kolb, 2017) experiential learning theory (ELT) and model because it has been applied in numerous cross-cultural studies (Yamazaki, 2005), which are thought to be associated with this study. Also, uniquely, Kolb’s ELT is characterized by a focus on individuals’ experiences as a source of learning (Kolb, 1984; Kolb & Kolb, 2017).

In developing ELT, Kolb drew on the perspectives of influential scholars including William James, John Dewey, Kurt Lewin, Jean Piaget, Lev Vygotsky, Carl Rogers, Paulo Freire, Carl Jung, and Mary Parker Follett (Kolb & Kolb, 2017). Kolb’s learning model consists of four learning modes: concrete experience (CE), reflective observation (RO), abstract conceptualization (AC), and active experimentation (AE). The CE mode requires feeling and sensing in the immediate experience of a learning situation, while the AC mode, in contrast, calls for thinking and using logic to form concepts based on the experience. The two modes in this dimension involve different ways of grasping experience, and they are dialectically opposed to each other. The RO learning mode requires reflecting on the experience, while the AE mode involves action to examine the conceptualized idea. The two modes in this dimension serve to transform an individual’s experience in a distinct way, and they are also dialectically opposed. Each person tends to prefer one learning mode over the other in each learning dimension.

In Kolb’s experiential learning model, the CE mode calls for grasping proximate experience, which leads to a foundation of reflection in applying the RO mode. Subsequently, the RO mode serves to transform the experience from apprehensive knowledge into comprehensive knowledge, which the AC mode does through employing logic and concepts. Then, the abstract form of comprehensive knowledge becomes a basis for the AE mode, which requires transforming abstraction to a new experience that the CE mode grasps. Figure 1 illustrates Kolb’s learning style model.

Figure 1.
Kolb's learning style model.



2.2. Intercultural sensitivity and international attitudes

Intercultural sensitivity has been studied in the field of cross-cultural studies for several decades. Several scholars defined intercultural sensitivity as “a sensitivity to the importance of cultural differences and to the points of view of people in other cultures” (Bhawuk & Brislin, 1992, p. 414), “the ability to discriminate and experience relevant cultural differences” (Hammer, Bennett, & Wiseman, 2003, p. 422), and an “individual’s response to cultural differences and perspectives” (Straffon, 2003, p. 488). Since intercultural sensitivity is thought to be a skill set of intercultural competence (Moore-Jones, 2018), individuals can acquire and develop this ability in a learning situation. Within the cross-cultural literature, scholars have largely agreed that individuals who are more interculturally sensitive will become more interculturally competent (Wang & Zhou, 2016). Chen and Starosta (2000) developed the Intercultural Sensitivity Scale with 24 items. The scale was designed to measure individuals’ intercultural sensitivity as the affective component of intercultural communication, which is the core construct of an upper layer built on affective, cognitive, and behavioral aspects (Chen & Starosta, 2000). The Intercultural Sensitivity Scale has a five-factor structure: Interaction Engagement, Respect of Cultural Differences, Interaction Confidence, Interaction Enjoyment, and Interaction Attentiveness. However, several studies documented inconsistent factorial configurations, including a three-factor structure (Suzuki & Saito, 2016) and a five-factor structure with different constituent items (Petrovic, Starcevic, Chen, & Komnencic, 2015). In this study, we attempted to examine the configuration of the Intercultural Sensitivity Scale before applying it for analysis.

Since intercultural sensitivity is mainly related to emotions (Wang & Zhou, 2016), it seems to be relevant to the concrete experience (CE) learning mode of Kolb’s learning model that requires using feeling and sensing to catch immediate experience. However, intercultural sensitivity also involves the cognitive and behavioral facets of interaction (Wang & Zhou, 2016), as discussed earlier. In this regard, it is thought that intercultural sensitivity requires applying entire human functions of feeling, thinking, and acting; thus, it entails applying the learning modes of abstract conceptualization (AC) and active experimentation (AE), as well as the CE mode. It could be inferred that intercultural

sensitivity is related to learning style, but the question remains how learning style variables link with it, which corresponds to our first research question.

International attitudes have been investigated in the domain of English as a foreign language as the concept of International Posture proposed by Yashima (2002, 2009). This concept was influenced by Gardner's construct of Integrativeness, developed to identify individuals' attitudes towards cross-cultural or international situations/events (Denies, Yashima, & Janssen, 2015). The International Posture measure originally had five subscales corresponding to five factors. For this study, however, we eliminated the subscale of Ethnocentrism due to its low psychometric values, as reported by Yashima (2002). The other four factors of International Posture include Intercultural Approach Tendency, Interest in International Vocation, Interest in Foreign Affairs, and Willingness to Communicate to the World.

When considering the relationship between learning style and international attitudes, it seems important to understand the complexity of the structure of attitudes (see Ajzen, 1989). According to the tripartite model of attitudes, three components represent affect, behavior, and cognition (Breckler, 1984). Like the three aspects of intercultural sensitivity, when international attitudes are configured as those components, it would seem that international attitudes are also associated with learning style modes. Our second research question directly addressed this issue.

3. METHODS

3.1. Sample

Participants for this study were 109 undergraduates of a Japanese university located near Tokyo. They belonged to the departments of business administration and information society. Seventy-three (67%) students were majoring in business management, including 19 sophomores (26%), 44 juniors (60%), and 10 seniors (14%), while 36 students (33%) were majoring in information society, including 31 (86%) juniors and 5 seniors (14%). Of the 109 participants, 44 (40%) were women and 65 (60%) were men. Their average age was 20.1 years ($SD = 0.65$). In the spring 2019 semester, one of the authors explained the purpose of this study in class and distributed and collected survey questionnaires from the students. After gathering the survey questionnaires, the authors entered the data and then kept paper copies in a locked cabinet.

3.2. Instruments

The study applied three questionnaires—Kolb's (1999) Learning Style Inventory, the Intercultural Sensitivity Scale, and the International Posture measure—with the addition of demographic questions. To analyze the learning style of Japanese undergraduates, we used the third version of Kolb's (1999) Learning Style Inventory (LSI). The LSI is composed of 12 questions. Each question includes four choices that are consistent with the four learning modes. A sample LSI question is "When I learn, (1) I am happy, (2) I am careful, (3) I am fast, and (4) I am logical." Students are required to rank the four choices in order from 4 (most preferred) to 1 (least preferred). The degree of a student's learning tendency is calculated from the sum of the score for each learning mode. Subtraction of one total score from the other in the same learning dimension determines the student's relative learning preference (i.e., concrete experience vs. abstract conceptualization; reflective observation vs. active experimentation); the two dimensions are regarded as learning style variables in this study.

For the Intercultural Sensitivity Scale (Chen & Starosta, 2000), we examined its factor structure of 24 items through exploratory factor analysis, applying the method of maximum likelihood with the direct oblimin. The results showed that five factors were initially extracted. Then, we employed a technique of a factor loading of at least 0.5 due to the sample size of 109, the guideline of eigenvalues > 1 , and consideration of items that had cross-loading with another factor. Consequently, we finalized four factors with a total of 15 items. Subsequently, confirmatory factor analysis showed a chi-square score of 210.04 ($p < 0.01$), goodness of fit of 0.83, comparative fit index of 0.84, and root mean square error of approximation of 0.10. The four factors comprised Affirmative & Enjoyment Interaction (6 items), Anxious Interaction (3 items), Negative Perceptions (3 items), and Respect of Cultural Differences (3 items). The Cronbach's α coefficients for those components ranged from 0.70 to 0.84, all of which were acceptable. A sample question item for Affirmative & Enjoyment Interaction is "I enjoy interacting with people from different cultures"; for Anxious Interaction, "I find it very hard to talk in front of people from different cultures"; for Negative Perceptions, "I think people from other cultures are narrow-minded"; and for Respect of Cultural Differences, "I respect the values of people from different cultures."

To investigate students' international attitudes, this study employed the International Posture measure developed by Yashima (2002, 2009). For this measure, the Cronbach's α coefficients were 0.78 for Intercultural Approach Tendency (7 items), 0.72 for Interest in International Vocation (6 items), 0.58 for Interest in Foreign Affairs (4 items), and 0.66 for Willingness to Communicate to the World (6 items). A sample question item for Intercultural Approach Tendency is "I want to make friends with international students studying in Japan"; for Interest in International Vocation, "I want to work in a foreign country"; for Interest in Foreign Affairs, "I often read and watch news about foreign countries"; and for Willingness to Communicate to the World, "I have thoughts that I want to share with people from other parts of the world."

4. RESULTS AND DISCUSSION

4.1. Research question 1: Learning style and intercultural sensitivity

Regression analysis was used to determine how learning style relates to intercultural sensitivity, as well as how learning style and intercultural sensitivity relate to international attitudes. Results indicated that a learning style variable of more acting over reflecting (AE – RO) significantly related to Anxious Interaction ($\beta = -0.26$, $p < 0.01$) and was marginally associated with Affirmative and Enjoyment Interaction ($\beta = 0.19$, $p < 0.10$). However, other relationships between learning style variables and intercultural sensitivity variables were insignificant. This result implies that individuals who learn by using more action than reflection will have less anxiety when interacting with culturally different people and tend to have more Affirmative and Enjoyment Interaction. Table 1 summarizes results of the regression analysis.

Table 1.
Results of Regression Analysis of Learning Style and Intercultural Sensitivity.

Variable entered	Dependent variables			
	Affirmative & Enjoyment Interaction	Anxious Interaction	Negative Perceptions	Respect of Cultural Differences
	β			
AC-CE (thinking vs. feeling)	0.03	-0.13	-0.01	-0.02
AE-RO (acting vs. reflecting)	0.19 [†]	-0.26**	-0.15	0.03
<i>F</i>	1.84	4.04*	1.25	0.09
<i>R</i> ²	0.03	0.07	0.02	0.00

** $p < 0.01$, * $p < 0.05$, [†] $p < 0.10$.

The results seem to be consistent with those of prior studies that investigated learning style and state and trait anxiety (Ayalp & Özdemir, 2016; Toyama & Yamazaki, 2019b). Compared with those with a Converging learning style (with a focus on AC and AE), those with a Diverging learning style (with a focus on CE and RO) had more state and trait anxiety (Toyama & Yamazaki, 2019b) and more test anxiety (Ayalp & Özdemir, 2016). It is thought that too much reflection without action elicits pessimistic feelings that lead to anxiety in general. In contrast, those with an action orientation in a learning situation tend to have optimistic feelings when facing challenges and taking risks, leading to increased opportunities for development of the ability of affirmative and enjoyable interaction.

4.2. Research question 2: Learning style and international attitudes

Table 2 illustrates results of the regression analysis for how learning style variables relate to four international attitudes. The results showed that the learning style variable of more thinking over feeling (AC – CE) was marginally negatively related to Intercultural Approach Tendency ($\beta = -0.18$, $p < 0.10$). Since the learning mode of concrete experience (feeling) is linked with a competency of forming good human relationships with others (Boyatzis & Kolb, 1991), those who use the feeling learning mode more than the thinking learning mode may tend to be more communicative and more involved with foreigners. The results also indicated that a learning variable of more acting over reflecting (AE – RO) was significantly associated with Intercultural Approach Tendency ($\beta = 0.28$, $p < 0.01$), Interest in International Vocation ($\beta = 0.39$, $p < 0.01$), and Willingness to Communicate to the World ($\beta = 0.19$, $p < 0.05$). An active orientation toward learning might lead to development of more interests relevant to the outer world, in contrast to a reflective orientation of learning that engages the inner world.

Table 2.
Results of Regression Analysis of Learning Style and Intercultural Attitudes.

Variable entered	Dependent variables			
	Intercultural Approach Tendency	Interest in International Vocation	Interest in Foreign Affairs	Willingness to Communicate to the World
	β			
AC-CE (thinking vs. feeling)	-0.18 [†]	-0.09	0.01	-0.09
AE-RO (acting vs. reflecting)	0.28**	0.39**	-0.08	0.19*
<i>F</i>	7.55**	11.45**	0.37	2.84 [†]
<i>R</i> ²	0.13	0.18	0.07	0.05

** $p < 0.01$, * $p < 0.05$, [†] $p < 0.10$.

4.3. Implications

The study results have practical implications. Results showed a relationship between learning style and two psychological variables—intercultural sensitivity and international attitudes—indicating that a learning style with a stronger active than reflective mode has a strong effect on those cross-cultural psychological factors. If a university wishes to decrease students' anxious interaction with foreigners and enhance their international attitudes, particularly in terms of Intercultural Approach Tendency, Interest in International Work, and Willingness to Communicate to the World, instructors should work to develop students' AE learning mode (active experimentation). When students are hesitant to take an active role in class, instructors should encourage them and motivate them by giving positive, warm, and friendly feedback. In a group session, instructors should create a safe atmosphere, which is called psychological safety (Edmondson, 1999). In such a place, students feel that they can take risks without penalty or criticism. An accumulation of active behavior could develop the AE mode that leads to an increase in international attitudes.

The study results also have implications for higher education in Japan. In Japanese higher education, a traditional teaching method is favored that focuses on lectures with reading assignments in order to transfer knowledge from teachers to students; the educator acts in the role of subject-matter expert (Kolb & Kolb, 2017). In this context, Japanese students get used to watching and listening in class but have difficulty expressing their thoughts and opinions. Since the results illustrated the significance of the active over reflective orientation for intercultural sensitivity and international attitudes, it is suggested that teaching methods shift from a teacher-centered to a student-centered approach in higher education. This shift may develop Japanese students' active learning orientation in class to better foster a fundamental capacity of intercultural sensitivity and international attitudes. To respond to this challenging shift, it is important to study teachers' perspectives. Promising studies include a question of how teachers behave with their students, how they educate them in class, and what competencies they need to develop in terms of cross-cultural contexts.

Finally, in the COVID-19 pandemic, face-to-face cross-cultural interactions in higher education are limited. Again, since our study showed that an active learning orientation is likely to relate to part of intercultural sensitivity and international attitudes, higher education should better utilize an interactive instructional method through online rather than one-way communication approach like videotapes or instruction by documents. It is thought that a more interactive method better develops an active learning mode, compared

with a one-way method. Also, it may be good to create an online platform where students with different cultural backgrounds exchange views and ideas in order to not only understand other cultures but also learn and acquire an active, affirmative learning tendency towards them.

5. CONCLUSIONS

Our study explored how learning style is associated with intercultural sensitivity and international attitudes. The results led us to conclude that learning style relates to intercultural sensitivity and international attitudes, but the relationship depends on the type of learning style variables and the type of underlying factors in intercultural sensitivity and international attitudes. More specifically, a learning variable of active over reflective modes tends to be more influential than that of thinking over feeling modes in terms of sensitivity and attitudes in a cross-cultural context.

6. LIMITATIONS

One study limitation concerns methodology. Among the three measures, the Intercultural Sensitivity Scale needs to be improved based on the fit indices described in the confirmatory factor analysis. The root mean square error of approximation of 0.10 indicated a poor model fit regarding factor structure because it was larger than 0.06 (Hu & Bentler, 1999). Also, two subscales of International Posture had low reliability, with scores of 0.58 for Interest in Foreign Affairs and 0.66 for Willingness to Communicate to the World; thus, these two subscales should be strengthened in terms of their reliability. Another limitation related to the demographic characteristics of the sample. This study involved students majoring in management and information society in a Japanese university. Most intended to work for business-type organizations. To generalize our conclusion of the importance of the learning variable of active versus reflective modes in relation to intercultural sensitivity and international attitudes, further studies should include participants with different majors and from different universities in diverse countries. Also, this study was limited to 109 undergraduates, and a future study should use a larger number of participants. Finally, our study focused on three variables and explored the relationships among them by applying quantitative methods. Although several statistically significant relationships were found, it is critical to employ triangulation with a different approach such as a qualitative study design including participant interviews to offer richer information on how the variables are related.

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AUTHORS' INFORMATION

Full name: Yoshitaka Yamazaki

Institutional affiliation: Bunkyo University

Institutional address: 1100 Namegaya, Chigasaki, Kanagawa 253-8550 Japan

Short biographical sketch: Dr. Yamazaki is a full professor of management in the Faculty of Business Administration of Bunkyo University in Japan and is currently serving as the department chair of Business Administration. He received his Ph.D. in organizational behavior from Case Western University. His research interests include expatriate management, learning and development in organizational settings as well as higher education contexts, and foreign language learning and its effective environments. He is involved in a research project on assessment of cross-cultural competencies. He teaches human resource management, human resource development, cross-cultural management, and international career development.

Full name: Michiko Toyama

Institutional affiliation: Bunkyo University

Institutional address: 1100 Namegaya, Chigasaki, Kanagawa 253-8550 Japan

Short biographical sketch: Dr. Toyama is an associate professor of English in the Faculty of Business Administration of Bunkyo University in Japan. She received her Ph.D. in linguistics from Sophia University, Japan. Her research interests include computer-assisted learning, affective learner variables, English as a foreign language education, and intercultural communication. She is currently involved in the following research projects: Internet use in higher education, classroom strategies to improve affective learner variables, and effective learning environments relevant to learning style. She is responsible for curriculum management in foreign language and cultural studies for the business students at Bunkyo.

Chapter #14

WELLBEING OF MILITARY PERSONNEL AS REFLECTED IN SLEEP QUALITY

Gabriela Kloudova¹, Vaclav Gerla², Kristyna Rusnakova¹, Jiri Mezulanik³, & Miloslav Stehlik¹

¹*Sport Research Institute of the Czech Armed Forces, Czech Republic*

²*Czech Institute of Informatics, Robotics, and Cybernetics, Czech Technical University in Prague, Czech Republic*

³*Department of Economics and Social Sciences, University of Business and Law plc, Prague, Ostrava branch, Czech Republic*

ABSTRACT

Military service is both physically and mentally demanding, so the purpose of this text is to find the best selection of methods that can describe the wellbeing of soldiers. In this study, we chose two specific military groups that have very different tasks in the Czech Army to determine their actual physical and mental states. The first group was the military Castle Guard, and the second group was military paratroopers. Both of these groups underwent psychological testing of personality, IQ, self-evaluation, cognitive abilities, and the motivation to perform the duties of military service. Physical health was tested by a body composition analysis, health-related biochemical parameters, sleep analysis, and diagnostics on the musculoskeletal apparatus. Our study aimed to find significant associations that have an impact on the wellbeing of elite Czech military units, and for this purpose, we used the association rule learning method. The results of this study demonstrate that the most significant associations were found between wellbeing reflected in life satisfaction and the health condition of soldiers and their quality of sleep.

Keywords: military personnel, wellbeing, combat readiness, sleep analysis.

1. INTRODUCTION

Military personnel are daily confronted with mental and physiological challenges given by a difficult working environment defined by its rules, responsibilities, and discipline. To perform well under these conditions, it is necessary to consider both mental and physical wellbeing within a single context (Hernández-Varas, Encinas, & Suárez, 2019). This study aims to reveal the current state of the Czech Army in the very different, but both highly responsible, aspects and to see which components play the main role in their wellbeing. Since the Czech Army is fully professional and it's more and more difficult to find competent personnel, it is important to help current soldiers keep fit. This broad-spectrum study was prepared to find the most useful methods to detect the mental and physical states of soldiers, which is subsequently reflected in their rate of injuries, chronic pain, and lowered motivation. The purpose is to find the most significant connections between life and work satisfaction and the current state of cognitive functions, sleep quality, and health conditions. These connections are not necessarily limited to the work environment, but they extend to the domestic environment as well. This chapter is an extension of a previously published article (Kloudova, Gerla, Rusnakova, Belobradek, & Stehlik, 2020).

2. BACKGROUND

This broad-spectrum study was designed to verify the mental and physical wellbeing of military units. Since the ways of measuring wellbeing are numerous, it is vital to establish the effective conceptualization and the clarity of what is meant to be measured (Fisher, 2014). Wellbeing is usually perceived through judgments made by the individual himself. But beyond those generalities, the phenomenon has many forms, and it might be helpful to incorporate some objective methods as well. Military personnel are usually tested regarding their work stress rather than their non-occupational issues, many of which play a crucial role in a person's wellbeing (Sanchez, Bray, Vincus, & Bann, 2004). This study might be perceived as job satisfaction research, which is usually limited to the job itself. However, wellbeing is also reflected in the time spent outside work and overall satisfaction with personal life, including its time management, relaxation, appearance, and relationships, that might influence life vitality and professional performance. Soldiers regularly undergo psychological testing, which is utilized in describing, explaining, predicting, and modifying behaviors (Nwafor & Adesuwa, 2014). However, to prevent possible problems, it is necessary to include testing for motivation, cognitive ability, self-evaluation, and IQ, as well to keep performance at the highest level. A high motivation to work in the military and a dedication to the cause can help protect against posttraumatic stress disorder (PTSD) together with better intellectual functioning (Kaplan et al., 2002). Good cognitive abilities are usually a decisive factor in a soldier's tasks, and they should be kept at the highest possible level. Findings indicate that when soldiers are under stress their decision-making and cognitive functioning are significantly decreased, which can also result in lowered shooting accuracy (Nibbeling, Oudejans, Ubink, & Daanen, 2014).

There is evidence that poor sleep, as seen in insomnia, may cause cognitive impairments (Fulda & Schulz, 2001). Moreover, poor sleep can be associated with additional health concerns, less physical activity, less vitality, and more emotional problems (Zammit, Weiner, Damato, Sillup, & McMillan, 1999). Even one night of sleep deprivation can cause considerable deterioration in alertness and performance, which makes accidents in the workplace more likely (Van Dongen, 2006). Good and poor sleepers differ in working memory, fluid intelligence, and the shifting of their attentional set (Buysse, 2014), which has a big influence on combat performance. Studies show that the quality of sleep is affected by occupation, and there is a significant association between the quality of life in military forces and their sleep patterns (Roustaei, Jamali, Jamali, Nourshargh, & Jamali, 2017). Especially in the military environment, sleep can be impaired because of common shift changes. Night-shift soldiers have significantly worse sleep efficiency as compared to day-shift soldiers. They also reported more problems falling asleep and staying asleep compared to the day-shift (Peterson, Goodie, Satterfield, & Brim, 2008). Disrupted sleep, as is usually seen in military personnel on duty, results in a high risk of daytime sleepiness and fatigue (Toblin et al., 2012). A sleep deficit decreases combat performance, and there is a significant association between the number of hours of sleep and the incidence of mistakes and potential accidents (LoPresti et al., 2016). Sleep is essential for normal brain functioning and emotion regulation. Its loss can lead to mood changes, cognitive impairment, and abnormal hormonal rhythms (Wilson & Nutt, 2008). Unfortunately, among the military, little attention is paid to sleep quality. When taking breaks, the rest areas for soldiers are not optimized for healthy sleep, as sleeping areas are usually uncomfortable and noisy (Troxel et al., 2015). The same situation was described by the soldiers tested in our study, and it is true for the Czech Army overall. Sleep is currently disregarded during operational planning, although it might produce significant advantages in increased readiness and resilience (Mysliwiec, Walter, Collen,

& Wesensten, 2016). In operational planning, the breaks and spare time are not well-organized, so, instead of sleeping, soldiers communicate with their families or play video games (Pruiksma & Peterson, 2018). Too much excitement before sleep produces insomnia among military personnel (Bonnet & Arand, 2010; Ramos, Arvelo, & Gomez, 2013).

The biochemical parameters related to stress and overload are usually cortisol, creatine kinase (CK), and urea. Fatigue is most accurately reflected in urea for endurance activity. On the other hand, for strength training, the best blood-borne marker reflecting fatigue is increased CK (Hecksteden et al., 2016). Creatine kinase is an enzyme that catalyzes the conversion of creatine to creatine phosphate, which serves as energy storage in the body. Serum CK increases in healthy participants right after exercise which consists of a very intense muscular load, and it is probably the best biochemical marker of muscle fiber damage (Mougios, 2019). Urea is formed in the liver, and it is the end product of protein metabolism - amino acid degradation. In the body, it serves as the main product of the excretion of excess nitrogen from the body. After performing a long-lasting exercise, there is usually a higher concentration of urea present in the blood (Virus & Virus, 2001). The accumulation of urea does not change during short-term exercise, but it increases with longer-lasting effort and depends primarily on the duration and intensity of exercise (Mougios, 2019). Cortisol is known to be a key factor in the biological stress response, and it mainly contributes to the regulation of stress responses (Glienke & Piefke, 2017). An increased release of cortisol occurs in a body facing a stressor by up to ten times the normal amount (Lüllmann, Mohr, & Wehling, 2004). Measuring cortisol at rest can help estimate physical and mental stress, while measuring cortisol after exercise can show the adaptation of the body to a certain stress load level (Mougios, 2019). Exercise based on endurance can cause significant changes in resting cortisol values (Anderson, Lane, & Hackney, 2016). Stress also significantly affects the quality of sleep, which can be reflected in cortisol secretion. Cortisol secretion is suppressed in sleep, and therefore during sleep deprivation the level of night cortisol increases slightly. In long-term sleep deprivation, the cortisol level tends to remain higher and can be a marker of chronic insomnia (Basta, Chrousos, Vela-Bueno, & Vgontzas, 2007).

While a number of test batteries and procedures are used in the military to determine physical fitness, muscle strength, and endurance, unfortunately, they are often not sufficiently relevant or reliable to predict an increased risk of injury or to assess real physical performance (Malmberg, 2011; Larsson, Tegern, & Harms-Ringdahl, 2012). Due to the discrepancy between the requirements for military personnel and their actual physical abilities, a risk of chronic disability may occur (Larsson et al., 2012; Payne & Harvey, 2010). The test of muscle imbalance could be a good indicator of possible future problems. This is because the number of individuals with muscle imbalance has increased. Muscle imbalance especially occurs in the lower limbs, which are usually caused by incorrect posture or inappropriate lifestyle (Kang et al., 2011). Many sports facilities, including those in the military environment, are more focused on the upper limbs, which can also cause muscle imbalance (Kang et al., 2011). If the muscular imbalance is in the range of 10% of muscle strength, it increases the frequency of injuries in athletes (Askling, Karlsson, & Thorstensson, 2003).

3. PARTICIPANTS

The participants tested were from two military groups significantly different in their types of duty. The first group consisted of 105 men working as the Castle Guard, ensuring the protection of the Czech president and other statesmen. The second group consisted of 101 men working as paratroopers (military parachutists) in the Czech Army. Their duty is quite

different in physical demands and also in keeping a different sleep schedule. The airborne group gets a full night's sleep, even when on duty, but the Castle Guard group sleeps in 2-hour intervals. The schedule is divided into a 2-hour duty, a 2-hour rest, and 2-hour preparation for the next duty, including night shifts. On the other hand, the airborne group has much more strenuous physical demands, and there is a greater risk of injuries.

4. METHODS

To analyze sleep and its impact on the performance of soldiers on duty, we used **actigraphy** to extract the main actigraphic variables. For this purpose, we used a Mindpax MindG bracelet actigraphic device, which is a battery-powered unit with a Kionix KX022 accelerometer. Detailed indexes derived from actigraphic data include: average sleep time per 24-hour period, time to fall asleep, wake-up time, number of arousals during sleep, sleep efficiency estimate, amount of daily sleep, amount of daily activity, chronotype estimate, percentage and stability estimates of individual sleep stages (deep sleep, light sleep, REM), the regularity of wake-up time, speed of falling asleep, etc. These indexes were computed as a mean value over multiple days (2-14 days for individual participants). AKTI_IND features were transferred to a 5-point scale, where 1 is the minimum, 2-3 is average for the given population, and 5 is the maximum.

The body composition measurement device was a Tanita foot-to-foot and hand-to-foot bioelectrical impedance analyzer. The MC780U Multi Frequency Segmental Body Composition Analyzer was used in this study and provided data on weight, body fat, fat mass, muscle mass, total body water, body mass index, bone mass, and basal metabolic rate.

Biochemistry data were obtained by a biochemical analysis from a blood sample. For all participants, a capillary blood sample was taken and immediately analyzed using a dry chemistry method (SPOTCHEM™ EZ SP-4430). Further, hormone cortisol was measured in the blood sample by the enzyme-linked immunosorbent assay (ELISA).

The muscle endurance test was based on the McGill test (McGill, Childs, & Liebenson, 1999) protocols divided into four core endurance tests. The participants were instructed to hold a static position for as long as possible. The endurance tests included the trunk flexor test, the trunk extensor test, and the bilateral side bridge test.

Cognitive tests were administered to measure the level of the cognitive performance of the soldiers. The test battery contained the psychomotor vigilance test (PVT), Go/NoGo, visual search, inhibition of return, the Corsi block test, and the Mackworth clock task. The tasks assigned are described in more detail in the PsyToolkit SW (Stoet 2010; Stoet 2017).

Psychological data were obtained by the NEO-PI-R personality test which can detect the main tendencies for neuroticism, depression, conscientiousness, and agreeableness (Costa & McCrae, 2008). The motivation to work in the military and to perform daily duties was measured by a series of questions covering the weekly schedule of the soldiers, including work, family, and leisure balance, and their motivation to make any changes. Another method was mapping the life satisfaction of the soldiers tested using a self-evaluation questionnaire based on life satisfaction scales (Fahrenberg, Myrtek, Schumacher, & Braehler, 2001) adapted and shortened for the military environment. The task was to evaluate each item on a scale of 1-10 from worst to best. The test had 10 scales referring to appearance, health, independence, physical fitness, work success rate, sexual performance, ability to satisfy one's partner, vitality, and life satisfaction. The IQ test used was the Efekt computer-based test, which along with the usual IQ score provided data about the level of aspiration of the participants tested based on Kurt Lewin's research (Lewin, Dembo, Festinger, & Sears, 1944). Strategy feature tells us how accurately the person evaluates his abilities. The points awarded are based on the level of another question the participant chooses after failure or correctly answered question. So, the higher the number of points is the higher aspirations the person has, and the

person takes more risks. The Cata feature in the Efekt test means that, even after a correct answer, the person lowers his aspirations and chooses an easier question. The Pole feature is about overestimating abilities, because the person chooses a more difficult question after a failure. So, the lower the number of points is the greater the level of aspirations the person has.

All of the last three mentioned tests were specially constructed by CASRI (Sport Research Institute of Czech Armed Forces) for this research project, although their significance among military personnel has already been proven in previous projects conducted by the Czech Armed Forces.

5. RESULTS

5.1. Feature extraction and selection

The first step to define the results was feature extraction and selection. In this study, we obtained a total of 149 features (see Table 1). We do not describe all the features in detail due to the high number of features and their nature.

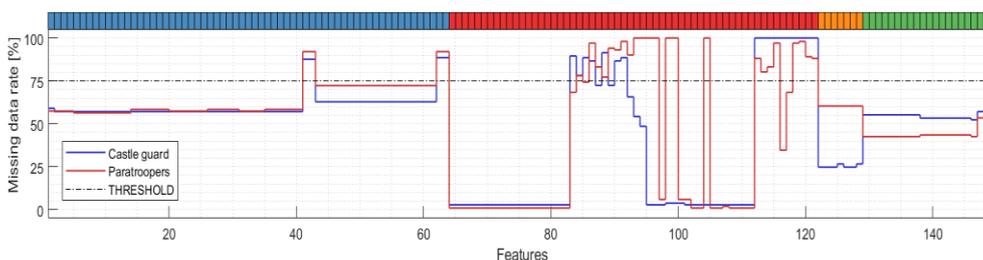
Table 1.

List of extracted features. The table provides a brief overview of all 149 features. The most important features are discussed in more detail in the Results section. The last column shows the color for each group.

Group name and acronym	Number of features	Short description	Color
Actigraphy AKTI	63	Detailed indexes derived from actigraphic data: average sleep time per 24-hour period, time to fall asleep, wake-up time, number of arousals during sleep, sleep efficiency estimate, amount of daily sleep, amount of daily activity, chronotype estimate, percentage and stability estimates of individual sleep stages (deep sleep, light sleep, REM), the regularity of wake-up time, speed of falling asleep, etc. These indexes were computed as a mean value over multiple days (2-14 days for individual participants) and are marked as AKTI_RAW. AKTI_IND features were transferred to a 5-point scale, where 1 is the minimum, 2-3 is average for a given population, and 5 is the maximum.	
Health condition BIO	58	Highly detailed anthropometry information (age, height, and 21 other body composition measurement values obtained from Tanita), number of years in the army, a muscle endurance test for each limb, biochemistry data (UREA, CK – creatine kinase, cortisol).	
Cognitive tests KOGNI	7	Final scores for 6 cognitive tests and summary mean score over all 6 tests.	
Psychological data PSYCHO	21	Subjective data from the questionnaires was used: NEO-PI-R personality test, work motivation, self-evaluation, IQ, and aspiration level tests.	

In this study, we worked with incomplete data, because it was not possible to perform all the necessary experiments on all the participants analyzed. The final missing data rate is shown in Figure 1. Features whose missing data rate was above the threshold $th = 75\%$ for at least one dataset were removed and not considered in further analyses. The total number of features after feature rejection was 118.

Figure 1.
Missing data rate for both datasets over all 149 features.



5.1.1. Association rules learning

We used association rules-based machine learning to discover interesting relationships hidden in both datasets. Association rules allow us to identify more complex dependencies that could not be detected by a simple algorithm, such as correlation analysis. An apriori-type algorithm for generating the association rules executed in the Weka software was applied (Frank, Hall & Witten, 2016). The algorithm iteratively reduces the minimum support until it finds the required number of rules with the given minimum confidence. Confidence (conf: in Tables 2 and 3) is computed as the proportion of the examples covered by the premise that is also covered by the consequence. We used a “lift” metric with the minimum of criteria set to 1.1. Lift is confidence divided by the proportion of all examples that are covered by the consequence. This is a measure of the importance of the association that is independent of support. The description of the data showed in Tables 2 and 3 regarding results are explained in Table 1 and in the Methods section.

As typical for association rule learning, the number of rules found was enormous. The total number of association rules found for the Castle Guard group was 757,599 and for the paratrooper group 307,304. The most relevant results are based on counting only simple rules across different groups with a lift > 2 . The number of rules found for the Castle Guard group was 190 and for paratrooper group was 20. In Table 2 and Table 3, the most significant results for each group regarding the lift parameter can be found. This is a direct output of the Weka software (Frank et al., 2016).

Table 2.
Best rules found for the Castle Guard dataset.

	Real wake time	Number of participants
1.	AKTI_RAW__Median_wake_time_h="(7.32-9.08]" 17 ==>	PSYCHO__Self-evaluation__Vitality="(7.9-8.6]" 11 conf:(0.65) < lift:(4.53)>
2.	PSYCHO__Self-evaluation__Vitality="(7.9-8.6]" 15 ==>	AKTI_IND__Continuity_of_sleep_estimated_by_number_of_microarousals="(2.6-3]" 12 conf:(0.8) < lift:(3.65)>
3.	AKTI_IND__Continuity_of_sleep_estimated_by_height_of_microarousals="(2.6-3]" 23 ==>	PSYCHO__Self-evaluation__Independence="(9.5-inf)" 11 conf:(0.48) < lift:(3.59)>
4.	AKTI_IND__Sleep_efficiency="(2.6-3]" 23 ==>	PSYCHO__Self-evaluation__Appearance="(6.8-7.2]" 11 conf:(0.48) < lift:(3.59)>
5.	PSYCHO__Self-evaluation__Health="(8.5-9]" 16 ==>	AKTI_IND__Average_number_of_arousals="(2.6-3]" 12 conf:(0.75) < lift:(3.42)>
6.	PSYCHO__Self-evaluation__Ability_to_satisfy_partner="(7.9-8.6]" 17 ==>	AKTI_IND__Average_time_to_fall_asleep="(2.8-3]" 12 conf:(0.71) < lift:(2.96)>
7.	AKTI_IND__Average_time_to_fall_asleep="(2.8-3]" 25 ==>	PSYCHO__Efekt__Strategy="(380.9-422.8]" 12 conf:(0.48) < lift:(2.8)>
8.	AKTI_RAW__Average_time_of_awakening="(5.8-7.75]" 28 ==>	PSYCHO__Self-evaluation__work_success_rate="(7.6-8.4]" 11 conf:(0.39) < lift:(2.58)>
9.	AKTI_RAW__Daytime_sleep_in_hours="(1.94-2.86]" 13 ==>	PSYCHO__Efekt__Cata="(-inf-0.3]" 11 conf:(0.85) < lift:(2.47)>
10.	PSYCHO__Efekt__Cata="(-inf-0.3]" 36 ==>	AKTI_IND__Estimated_time_spent_in_a_deep_sleep="(2.6-3]" 18 conf:(0.5) < lift:(2.28)>

Self-evaluated vitality has the most significant association with median wake time (lift:4.53) and continuity of sleep (lift:3.65). The longer the subject sleeps and the more continuous sleep the subject gets, the greater the life vitality the subject perceives. There are more sleep-relevant features, like the continuity of sleep and self-perceived independence (lift:3.59), sleep efficiency and appearance (lift:3.59), and the lower number of arousals during sleep which are reflected in self-evaluated health (lift:3.42). Also, the self-evaluation of the ability to satisfy one's partner is mostly related to the average time to fall asleep (lift:2.96). The participants that fall asleep more regularly feel more capable of satisfying their partner. The average time to fall asleep is also related to the level of accurate aspirations from the Efekt test, as shown by the Strategy feature (lift:2.8). A more regular time of awakening is related to the self-perceived work success rate (lift:2.58). More daytime sleeping lowers participants' aspiration, as reflected in the Cata feature together with a lower time spent in a deep sleep (lift:2.28).

Table 3.
Best rules found for the paratroopers' dataset.

1.	KOGNI__CORSI="(40-50]" 13 ==> PSYCHO__Self-evaluation__work_success_rate="(7.9-8.6]" 10 conf:(0.77) < lift:(2.99) >
2.	AKTI_RAW__Dispersion_of_sleep_effectivity_%="(1.3-1.95]" 14 ==> Self-evaluation_work_rate_success="(7.9-8.6]" 10 conf:(0.71) < lift:(2.77) >
3.	AKTI_RAW__Number_of_awakenings_per_hour_>_10_min="(-inf-0.04]" 23 ==> BIO__Anthropometry__Basal_metabolism_kcal="(2097.5-2225.4]" 10 conf:(0.43) < lift:(2.31) >
4.	BIO__Anthropometry__total_body_water_kg="(50.75-53.62]" 20 ==> AKTI_RAW__Number_of_awakenings_per_night_>_10_min="(-inf-0.45]" 11 conf:(0.55) < lift:(2.22) >
5.	AKTI_IND__Average_length_of_sleep="(-inf-3.1]" 21 ==> PSYCHO__Self-evaluation__Independence="(8.6-9.3]" 11 conf:(0.52) < lift:(2.2) >
6.	BIO__Anthropometry__Body_weight_kg="(69.35-80.84]" 32 ==> PSYCHO__Motivation_to_work="(-inf-0.26]" 11 conf:(0.34) < lift:(1.93) >
7.	AKTI_RAW__Average_time_to_fall_asleep="(21.52-inf)" 32 ==> PSYCHO__SAT__Neuroticism="(497.6-541.62]" 11 conf:(0.34) < lift:(1.83) >
8.	BIO__Biochemistry__CK="(-inf-4.32]" 47 ==> PSYCHO__Self-evaluation__Work__success_rate="(6.5-7.2]" 11 conf:(0.23) < lift:(1.82) >
9.	AKTI_IND__Sleep_efficiency="(2.6-3]" 16 ==> PSYCHO__Efekt__Pole="(-inf-455.5]" 12 conf:(0.75) < lift:(1.8) >
10.	AKTI_RAW__Dispersion_of_night_sleeping_time_in_hours="(0.87-1.16]" 15 ==> BIO__Anthropometry__Body_weight_kg="(80.84-92.33]" 11 conf:(0.73) < lift:(1.76) >

The most significant association in the paratroopers' dataset was found between the score in cognitive testing (KOGNI_CORSI) and self-evaluated work success rate (lift:2.99). These results seem accurate, since the paratroopers need to concentrate and have precise and effective decision making. Professional success is also related to a low level of dispersion of sleep efficiency (lift:2.77), which means that the person usually gets the same effective sleep over the 14-day measurement period. Other significant biological associations were found, such as a low percentage of awakenings and higher basal metabolism (lift:2.31) together with higher total body water (lift:2.22). The more continuous sleep the person gets the better basal

metabolism the person has, together with a healthier water ratio in the body. Lower length of sleep is related to a lower self-evaluation of independence (lift:2.2). Motivation to work is lowered by increasing body weight (lift:1.93). Longer average time to fall asleep points to increasing neuroticism, as measured by a personality test (lift:1.83). The work success rate was reflected in biochemical features such as CK (creatine kinase). It reflects fatigue and muscle fiber damage, which usually occurs after intense endurance training. The lower CK that was present in the blood the lower the self-perceived work success rate that soldiers mentioned (lift:1.82). If the sleep efficiency is within the average range, the more accurate aspirations the subject had regarding the Pole feature in the Efekt test (lift:1.8). Increased body weight can be also reflected by the dispersion of night sleeping time in hours (lift:1.76).

6. CONCLUSION/DISCUSSION

The purpose of this study was to examine the most useful methods and feature extraction algorithms that effectively reflect the physical and mental health of the Czech Armed Forces. Since the workload and work schedule can vary among military units, we chose two specific units that have very different duties and organizational planning. In the Results section, only the 10 most significant associations based on lift parameters were chosen. The differences between these units can be seen in the results, where the features for the Castle Guard group were mostly related to sleep quality. The paratrooper unit had slightly different results more closely related to biological markers, although sleep plays a role in their health and work success as well. The health condition is reflected more in the work success of the paratroopers than the Castle Guard group, since their job is mostly physically demanding and without optimal body weight and fitness, they are not able to perform.

The results indicate that self-perceived vitality, work success, and health condition are mostly reflected by sleep-related features. Given the analysis of the 118 features extracted from various fields and commonly used methods to determine military personnel vitality (fatigue, work success, and overload), the sleep-related features demonstrated the most relevant associations.

To make conclusions for the military environment as a whole, it is necessary to differentiate between units, their work schedules, and their mental and physical demands. So, we cannot expect these results to be applied uniformly to all military personnel, which represents a substantial limitation. Also, a limitation of this study is the research sample, since it wasn't possible to follow all of the 215 soldiers in total, due to their work assignment changes over the two years of the research. Some of the results are based on less than 20 participants, which implies they are not statistically significant.

Still, our results indicate a clear need for discussing and ensuring better sleep hygiene practices, which are often routinely disregarded during operational planning.

Giving these findings, the goal of new research might consider potential ways to measure various military units. Future possibilities can be also found in the proper education of the soldiers. Doing so, they would be able to follow the guidelines of a healthy lifestyle in their spare time to maintain mental and physical fitness and to improve operational longevity and combat performance. The implications of the study findings for applied psychology lie within a wider range of testing wellbeing. Defined as such, wellbeing is a very comprehensive construct, based not only on psychological but also on physiological features, including sleep and health-related parameters.

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AUTHORS' INFORMATION

Full name: Gabriela Kloudova

Institutional affiliation: CASRI - Sport Research Institute of Czech Armed Forces

Institutional address: Podbabska 3, Prague 6, Czech Republic

Email address: gabriela.kloudova@gmail.com

Short biographical sketch: Military and sport psychologist specialized in human performance analysis and peak performance of military personnel. She is currently working in the research center of the Czech Ministry of Defense as a Research Psychologist. Her main area of expertise is in work with psychophysiological methods used for increasing the mental resilience of top athletes, military pilots, and other soldiers performing in extreme conditions.

G. Kloudova, V. Gerla, K. Rusnakova, J. Mezulanik, & M. Stehlik

Full name: Vaclav Gerla

Institutional affiliation: Czech Institute of Informatics, Robotics, and Cybernetics, Czech Technical University in Prague

Institutional address: Jugoslavských partyzanu 1580/3, 160 00 Praha 6-Dejvice, Czech Republic

Email address: vaclav.gerla@cvut.cz

Short biographical sketch: Vaclav Gerla received M.Sc. degree in Biomedical Engineering and Ph.D. degree in Artificial Intelligence and Biocybernetics, both from Czech Technical University in Prague. He is currently a member of the Cognitive Systems and Neurosciences Department of the Czech Institute of Informatics, Robotics, and Cybernetics. His research interests include sleep medicine, long-term EEG and intracranial EEG signal processing, and the development of novel machine learning techniques.

Full name: Kristyna Rusnakova

Institutional affiliation: CASRI - Sport Research Institute of Czech Armed Forces

Institutional address: Podbabska 3, Prague 6, Czech Republic

Email address: rusnakova@casri.cz

Short biographical sketch: Psychologist and a researcher in the research center of the Czech Ministry of Defense. Her research activities are focused on the relationship between mental processes and physical characteristics of military personnel, especially on the interaction of cognitive abilities and postural stability and their importance for human adaptation to extreme conditions.

Full name: Jiri Mezulanik

Institutional affiliation: Institute of Business and Marketing, University of Entrepreneurship and Law

Institutional address: Vltavska 585/14, 150 00 Prague 5, Czech Republic

Email address: jiri.mezulanik@vspp.cz

Short biographical sketch: His research is focused mainly on Sharing Economy, Enterprise Economics, Corporate Communication, Marketing and Education of students in the economic field. He provides lectures in Psychology and sociology in entrepreneurship, Corporate communication and Communication and digital skills for full-time and part-time students. He published 6 scientific articles on database Web of Science.

Full name: Miloslav Stehlik

Institutional affiliation: CASRI - Sport Research Institute of Czech Armed Forces

Institutional address: Podbabska 3, Prague 6, Czech Republic

Email address: stehlik@casri.cz

Short biographical sketch: Clinical psychologist and the head of the Department of Psychology in the research center of the Czech Ministry of Defense. Dr. Stehlik is also currently a Project Manager for a military research program and a Lecturer at the Czech Military College.

Chapter #15

COGNITIVE AND MOTIVATIONAL DETERMINANTS OF INTUITION

Shulamith Kreitler^{1,2} & Carmit Benbenishty¹

¹*School of Psychological Sciences, Tel-Aviv University, Tel-Aviv, Israel*

²*Psychooncology Research Center, Sheba Medical Center, Tel-Hashomer, Israel*

ABSTRACT

The objective of the study was to identify cognitive and motivational components of intuition. The methodology was based on the meaning system, which enables identifying cognitive variables involved in a specific cognitive act, and on the cognitive orientation (CO) theory which enables assessing cognitions supporting specific behaviors. The hypotheses were that the findings would enable identifying cognitive and motivational variables unique for intuition. We expected that the cognitive and motivational variables separately would predict intuition and that both together would enable a better prediction than each separately. A set of cognitive variables related to intuition was identified and accounted for 29.2% of the variance. It included variables indicating interpersonally-shared and personal meanings, attending to overall general contexts and specific details, to the abstract and the concrete. The four belief types of the CO predicted intuition and accounted for 30.4% of the variance. The four types referred to the themes concerning emotions, opening-up, fast solutions, comprehensive view, and self reliance. Both sets of the cognitive and motivational variables together accounted for 39.19% of the variance. The findings show that both cognition and motivation contribute to intuition and need to be considered for predicting intuition, assessing it, and intervening for its improvement.

Keywords: intuition, cognitive orientation, beliefs, motivation.

1. INTRODUCTION

Intuitive thinking is a common type of thinking, usually described as a kind of inner perception which enables reaching conclusions, decisions and solutions to problems without awareness or logical inferences. It is often described as based on unconscious, illogical, uncontrolled cognition, which represents tacit knowledge (Polanyi, 1966) and proceeds in a fast, effortless, and easy manner as compared with rational, evidence-based and deliberate thinking (Kahneman, 2003). It is involved in various cognitive activities, including decision making, planning, problem solving, and mathematics (Heintzelman & King, 2016; Sagiv, Amit, Ein-Gar, & Arieli, 2014) and is correlated with creativity, humor, aesthetic judgment, empathy and social popularity (Norris & Epstein, 2011). As may be expected, it was found to be responsible for biases, overconfidence in judgments (Hansson, Rönnlund, Juslin, & Nilsson, 2008), and wrong conclusions in diagnoses (Gäbler, 2017). It is manifested neurally in desynchronized alpha waves in the posterior cortex (Razumnikova & Yashanina, 2017). Intuition is often observed complementing rational thinking when a decision is required in situations involving time pressure, risk, or insufficient information (Thompson, Prose Turner, & Pennycook, 2011). Intuition is subject to individual differences but little is known about its psychological correlates. It is the objective of this study to examine the cognitive and motivational correlates of intuition which would provide insight into the tendencies underlying intuition, enabling identifying individuals who rely on intuition and even training those who do not.

2. THE THEORETICAL APPROACH

The basic theoretical approach in regard to cognition is designed to enable explaining, predicting and changing cognitive acts. For this purpose, it is necessary to consider several aspects or components of the cognitive acts. The major ones are the processes of which the cognitive act consists and the motivation for the cognitive act. The processes answer the implied question “how” and the motivation refers to “why”. These two aspects differ in their constituents and hence also in the tools that need to be applied for their assessment (Kreitler, 2013).

2.1. The meaning system

The meaning system consists of a set of variables of different kinds that have been identified as constituting the understructure of cognitive acts (Kreitler, 2014a, 2020). These variables are involved in the manner in which an individual functions cognitively in regard to one’s inner and external environment, They are assessed by means of the meaning test and include 56 variables of the following five sets: (a) content categories (called meaning dimensions), such as contextual allocation (e.g., chair – a piece of furniture), range of inclusion (e.g., art – dance), function (e.g., telephone – for transmitting messages), locational qualities (Tel-Aviv – on the sea shore), feelings (bicycle – I love it), judgments and evaluations (e.g., laws – very important); (b) types of relation between the referent and the content, such as direct relation (attributive), by means of comparisons or by means of examples or metaphors; (c) forms of relation, such as positive, negative (e.g., bicycle – is not a car), normative (life – should be pleasant); (d) forms of expression, such as verbal or graphic; and (e) shifts in referent, such as shifts to synonyms, contrasts (e.g., to take – to give) or grammatical variations (to take – taking is recommended). Each individual uses preferentially some of these processes which define the individual’s meaning profile. This can be assessed on the basis of the individual’s responses to the meaning test (see Tools). The performance of different cognitive acts is implemented by different cognitive processes. These can be identified by comparing the meaning profiles of individuals who score high or low on the performance of the cognitive act in question. The comparison yields the list of meaning variables that characterize those who perform well the specific cognitive act. These variables constitute the meaning profile of the cognitive act. In order to predict whether an individual would manifest the cognitive act in question it is necessary to establish the individual’s meaning profile and to compare it to the meaning profile of the specific cognitive act. The higher the correspondence between these two meaning profiles the higher the chances that the individual would perform well the cognitive act. Previous studies showed that meaning profiles of cognitive acts provided good predictions of performance in different tasks, such as planning and creativity (Casakin & Kreitler, 2011; Kreitler & Kreitler, 1990, 1987).

2.2. The cognitive orientation theory

The cognitive orientation (CO) approach is a theory and methodology which provides an explanation for the behavior of individuals as a function of specific beliefs that orient toward the behavior without the involvement of conscious intention or decision based on considering benefits and utility (Kreitler, 2004; Kreitler & Kreitler, 1976, 1982). The beliefs are characterized in terms of form and contents. Formally the beliefs are of four kinds: beliefs about oneself that describe traits, events and other facts referring to oneself; general beliefs that deal with information about others and reality in general; beliefs about rules and norms

which refer to ethical, social, esthetical and functional rules and standards; and goal beliefs which refer to actions or states desired or undesired by the individual. In terms of contents the beliefs refer to deep underlying meanings of the involved inputs rather than to their obvious and explicit surface meanings. These underlying meanings are called motives and are identified for the behavior in question by means of a standard guided three-step interviewing procedure conducted with pretest subjects. The motives are selected as the responses that appear in the third step of interviewing in at least 50% of those who manifest the behavior and in less than in 20% of those who do not manifest it. The motives represent the underlying meanings of the behavior but do not refer to it directly. The motives are formulated in the form of statements corresponding to the four belief types and are used for constructing a CO questionnaire in which the individual is asked about his or her acceptance of each statement (see Tools). For example, a motive such as striving for success could be formulated in the following statements: "Success is the most important thing in my life", "Success is difficult to attain", "One should never stop striving for success", and "I would like more than anything else to be successful", referring to beliefs about self, general beliefs, norm beliefs and goal beliefs, respectively. If all four or at least three belief types support the action, a cluster of beliefs is formed orienting toward the particular act. It generates a unified tendency or vector which represents the motivational disposition orienting toward the performance of the action. Previous studies showed that questionnaires constructed on the basis of the CO theory provided significant predictions of various cognitive, emotional, behavioral and physiologic variables (Kreitler, 2004, 2014b; Kreitler & Kreitler, 1982).

2.3. The hypotheses

The hypotheses of the study were that the scores based on the meaning profiles of intuition – the meaning variables correlated with scores on intuition - and of the CO questionnaire of intuition –the four belief types and the factors based on the motives – will be correlated with the scores of intuition assessed by an intuition questionnaire. In regard to meaning, the expectation was that there would be a set of meaning variables correlated significantly with the intuition score which could be considered as the meaning profile of intuition. In regard to the CO variables, it was expected that they too would be related significantly to the intuition score. In addition to the hypotheses that each set of independent variables (i.e., meaning and CO) would be related to intuition each separately, it was expected that both together would provide a better prediction score of intuition than each separately (Kreitler, 2020).

3. METHOD

3.1. Design

The first part of the study was based on a correlational design and the second on a multiple regression design. The independent variables were the meaning variables and the CO variables, and the dependent variable was the summative score on the intuition scale.

3.2. Participants

The participants were 90 undergraduate students (55 women, 45 men) in the behavioral sciences, in the age range 21-25 years. They were administered three questionnaires in random order, in the google.docs online format. Questionnaires that had over 5% of missing responses (16%) were deleted from the final file.

3.3. Tools

The meaning profile was assessed by the Meaning Test (Kreitler & Kreitler, 1990). The test consists of 11 familiar words (e.g., street, bicycle, life, to create, feeling, to take, friendship). The respondent is requested to communicate the interpersonally-shared and personal-subjective meanings of these words to someone else of one's choice who is not present, as comprehensively as possible, by using any preferred means of communication (e.g., by writing or drawing or describing drawings). The responses are elaborated by computer in two steps. In the first, the responses are divided into units, each of which consists of a referent and some content attributed to it (e.g., the response "Street is a place in a city" includes the following two units: "Street is a place" and "Street is in a city"). The second stage consists in characterizing each unit in terms of the five sets of variables described above (Meaning system). The codings are summed for each set of meaning variables. The individual's meaning profile consists of the sums of the meaning variables used by the respondent in the meaning test.

A second questionnaire the subjects got was the CO questionnaire of intuition (see Appendix). It included four parts corresponding to the four belief types with 18 items in each. The following are examples of statements in the CO questionnaire: 'I like to open-up to things, to grasp the solution dictated by the situation' (belief about self), 'Best solutions to problems may be due to emotionally-based impressions' (General belief), 'It is necessary to deal with the comprehensive view rather than with the details' (Belief about norms), 'To let emotions rule my thinking rather than reason alone' (Belief about goals). The response format consisted of 4 response alternatives ranging from not at all true (=1) to very true (=4). Thus, each individual got four scores for beliefs about self, general beliefs, norms and goals. The 18 items in each part of the questionnaire represented 18 motives. These yielded five factors (principal component; accounting for 68% of the variance) labelled as: emotions, opening-up, fast solutions, comprehensive view, self reliance. Thus, each subject got also five scores for the five motive factors.

Intuition was assessed by The Types of Intuition Scale (TIntS) (Pretz et al., 2014). The scale includes 29 items in the form of statements to which the respondents were asked to respond by checking one of 5 alternatives ranging from definitely false (=1) to definitely true (=5). The scale measures three types of intuition holistic (8 items), inferential (12 items), and affective (9 items). Holistic intuitions integrate diverse sources of information in a Gestalt-like, non-analytical manner; inferential intuitions are based on previously analytical processes that have become automatic; and affective intuitions are based on feelings. Since a previous stage of the study showed that the results for the three subscales were similar and that they were correlated significantly, in the present stage we used for this scale a summative score.

3.4. Procedure

The three questionnaires were administered online in google.doc format in random order to the respondents who got credits for their participation. The study got the authorization of the university ethics committee.

4. RESULTS

4.1. Control analyses

Preliminary analyses showed the four basic intuition measures of the CO questionnaire had satisfactory reliability coefficients (α Cronbach $\geq .70$), as well as the meaning test, and the intuition score (both α Cronbach $\geq .75$). Further, correlation analyses showed that of the four belief types of the CO questionnaire only beliefs about self and goal beliefs were correlated significantly ($r = .25$, $p < .05$). There were no significant differences between the genders in more than 5% of the variables which does not deviate significantly from chance.

4.2. Relations between the meaning test and the intuition score

The responses of the participants to the meaning test were coded in line with the standard procedure. In the final stage all responses for each meaning variable were summed, each separately. The set of all the meaning variables for any one individual is called the individual's meaning profile. In order to identify the meaning profile of intuition the scores of the meaning profiles were correlated with the scores of the intuition scale for the different individuals. The meaning variables correlated significantly with the intuition score are considered as the constituents of the meaning profile of intuition.

The meaning profile of intuition includes the following meaning variables (only correlations $\geq .42$, $p < .001$ are presented): contextual allocation (i.e., specifies to which context or category an object belongs), results and consequences, domain of application (e.g., who or what are involved in the situation), state (e.g., is the object strong, healthy, empty, stable, complete?), temporal qualities (e.g. when does it occur? how long does it last?), sensory qualities (e.g., what is the color, shape, sound, smell of the object?), judgements and evaluations (avoiding issues such as, is it true, valid, reliable?), attributive type of relation (i.e., assigning some proposition directly to the subject), comparative: similarity type of relation (i.e., comparing situations or objects to each other), exemplifying-illustrative type of relation (i.e., attending to exemplifying items or situations), metaphoric type of relation (i.e., considering things in terms of metaphors), partial form of relation (i.e., relating things in terms such as sometimes, partly), conjunctive form of relation, close referent shifts (avoiding attending to the inputs as presented), medium referent shifts (i.e., deviating to some degree from the presented inputs, for example, to associations, or modifying them by additions). The range of correlations for the different variables in the meaning profile of intuition was .42 to .67. A mean of the correlation coefficients computed by means of Fisher's Z scores yielded an average of .54, which indicates that the meaning profile accounted for 29.16% of the variance in intuition. A factor analysis of the meaning variables included in the meaning profile of intuition show that the variables form two factors: a major factor that accounts for 49.01% of the variance and represents the variables which deal with formal aspects of cognitive elaboration, and a secondary factor that accounts for 14.57% of the variance and represents variables that deal with different contents aspects in situations and objects.

Table 1.
The results of factor analysis of the meaning variables correlated significantly with the mean sum of the Intuition scale (TIntS).

Meaning variables	Component 1	Component 2
(TR) Attributive	.802	
(TR) Comparative: similarity	.735	
(TR) Exemplifying-Illustrative	.711	
(TR) Metaphoric	.692	
(FR) Partial relation	.603	
(FR) Conjunctive	.533	
(SR) Close	-.512	
(SR) Medium	.492	
(Dim) Contextual allocation		.485
(Dim) Results and consequences		.406
(Dim) State		.372
(Dim) Domain of application		.359
(Dim) Temporal qualities		.344
(Dim) Sensory qualities		.322
(Dim) Judgements and evaluations		-.270
Eigenvalue	3.225	1.006
Percent of variance	49.01	14.57

Extraction method: Principal component analysis. Rotation method: Oblimin with Kaiser normalization.

Notes: (Dim)=Meaning dimension; (TR)=Types of relation; (FR)=Forms of relation; (SR)=Shifts of referent.

4.3. Relations between the CO of Intuition and the intuition score

Table 2 presents the results of the regression analyses performed with regard to the intuition score as the dependent variable. In the first part of the table the predictors are the four types of CO beliefs. The results show that the CO beliefs yielded a significant prediction of the intuition variable, accounting for 30.4% of the variance. All four types of beliefs had a significant contribution, in the following descending order: beliefs about self, about norms, about goals and general beliefs. The second part of table 2 presents the results of a regression analysis based on both the CO variables and the two meaning factors. The overall prediction based on the six variables was significant and accounted for 39.9% of the variance. Only the contribution of the factor representing the formal variables was significant. Adding the meaning factors to the model increased the total amount of variance accounted for ($R^2=9.5\%$, F change =2.52, $p<.01$).

In order to provide additional information about the contribution of the CO variables to intuition, a regression analysis was done in regard to the score of intuition as the dependent variable with the five factors of the motives of the CO questionnaire of intuition as predictors. The five factors provided a significant prediction of the four intuition, accounting for 32.37% of the variance. All five factors had significant contributions to the prediction, in the following descending order, starting with the highest contribution for the factor of Comprehensive view, followed by the factors of Opening-up, Self-reliance, Emotions and Fast solutions.

Table 2.
Regression analyses of the cognitive orientation variables and the two meaning factors with the score of the Intuition scale (TIntS) as the dependent variable.

Dependent variable: Types of Intuition scale (TIntS) R=.551 R ² =.304 F (df=4/85) = 4.32**			
Coefficients	Unstandardized	Standardized	t-test
Constant	5.849		
Beliefs about self	.359	.335	2.470**
General beliefs	.281	.204	2.001*
Beliefs about norms	.349	.314	2.281**
Goal beliefs	.301	.225	2.217*
Dependent variable: Types of Intuition scale (TIntS) and meaning variables R=.632 R ² =.399 F (df=5/83) =5.25**			
Constant	5.441		
Beliefs about self	.341	.157	2.342**
General beliefs	.250	.106	2.055*
Beliefs about norms	.304	.216	2.103*
Goal beliefs	.283	.136	2.012*
Factor of meaning 1: Meaning dimensions	.199	.027	1.951
Factor of meaning 2: Types of relation, forms of relation and referent shifts	.451	.188	3.251**

Note. *p<.05 **p<.01

5. DISCUSSION

The results showed that both the cognitive variables and the motivational ones are related to intuition and affect its performance. The hypothesis about the contribution of cognitive variables to intuition was supported by the findings about the cognitive profile of intuition. The profile includes two types of variables, one of which represents contents and the other formal variables of functioning. The different kinds of variables are included in practically all meaning profiles of cognitive acts. The exceptional feature in the present findings is the binary clustering of the variables into two classes of form variables and contents variables. In predicting intuition, it is only the factor representing the form variables that has a significant contribution. It is evident that the formal variables do not function in

the void but depend on the content variables whose function it implements. Thus, the findings indicate that what matters most in regard to intuition is how the individual approaches the situation or the object rather than what he or she attend to. The manner of attending that characterizes intuitive individuals is focusing on concrete examples and instances, comparing perceptions in terms of similarity or metaphors, attending to relations that are possibly maybe acceptable rather than always true, combining different possibilities conjunctively and attempting to consider aspects related to the present situation indirectly. Notably, intuitive individuals access equally the interpersonally-shared mode of meaning (represented by the attributive and comparative types of relation) and the personal-subjective mode of meaning (represented by the exemplifying-illustrative and metaphoric types of relation). In this respect they resemble creative individuals (Kreitler, 2020). In terms of contents the major aspects that individuals with intuition are likely to attend to are the overall context to which an issue belongs, and the identity, state, results, temporal and sensory qualities of the objects involved in the situation. They have a tendency to avoid judgements and evaluations. There is evidence for combining the abstract approach (e.g., contextual allocation with the concrete one (e.g., who or what is in the situation, sensory qualities). It is likely that the described formal and content variables of the meaning profile of intuition may promote intuition directly (e.g., accessing both the general and personal modes of meaning, conjunction, associations) as well as indirectly (e.g., avoiding judgements, focusing on the general overall context and the sensory qualities).

The findings provide support also to the hypothesis about the contribution of motivational factors to intuition. The motivational factors were assessed in terms of four belief types referring to themes concerning emotions, opening-up, fast solutions, comprehensive view, and self reliance. The results show that the four belief types enabled a significant prediction of the intuition score accounting for 30.4% of the variance in intuition. All four belief types had a significant contribution to the prediction, with beliefs about self with the relatively largest contribution, followed by beliefs about norms, goal beliefs and general beliefs in descending order. These findings indicate that intuition is embedded in a network of personal tendencies and attitudes which constitute the motivational source for the disposition to rely on intuition in regard to the different domains of life. The earmarks of these motivationally relevant tendencies are focusing on emotions, opening-up to situations, preference for fast and easy solutions, promoting the overall comprehensive view of things and self-reliance. These themes together provide a prediction of intuition accounting for 32.37% of the variance, a percentage that barely deviates from that accounted for by the four belief types. The power of these tendencies to orient toward intuition is due to the fact that they represent deep underlying meanings of intuition and operate in the form of a four-pronged vector defined by beliefs about self, general beliefs, beliefs about norms and beliefs about goals.

Notably, the contributions of the cognitive variables and the motivational ones to intuition appear to be similar. While the cognitive variables account for 29.16% of the variance in intuition, the four belief types account for 30.4%. Equal contributions of cognition and motivation to the performance of cognitive acts are a common phenomenon (Kreitler, 2013). This indicates that both tendencies or skills are necessary for supporting intuition. As expected, applying both cognition and motivation to the prediction of intuition yielded results that were better than the results based on applying only cognition or motivation separately. However, the improvement in prediction reached only the level of 39.19% of variance accounted for, which entails an improvement of only 9.5%. Possible reasons for this relatively low enhancement despite conjoint application of the predictors could be correlations between them or individual tendencies to rely mainly on one or another kind of

variables thus lowering the impact of other variables. Additionally, it should be noted that a conjoint application of variables in prediction provides no information about the manner in which these cognition and motivation interact in the course of the process of intuition-based enactment.

6. CONCLUSIONS

The study showed that intuition is a cognitive tendency embedded in a motivational network of beliefs and meanings. As such it can be considered as a personality disposition. The findings provided a clear definition of the specific and unique cognitive and motivational components that constitute the groundwork of intuition. The characteristic cognitive features are first, the prominence of the formal tendencies rather than those that deal with contents, secondly, the salience of both the interpersonally-shared and personal-subjective modes of meaning, and thirdly, the use of both the abstract or general meanings together with the concrete and specific ones. The characteristic motivational tendencies are the complementary themes of reliance on oneself and especially on one's emotions, preference of a comprehensive overall view of issues and of fast solutions, supported by opening-up to situations, forming a four-pronged vector of the multiple belief types. A most basic conclusion of the findings is that both cognition and motivation are involved in producing intuition and that both aspects need to be considered in predicting intuition and in exploring its nature and manner of functioning. This conclusion is important not only theoretically but also has practical implications. It enables assessing intuition in a comprehensive manner, in terms of both cognition and motivation, both of which enable assessment in a manner that is not subject to the effects of social desirability. The assessment may shed light on the particular domains of strength or weakness of the factors contributing to intuition in specific individuals. The findings of the study also enable the training of intuition when the enhancement of intuition is desired or considered advisable. The training can target both constituents of intuition or any one of them. When the training targets cognition, it will be done in line with the systematic procedure developed for the training of meaning variables, and will focus on the major meaning variables relevant for intuition that may be identified as weak in the individual's meaning profile (Kreitler, 2020). When the training targets the motivational component of intuition it will be performed in line with the systematic procedure developed for training of motivational contents and will focus on those themes that will be identified as weak in the individual's CO profile (Kreitler, 2004, 2014b). At present both intervention methodologies are available in digital form so that they can be applied by individuals on their own after minimal instruction.

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KEY TERMS AND DEFINITIONS

For instructions and application of the meaning system used in the study on intuition please refer to <http://kreitlermeaningsystem.tau.ac.il/>

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AUTHORS' INFORMATION

Full name: Shulamith Kreitler

Institutional affiliation: Tel-Aviv University

Institutional address: School of Psychological Sciences, Tel-Aviv University, Tel-Aviv 69978

Short biographical sketch: Shulamith Kreitler was born in Tel Aviv. She is a full professor of psychology at Tel Aviv University since 1986, and has worked at Princeton, Harvard and Yale Universities. She is the director of the Center for Psychooncology Research at the Sheba Medical Center, Tel-Hashomer. She is a certified clinical psychologist and health psychologist. Her major publications are in cognition, creativity, personality, and psychooncology. She has developed a new approach to meaning, and the cognitive orientation approach for predicting and changing behaviors. She has published over 200 articles in major journals and 21 scientific books about cognition, meaning, personality traits, and art. Her recent publications are a book about psychooncology (Springer) and a book about creativity (Nova). At present she is preparing a book about creativity (New Horizons in Creativity) and about meaning (for Cambridge University Press). She has been married to Hans Kreitler (who died in 1993) and has one son and two grandchildren.

Full name: Carmit Benbenishty

Institutional affiliation: Tel-Aviv University

Institutional address: School of Psychological Sciences, Tel-Aviv University, Tel-Aviv 69978

Short biographical sketch: Carmit Benbenisty was born in Israel. She studied mathematics and received her Ph.D. in mathematics at the Hebrew University. She is a lecturer both at the Open University and at the Academic College of Tel-Aviv-Jaffa. She has two children.

Section 3
Clinical Psychology

Chapter #16

POSITIVE YOUTH DEVELOPMENT PERSPECTIVE: THE INTERPLAY BETWEEN THE 5CS AND ANXIETY

Ana Kozina¹, Nora Wiium², & Tina Pivec¹

¹*Educational Research Institute, Slovenia*

²*Bergen University, Norway*

ABSTRACT

Anxiety-related difficulties, one of the most common psychological difficulties in childhood and adolescence (Neil & Christensen, 2009), are associated with numerous short and long-term negative consequences and are in the increase (Kozina, 2014; Twenge, 2000). Core elements of the PYD model are the 5Cs: competence, confidence, connection, character and caring (Lerner, 2007). There is ample evidence that the 5Cs are positively related to the adolescent's contribution and negatively related to risky behaviors and emotional difficulties. In the present study, we investigated the relationship between the 5Cs and anxiety (and components of anxiety) in a sample of adolescents using the PYD questionnaire (Geldof et al., 2013) and the AN -UD anxiety scale (Kozina, 2012) in Slovenia ($N = 449$, $M_{age}=17.10$ years). The findings indicate the PYD dimensions of confidence and connection as negative predictors of anxiety (and components of anxiety) while caring is shown as a positive predictor of anxiety (and components of anxiety). The findings are informative for practice within an educational framework, where intervention strategies based on the 5Cs can be used to moderate high-risk behaviors and emotional difficulties, although with caring, some caution need to be taken due to its positive association with anxiety.

Keywords: positive youth development, anxiety, Slovenia.

1. INTRODUCTION

Anxiety is a combination of cognitive (e.g., worries), physiological (e.g., nausea), emotional (e.g., fear) and behavioral responses (e.g., avoidance) (Silverman & Treffers, 2001). Even though anxiety is common throughout the life course and a part of everyday life, it becomes problematic when it is persistent, frequent and severe enough to interfere with a person's daily functioning (Weems & Stickle, 2005). Anxiety-related difficulties are one of the most common psychological difficulties in childhood and adolescence (Neil & Christensen, 2009) and are associated with numerous short and long-term negative consequences. For example, high levels of anxiety interfere significantly with children and adolescent's adaptive functioning, social competence and social adjustment (Last, Hansen, & Franco, 1997; Schwartz, Hopmeyer, Gorman, Nakamoto, & McKay, 2006), and if present in childhood it can persist into adulthood (Ialongo, Edelsohn, Werthamer-Larsson, Crockett & Kellam, 1996; Woodworth & Fergusson, 2001). There is a documented increase in anxiety in Slovenia (Kozina, 2014) and abroad (Twenge, 2000), which points to the need for immediate prevention and intervention.

Positive Youth Development (PYD) as a theoretical perspective is embedded in the Relational Development Systems Model (Overton, 2015), which emphasizes the individual's potential to contribute to the development of the self and the society (Lerner, 2007). PYD focuses on the importance of the interaction that takes place between the

individual and his or her context (e.g., school, family, community, society) (Lerner, 2007). Relational Developmental System Model (Overton, 2015) argues that young people should be studied as the product of a mutually reinforcing interaction between individual characteristics (internal assets) and youth contextual resources (external assets) – the so-called adaptive developmental regulations (Lerner et al., 2006). As a result of the adaptive development regulations, positive youth development outcomes, typically defined as the 5Cs: competence, confidence, character, caring, connectedness, are facilitated. Confidence is defined as an inner feeling of positive self-worth and self-efficacy, while competence is a positive view of one's own actions in specific areas (e.g., social and academic skills). Connection stands for all positive mutual ties of an adolescent with significant others and institutions. Character is defined as the possession of standards for correct behavior in relation to social and cultural norms. A feeling of sympathy and empathy for others indicates caring. There is ample evidence that the 5Cs are positively related to the adolescent's contribution to self, the family and society (e.g., prosocial behaviors) and negatively related to risky behaviors and emotional difficulties, such as anxiety and depression. Each of the 5Cs are perceived as significant contributor to an overall positive youth development (Jeličić, Bobek, Phelps, Lerner, & Lerner, 2007), and subsequently to a sixth C - contribution to self, family, community and institutions in civil society (Lerner, 2007). Thus, although PYD has mainly been studied in relation to the promotion of positive youth outcomes, the perspective has the potential to be used as a theoretical framework for a prevention program.

The basic idea within PYD is that young people will develop positively if their strengths (internal assets) are aligned with the resources in their environment (external assets). However, these adaptive regulations do not always lead to a positive outcome, as indicated by Geldhof et al. (2019), but can also be neutral or negative. This process has been referred to as neutral or negative developmental regulations (which neither benefit nor harm the individual). Sometimes, negative developmental regulations can take place where the process can either harm the individual (self-sacrificing developmental regulations, martyrdom developmental regulations) or the context (parasitic developmental regulations) or both (maladaptive developmental regulations). Thus, Geldhof and colleagues (2019) stress the importance of not recognizing the Cs as an outcome but rather as intersections between youth and their context. For example, competence stands for the ability to navigate the context effectively in order to achieve desired goals. Confidence develops when navigation in one's context leads to feelings of personal capacity to act and self-esteem. Character represents the internalization of moral standards through repeated relationships in the context of the person and the behavioral manifestations of this moral code. Caring indicates a level of care for others that is appropriate for development and context, and connection requires that the person be embedded in and supported by a reliable and diverse social network.

There is evidence that positive youth development indicators (the 5Cs) promote positive outcomes only when they exist as part of mutually beneficial relationships between individuals and their unique contexts (adaptive developmental regulations), and that there is also a conditional relationship between positive youth development indicators (the 5Cs) and healthy development (Geldhof, et al., 2019; Holsen, Geldhof, Larsen, & Aardal, 2017). Research suggests that the associations between the 5Cs and risky and problematic behaviours appear to depend on how the 5Cs are treated in data analysis. When treated together as one PYD component, a negative association with anxiety has been observed (Erentaitė & Raižienė, 2015; Geldhof et al, 2014; Holsen et al, 2017), while some inconsistencies arise when the 5Cs are treated as five separate components. For example, in

such situations, caring has surprisingly been found to correlate positively with anxiety (Geldhof et al., 2014; Holsen et al., 2017; Truskauskaitė-Kunevičienė, Žukauskainė, & Kaniušonytė, 2014).

In the present study, we examine the 5Cs separately. We add to the existing literature by: (i) examining associations between anxiety (and component of anxiety) and PYD outcomes: character, confidence, connection and caring in a convenience sample of Slovenian adolescents and (ii) analyzing the predictive power of the 5Cs for anxiety and its components. Thus, we will analyze the associations at the level of the 5Cs as well as provide more in-depth analyses of anxiety at the anxiety component level. This is particularly important because of the multidimensional nature of anxiety. Not only is anxiety multidimensional, but different components of anxiety can lead to different outcomes (Olatunji & Cole, 2009), making a multidimensional analysis of anxiety crucial.

2. METHODS

In the present study, we used a convenience sample of Slovenian adolescents ($N = 449$, 312 women and 130 men) aged between 15 and 23 years ($M_{\text{age}} = 17.10$ years), who were enrolled in upper secondary schools. The data collection took place in 2017. We measured anxiety and the 5Cs of PYD by using the PYD questionnaire (Geldhof et al., 2013) and AN - UD anxiety scale (Kozina, 2012).

The PYD questionnaire (Geldhof et al., 2013) consists of 34 items that were answered on a 5-point Likert scale (with answers ranging from 1 = strongly disagree to 5 = strongly agree). Sample items are: competence (e.g., "I do very well in my class work at school"), confidence (e.g., "All in all, I am glad I am me"), caring (e.g., "When I see another person who is hurt or upset, I feel sorry for them"), character (e.g., "I hardly ever do things I know I shouldn't do"), and connection (e.g., "My friends care about me"). The questionnaire has proven to be psychometrically adequate in the sample used in this study with reliability coefficients as follows: .78 (competence); .82 (confidence); .74 (character); .91 (caring); .81 (connection). CFA (Confirmatory Factor Analyses) on the present data confirmed a good fit of the 5-factor structure: $\chi^2(517) = 8745.16$, $p < .001$, RMSEA (Root Mean Square Error of Approximation) = .06, 90 % CI [.062 - .065], CFI (Comparative Fit Index) = .95; TLI (Tucker Lewis Index) = .94 (Gonzalez, Kozina, & Wium, 2017).

AN-UD anxiety scale (Kozina, 2012) measures general anxiety and the three anxiety components with 14 self-report items: emotions – eight items (e.g., "I suddenly feel scared and I don't know why"), worries – three items (e.g., "I am very worried about my marks") and decisions – three items (e.g., "I have difficulties making decisions"). As response, students indicate the frequency that applies to them for each item (1 = Never, 2 = Rarely, 3 = Sometimes, 4 = Often, 5 = Always). The component scores can be summed up to create an overall anxiety score. The three-factor hierarchical structure was confirmed with the confirmatory factor analysis (CFA) on samples of primary/lower-secondary students (RMSEA = .06; CFI = .95; TLI = .93; SRMR (Standardized Root Mean Square Residual) = .03) and upper-secondary students (RMSEA = .07; CFI = .94; TLI = .93; SRMR = .04). The scale has proven to be psychometrically appropriate on the sample of lower-secondary students (reliable: $.70 < \alpha > .84$; sensitive: $r_{\text{average}} = .60$; valid: $r_{\text{ANUD-STAI-X2}} = .42$) and upper-secondary students (reliable: $.72 < \alpha > .88$; sensitive: $r_{\text{average}} = 0.60$).

3. RESULTS

Table 1 shows a pattern of correlation coefficients between the 5Cs and anxiety and its components. The highest coefficients are found between *anxiety* and *confidence*, followed by *connection*, while the coefficients are lower and usually not significant with *character*. In general, most of the coefficients between the 5Cs and anxiety are negative, with the exception of *caring* where the coefficients are positive.

Table 1.
Correlations between the 5Cs, general anxiety and anxiety components.

	1	2	3	4	5	6	7	8
1 – competence	-							
2 – confidence	.67**	-						
3 – character	.35**	.46**	-					
4 – caring	.08	.05	.50**	-				
5 – connection	.50**	.58**	.45**	.19**	-			
6 – anxiety	-.38**	-.48**	-.08	.24**	-.33**	-		
7 – emotions	-.39**	-.49**	-.09	.24**	-.38**	.96**	-	
8 – worries	-.19**	-.26**	-.00	.19**	-.07**	.73**	.58**	-
9 – decision	-.32**	-.39**	-.10**	.16**	-.27**	.80**	.69**	.44

Notes. ** $p < 0.05$

Table 2 shows results from multiple linear regressions for the components of anxiety, with all 5Cs included as predictors. *Confidence* is a negative predictor of *general anxiety* and all components of anxiety, while *connection* is a negative predictor of *general anxiety* and the components *emotion* and *decision*. *Caring* is a significant positive predictor of *general anxiety* and all three components of anxiety. With all predictors included, we can explain about 30 percent of the variance of *general anxiety* and its component, *emotion* while we only explained 18 percent of the variance of *decision* and 10 percent of the variance of *worries*.

Positive Youth Development Perspective: The Interplay between the 5Cs and Anxiety

Table 2.
Predictive power of the 5Cs for anxiety and components of anxiety.

	<i>B</i> (<i>SE</i>)	β	<i>t</i>	R ²	R ^{2*}
Anxiety (<i>F</i> (5, 394) = 37.38, <i>p</i> = 0.000)					
constant	52.96 (3.67)		14.43***		
competence	-0.28 (0.16)		-1.76		
confidence	-0.89 (0.17)		-5.26***		
character	0.17 (0.14)		1.21		
caring	0.63 (0.12)		5.33***		
connection	-0.36 (0.11)		-3.19**	.32	.31
Emotions (<i>F</i> (5,396) = 42.30; <i>p</i> = .000)					
constant	31.06 (2.29)		13.59***		
competence	-0.15 (0.10)	-0.09	-1.58		
confidence	-0.57 (0.10)	-0.35	-5.45***		
character	0.13 (0.09)	0.08	1.48		
caring	0.40 (0.07)	0.27	5.37***		
connection	-0.30 (0.07)	-0.22	-4.20***	0.35	0.34
Worries (<i>F</i> (5,397) = 10.01; <i>p</i> = .000)					
constant	9.64 (1.06)		9.07***		
competence	-0.05 (0.04)	-0.08	-1.16		
confidence	-0.15 (0.05)	-0.23	-3.07**		
character	0.02 (0.04)	0.03	0.50		
caring	0.12 (0.03)	0.20	3.50**		
connection	0.01 (0.03)	0.01	0.24	0.11	0.10
Decision (<i>F</i> (5,399) = 18.99; <i>p</i> = .000)					
constant	12.35 (1.02)		12.15***		
competence	-0.07 (0.04)	-0.10	-1.57		
confidence	-0.16 (0.05)	-0.25	-3.50**		
character	0.02 (0.04)	0.03	0.46		
caring	0.12 (0.03)	0.20	3.58***		
connection	-0.08 (0.03)	-0.14	-2.39**	0.19	0.18

Notes. ** *p* < 0.05; *** *p* < 0.001;

4. DISCUSSION

In the present paper, we examined the associations between the 5Cs of *competence, confidence, character, caring* and *connections* and anxiety together with its components of *emotions, worries* and *decision*. The primary goal of the study was based on the need for anxiety prevention and intervention programs and the potential of PYD to serve as a theoretical framework for the intervention. PYD perspective (Lerner, 2007) is used for the first time as a framework for an in-depth understanding of the relationship between the 5Cs and anxiety among Slovenian adolescents. To enhance effectiveness of the prevention and intervention programs, theoretical sound models with clear links between protective factors and outcomes need to be considered (Silverman & Treffers, 2001).

In our study, we first analyzed the association between the 5Cs and anxiety and its components. The findings from the correlation analysis show that *anxiety* is significantly and negatively associated with *competence, confidence* and *connection* (association with *character* is negative but non-significant) and significantly and positively associated with *caring*. Similarly, from the regression models that followed in the second part of the results, *connection* and *confidence* are negative predictors of *anxiety* while *caring* is a positive predictor of *anxiety*. The model explains about 30 percent of the variance of anxiety. The pattern of predictors is similar for the components of anxiety (with one exception: *connection* is not a significant predictor of the anxiety component, *worries*). Thus, besides *worries*, the more confident the students in our sample feel or the more they feel connected to their contexts, the less anxiety they report. In contrast, the more caring they feel, the more anxious they are. While the latter finding is surprising, it has been observed in earlier studies as well (Geldhof, et al., 2014; Holsen et al., 2017; Truskauskaitė-Kunevičienė et al., 2014). At the level of anxiety component *emotions* is highly associated (compared with *worries* and *decision*) with *caring*. The *emotions* component measures a combination of physical symptoms (such as tension, worries of getting ill) and emotions (such as fear, nervousness) (Kozina, 2012). Thus, although the findings are supported by previous research, there is still the need to pay special attention to the links between caring and anxiety when planning prevention and intervention programs.

The insight for the negative association between *anxiety* and *caring* can be linked to the complexity of the definition of *caring*. Caring in the context of PYD (Geldhof et al., 2013) is defined as a combination of empathy and sympathy. Empathy is a multidimensional process that combines a physiological (present from birth), emotional and cognitive component together with metacognitive awareness that distinguishes between one own's emotional state and the emotional state of the other (Hoffman, 2008). In the course of development, there is a shift from more immature forms of empathy (which include only physiological and emotional processes) to a more mature empathy that also includes cognitive processes and, most importantly, metacognitive awareness (Hoffman, 2008). Metacognitive awareness helps individuals to distinguish between their own stress and the stress of others (Hoffman, 2008). It is therefore possible that people who are characterized as more caring have difficulties with emotional contagion and are not able to distinguish between the other person's stress and their own stress. For example, the observation of other people's stress can cause an individual to feel emotional stress (emotional component of empathy), and this emotional stress can lead to prosocial behavior to help the other person (making empathy very important here). However, it can also happen that the individual override the stress of the other person, a condition known as empathic over arousal (Hoffman, 2008), when he or she shift attention to his or her own emotional stress and not

to helping the other person who was originally under stress. Thus, the individual is mainly concerned with his or her own stress and tries to avoid the other person and the situation. This attention shift can result in a higher anxiety level. The strategy that has proven to be useful in enhancing empathic over arousal is teaching coping strategies. Individuals who have been taught coping strategies to cope with their own anxiety can keep their own emotional stress within tolerable limits while they focus more on the person in need of help (Fabes, Eisenberg, Karbon, Troyer & Switzer, 1994; Valiente et al. 2004). There are complex processes involved in an emphatic response when coping with anxiety. Future research will therefore need a more detailed multidimensional analysis of caring and not just multidimensional analyzes of anxiety. In future studies, we recommend this multidimensional measurement of all 5Cs and anxiety in more representative samples, and preferably with longitudinal design allowing for causal interpretations. This will provide a better picture of the link between the 5Cs and anxiety as well as evidence for effective interventions.

5. CONCLUSION

The current findings are based on convenience sample and are cross-sectional, which limits our conclusions on the causal relations between the 5Cs and anxiety. Nevertheless, the findings are informative for practice within an educational framework aimed at using 5Cs strategies in reducing high-risk behaviors and emotional difficulties. Two Cs, *confidence* and *connection*, are significant predictors of anxiety and all its measured components in the expected direction, indicating the important role that the PYD model can play in anxiety intervention and prevention. Here, interventions can focus on activities promoting confidence (e.g., identifying one's own strengths) and connection (e.g., identifying important others in one's surroundings, practicing pro-social behaviors, having discussions on meaningful friendships). However, caution must be taken when promoting interventions that target care (e.g., focusing on distinguishing one's own stress from the stress of others, learning coping mechanisms). Our findings show a positive relationship between *caring* and *anxiety* and its components, indicating that high levels of caring are associated with high levels of anxiety. Future research must address the question of the optimal level of caring to promote among adolescents. Our findings support the need to distinguish between an overall measure of positive youth development and the individual components of the 5Cs. Consistent with Geldhof and colleagues (2014), instead of specifying positive youth development as a universal composition of the 5Cs, the need for a detailed analysis of the adaptive functioning of each of the Cs is necessary.

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AUTHORS' INFORMATION

Full name: Ana Kozina

Institutional affiliation: Educational Research Institute

Institutional address: Gerbičeva 62, SI-Ljubljana, Slovenia

Short biographical sketch: Ana Kozina is a researcher, assistant professor and a head of the Centre for evaluation studies in Educational Research Institute. She is focused on the developmental and time related trends of aggression and anxiety (in childhood and adolescence) their interplay and the role anxiety and aggression play on individual level, on school level and on the community level (with possible prevention and intervention designs). In the field of education, she is interested in the factors related to students' achievement and well-being (social and emotional learning, school climate, motivation...). In the last years she has lead HAND in HAND: Social and Emotional Skills for Tolerant and Non-Discriminative Societies and is currently actively involved in international research project Positive Youth Development Across Cultures (led by Nora Wiium, Bergen University). She is a member of Editorial board: Educational research Institute Press and a president of Slovenian Educational Research Association (SLODRE).

Full name: Nora Wiium

Institutional affiliation: Educational Research Institute

Institutional address: Gerbičeva 62, SI-Ljubljana, Slovenia

Short biographical sketch: Nora Wiium is currently an associate professor of developmental psychology at the University of Bergen, Norway. Her job mainly entails teaching in developmental psychology and research on health behaviors and youth development. She holds a PhD in Health Promotion from the University of Bergen. As the principal investigator for the Positive Youth Development Cross-National Project, which was initiated in 2014, she has led and organized collaborations with research partners from over 30 countries across, Africa, Asia, Australia, Europe, the Middle East, and South America. The Cross-National Project represents expertise in wide ranging yet connected scientific fields of human development, intervention and implementation science. Wiium has co-edited a Special Issue on the topic of Positive Youth Development across Cultures in Child & Youth Care Forum. She is a co-editor of a forthcoming Handbook on Positive Youth Development to be published by Springer.

A. Kozina, N. Wiium, & T. Pivec

Full name: Tina Pivec

Institutional affiliation: Educational Research Institute

Institutional address: Gerbičeva 62, SI-Ljubljana, Slovenia

Short biographical sketch: Tina Pivec is currently employed as an emerging researcher at the Educational Research Institute. Her research interest is in the field of educational and developmental psychology (bullying, positive youth development). In her PhD studies, she is preparing a doctoral dissertation with a focus on positive youth development and bullying behaviour among adolescents in the transition between primary school and high school. She is currently actively involved in international research project Positive Youth Development Across Cultures (led by Nora Wiium, Bergen University).

Chapter #17

WORK-RELATED STRESS, PERSONAL RESOURCES AND MENTAL HEALTH IN HIGH-RISK PROFESSIONS

Martina Chylova¹, Jana Nezkusilova², & Monika Seilerova³

¹1st Department of Psychiatry, Faculty of Medicine, P. J. Safarik University, Kosice, Slovakia

²Department of Psychology, Faculty of Arts, P. J. Safarik University, Kosice, Slovakia

³Department of Labour Law and Social Security Law, Faculty of Law, P. J. Safarik University, Kosice, Slovakia

ABSTRACT

The importance of work-related stress and its consequences for mental health is underlined by the increasing prevalence of absence from work due to stress-related illnesses. The aim of this study was to explore how work-related stress and personal resources associate with the perceived anxiety and depression in high-risk professions. The study sample comprised a total of 276 police officers, prison guards, customs officers and physicians (72.1% men, an average age of 36.6) who filled out questionnaires concerning sociodemographic variables (age, gender, working time), work-related stress (occupational roles, personal resources), anxiety and depression. The multiple regression analysis was used to analyze data. A model consisting of gender, occupational roles and personal resources explained 39.5% of the variance in anxiety, and 48.7% of the variance in depression in the total sample. Gender ($\beta=.22$, $p\leq.001$), recreation ($\beta=-.26$, $p\leq.001$), social support ($\beta=-.17$, $p\leq.01$), and rational/cognitive coping ($\beta=-.17$, $p\leq.01$) were significant predictors of anxiety. Gender ($\beta=.26$, $p\leq.001$), insufficiency ($\beta=.11$, $p\leq.05$), ambiguity ($\beta=.13$, $p\leq.05$), recreation ($\beta=-.19$, $p\leq.001$), social support ($\beta=-.19$, $p\leq.001$), and rational/cognitive coping ($\beta=-.24$, $p\leq.001$) were significant predictors of depression. Higher levels of recreation, social support and rational/cognitive coping in the work of high-risk employees are important in diminishing the perceived anxiety and depression, and potentially protecting against work-related stress.

Keywords: mental health, work-related stress, anxiety, depression, personal resources, high-risk professions.

1. INTRODUCTION

Work has been identified as a significant predictor of mental health problems. In some high-income countries, nearly 40% of disabilities are caused by the occurrence of mental disorders. The significance of work-related stress and its consequences for mental health is underlined by the increasing prevalence of absence from work due to stress-related illnesses. They belong to the leading causes of disability in Slovakia. Research in the field of work-related stress is still insufficient in Slovakia, although occupational physicians and employers estimate an increasing trend in disability due to mental disorders (Baumann, Muijen, & Gaebel, 2010; NCZI, 2018).

Work-related stress can lead to many psychological problems, even psychiatric illnesses. When an illness is clearly diagnosed and physical in nature, supervisors and co-workers tend to be much more tolerant of employee absenteeism. In contrast to physical illnesses, the absence for unclear or psychiatric reasons can be especially difficult for employers to understand and accept (Pflanz & Heidel, 2003).

Responders included in this study worked in the emergency services in the government and health care. They belong to high risk professions due to their job-related risks that may deteriorate their physical and mental health. They have a dynamic work environment with various psycho-social work stressors. The stressors responsible for poor mental health in customs officers, prison guards or policemen include long hours at work and overtime, conflicting demands, poor social support, badly-designed organizational structure, employee reward system, working with dangerous clients. Furthermore, many physicians are notoriously reluctant to seek help. There is an increased level of psychological morbidity among high-risk employees, such as anxiety, depression, substance abuse or personal problems. When employees with such the symptoms begin to perform poorly, supervisors must look beyond job skills of their deteriorating performance.

The risk professions have long recognized the critical role human factors play in accidents. The distractibility and poor judgment that cause human errors have multiple causes, including unresolved psychiatric illnesses and personal problems (Pflanz & Heidel, 2003; Schneider & Weigl, 2018).

Psycho-social work factors may negatively affect the mental health of employees. Employees who worry about the job loss, experience conflicts with co-workers or supervisors, are involved in unchallenging work, or face excessive work demands are bound to experience more absenteeism, less productivity, and decreased job satisfaction. The critical role the work climate plays in the health of employees and the potential contribution of negative work environments contribute to absenteeism and accidents (Pflanz & Heidel, 2003).

Work-related stress may trigger the onset of anxious disorders or depression (Madsen et al., 2017). Anxiety and depression have become extremely common mental disorders, and are manifested in a varying intensity. The anxiety disorders include panic disorder, generalized anxiety disorder, adjustment disorder with anxious mood, phobic disorder, obsessive-compulsive disorder, and post-traumatic stress disorder (APA, 2018). Generally, anxious employees consider day-to-day events to be threatening, although they are not necessarily serious. During intense fear or discomfort many physical symptoms can develop. This may lead to the avoidance of job tasks instead of utilising effective skills to deal with job tasks. Certain events at the workplace may trigger anxiety. These include job transfers, promotion or demotion, employment of new workers, or lay-offs (Stein & Hollander, 2003; Maran, Varetto, Zedda, & Ieraci, 2015).

The employees feeling depression may express emotional, motivational, physiological and cognitive symptoms. Some of them may experience suicidal thoughts or actions (Bennett, 2011). Employees with psychiatric illnesses and other psycho-social problems exhibit a variety of symptoms, including irritability, anger, inattention, apathy, loss of motivation, disinterest, and fatigue. It is not surprising that employees with these symptoms have problems with absenteeism, accidents, interpersonal conflicts, poor job performance, and job dissatisfaction (Pflanz & Heidel, 2003).

Mental disorders account for 11% of all medical plan costs, and depression accounts for 52% of all medical claims for mental disorders. Upon return from disability absence due to depression, 26% of workers experience another episode of disability due to depression in the following 12 months. The disability relapse rate is significantly greater than the relapse rates for high blood pressure, low back pain, and heart disease. Depression is associated with both longer and more frequent absences from work. Psycho-social problems interfere with day-to day work tasks of risk profession employees, impairing their attention span, motivation, energy, and ability to relate to co-workers and clients or patients (Pflanz & Heidel, 2003).

Personal resources, ranking among coping resources, contribute to occupational adjustment. Recreation, self-care, social support and/or rational/cognitive coping resources may play an important role as protective factors in the increase of psychological symptoms. Recreation is one of the most important personal resources of risk profession employees. They may engage in a variety of activities they find relaxing and satisfying. They may do things they enjoy doing the most in their spare time. High levels in self-care domains mean that employees regularly exercise, sleep well, are careful about their diet, practice relaxation techniques, and avoid harmful substances, such as alcohol, drugs, tobacco. Social support reflects that there is at least one person they can count on, one who values or loves them. They may report having a sympathetic person with whom they may talk about work problems. They also may report feeling close to another individual. Rational/cognitive coping resources of employees mean a systematic approach to solving problems, through the consequences of their decisions as well as the ability to identify important elements of problems encountered. They may report being able to set and follow priorities, and having techniques to avoid being distracted. They also may be able to reexamine and reorganize their work schedule. They put their jobs out of their minds when they go home, and feel that there are other jobs besides their present one that they can do (Osipow, 2010; Lovaš, Raczová, Hricová, Mesárošová, & Kováčová Holevová, 2014).

The current research points out a protective factor in performing recreational activities when recovering from work overload, mainly in high-risk professions. High-risk professionals identified self-care strategies that support their well-being at both institutional and individual levels. The inclusion of self-care and recreational activities exists in the social policy systems of some organizations as regards the mental health care of employees (Kilfedder, 2010, in Baumann et al., 2010; Schwartz et al., 2019; Krick & Felfe, 2020). The concept of social support as a protective factor in the stress-health theory has been extensively described in the previous publications. They consider the impact of the perceived social integration and social support as a key in the study of stress and health. Extensive research was carried out around the world in the 1980s on various diseases, including depression. In relation to depression, social support has a protective effect as it was revealed in the studies of prison officers, physicians, or police officers (Cohen & Wills, 1985; Goldberg et al., 1996; Sherwood et al., 2019; Chan & Andersen, 2020; Sun et al., 2020). Stress is viewed as a transactional process that both influences and is influenced by cognitive appraisal, coping strategies, and stress outcomes. The specific stress management interventions typically entail the positive self-talk, deep breathing, anchoring, cognitive rehearsal and desensitization, progressive muscle relaxation, meditation, imagery and biofeedback, goal setting, stress debriefing, time management, financial planning, visual-motor behavior rehearsal, critical incident stress management, physical fitness, biofeedback, social support, eye movement desensitization and reprocessing (Patterson, Chung, & Swan, 2012). Cognitive strategies result from the cognitive-behavioral therapy, and their effect on anxiety and depression has been demonstrated in a variety of studies. The effects of stress management interventions on stress outcomes were studied also in police officers or in emergency medical personnel (Sarason, Johnson, Berberich, & Siegel, 1979; McCammon, Durham, Allison, & Williamson, 1988; De Vente, Kamphuis, Emmelkamp, & Blonk, 2008; Hofmann, Asnaani, Vonk, Sawyer, & Fang, 2012; Patterson et al., 2012).

2. OBJECTIVES

The main objective of this cross-sectional study was to find out how work-related stress and personal resources explain the perceived anxiety and depression in high-risk professions. It was expected that variables of work-related stress explain higher rates of anxiety and depression, while higher levels of personal resources explain less anxiety and depression in the studied sample. The dependent variables were anxiety, depression, while the independent variables were gender, occupational roles and personal resources.

3. METHODS

3.1. Sample and procedures

The study sample comprised a total of 276 first responders from Slovakia including police officers (n=69), customs officers of the Financial Administration of the Slovak Republic (n=65), prison guards of the Prison and Court Guard Service of the Slovak Republic (n=77), and physicians working in state hospitals (n=65).

The responders were recruited in various cities of Slovakia after the consent of their head of departments. They were presented the possibility of participating in a mental health survey on a voluntary basis. The survey was usually conducted at the beginning of their work shifts. Firstly, a written informed-consent form was presented, then questionnaires to be filled out on a voluntary and anonymous basis were explained in a group of employees by a psychologist. Each responder provided a signed informed-consent form before participating in this study. The data were collected from December 2018 to April 2019.

The Ethics Committee of the Faculty of Medicine, University of P. J. Šafárik in Košice, Slovakia, approved the study on April, 30th, 2018.

3.2. Measures

The study was conducted by questionnaire concerning socio-demographic variables, a self-reported questionnaire on work-related stress, and two clinical scales. Firstly, responders filled out the questionnaire concerning socio-demographic variables including age, gender, marital status, education level, employment status and working time.

Work-related stress was measured by the Occupational Stress Inventory Revised (OSI-R), particularly by the questionnaires Occupational Role (ORQ, 60 items) and Personal Resources (PRQ, 40 items). The Personal Strain Questionnaire (PSQ) was not taken into account when assessing stress characteristics due to high collinearity with clinical scales used in the study. Responders answer at the 5-degree scale (from Never to Most). The raw score in each dimension has to be converted to a T-score.

The ORQ measures six dimensions: Role Overload (high scorers may describe their work load as increasing, unreasonable, and unsupported; themselves as not feeling well-trained or competent for the job in hand, needing more help, and/or working under tight deadlines); Role Insufficiency (high scorers report a poor fit between their skills and the job they are performing, boredom and/or underutilization); Role Ambiguity (high scorers report an unclear sense of what they are expected to do, how they should be spending their time, and how they will be evaluated); Role Boundary (high scorers may report feeling caught up in between conflicting supervisory demands and factions, not feeling proud of what they do, or not having a stake in the enterprise); Responsibility (high score indicates high levels of responsibility for the activities and work performance of subordinates, having poor relationships with people at work or feeling pressure from

working with angry or difficult employees or the public); Physical Environment (high score means being exposed to high levels of noise, moisture, dust, heat, cold, light, poisonous substances, having an erratic work schedule or feeling personally isolated). For the ORQ, high scores suggest significant levels of occupational stress. T-scores at or above 70 indicate a strong probability of maladaptive stress. Scores in the range of 60-69 suggest mild levels of maladaptive stress. Scores in the range of 40-59 should be interpreted as being within the normal range. Scores below 40 indicate a relative absence of work-related stress (Osipow, 2010).

The PRQ reports on four dimensions: Recreation (e.g. finding relaxing activities); Self-Care (maintaining healthy behaviour, such as an appropriate diet, sufficient time to sleep, avoiding harmful substances); Social Support (feeling close to another individual, having someone to talk about work problems, spending spare time with someone); Rational/Cognitive Coping (means solving problems adequately, being able to set and follow priorities, and having techniques to avoid being distracted). Concerning the PRQ scales, high scores indicate highly developed coping resources. T-scores below 30 indicate a significant lack of coping resources. Scores in the range of 30-39 suggest mild deficits in coping skills. T-scores in the range of 40-49 indicate average coping skills, whereas higher scores indicate increasingly strong coping skills (Osipow, 2010).

Anxiety was identified by the State Trait Anxiety Inventory (STAI X-1, 20 items). Responders respond on a 4-point scale. This clinical scale describes the current state of anxiety (feelings of tension, nervousness right now). The cutoff score is 50, higher values are considered to be an increased level of anxiety (Müllner, Ruisel, & Farkaš, 1980).

The Zung Depression Scale (SDS) is one of the world's most widely used clinical scales that measures current characteristics of depression. It contains 20 items. The responders should indicate the degree on a 4-point scale that best corresponds to their status they had been feeling in the last two weeks. The total score is converted into the SDS index, which expresses the current level of depressive symptoms. The SDS more than 70 points means severe depression (Zung, 1991).

3.3. Statistical analysis

Firstly, the socio-demographic variables (age, gender, working time), work-related stress (role overload, role insufficiency, role ambiguity, role boundary, responsibility, physical environment), personal resources (recreation, self-care, social support, rational/cognitive coping), and clinical scales (anxiety, depression) were studied. Pearson's correlations, according to the normal distribution of data, were used for testing the associations between the examined variables.

Then, a hierarchical multiple regression analysis, the stepwise method, was performed to determine predictors of anxiety and depression in this study. In the first step, hierarchical multiple regression analyses with independent variables (gender) were applied in relation to anxiety, and depression separately. In the second step, occupational roles and, in the third step, personal resources were added to the both models, and hierarchical multiple regression analyses were calculated again.

The statistical software IBM SPSS Statistics v.23 was used to analyze the data.

4. RESULTS

In general, the responders (n=276) were of middle age (36.6±9.0 years), ranging from 18 to 77 years of age. The sample comprised more men than women (72.1% males). 51.4%

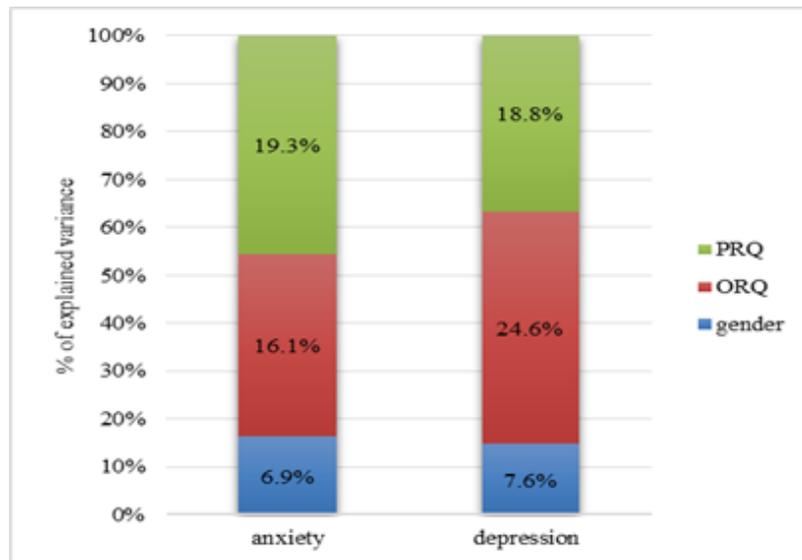
of them worked in shifts, 75.7% worked at night, 62.3% worked overtime, and 48.2% worked in the emergency services.

Mean T-scores were similar in the occupational roles ORQ: 47 (role overload), 54 (role insufficiency), 50 (role ambiguity), 53 (role boundary), 46 (responsibility), and 43 (physical environment) in the total sample. The mean T-scores in the personal resources were: 56 (recreation), 49 (self-care), 51 (social support), 52 (rational/cognitive coping) in the total sample. The mean values for anxiety and depression in the total sample were 37.4 ± 9.8 , and 35.3 ± 8.3 (SDS, respectively).

The average value of anxiety was 37.4 ± 9.8 , and SDS was $44 (\pm 8.3)$.

Two models comprised gender, occupational roles ORQ, and personal resources PRQ. The variances in anxiety and depression explained significantly by independent variables can be found in Figure 1.

Figure 1.
Explained variance of anxiety and depression in the total sample.

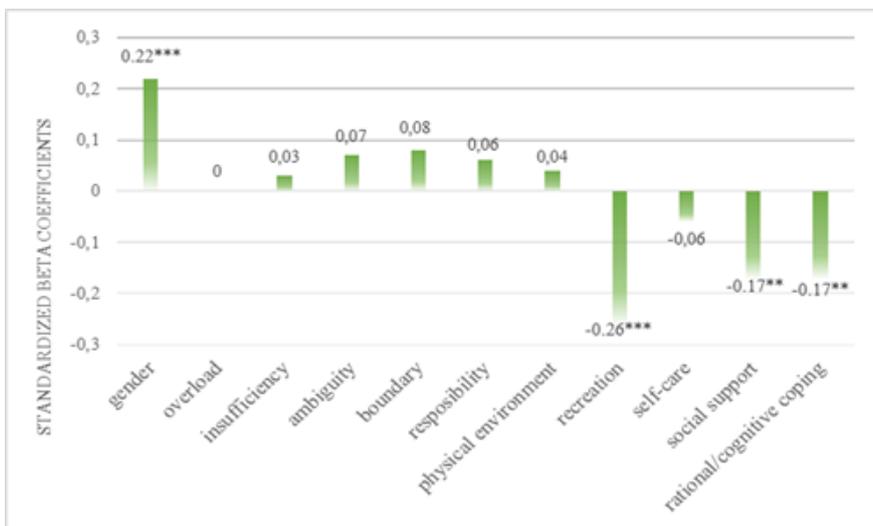


Notes: ORQ=Occupational Role Questionnaire (role overload, role insufficiency, role ambiguity, role boundary, responsibility, physical environment); PRQ=Personal Resources Questionnaire (recreation, self-care, social support, rational/cognitive coping)

Significant predictors of anxiety included female gender ($\beta=.22$, $p \leq .001$), lower levels of recreation ($\beta=-.26$, $p \leq .001$), of social support ($\beta=-.17$, $p \leq .01$), and of rational/cognitive coping ($\beta=-.17$, $p \leq .01$). R^2 was reported by 42.3% in the final model, explaining variance of anxiety (Figure 2).

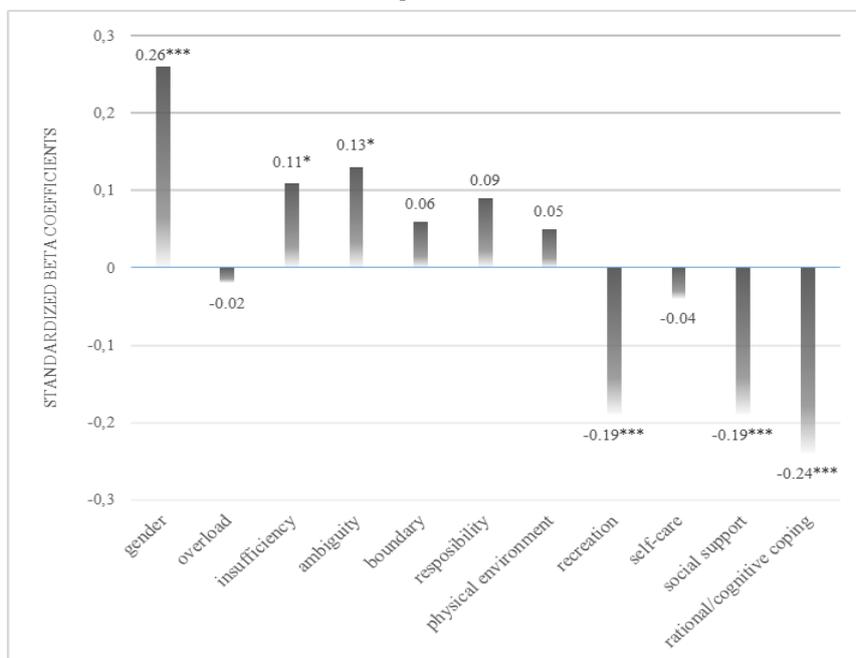
Significant predictors of depression consisted of female gender ($\beta=.26$, $p \leq .001$), higher level of role insufficiency ($\beta=.11$, $p \leq .05$), of role ambiguity ($\beta=.13$, $p \leq .05$), and lower levels of recreation ($\beta=-.19$, $p \leq .001$), of social support ($\beta=-.19$, $p \leq .001$) and of rational/cognitive coping ($\beta=-.24$, $p \leq .001$). R^2 was 48.7% in the final model, explaining variance of depression (Figure 3).

Figure 2.
Multiple regression analysis: gender, occupational roles and personal resources on anxiety.



Notes: * $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$

Figure 3.
Multiple regression analysis: gender, occupational roles and personal resources on depression.



Notes: see Figure 2

5. DISCUSSION AND CONCLUSION

In this study, associations among work related stress, coping resources and mental health were performed in a specific group of employees who perform, before the COVID-19 pandemic. There has been a lack of research on a mental health status of these employees in Slovakia till now.

The findings revealed that the female gender was a risk factor for anxiety and depression in the studied risk professions. For female employees in high-risk professions it is important to have stable personality traits including good self-efficacy and resilience, good time management skills, deal with less dangerous tasks at work, protect their overall health so they can take care of their family, and have adequate social support from their family. If they are vulnerable to anxiety or depression, it is necessary to address an occupational psychologist in their organization to find an appropriate individual solution how to stay healthy at work.

Furthermore, no work-related stress variables, apart from personal resources (except self-care), proved to be significant protective factors in developing of anxiety in employees at risk professions. Regarding depression, work-related stress variables, mainly role insufficiency and role ambiguity, were significant risk factors for its development. On the other hand, personal resources, except self-care, were showed as protective factors against depression. Higher levels of recreation, better social support, and good rational/cognitive coping strategies in the work of high-risk employees are important in diminishing the perceived anxiety and depression, and potentially in protecting against work-related stress.

The importance of this study for practice is a strong need to improve mental health at the workplace of high-risk professions. There is still a paucity of interventions that target psycho-social work factors in high-risk professions. Therefore, the design of effective interventions to promote employees' psychological well-being is very important. A significant number of medical conditions are strongly associated with depression, including chronic pain, heart disease, stroke, AIDS, chronic fatigue, and cancer. Adequate treatment of both the physical and mental disorders is essential for the employee's maximum recovery, regardless of whether the mental disorder is the primary disorder or secondary to medical problems. When an employee is suspected of having a mental health problem, someone in the management should consult a psychologist to evaluate the particular problem behavior and implement appropriate solutions (Pflanz & Heidel, 2003; De Vente et al., 2008).

These findings are much more important in the present worldwide pandemic situation. They underline the need for aiming interventions for high-risk professions that can be on overall risk of development of stress-related disorders than in previous years. These interventions should focus on reducing insufficiency and ambiguity in their work, and more enhance recreation, social support and rational/cognitive coping strategies to avoid worsened psychological well-being of these employees (Patterson, Chung, & Swan, 2014; Tsirigotis, Gruszczyński, & Pęczkowski, 2015).

The limitation of this study included the demanding availability of responses from employees of high-risk professions, e. g. armed forces or doctors, who were too busy to participate in this study. Then, the low prevalence of anxiety and depressive symptoms in the studied sample has been related to normal levels of occupational stress and strong coping skills. This result could have been caused by distrust and fear that the research outcomes from an unknown person (researcher) would reach the leaders, or it could be caused by the fear of a job loss. This might be a potential bias that could have affected these findings. Furthermore, it can be assumed that those responders who were most affected by

occupational stress avoided the research as they had no energy to deal with their exhaustion, either because of the above-mentioned concerns, or for other personal reasons. We also assume that those employees who attended work or did not perceive an increased occupational stress voluntarily participated in the study in contrast to those who refused to be included in the research. The present levels of anxiety and depression in the study group seem to confirm it. It is gratifying that the studied employees did not experience increased levels of anxiety or depression, which seems to be very important for their job achievement.

Since Slovakia does not have any specific regulations on work-related stress and occurrence of mental health problems due to stress, a future general legal framework should be created to protect employees from developing work-related stress (Žuřová, 2019).

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AUTHORS' INFORMATION

Full name: Martina Chylová, PhDr., PhD.

Institutional affiliation: 1st Department of Psychiatry, Faculty of Medicine, P. J. Šafárik University in Košice, Slovakia

Institutional address: Tr. SNP 1, Košice 040 11, Slovakia

Short biographical sketch: Martina Chylová is a clinical psychologist and assistant professor. She completed her doctoral program in Health Sciences (University Medical Center Groningen, the

Netherlands) in 2009. Her teaching and practical activities associate with health psychology, clinical psychology, and psychopathology in adulthood. She conducts investigations in the research projects focusing on employees' mental health and its assessment, improving mental health status in patients with psychiatric illnesses. She also helps students with psychological problems as a counselor at University counselling center UNIPOC in Košice. She is a member of the Slovak Chamber of Psychologists.

Full name: Jana Nezkusilová, Mgr., PhD.

Institutional affiliation: Department of Psychology, Faculty of Arts, P. J. Šafárik University in Košice, Slovakia

Institutional address: Moyzesova 9, Košice 041 80, Slovakia

Short biographical sketch: Jana Nezkusilová works as a lecturer and researcher at the Department of Psychology. Her main field of research is stress, health-related behavior, and high-risk professions. She is also part of an international team at the project COVIDiSTRESS global survey, studying the effect of COVID-19 pandemic on mental health and the behavioral response to the pandemic situation. At the university, she teaches psycho-diagnostics, developmental disorders, and qualitative research. She works also as a child counselor.

Full name: Monika Minčičová Seilerová, JUDr., PhD.

Institutional affiliation: Department of Labour Law and Social Security Law, Faculty of Law, P. J. Šafárik University in Košice, Slovakia

Institutional address: Kováčska 26, Košice 040 75, Slovakia

Short biographical sketch: Monika Seilerová works as a researcher at the Department of Labour Law and Social Security Law. Her research concerns several areas. She currently focuses mainly on the possibilities of improving the legal framework for employees' health care and wellbeing, including the legal regulation of employees' health assessment. In publications, she also deals with issues of the interconnection of civil law with labour law, with issues of employment services or consequences of digitisation on labour law relations. She partially participates as a teacher, lecturing in the field of labour law. She is also active in the organisation of scientific conferences, student symposiums and other popularisation activities.

Chapter #18

ARE THE 5CS OF POSITIVE YOUTH DEVELOPMENT RELATED TO RISKY BEHAVIOURS: ANALYSIS ACROSS COUNTRIES

Tina Pivec¹, Ana Kozina¹, Nora Wium², & Fitim Uka³

¹*Educational Research Institute, Slovenia*

²*University of Bergen, Norway*

³*University of Prishtina, Kosovo*

ABSTRACT

The Positive Youth Development approach views youth development from a broader perspective by emphasizing strengths rather than deficits. If youth strengths are aligned with the resources in their environment, positive youth development outcomes (5Cs: Competence, Confidence, Character, Connection, and Caring) will be more probable, and risky behaviours less frequent. It is crucial to understand the relationship between possible protective factors (e.g., 5Cs) and risky behaviours to provide support for at-risk youth. An emphasis was put on the national contexts of Kosovo, Norway, and Slovenia in investigating the research questions: 1) Does the experience of 5Cs differ across countries? and 2) Does the relation between 5Cs and risky behaviours vary across countries? The sample included 916 participants from Kosovo (66.3% girls; $M_{age} = 16.32$), 220 participants from Norway (47.7% girls; $M_{age} = 17.30$) and 218 participants from Slovenia (70.6% girls; $M_{age} = 17.18$). Results show that the 5Cs differ across countries, revealing that participants from Slovenia reported the lowest scores of the 5Cs in comparison with participants from other countries. In addition, a series of Factorial ANCOVAs revealed that relation between alcohol use and 5Cs varies across countries for Competence, Confidence, and Connection. Guidelines for interventions and future research are discussed.

Keywords: positive youth development, 5Cs, risky behaviours, country comparison.

1. INTRODUCTION

Research on youth has long focused on their deficits rather than their strengths. As a reaction to the deficit perspective, strength-based approaches such as the Positive Youth Development (PYD) perspective have emerged during the last two decades (Lerner, 2017). PYD is based on the Relational Developmental System Theory, which views positive development as an outcome of the interaction between an active, engaged and competent individual and a supportive and nurturing context (i.e., family, school, community; Damon, 2004). Thus, in this interaction, positive youth development outcomes (e.g., 5Cs) are more probable while risky behaviours (e.g., substance use and truancy) are less frequent (Lewin-Bizan et al., 2010). PYD has been mostly researched in the United States (e.g., Geldhof et al., 2014), but also in Europe (e.g., Kozina, Wium, Gonzalez, & Dimitrova, 2019). To design effective interventions with the PYD perspective, it is important to understand the relation between positive youth development outcomes and risky behaviours. Moreover, since positive development outcomes depend on the interaction between the individual and his or her context, it is of great significance to consider the characteristics of one's context in research and youth programmes. Empirical

research investigating the relation between positive development outcomes and risky behaviours among youth in different European countries is scarce. Our aim was to address this relation across three countries: Kosovo, Norway, and Slovenia, to get a deeper understanding of the relations between positive youth development outcomes, substance use, and truancy.

Adolescence is a phase of human development in which major biological, psychological and social changes occur (Sawyer, Azzopardi, Wickremarathne & Patton, 2018). In addition, it is a period of increased risk-taking and is associated with risky behaviours, such as substance use, truancy and bullying. Risky behaviours tend to coexist (Hair, Park, Ling, & Moore, 2009) and may lead to mental health problems (Arbour-Nicitopoulos, Faulkner, & Irving, 2012). The Positive Youth Development framework proposes a negative association between positive development outcomes, such as the 5Cs and risky behaviours, where higher scores on the Cs are associated with lower scores on risky behaviours.

The 5Cs represent Competence (i.e., a positive view of one's actions in specific areas), Confidence (defined as an inner sense of positive self-worth and self-efficacy), Character (described as possession of standards for appropriate behaviour with respect to societal and cultural norms), Connection (i.e., positive bonds with friends, family, and institutions) and Caring (i.e., a sense of sympathy and empathy for others). Earlier research indicates that the 5Cs are positively related to adolescents' contribution to self, family and society (e.g., Lewin-Bizan et al., 2010) as well as negatively related to risky behaviours and emotional difficulties (e.g., Jelacic, Bobek, Phelps, Lerner, & Lerner, 2007).

Risky behaviours, such as substance use, truancy, unprotected sexual activity, and violence may adversely affect adolescents' health and well-being whereas adolescents who engage in risky behaviours are more likely to have negative outcomes later in life. Alcohol use and smoking have been related to adverse short- and long-term consequences, such as car accidents, risky sexual behaviour, increased likelihood for substance use in adulthood, lower academic achievement, emotional distress, and mental health problems (e.g., Arbour-Nicitopoulos et al., 2012).

Regarding the relation between PYD and risky behaviours, findings from the United States have shown a complex pattern of positive and negative developmental pathways towards risky and problem behaviours (Lewin-Bizan et al., 2010). For instance, Phelps et al. (2007) assessed the relations between the 5Cs and risky and problem behaviours among early adolescents in the United States. Only one-sixth of the participants manifested a negative relation between PYD indicators and risky and problem behaviour, where increases in PYD indicators were related to decreases in risky and problem behaviours. Other youth remained stable in their risky and problem behaviours over time or even showed increases in both trajectories. Similarly, Lewin-Bizan et al. (2010) found that youth who scored high on the 5Cs were also more likely to engage in risk behaviours. Thus, both positive and negative associations have been found between PYD outcomes and risky behaviours. However, Schwartz and colleagues (2010) indicated that PYD outcomes as a whole (i.e., the 5Cs) were protective against smoking and marijuana use for girls and against hard drugs for both genders. In contrast, PYD outcomes were positive predictors of drinking for boys. The authors speculated that higher levels of PYD may lead to engaging in more positive social relationships, which might be the reason for the increase in alcohol use.

More research is needed on the role of PYD in reducing risk behaviours (Bonell et al., 2016). Although several findings have been made on the protective role of the positive outcomes, some specific associations regarding the PYD outcomes have not been thoroughly researched. Bonell and colleagues (2016) proposed that positive assets might serve as buffers or compensators. Buffering relates to a lesser influence of the risk factors (i.e., risky behaviour) if positive assets (e.g., 5Cs) are present while compensation is having more positive assets and therefore being able to engage in risk-taking behaviours without adverse outcomes (Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2004).

It has been argued that future research should focus on individual PYD outcomes to understand their separate influence on risk behaviours in order to design effective youth programmes or interventions (Schwartz et al., 2010). Moreover, the authors pointed out that the different Cs may be protective against different risk behaviours, indicating that diverse risk behaviours should be included in future research. Based on Schwartz and colleagues' (2010) recommendations, our aim is (1) to examine the differences in the 5Cs across countries; (2) to explore the relation between PYD outcomes and risky behaviours across countries (controlling for age, gender and parents' educational background).

2. METHOD

2.1. Participants

The sample included 916 participants from Kosovo with age range 14–19 (Albanians living in Kosovo; 66.7% girls; $M_{age} = 16.32$; $SD = 1.67$), 220 participants from Norway with age range 16–20 (47.7% girls; $M_{age} = 17.30$; $SD = 1.12$) and 218 participants from Slovenia with age range 15–20 (70.6% girls; $M_{age} = 17.18$; $SD = 1.36$). About 47% of participants in Kosovo reported that the highest educational level of their father was vocational, technical, polytechnic or university, while 38% reported that their mothers gained the same level of education. In Norway, the respective percentages were 75% and 79% and in Slovenia, the percentages were 43% and 54%.

2.2. Instruments

The short form of the PYD questionnaire (Geldhof et al., 2013) was used to measure the 5Cs. It consists of 34 items answered on a 5-point Likert scale (with responses ranging from 1 = *strongly disagree* to 5 = *strongly agree*, for example). Sample items that measure the 5Cs are: Competence (e.g., I do very well in my classwork at school); Confidence (e.g., All in all, I am glad I am me); Character (e.g., I hardly ever do things I know I shouldn't do); Connection (e.g., My friends care about me); and Caring (e.g., When I see another person who is hurt or upset, I feel sorry for them). Reliability measures (Cronbach's alphas) of the 5Cs are adequate: Competence (Kosovo: .68; Norway: .86; Slovenia: .65); Confidence (Kosovo: .67; Norway: .93; Slovenia: .89); Character (Kosovo: .64; Norway: .83; Slovenia: .68); Connection (Kosovo: .75; Norway: .88; Slovenia: .73); Caring (Kosovo: .85; Norway: .90; Slovenia: .83).

Additionally, the participants answered several questions about risky behaviours, from which substance abuse (i.e., Have you used alcohol once or more in the last 30 days? and Have you smoked a cigarette once or more in the last 30 days?), as well as truancy (i.e., Have you skipped school once or more in the last 4 weeks?), were included in the analysis. Response categories were yes and no.

3. RESULTS

In Table 1, a frequency distribution of the demographic variables and risky behaviours is presented. The majority of participants both in Kosovo and Slovenia were females (66.7% and 70.6%, respectively), while in Norway most of the participants were males (52.3%). The countries differed in age as participants from Kosovo ($M_{age} = 16.32$ years) were younger on the average than participants from Norway ($M_{age} = 17.30$ years) and Slovenia ($M_{age} = 17.18$ years). In Kosovo, most of the parents had secondary school or lower education and in Norway, most of the parents had post-secondary school. However, in Slovenia, there were some differences among education of parents since the majority of mothers had post-secondary while fathers had mostly secondary school or lower education. To address the differences in economic status across all included countries, the analyses controlled for parents' educational background as an indicator of socio-economic status since Kosovo has an upper-middle-income economy while Norway and Slovenia have high-income economies (World Bank, 2020).

Some differences among countries in risky behaviour are visible as well. In Norway and Slovenia, the majority of the participants drank alcohol in the last 30 days, while in Kosovo only 12% of the participants engaged in alcohol use in the last 30 days. The proportion of youth who smoked a cigarette in the last 30 days was similar in all three countries. As for truancy, a third of the participants from Norway reported skipping school in the last month, while almost half of the participants from Slovenia had done the same. On the contrary, only 7% of participants from Kosovo reported they have skipped school in the last month.

Table 1.
Descriptive Analysis of Study Variables among Youth in Kosovo, Norway, and Slovenia.

Study variable	Kosovo <i>n</i> = 916	Norway <i>n</i> = 220	Slovenia <i>n</i> = 218	Total <i>N</i> = 1354
<i>Mean age (SD)</i>	16.32 (0.99)	17.30 (1.12)	17.18 (1.36)	16.62 (1.16)
Gender %				
Male	33.3	52.3	29.4	35.8
Female	66.7	47.7	70.6	64.2
Father's education %				
Post-secondary	40.8	74.5	43.8	46.8
Secondary school or lower	59.2	25.5	56.2	53.2
Mother's education %				
Post-secondary	23.6	79.0	54.2	37.5
Secondary school or lower	76.4	21.0	45.8	62.5
Alcohol use in the last 30 days %	12.1	67.4	59.6	27.7
Smoking cigarettes in the last 30 days %	20.7	23.7	21.5	21.2
Truancy in the last 30 days %	7.4	33.9	45.4	17.4

To examine the differences in PYD outcomes (i.e., the 5Cs) across countries, MANCOVA was employed ($\Lambda = 0.88$; $F = 16.31$; $p < .001$; $partial \eta^2 = 0.06$). In Table 2, the means of the 5Cs are presented together with standard errors. The post hoc tests revealed that examined countries significantly differed in all 5Cs, except for Character. Participants from Slovenia reported lower levels of Competence and Caring in comparison with participants from Norway and Kosovo (all $ps < .001$), lower levels of Confidence with regard to participants from Kosovo ($p < .001$), and lower levels of Connection compared to participants from Norway ($p = .029$). The participants from Norway and Kosovo differed only in Confidence ($p < .001$), where participants from Kosovo reported higher levels of Confidence.

Table 2.
5Cs by Country: MANCOVA.

Variable	Kosovo <i>M (SE)</i>	Norway <i>M (SE)</i>	Slovenia <i>M (SE)</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>
Competence	3.57 (.02)	3.61 (.05)	3.37 (.05)	6.86	2	3.43	7.58*
Confidence	4.05 (.02)	3.74 (.05)	3.62 (.05)	32.15	2	16.08	36.53**
Character	3.87 (.02)	3.97 (.05)	3.89 (.04)	1.36	2	0.68	1.95
Caring	4.23 (.03)	4.37 (.06)	4.02 (.05)	11.94	2	5.97	11.61**
Connection	3.78 (.02)	3.87 (.05)	3.71 (.04)	2.67	2	1.33	3.37*

Note. Gender, age and parents' educational background were controlled for; *M (SE)*: Mean (standard error), *SS*: Sum of Squares; *MS*: Mean Square; * $p < .05$; ** $p < .01$.

Due to the differences in the 5Cs across countries, we expected the associations between the 5Cs and risky behaviours (i.e., alcohol use, smoking, and truancy) to differ across countries as well. A series of Factorial ANCOVAs were conducted to examine interaction terms between countries and risky behaviours on the 5Cs. In Table 3, we present only the interaction effects between countries and risky behaviours on the 5Cs. Similar to MANCOVA findings, country had a significant effect on all of the 5Cs, except for Character ($ps < .05$). Among risky behaviours, the effect of Alcohol use, Smoking, and Truancy did not have a significant effect on Competence, Confidence, and Caring. However, Truancy had a significant effect on Character ($F = 5.50$, $p = .02$), and Caring ($F = 6.15$, $p = .01$), meaning participants that were engaged in truancy had lower Character or Caring.

Only one interaction effect (between countries and alcohol use) was observed on three of the 5Cs: Competence, Confidence and Connection. In particular, participants from Kosovo who were drinking in the last month felt less confident and less connected to their friends, parents, and society than those who did not drink alcohol. On the contrary, participants from Slovenia who have been drinking in the last month were more confident and connected to their society, friends, and parents than those who did not. Furthermore, participants from Kosovo who have been drinking reported feeling less competent than those who did not drink alcohol while participants from Slovenia and Norway who have been drinking in the last month felt more competent than those who did not drink alcohol.

Table 3.
5Cs and Risky Behaviours by Country: Series of Factorial ANCOVA Analyses.

Factorial ANCOVA Summary				
Source	SS	df	MS	F
Competence				
Country*Alcohol	2.93	2	1.47	2.90*
Country*Smoking	0.80	2	0.04	0.09
Country*Truancy	1.34	2	0.67	1.47
Confidence				
Country*Alcohol	3.85	2	1.93	4.39*
Country*Smoking	0.28	2	0.14	0.32
Country*Truancy	2.15	2	1.08	2.45
Character				
Country*Alcohol	0.38	2	0.19	0.54
Country*Smoking	0.63	2	0.32	0.91
Country*Truancy	1.45	2	0.72	2.07
Caring				
Country*Alcohol	2.00	2	1.00	1.97
Country*Smoking	1.95	2	0.97	1.91
Country*Truancy	0.77	2	0.38	0.76
Connection				
Country*Alcohol	5.12	2	2.56	6.60*
Country*Smoking	0.03	2	0.01	0.03
Country*Truancy	1.07	2	0.54	1.39

Note. Gender, age and parents' educational background were controlled for; SS: Sum of Squares; MS: Mean Square; * $p < .05$; ** $p < .01$.

4. DISCUSSION

The aim of the chapter was to examine differences in the 5Cs across countries, as well as to explore how the associations between PYD outcomes and risky behaviours differed across countries. The results showed that youth in the different countries reported diverse levels of the 5Cs, in particular, participants from Slovenia reported lower levels of the 5Cs relative to participants from the other two countries. Participants from Norway and Kosovo differed only in Confidence, where Norwegians reported lower Confidence. However, the scores on the 5Cs were relatively high in all countries thus, indicating that the majority of the youth experienced competence in academic and social domains, for example, had a sense of positive self-image, had standards for appropriate behaviours in relation to societal and cultural norms, experienced mutual positive relations with significant others as well as had a sense of sympathy and empathy for others.

Regarding risky behaviours, participants who reported Truancy had lower Character. Since Character consists of having standards for appropriate behaviour according to cultural and societal norms, participants who reported lower levels of Truancy had higher Character scores as they know how to behave more suitable in school. Furthermore, participants with higher levels of Truancy had lower caring scores, an association, which has been scarcely researched. However, we predict that having higher empathy and sympathy for others lowers the risk of skipping schools since prosocial behaviour, which is highly associated with empathy, is an important protective factor of truancy (Veenstra, Lindenberg, Tinga, & Ormel, 2010). Regarding Truancy, there appears to be a difference among countries as well since participants from Kosovo reported only 7% of truancy in the last 30 days relative to Norway's 34% and Slovenia's 45%. The reason for this may relate to the age differences among countries as participants from Kosovo were younger than participants from Norway and Slovenia, thus, since elementary school is mandatory in Kosovo, their perception of first years of high school may differ as well.

The only significant interaction effect on the 5Cs occurred between country and alcohol use. The main differences were between Slovenia and Kosovo, since drinking alcohol in Slovenia is connected to higher levels of Confidence, Competence, and Connection, while participants from Kosovo reported exactly the opposite. Norwegians reported being more competent when drinking alcohol as well.

To our knowledge, studies reporting comparisons between countries and 5Cs are scarce, especially those regarding the relation between 5Cs, and risky behaviour across countries. As argued by Bonell and colleagues (2016), specific positive assets may protect against risky behaviours. In the case of Kosovo, being more confident, competent and connected to others may specifically protect against alcohol use although not against smoking or truancy. Our finding is consistent with previous findings (Benson & Scales, 2009) that indicate that social skills, connection with peers and school engagement can reduce substance use. However, as our analyses showed, participants from Slovenia who were drinking in the last month felt more confident, competent and connected to others and participants from Norway who were drinking also felt more competent. In an earlier study, Schwartz and colleagues (2010) found out that for boys, the accumulation of positive assets was predictive of alcohol use while it has been commented that especially in Western societies, alcohol use is part of adolescents' events and parties and is acceptable in different social contexts, sometimes including families (Power, Stewart, Hughes, & Arbona, 2005). Therefore, alcohol use may promote Connection and the social component of Competence as well. Moreover, using alcohol does not mean a young person will develop poorly, as Dworkin (2005) argued that experimentation with alcohol could actually be an opportunity for positive development, allowing youth to figure out who they are and where they belong.

Differences in alcohol consumption among adolescents in Kosovo, Norway and Slovenia appear to reflect cultural and religious contrasts between the countries. Accordingly, the findings on alcohol consumption and the associations with the 5Cs may reflect the liberal contexts of Slovenia and Norway that may be tolerant of the behaviour among adolescents, and the more strict Islamic context of Kosovo that perceives alcohol consumption as problematic and thus prohibit it. Nevertheless, previous research on alcohol use among adolescents in Kosovo showed that over one-third of late adolescents reported harmful drinking behaviours (Sajber, Tahiraj, Zenic, Peric, & Sekulic, 2016). As for Norway and Slovenia, the proportion of late adolescents who have used alcohol in the last month was quite similar to that reported in previous studies (Inchley et al., 2020; Pedersen & von Soest, 2015).

The results clearly revealed differences in PYD outcomes (although not in Character), thus, supporting the guidelines for interventions based on Positive Youth Development perspective, which recommend contextualization of the youth programmes (Roth & Brooks-Gunn, 2016). Moreover, Bonell and colleagues (2016) suggest that PYD interventions should include a reflection of the behaviour the youth had to engage in, choosing personal goals and activities to achieve the behaviour, and using the resources that are available wisely. Thus, PYD interventions should allow adolescents to build on their intentional self-regulation skills and prosocial behaviour, which will in turn empower adolescents to develop PYD outcomes (i.e., the 5Cs).

Despite addressing important youth issues, our subsamples in Norway and Slovenia were smaller than the subsample in Kosovo. Again, the internal consistencies of the 5Cs were adequate in Kosovo and Slovenia while the scales had good or excellent reliability in Norway. This may be due to the translations into national languages or to differences in national contexts since the original scale was in English and adjusted to the US context. Moreover, our study was more exploratory, focusing on country differences with respect to the relation between positive youth development outcomes and risky behaviours; and the cross-sectional design did not allow us to explore the buffering or compensating effects of the 5Cs on risky behaviours as proposed by Bonell and colleagues (2016). In light of the above-mentioned limitations, larger representative samples and more rigorous procedures that ensure similarities of study scales and samples across groups as well as longitudinal research designs that will thoroughly examine the possible protective function of positive youth development outcomes on risky behaviours are recommended in future research. Furthermore, Contribution, considered as the 6th C of PYD, and which relates to contributing to the self, family, community, and institutions as a result of enhanced experience of the 5Cs can also be explored in future studies. A better understanding of the associations between PYD outcomes and risky behaviours, as well as the contexts in which they occur, will make intervention programmes more effective.

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AUTHORS' INFORMATION

Full name: Tina Pivec

Institutional affiliation: Educational Research Institute

Institutional address: Gerbičeva 62, SI-Ljubljana, Slovenia

Short biographical sketch: Tina Pivec is employed as an emerging researcher at the Educational Research Institute. Her research interest is in the field of educational and developmental psychology (bullying, positive youth development). In her PhD studies, she is preparing a doctoral dissertation with a focus on positive youth development and bullying behaviour among adolescents in the transition between primary school and high school. She is currently actively involved in international research project Positive Youth Development Across Cultures (led by Nora Wiium, Bergen University).

Full name: Ana Kozina

Institutional affiliation: Educational Research Institute

Institutional address: Gerbičeva 62, SI-Ljubljana, Slovenia

Short biographical sketch: Ana Kozina is a researcher, assistant professor and a head of the Centre for evaluation studies in Educational Research Institute. She is focused on the developmental and time related trends of aggression and anxiety (in childhood and adolescence) their interplay and the role anxiety and aggression play on individual level, on school level and on the community level (with possible prevention and intervention designs). In the field of education, she is interested in the factors related to students' achievement and well-being (social and emotional learning, school climate, motivation...). In the last years she has lead HAND in HAND: Social and Emotional Skills for Tolerant and Non-Discriminative Societies and is currently actively involved in international research project Positive Youth Development Across Cultures (led by Nora Wiium, Bergen University). She is a member of Editorial board: Educational research Institute Press and a president of Slovenian Educational Research Association (SLODRE).

Full name: Nora Wiium

Institutional affiliation: University of Bergen

Institutional address: Christiesgate 12, 5020 Bergen, Norway

Short biographical sketch: Nora Wiium is currently an associate professor of developmental psychology at the University of Bergen, Norway. Her job mainly entails teaching in developmental psychology and research on health behaviors and youth development. She holds a PhD in Health Promotion from the University of Bergen. As the principal investigator for the Positive Youth Development Cross-National Project, which was initiated in 2014, she has led and organized collaborations with research partners from over 30 countries across, Africa, Asia, Australia, Europe, the Middle East, and South America. The Cross-National Project represents expertise in wide ranging yet connected scientific fields of human development, intervention and implementation science. Wiium has co-edited a Special Issue on the topic of Positive Youth Development across Cultures in Child & Youth Care Forum. She is a co-editor of a forthcoming Handbook on Positive Youth Development to be published by Springer.

Full name: Fitim Uka

Institutional affiliation: University of Prishtina "Hasan Prishtina", Prishtina, Kosovo

Institutional address: Street "Eqrem Çabej", nr. 21, 10 000, Prishtinë, Kosovo.

Short biographical sketch:

Fitim Uka is lecturer at the Department of Psychology, University of Prishtina "Hasan Prishtina", Kosovo. He is director of Psycho-Social and Medical Research Centre. Uka is currently engaged in several research and intervention projects regarding the Positive Youth Development. Apart of PYD, his research is focused on the development of learning-related skills during the early childhood years, including children's intelligence, self-regulation and academic skills. He has published several articles in the field of early childhood education. Recent publications appear in Intelligence, Early Education and Development, and American Journal of Community Psychology.

Chapter #19

THE PREDICTIVE ROLES OF PERFECTIONISM, SELF-HANDICAPPING AND SELF-COMPASSION ON PSYCHOLOGICAL WELL-BEING

Gizem Alaloglu & Basak Bahtiyar

Maltepe University, Turkey

ABSTRACT

Perfectionism is a multidimensional concept and its role on psychological well-being has gained attention in recent literature. The aim of the current study was to examine the relationship of different dimensions of perfectionism with self-handicapping and self-compassion and to investigate their predictive roles on psychological well-being. For this purpose, 653 volunteered participants (360 females and 293 males) whose ages were between 18 and 50 ($M = 24.90$, $SD = 7.57$) were recruited from various cities in Turkey. For data collection, Multidimensional Perfectionism Scale (MPS), Self-Handicapping Scale (SHS), Self-Compassion Scale (SCS), Brief Symptom Inventory (BSI) and Satisfaction with Life Scale (SWLS) were administered. The findings indicated that self-compassion was negatively correlated with all perfectionism domains and self-handicapping. Moreover, self-handicapping was positively correlated with socially prescribed perfectionism, but negatively correlated with self-oriented perfectionism. The results of the hierarchical regression analyses revealed that psychological symptoms were positively associated with socially prescribed perfectionism and self-handicapping, but negatively associated with self-compassion. Finally, satisfaction with life was found to be positively associated with self-oriented perfectionism and self-compassion, while negatively associated with socially prescribed perfectionism. These findings highlighted the importance of different aspects of perfectionism regarding to psychological well-being and its related components.

Keywords: perfectionism, self-handicapping, self-compassion, psychological symptoms, well-being.

1. INTRODUCTION

Perfectionism is a personality trait characterized by one's desire to be perfect, setting high standards for performance, fear of failure, and also self-criticism (Frost, Marten, Lahart, & Rosenblate, 1990). In the literature, perfectionism is mostly considered as a risk and maintaining factor for various psychological problems (Egan, Wade, & Shafran, 2011) including depression (Hewitt & Flett, 1991a), anxiety (Flett, Hewitt, & Dyck, 1989; Soares et al., 2014), obsessive compulsive disorder (Frost & Steketee, 1997), eating disorder (Bento et al., 2010), burn-out (Zhang, Gan, & Cham, 2007), narcissism (Sherry, Gralnick, Hewitt, Sherry, & Flett, 2014), borderline personality disorder (Chen, Hewitt, Flett, & Roxborough, 2019) and aggression (Erol-Öngen, 2009). However, some other researchers emphasized that perfectionism is a multidimensional concept and may not be an overall maladaptive (Stoeber & Otto, 2006). Consistently, assessment tools named as Multidimensional Perfectionism Scales (Frost et al., 1990; Hewitt & Flett, 1991b) contributed to the conceptualization and measurement of perfectionism in different domains by pointing out that each dimension may differ in terms of related psychological outcomes. One of the well-known conceptualizations of multifaceted perfectionism has been

recognized by Hewitt and Flett's (1991b), which included self-oriented perfectionism, other-oriented perfectionism and socially prescribed perfectionism. Accordingly, self-oriented perfectionism represents setting high standards and some perfectionist expectations toward oneself; other-oriented perfectionism refers to striving for perfectionism toward others' abilities and behaviors; and socially prescribed perfectionism is the tendency to believe that others have high expectations from individual. Self-oriented perfectionism (Frost, Heimberg, Holt, Mattia, & Neubauer, 1993; Soares et al., 2014) and other-oriented perfectionism (Frost et al., 1993) are argued to be adaptive, whereas socially-prescribed perfectionism originated from high parental expectations and parental criticism is maladaptive being associated with concerns about mistakes or doubts about actions (Frost et al., 1993; Soares et al., 2014). Consistently, empirical studies illustrate the positive relation of socially-prescribed perfectionism with depression (Frost et al., 1993; Kawamura, Hunt, Frost, & DiBartolo, 2001) and anxiety (Weiner & Carton, 2012), as well as decrease in well-being, environmental mastery and self-esteem (Park & Jeong, 2015). On the other hand, adaptive perfectionism traits (e.g. self-oriented perfectionism and other-oriented perfectionism) are related to positive outcomes such as responsibility, success, higher academic performance, psychological reliance, perceived social support, positive affect and life satisfaction (Stoeber & Otto, 2006).

In order to acknowledge the role of different perfectionism domains on psychological outcomes, the current study included two concepts assumed to be closely associated with psychological health. The first concept is self-handicapping. This is a strategy in which people use to protect their self-esteem through withholding effort in the anticipated failure (Kolditz & Arkin, 1982). According to Berglas and Jones (1978), people are more likely to externalize their failures by using self-handicapping strategies when they have doubts about their abilities. This externalization may prevent people from attributing their failures to their poor abilities and help them to protect their self-esteem (Brown & Kimble, 2009). Using self-handicapping strategies seem to be useful in the short term; however, they might lead to negative psychological consequences in the long run (Zuckerman, Kieffer, & Knee, 1998; Zuckerman & Tsai, 2005). Relevant studies also indicate that self-handicapping is positively associated with trait anxiety, negative affect, alcohol and drug usage (Zuckerman & Tsai, 2005); stress, anxiety and depression (Sahranç, 2011); withdrawal and negative focus (Zuckerman et al., 1998); but negatively associated with satisfaction with life, psychological well-being and intrinsic motivation for job (Zuckerman & Tsai, 2005); academic performance, self-esteem and positive affect (Zuckerman et al., 1998). Although the research examining the relationship between self-handicapping and perfectionism is very limited; there is evidence showing that people with higher perfectionist expectancies are more likely to use self-handicapping strategies (Frost et al., 1990; Pulford, Johnson, & Awaida, 2005). Pulford and colleagues (2005) suggested that the fear of making mistake and doubt about performance may lead perfectionists to intentionally avoid making an effort through these strategies in order to deal with possible failure and negative intra/interpersonal evaluations. However, the question about how different domains of perfectionism are associated with self-handicapping remains unanswered.

Another important concept of the study is self-compassion assumed to be a well-being enhancing attitude which enables people to handle a negative situation or failure in an adaptive way (Neff, 2011). Unlike self-handicapping, people with high level of self-compassion are more likely to attribute their personal experiences to their own abilities without comparing with others (Neff, 2011); to accept their failures (Neff, Rude, & Kirkpatrick, 2007) and to learn something new rather than focusing on protecting self-esteem (Neff & Vonk, 2009). The literature provides substantial support for the

adaptive value of self-compassion related to social connectedness, emotional intelligence, satisfaction with life (Neff, 2003); autonomy, environmental mastery, personal development, positive relations with others, purpose in life, self-acceptance (Sun, Chan, & Chan, 2016); and positive affect (Brown, Bryant, Brown, Bei, & Judd, 2015; Galla, 2016). Consistently, this pattern is found to be negatively correlated with self-criticism, maladaptive perfectionism, anxiety, rumination, depression (Neff, 2003); stress and negative affect (Brown, et al., 2015; Galla, 2016).

A limited number of studies have established a negative association between perfectionism and self-compassion (Barnett & Sharp, 2016; Ferrari, Yap, Scott, Einstein, & Ciarrochi, 2018; Neff, 2003). Accordingly, self-judgment as a typical feature of maladaptive perfectionism may induce some negative cognitive evaluations and emotional responses; whereas, self-compassion including self-kindness and self-acceptance may promote positive self-evaluations and self-appraisals (Barnett & Sharp, 2016). Although it seems that perfectionism and self-compassion are opposed to each other; there is the need for further examination to clarify this association regarding the specific perfectionism traits. Moreover, very few empirical studies also indicate the negative link between self-compassion and self-handicapping (Akın & Akın, 2015; Petersen, 2014).

To sum up, the role of perfectionism as a multidimensional concept needs to be highlighted in terms of psychological well-being. In this attempt, not only focusing on its dimensions but also considering related risk and protective factors are important to achieve comprehensive framework differentiating between adaptive and maladaptive aspects of perfectionism. Therefore, the aim of the current study was to examine the relationships among different perfectionism traits, self-handicapping, self-compassion and the predictive roles of these on psychological symptoms and life satisfaction. Based on this objective, positive associations among socially prescribed perfectionism, self-handicapping and psychological symptoms are expected. On the other hand, self-oriented perfectionism and self-compassion are hypothesized to be positively associated with psychological well-being.

2. METHOD

2.1. Participants

653 volunteered participants (360 females, 293 males) were recruited from various cities in Turkey by using convenience sampling method. The age range of the participants was between 18 and 50 ($M = 24.90$, $SD = 7.57$). Majority of the participants (89.4%) were either university students or had a minimum bachelor's degree. In terms of marital status, 101 participants (15.6%) were married and 488 of them (74.7%) were single. Finally, 170 participants (26%) had a history of psychiatric or psychological help for some reason or complain, while others (74%) did not seek any help during their lifetime.

2.2. Measures

2.2.1. Demographic information form

This form was prepared by the authors to collect information about participants' demographic characteristics including gender, age, education, marital status and psychiatric history. All these demographic variables except the education level were measured by the open-ended questions, such as "Your marital status: ____". In terms of participants' psychiatric history, "the absence/presence of a psychiatric history, the name of diagnosis and the type of treatment" were assessed with 3 separate questions. In terms of education level, it was measured by a question rated on an 8-point Likert-scale ranging from "illiterate" to "PhD and above".

2.2.2. Multidimensional perfectionism scale (MPS; Hewitt & Flett, 1991b)

MPS is a self-report questionnaire including 45 items to assess different perfectionism traits; namely, self-oriented perfectionism, other-oriented perfectionism and socially prescribed perfectionism. Each subscale contains 15 items rated on a 7-point Likert-scale ranging from strongly disagree (1) to strongly agree (7), and higher scores reflecting higher perfectionism on that dimension and also overall. In a study conducted with university students, internal consistency results were reported as .86 for self-oriented perfectionism, .82 for other-oriented perfectionism and .87 for socially prescribed perfectionism (Flett, Hewitt, Blankstein, & O'Brien, 1991). In another study conducted with psychiatric patients, internal consistency was found as .88 for self-oriented perfectionism, .74 for other-oriented perfectionism and .81 for socially prescribed perfectionism. Turkish version of the form adapted by Oral (1999) was conducted with the university students. In this adaptation internal consistency was reported as .91 for total scale, .91 for self-oriented perfectionism, .73 for other-oriented perfectionism and .80 for socially prescribed perfectionism (Oral, 1999).

In the present study, Cronbach's alpha coefficient was calculated as .86 for total scale, .86 for self-oriented perfectionism, .67 for other-oriented perfectionism and .78 for socially prescribed perfectionism.

2.2.3. Self-handicapping scale (SHS; Jones & Rhodewalt, 1982)

SHS was used to assess self-handicapping strategies such as procrastination, lack of preparation and effort, use of alcohol and medicine, substance abuse, lack of sleep and emotional symptoms. The scale involves 25 items rated along a 6-point Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree). Higher scores refer to increase in tendency of self-handicapping. Turkish version of the form used in this study also consists of 25 items rated along a 6-point Likert scale as in the original form.

The internal consistency of the original form was calculated as .79 (Rhodewalt, 1990), while the internal consistency of Turkish version was reported as .90 (Akin, 2012). In the current study, internal reliability of the scale was calculated as .71.

2.2.4. The self-compassion scale (SCS; Neff, 2003)

SCS was developed to measure individual's tendency to be compassionate and kind toward self. The scale contains 26 items rated on a 5-point Likert scale ranging from 1 (almost never) to 5 (almost always). There are 6 factors to assess general aspects of self-compassion named as, self-kindness vs self-judgment, common humanity vs isolation, mindfulness vs over identification. Accordingly, self-kindness refers to caring attitudes toward self; common humanity indicates the awareness about the possibility of making a mistake as a human being; and mindfulness refers to embracing the present experiences without judging or avoiding. Self-judgment, isolation and over-identification are evaluated as the opposite of these positive attitudes and reversely coded. Higher scores for the total scale indicate higher self-compassion. Internal consistency for the total scale was .90 with the subscales ranging from .78 to .84 (Neff, 2003).

Turkish version (Akin, Akin, & Abacı, 2007) of the form includes same 6 factors and 26 items. The scale has internal consistency ranging from .72 to .80 for these 6 factors (Akin et al., 2007). In the current study, internal consistency was reported as .92 for total scale, .79 for self-kindness, .84 for self-judgment, .74 for common humanity, .76 for isolation, .77 for mindfulness, .78 for over-identification.

2.2.5. Brief symptom inventory (BSI; Derogatis, 1993)

BSI is self-report questionnaire assessing the intensity of psychological symptoms. The scale consists of 53 items with 9 subscales (somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism) and 3 indices of global stress (Global Severity Index, Positive Symptom Distress Index, and Positive Symptom Total). 9 subscales of BSI aim to assess dimensions of symptoms, while 3 indices of global stress aim to assess current or past level of symptomatology, intensity and number of reported symptoms. Items are scored with a 5-point Likert scale ranging from 0 (not at all) to 4 (extremely). Higher scores represent higher frequency and intensity of symptoms. Internal consistency for the total scale was .97 with the subscales ranging from .71 to .85.

Turkish version of this scale (Şahin & Durak, 1994) contains only 5 subscales; named as anxiety, depression, paranoid ideation, somatization and hostility whose internal consistency was ranged from .63 to .86. In the current study, internal consistency was calculated as .97 for total scale, between .82 (hostility) and .91 (depression) for subscales.

2.2.6. Satisfaction with life scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985)

SWLS has 5 items to assess overall life satisfaction rated on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Higher scores reflect higher satisfaction with life and internal consistency was reported as .87 (Diener et al., 1985). Turkish version of the scale also includes 5 items whose internal consistency was calculated as .79 (Köker, 1991). In the current study, internal consistency was calculated as .84.

2.3. Procedure and analysis

After the approval of Maltepe University Ethics Committee, self-report questionnaires were administered to volunteered participants. All participants were informed about the purpose, confidentiality and procedure of the study in detailed through the inform consent. It took approximately 20 minutes to complete all items. Collected data was analyzed by using SPSS IBM 23. Firstly, Cronbach's alpha coefficients were calculated for all the scales. Secondly, relationships among variables were examined with Pearson's Correlation Analysis. Thirdly, predictors of psychological well-being were examined by using hierarchical regression analyses.

3. RESULTS

3.1. Descriptive information for the measures

In order to assess descriptive statistics for the measures, means, standard deviations, minimum-maximum scores, Cronbach's alpha coefficients for internal consistency were calculated for the subscales of Multidimensional Perfectionism Scale (MPS), namely; self-oriented perfectionism, other-oriented perfectionism and socially prescribed perfectionism; Self-compassion Scale total (SCS); Self-handicapping Scale (SHS); Brief Symptom Inventory total (BSI) and Satisfaction with Life Scale (SWLS) (See Table 1).

Table 1.
Descriptive Information for the Measures.

Measures	N	M	SD	Range (Min-Max)	Cronbach's Alpha
1. MPS-SOP	653	72.81	14.50	28-105	.86
2. MPS-OOP	653	62.38	11.08	29-96	.67
3. MPS-SPP	653	56.07	13.10	16-97	.78
4. SHS	653	80.49	13.58	35-113	.71
5. SCS total	653	83.24	18.41	29-126	.92
6. BSI total	653	58.22	40.73	0-195	.97
7. SWLS	649	21.81	6.70	5-35	.84

Note: 1 = MPS Self-Oriented Perfectionism, 2 = MPS Other-Oriented Perfectionism, 3 = MPS Socially Prescribed Perfectionism, 4 = Self-handicapping Scale, 5 = Self-compassion Scale, 6 = Brief Symptom Inventory, 7 = Satisfaction with Life

3.2. Intercorrelations among Variables of the Study

The findings of the correlation analyses revealed that socially prescribed perfectionism ($r = -.37, p < .001$), self-oriented perfectionism ($r = -.11, p < .01$) and other-oriented perfectionism ($r = -.15, p < .001$) were all negatively correlated with self-compassion. However, self-handicapping was positively correlated with socially prescribed perfectionism ($r = .31, p < .001$), but negatively correlated with self-oriented perfectionism ($r = -.09, p < .05$). In addition, other-oriented and socially prescribed perfectionism have positive correlations with psychological symptoms, and negative correlations with life satisfaction. Finally, self-handicapping, self-compassion, psychological symptoms and life satisfaction were significantly associated with each other in expected direction. All correlation coefficients among variables were listed in Table 2.

Table 2.
Intercorrelations among Variables of the Study.

Variables	1	2	3	4	5	6	7
1. MPS-SOP	1	.52***	.26***	-.11**	-.09*	.08	.02
2. MPS-OOP		1	.23***	-.15***	.02	.13***	-.08*
3. MPS-SPP			1	-.37***	.31***	.34***	-.27***
4. SCS total				1	-.58***	-.56***	.38***
5. SHS					1	.56***	-.26***
6. BSI total						1	-.29***
7. SWLS							1

Note: * $p < .05$, ** $p < .01$, *** $p < .001$; 1 = MPS Self-Oriented Perfectionism, 2 = MPS Other-Oriented Perfectionism, 3 = MPS Socially Prescribed Perfectionism, 4 = Self-compassion Scale, 5 = Self-handicapping Scale, 6 = Brief Symptom Inventory, 7 = Satisfaction with Life Scale

3.3. The predictors of the psychological well-being

In order to examine the factors associated with psychological well-being, two hierarchical regression analyses were performed. For these analyses, psychological symptoms (BSI) and life satisfaction (SWLS) were dependent variables. Independent variables entered into the equation in three steps via stepwise method. In the first step, age, education level and gender were entered into the regression analysis as control variables. In the second step, 3 perfectionism traits were entered. Finally, self-handicapping and self-compassion were entered in the third step.

The first regression analysis examined the predictors of psychological symptoms. The findings revealed that only age was the significant predictor of psychological symptoms as a demographic variable, [$\beta = -.14$, $t(650) = -3.50$, $p < .001$, $pr = -.14$]. After controlling the effect of demographic variables, only socially prescribed perfectionism was the significant predictor of psychological symptoms [$\beta = .35$, $t(649) = 9.72$, $p < .001$, $pr = .36$]. In the third step, self-handicapping [$\beta = .48$, $t(648) = 14.21$, $p < .001$, $pr = .49$] and self-compassion [$\beta = -.31$, $t(647) = -8.08$, $p < .001$, $pr = -.30$] were found to be significantly associated with psychological symptoms. All significant variables explained 40% of total variance. According to these results, after controlling the significant effect of age, increase in socially prescribed perfectionism and self-handicapping; and decrease in self-compassion were significantly associated with increase in the intensity of psychological symptoms (see Table 3).

Table 3.
Predictors of Psychological Symptoms.

	<i>F</i> change	<i>df</i>	β	<i>t</i> (within)	<i>pr</i>	<i>Adj.R</i> ²
Step 1: Demographics						
Age	12.22*	1,650	-.14	-3.50*	-.14	.02
Step 2: Perfectionism						
MPS-SPP	94.56*	1,649	.35	9.72*	.36	.14
Step 3: Self-handicapping and Self-compassion						
SHS	201.91*	1,648	.48	14.21*	.49	.34
SCS total	65.25*	1,647	-.31	-8.08*	-.30	.40

* $p < .001$; MPS-SPP = Multidimensional Perfectionism Scale-Socially Prescribed Perfectionism, SHS = Self-handicapping Scale, SCS = Self-compassion Scale

The second regression analysis examined the predictors of life satisfaction. The results indicated that only gender [$\beta = -.24$, $t(646) = -6.26$, $p < .001$, $pr = -.24$] and education level [$\beta = .11$, $t(645) = 2.74$, $p < .01$, $pr = .11$] were the significant predictors of life satisfaction as the control variables. Among perfectionism traits, socially prescribed perfectionism [$\beta = -.23$, $t(644) = -6.01$, $p < .001$, $pr = -.23$] and self-oriented perfectionism [$\beta = .11$, $t(643) = 2.74$, $p < .01$, $pr = .11$] were found to be associated with life satisfaction. In the final step, only self-compassion was the significant predictor, [$\beta = .35$, $t(642) = 9.28$, $p < .001$, $pr = .34$]. All significant variables explained 23 % of total variance. According to these findings, after controlling the significant effect of gender and education level, decrease in socially prescribed perfectionism but increase in self-oriented perfectionism and self-compassion were significantly associated with increase in life satisfaction (See Table 4).

Table 4.
Predictors of Satisfaction with Life.

	<i>F</i> change	<i>df</i>	β	<i>t</i> _(within)	<i>pr</i>	<i>Adj.R</i> ²
Step 1: Demographics						
Gender	39.16**	1,646	-.24	-6.26**	-.24	.06
Education Level	7.49*	1,645	.11	2.74*	.11	.07
Step 2: Perfectionism						
MPS-SPP	36.15**	1,644	-.23	-6.01**	-.23	.11
MPS-SOP	7.50*	1,643	.11	2.74*	.11	.12
Step 3: Self-handicapping and Self-compassion						
SCS total	86.08**	1,642	.35	9.28**	.34	.23

Note: * $p < .01$, ** $p < .001$; MPS-SPP = Multidimensional Perfectionism Scale-Socially Prescribed Perfectionism, MPS-SOP = Multidimensional Perfectionism Scale-Self-Oriented Perfectionism, SCS = Self-compassion Scale

4. DISCUSSION

The current study aimed to examine the associations among different perfectionism traits, self-handicapping, self-compassion and the predictive roles of these on psychological symptoms and life satisfaction.

Firstly, the findings confirmed the first hypothesis by pointing out that psychological symptoms are positively associated with socially prescribed perfectionism and self-handicapping; while negatively associated with self-compassion. These findings are consistent with previous studies indicating that trying to meet others' or society's expectations and using self-handicapping strategies to protect self-esteem may lead to some psychological problems such as depression and anxiety (Frost et al., 1993; Zuckerman & Tsai, 2005). On the other hand, self-compassion is argued to be a protective factor for these problems (Neff, 2003; Sun et al., 2016). As self-compassion is not based on the performance evaluations, it can cultivate positive emotions without the necessity of protecting self-concept (Neff, 2003).

As consistent with the second hypothesis, the findings also revealed that life satisfaction is positively associated with self-oriented perfectionism and self-compassion; but negatively associated with socially prescribed perfectionism. The promoting role of self-compassion on life satisfaction has been validated in the literature (Neff, 2003). On the other hand, this finding also highlights the difference between the pressure of being perfect based on others' expectations and the genuine strive to be flawless on the influence of life quality. In other words, trying to be perfect in the eye of others seems to be impediment to a flourishing life; whereas being motivated to be perfect based on the internal expectations is promoting and beneficial. This distinction may shed a light on the debate between healthy perfectionists and unhealthy perfectionists (Stoeber & Otto, 2006).

In addition to that, other-oriented perfectionism was found to be the significant predictor of neither psychological symptoms nor life satisfaction. This finding is noteworthy, since other-oriented perfectionism tends to be ignored in the literature due to

the lack of unique characteristics that are not shared by self-oriented or socially prescribed perfectionism (Hewitt & Flett, 2004). Nonetheless, expecting others to be perfect and judgmental attitudes that come with this are assumed to play important role in dyadic dynamics, such as relationship commitment and satisfaction (Stoeber, 2012). Consistently, other-oriented perfectionism is found to be uniquely associated with interpersonal processes, such as less interest in helping others, in knowing or getting along with others or in making others happy (Stoeber, 2014). Therefore, the current findings provide a support to the claim that other-oriented perfectionism deserves further attention in research regarding to interpersonal outcomes rather than intrapersonal well-being.

Along with these two hypotheses, all facets of perfectionism were negatively correlated with self-compassion, which is in the line with literature (Ferrari et al., 2018). Perfectionistic attitudes are related to self-judgement and self-criticism particularly in case of a failure (Frost et al., 1990); while self-compassion refers to being caring and kind toward self in any case of negative experiences including failure or disappointment (Neff et al., 2007; Neff, 2011). Therefore, these two concepts seem to be opposite to each other regardless of specific dimension. However, a differentiation was observed in the relation of self-handicapping to diverse aspects of perfectionism. Accordingly, self-handicapping strategy was positively correlated with socially prescribed, but negatively correlated with self-oriented perfectionism. It is reasonable to suggest that self-oriented perfectionists and socially prescribed perfectionists may benefit from different strategies when they anticipate a failure. To illustrate, people setting high standards based on others' expectations may be more likely to externalize their failures or blaming others with an attempt to present themselves flawlessly to others. Otherwise stated, the strive for seeming perfect in the public may trigger self-handicapping behaviors. Whereas, self-oriented perfectionist with intrinsic goals may work hard or show greater effort to avoid a possible failure. Consistently, Hewitt and Flett (1991b) also emphasizes that self-intrinsic motivation might be increased by self-oriented perfectionism, while decreased by socially prescribed perfectionism.

From a cultural perspective, current findings regarding to the associations among perfectionism traits, self-handicapping, self-compassion and psychological well-being were similar to those of other studies conducted in Turkey and also in different cultures. For instance, a study conducted in the U.K. showed that self-oriented perfectionism and socially prescribed perfectionism were negatively associated with self-compassion (Stoeber, Lalova, & Lumley, 2020). Additionally, Stoeber et al. (2020) also found that self-compassion positively predicted subjective well-being, and fully mediated the relationship between perfectionism and subjective well-being. Furthermore, Pulford et al. (2005) revealed that self-oriented perfectionism was reported as one of the major predictors of self-handicapping among both British and Lebanese participants. As another cultural support, researchers found that socially prescribed perfectionism was associated with decrease in well-being in South Korea (Park & Jeong, 2015). Finally, another study having Turkish sample reported positive correlation of self-handicapping with stress, anxiety and depression (Sahranç, 2011). These similar results across cultures supported the idea that the predictive roles of some personality traits, particularly those related to criticism and judgmental attitudes, on psychological well-being might be independent of the cultural components. Nevertheless, further cross-cultural studies are recommended to clarify the role of cultural and personal factors among these associations.

Overall, the findings of the current study are consistent with the argument for that perfectionism might not be an entirely negative construct (Stoeber & Otto, 2006). Therefore, the present study may contribute to the literature by pointing out the dimensional

differences of perfectionism and its related mechanisms to explain psychological outcomes. Although all aspects of perfectionism are associated with less self-caring attitudes; only individuals who try to meet others' standards tend to engage in self-interfering strategies to protect self-esteem. Considering the predictive role of these strategies on psychological symptoms, self-handicapping tendency may have a potential role to explain the association between socially prescribed perfectionism and specific problems. Moreover, future research focusing on clarifying the link between socially prescribed perfectionism and self-handicapping is recommended. For instance, shame and guilt as two essential social emotions are found to be correlated with socially prescribed perfectionism but not with self-oriented perfectionism (Klibert, Langhinrichsen-Rohling, & Saito, 2005). Therefore, these emotions can be examined as source as well as mediating factors for this mechanism. Another importance of study is that predictors of psychological outcomes provide a support on positive psychology literature from a nonclinical Turkish sample. Accordingly, self-handicapping had just the significant role on increased psychological symptoms; while self-compassion was the significant predictor of both increased life satisfaction and decreased symptoms. This is consistent with the principle of positive psychology emphasizing that absence of maladaptive strategies or psychological symptoms does not necessarily indicate a higher level of psychological well-being. Hence, the factors contributing and fostering well-being and life quality, such as self-compassion should also be considered in order to make an accurate assessment and effective intervention plan regarding to psychological welfare.

Present findings have some clinical implications as well. Therapeutic interventions focusing on perfectionism driven thoughts and behaviors (e.g. self-handicapping strategies such as procrastination and lack of effort) are beneficial in dealing with psychological problems. The recognition of the pressure of fulfilling other's expectation among self-handicappers may lead to therapists to achieve comprehensive case conceptualization as well as effective treatment plan. In addition to that, mindful self-compassion promoting programs may improve psychological health and life quality. Although self-oriented perfectionism and self-compassion are negatively related to each other, it is important to note that both have significant roles in psychological-well-being. Therefore, self-compassion focused interventions may help individuals to cope with failure in daily life or crisis and to maintain self-motivation for personal development and performance enhancement.

The current study is not free from limitations. Firstly, the participants composed of mostly females and young adults may limit the generalizability of the findings. Therefore, future studies having sample from different socio-demographic characteristics are recommended. Furthermore, information about the presence/absence of the participants' psychiatric history was gained by only a self-report question. Since a concrete clinical assessment was not conducted to collect information about the nature of their problems; participants with psychiatric help and those without were treated as one sample and not compared to each other for different variables. Hence, future studies conducting a detailed clinical assessment are recommended to examine the differences of these patterns between participants with and without a history of psychological help. Moreover, due to the cross-sectional nature of the study, it is not possible to infer causality or directions about these associations. Longitudinal studies may provide more insight about these relationships. Besides, further studies may be conducted with participants experiencing a crisis situation at a certain period of their lives, such as divorce or college entrance exam, in order to shed light on the protective role of self-compassion in a challenging experience. Lastly, future studies including particular clinical groups are recommended to achieve knowledge for the role of different dimensions of perfectionism and related self-handicapping strategies in various psychological disorders.

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AUTHORS' INFORMATION

Full name: Gizem Alaloglu

Institutional affiliation: Maltepe University

Institutional address: Büyükbakkalköy, Maltepe Uni. Marmara Eğitim Köyü, 34857 Maltepe/İstanbul, Türkiye

Short biographical sketch: Gizem Alaloglu is a clinical psychologist (M.Sc.) and graduated with high honors from Maltepe University (Turkey) in January, 2020. In her bachelor's and master's theses, she mainly focused on self-compassion and its related mechanisms, namely; body image, perfectionism and psychological well-being. She has presented her two theses at international psychological conferences. Besides, she is currently practicing online Cognitive Behavioral Therapy as a psychotherapist. Moreover, she found the opportunity to enhance her experience in clinical psychology throughout the comprehensive internships in several hospitals and research centers.

Full name: Basak Bahtiyar

Institutional affiliation: Maltepe University

Institutional address: Büyükbakkalköy, Maltepe Uni. Marmara Eğitim Köyü, 34857 Maltepe/İstanbul, Türkiye

Short biographical sketch: Basak Bahtiyar, PhD. currently works as assistant professor at Department of Psychology in Maltepe University, Istanbul. In teaching, she specializes in clinical psychology, psychopathology and psychotherapy at undergraduate and graduate level. Her research interest includes emotions, meta-cognition, meta emotions and emotion regulation in psychopathology. She also works as psychotherapist and clinical supervisor specialized in cognitive behavioral psychotherapy.

Chapter #20

IMPROVING THE ASSESSMENT OF CHILDREN AND YOUTH WHO PRESENT WITH GENDER DYSPHORIA: An investigation into patient and parent satisfaction

Kathleen Walsh¹, Melissa Jonnson², Wallace Wong³, & Veronique Nguy¹

¹University of British Columbia, Canada,

²Simon Fraser University, Canada,

³Diversity & Emotional Wellness Centre, Canada

ABSTRACT

Practitioners working with gender non-conforming children and youth ascribe to general guidelines based on the World Professional Association for Transgender Health *Standards of Care for the Health of Transsexual, Transgender, and Gender Nonconforming People* (2012). These guidelines inform clinical practice and assessment and emphasize the need for gender affirming care, but they do not include strict treatment criteria. Consequently, there are multiple perspectives and approaches in the field regarding effective assessment and treatment of gender diverse and transgender clients. Given the ongoing debate around best practices, the current exploratory research study investigates the perspectives and satisfaction of transgender youth and their parents actively seeking out gender health assessments (e.g., hormone readiness assessments). Twenty-five parents and 22 youth who were accessing gender health services through a community outpatient clinic completed a questionnaire about the gender health assessment process. Survey data was analyzed using descriptive statistics, and portions analyzed using thematic analysis. Similar response patterns were found between groups and themes emerged surrounding the need for an individualized approach to care. This study aims to increase clinical understanding of the experiences of those seeking gender health assessment services to inform and improve practices to better serve this community.

Keywords: gender dysphoria, comprehensive assessment, children & youth, transgender, cross gender hormone treatment.

1. INTRODUCTION

Currently in North America there is a trend for transgender youth to access gender-related health care and interventions based on the Informed Consent Model (Edwards-Leeper, Leibowitz & Sangganjanavanich, 2016). The Consent Model allows transgender clients, typically adults, to access treatment and interventions including hormone treatment and surgery without receiving a comprehensive mental health evaluation (Schulz, 2018). The Consent Model offers a more accessible, affirmative, timely and less restrictive treatment model for transgender individuals, but questions remain about its efficacy (Edwards-Leeper et al., 2016; Schulz, 2018). This approach continues to grow in popularity among adult clients and many practitioners, given the advantages previously mentioned; however, when this clinical approach is applied to younger clients, debate remains. Children and youth have complex needs and are significantly more reliant on outside support systems for meeting these needs including familial support, financial assistance, psychological support, housing, transportation and more (Edwards-Leeper et al., 2016). Given this,

concerns exist about using the Consent Model with children and youth and not adequately evaluating these basic necessities.

Alternatively, comprehensive psychological assessments for assessing Gender Dysphoria requires clinicians to assess the mental health and well-being of the patient seeking care, in addition to having the opportunity to assess the socio-familial factors that are central to successful treatment implementation and adherence (World Professional Association for Transgender Health [WPATH], 2012). This approach is supported by organizations including the American Psychological Association (APA, 2015), the Australian and New Zealand Professional Association for Transgender Health (Cheung et al., 2019) and the Royal College of Psychiatrists (Wylie et al., 2014). While this is a more thorough assessment process, there are both time-related and financial costs associated with the approach. In addition, the reality of including a mental health assessment within a comprehensive gender health assessment may further contribute to the pathologization of gender variance (Castro-Peraza et al., 2019).

Given that the WPATH *Standards of Care for the Health of Transsexual, Transgender, and Gender Nonconforming People* (2012) do not have specific guidelines for the assessment of children and/or youth presenting with gender dysphoria, clinicians determine a course of treatment based on their training, comfort zone and previous experience (Edwards-Leeper et al., 2016). Therefore, there is little consistency across professionals when supporting children and youth with gender variance. Often, clinicians feel pressure to act quickly, especially if the child/youth is dysphoric and presents with severe mental health challenges including self-harm and suicidal behaviours. While acting quickly may be intended as an act of support for the child/youth, it could be short-sighted by failing to consider the complexities of the age group and the long-term developmental, social, cultural and financial needs of the child/youth. For instance, a youth may be provided with a prescription for gender affirming hormones but be denied the financial and practical support necessary to access the treatment by their parents, which could trigger an exacerbation of prior mental health concerns. As such, comprehensive assessments that involve a parent or other supportive adult may result in greater long-term success and safety for the youth (Coleman et al., 2012).

The ongoing debate among mental health and medical professionals involves a fine balance between the important facilitation of client access to services and consideration of the potential complicating factors previously mentioned. This study aims to increase clinical understanding of the experiences of those seeking gender health assessment services, both youth and parents of gender variant children, to inform and improve current practices in order to better serve this community (Wylie et al., 2014).

2. PARTICIPANTS AND METHODS

Forty-eight people participated in this exploratory study and were recruited through a community-based mental health service clinic in British Columbia, Canada. Participant data was divided into two groups: 22 gender variant youth ranging from 13 to 19 years ($M = 16$; $SD = 1.95$) and 25 parents of gender variant children/youth, whose children range in age from 8 to 19 years ($M = 12.76$; $SD = 2.60$). Of the youth participants, 17 reported their affirmed gender as male, 2 as female, 1 as non-binary, 1 as questioning and 1 did not report. Of the parent respondents, 15 reported their child's affirmed gender as male, 6 as female, 1 as gender fluid and 3 as non-binary. Of all respondents, 25 had previously undergone a comprehensive gender assessment, 16 had not, 3 were in progress of getting an assessment and 4 did not report if they had had an assessment or not. After completing appropriate informed consent procedures, participants completed a three-item questionnaire. Items queried participants' perspectives about (1) the need for a comprehensive assessment when

a youth presents with gender identity concerns, (2) the number of sessions needed to complete a comprehensive assessment, and (3) the importance of parents being involved in the assessment process. For each item, a categorical response option (e.g., strongly disagree, disagree, neutral, agree, strongly agree) was provided, in addition to an open-ended response format option. Frequency tables were analyzed to determine differences in responding between the two groups, and open-ended responses were analyzed for emergent themes. Exemplar quotes are shared to help illustrate each theme.

3. RESULTS

Preliminary results of this ongoing study are provided below. Analyses are divided into three sections based on the questionnaire items, and emergent themes are explored within each item's responses. The research questionnaire includes more items than represented in this study but given the limited space.

3.1. Necessity of a comprehensive assessment

Item 1 asked participants the extent to which they agreed that a comprehensive assessment is needed when a child or youth presents with gender identity concerns. Patterns of responding were similar across groups with almost all parents (92.0%; $n = 23$) and youth (91.0%; $n = 20$) agreeing or strongly agreeing that a comprehensive assessment is necessary. Of the remaining participants, one parent and one youth strongly disagreed, and one parent and one youth provided a neutral response. Open-ended responses among parents highlighted **the importance of the assessment for recommendations on how to best support their child**. One parent wrote, "The report that came from the assessment has helped my child. It is part of their school file and the recommendations have been used as a guide for sports/classes. The assessment is fine but is all things us (parents) knew already." Another parent shared "We did not know about the details of transitioning until we did the assessment. I feel better as a parent about treatments having gone through the assessment process."

Common themes among both groups included **the importance of the assessment for ruling out underlying and contributing factors**, as well as **the importance of the assessment for identity formation**. One parent shared that it "helps to gain clarity of where your child's emotions and feelings are coming from - if there is anything underlying (contributing factors), [to] gain an understanding of [the] child's self-perception, [and to] give [the] child an opportunity and voice to share and hopefully make sense of their feelings and self-perception." One youth shared "I think that it is very important that a child gets to learn about themselves through an assessment like this one. As long as the concerns are great enough, then it would be a good idea." Another youth expressed that "[an assessment] can isolate other factors that may give them gender confusions (mostly in young children). I think most teenagers are mature and independent enough to decide their gender for themselves." Some youth also shared a more reserved perspective indicating that an assessment is "not initially [necessary]. One should have their own time to figure things out rather than be bombarded with questions."

3.2. Number of sessions needed

Item 2 asked participants how many sessions would be adequate to complete a comprehensive gender related assessment. Response options included a half hour appointment, 1 session, 2 sessions, 3 sessions, 4 sessions and 'other'. On average, parents ($M = 3.96$; $SD = 0.96$) and youth ($M = 3.14$; $SD = 1.14$) reported that a similar number of

sessions would be necessary. Parents' open-ended responses reflected the idea that the **assessment length should be determined by the professional and based on the individual circumstances and needs of the child and their family**. One parent noted that "this should be left up to the professional. Each child is unique and a 'cookie cutter' approach does not acknowledge this. [The] age of [the] child, past history, [and] current life circumstances all impact willingness of [the] child and family to disclose what is happening." Similarly, several youths pointed out that **the age of the client may impact the number of sessions needed**. For example, one youth shared, "I was 18 and felt that 2 sessions were enough, but I was also sure how I wanted to pursue. I think younger people, or those who are unsure, should have longer to explore in sessions."

3.3. Parental involvement in the assessment

Item 3 asked participants the extent to which they agreed that parents/caregivers should be involved in the assessment process. Among parents, almost all (92.0%; $n = 23$) agreed or strongly agreed that parents should be involved in the process. Of the two remaining parents, one was neutral, and one strongly disagreed. Conversely, there was much more variability among youths' responses to this question. Over half of youth (63.6%; $n = 14$) agreed or strongly agreed in favor of parent involvement, whereas 36.4% ($n = 8$) disagreed or strongly disagreed. In addition to these figures, the themes that emerged through open-ended responses provide important detail to conceptualize this data.

The most prominent theme that emerged from parents' open-ended responses included that **the assessment process helps to increase parents' understanding and support of their child**. One parent wrote that "the entire family is transitioning and learning. The youth needs the support of their parents and family." Another wrote that the assessment provides "an opportunity for parents to learn about this aspect of their child - an opportunity for improved communication and understanding between parents and child." The second most prominent theme that emerged from parent responses was that **parents can provide unique knowledge about their child that is important for the integrity of the assessment**. For example, one parent wrote that "parents are an important part of a child's life and often know much of what the child is going through."

Alternatively, the most prominent theme that emerged from youths' open-ended responses was **the complexity of parental support**. Almost unanimously, youth expressed that if parents are supportive of their child's gender identity journey then parental involvement is generally beneficial. One youth wrote that "I believe it truly depends. If parents are accepting and supportive - yes. If they want to, they should, unless the child doesn't want them to." Alternatively, concerns about the impact of parental involvement were raised. One youth wrote, "I don't think parents should be involved during the assessment because they can limit the openness and safety felt by the child." Notably, although a similar theme arose in the parent data, only three parent respondents raised this concern. Another prominent theme that emerged for youth was **the beneficial impact the assessment can have on parents' insight and ability to effectively support their child**. This theme is similar to the one that emerged among parents as previously discussed. For instance, one youth highlighted that "the opportunity for parents to be present could be seen as beneficial towards their learning of their child's feelings and the subject."

Other less common themes across both groups included **the importance of a child-focused assessment, regardless of parental involvement and the child's dependence on the parent to help direct the assessment process and implement recommendations**. Parental dependence was noted to be particularly important for younger children.

4. DISCUSSION

Results of this research revealed several shared perspectives between parents and youth regarding gender health assessments. Commonalities were found in regards to the importance of having a comprehensive assessment, as well as the length (i.e., number of sessions) needed. However, differing perspectives were noted in regard to parental involvement in the assessment process. Parental involvement was a polarizing topic for many youth, and responses revealed the complex nature of parental support. Alternatively, parents were almost unanimously in favor of parental involvement.

Parents play a central role in the lives of youth. Financial, logistical, social/emotional and physical support are just some ways in which parents may support their children. Despite the capacity of some youth to legally consent to the assessment, in the vast majority of cases, it is not an ideal situation for a clinician to complete an assessment without completing a thorough evaluation of these areas of support and at least make attempts to engage these external support systems. At the same time, it may be necessary to consider other sources of support (e.g., other trustworthy adults) if parents are unsupportive of their child's needs. Research indicates that just one supportive adult can improve a transgender youth's mental health significantly (Olson, Durwood, DeMeules, & McLaughlin, 2016; Travers, Bauer, & Pyne, 2012). Relatedly, youth and parents in this study emphasized the importance of taking an individualized approach to assessment. Since there is no standardized, universally-accepted approach for conducting a gender health assessment, clinicians are responsible for considering all relevant familial, developmental, cultural, psychological, and logistical factors impacting clients with gender health concerns. A thorough consideration of these factors will not only help professionals facilitate youths' access to treatment but also increase the likelihood that their clients will successfully adhere to treatment and access support throughout this often challenging process.

While there is value to conducting comprehensive assessment with different information sources, the process of the assessment needs to be flexible and individualized. Transgender youth are a heterogeneous population and thus different youth may require different levels of support and differing approaches to assessment. Some youth may require an expedited process while others may require a more thorough, step-by-step approach. In addition, it is essential that the comprehensive assessment not cause harm or any unnecessary prolonging of services for a transgender youth who is so desperately in need of support.

Another important consideration is the role of psychoeducation within the assessment process. The comprehensive assessment approach inherently offers clinicians the opportunity to gather essential information about the youth's development, mental health history, current needs and supports, as well as the level of psychoeducation for both the youth and their parents surrounding gender identity. This is an incredibly important component of the comprehensive assessment process, especially for youth and parents who are new to the process and/or for parents and families who are in the skeptical stage of accepting or are indecisive in supporting their transgender child.

4.1. Limitations

Primary limitations of this research include the homogeneous nature of recruiting all participants through a community-based mental health office. All participants were affiliated with this office due to previously showing interest in pursuing an assessment and/or receiving some type of mental health support for gender health concerns. Further, our sample is limited by the large age span represented in the youth sample. Developmentally, the youth sample spans early adolescence to young adulthood and does not highlight potential age-based

variation in the results. The choice to use such a wide age-range for the youth participants was due to the limited total sample size of the study. Additionally, the team behind this research includes clinicians from a specialized Gender Health Program, thus adding an additional confound. Another limitation is the moderate sample size of the study. It is hard to make gross generalizations given the sample size and heterogeneity of the sample. That being said, the sample size is relatively large given the specificity of the topic and persons being researched. Lastly, it is important to acknowledge the limitations surrounding the thematic analysis of the open-ended question responses. Investigators conducted this analysis independently and then created themes based on common findings. No follow-up was conducted with interview participants, thus findings are based on researcher interpretations only. As mentioned, this is a preliminary study. Many more questions require exploration to better understand themes and trends in this research to better inform clinical practice and care moving forward.

4.2. Conclusion

Preliminary research findings from both youth and parents suggest strong agreement with the need for a comprehensive gender health assessment when youth present with concerns about their gender identity. Both groups identified that a thorough and individualized comprehensive assessment can help parents better understand and support their children's overall needs, in addition to their gender-related needs. Given that parents and youth have differing perspectives, if possible, it is important to include both in the assessment process. There is innate value to including the entire family in this process, including familial alliance and psychoeducation. The researchers of this study hope this work will provide more information and insights about this process so that clinicians can apply some of these considerations to their future assessments when working with transgender youth and their parents. Considerations may include findings indicating that a comprehensive assessment was noted to provide families with a clearer understanding of current and future transitions, as well as the challenges people may face along their gender identity journey for our study participants. Both groups also reported that having multiple assessment sessions was necessary for completing a comprehensive assessment given the complexity and uniqueness of each client. Having multiple sessions provides an opportunity for parents and youth to become more engaged in the process and also for families to enhance their mutual communication and support.

Research results also indicate that parents and youth have differing perspectives about parental involvement in the assessment process. While most youth see the benefit of having their parents involved, this involvement was dependent on whether the parents were perceived as supportive or unsupportive of their child's gender identity and journey. Many youths expressed caution about the motives of some parents in interfering with their progress and transition. While it is reasonable for youth to hold this view, it is also important to acknowledge that many parents are new to the gender assessment process, in comparison to their child. Parents are typically seeking more information to better understand what their child is going through and are sometimes resistant to the process due to a desire to protect their child. A lot of misinformation exists regarding gender variance, identity and expression, and parents may require professional guidance to support them in understanding what their child is going through. Arguably, for this reason, having parents involved may be even more crucial in helping to clarify misconceptions thus allowing them to provide more informed, proactive support for their child.

5. FUTURE RESEARCH DIRECTIONS

Research about transgender children and youth is in its infancy. Though research is rapidly evolving, it is still limited. Given this, there is limited clinically relevant information specific to this population. More information and research are needed to inform evidence-based practices to allow clinicians and service providers to provide adequate and informed assessment and care. As described above, there are no universal assessment guidelines, let alone a unified perspective on treatment. Clinicians need data to help guide their decision making to allow for more consistent and competent care.

A relatively recent clinical phenomenon being documented by professionals whom actively support and provide treatment to transgender children and youth is the high prevalence of transgender persons who are also on the Autism Disorder Spectrum (de Vries, Noens, Cohen-Kettenis, Berckelaer-Onnes, & Doreleijers, 2010; Stagg & Vincent, 2019). This phenomenon has changed the way many clinicians' approaches clinical practice and assessment with transgender children and youth. For example, in the Australian Standards of Care and Treatment Guidelines (Telfer, Tollit, Pace, & Pang, 2018; Stagg & Vincent, 2019), guidelines commonly used to support assessment approaches and care for transgender children and youth, emphasize that the assessor, as part of a general gender health assessment, should look for any indications of Autism. As mentioned above, the research supporting evidence-based practice, treatment, and assessment of transgender children and youth is incredibly limited. This becomes even more restricted when considering autism as part of the equation. Given the vulnerabilities of transgender children and youth, in addition to the mental health and social vulnerabilities of having autism, more research is urgently needed to identify and provide adequate support and intervention for this population.

Given the lack of data, there are significant variations in the treatment models that clinicians use to assess transgender clients. While some clinicians use an adult model, such as the informed-consent model, others may choose to use the harm reduction model. While our research outlined above suggests that an individualized comprehensive assessment model was preferred among the youth and their parents seeking gender health assessments at our clinic, it is crucial for us to better understand this information by creating a control study determine if there are any potential differences between treatment models used for the different age groups of this population. Moreover, a control study would also be helpful to examine the outcome between those who have completed the comprehensive assessment model with those who have received the psycho-educational approach; this information can help clinicians make informed decisions around the type of model or approach to their assessments. This is especially important for transgender children and youth who may need an expedited assessment or urgent care.

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AUTHORS' INFORMATION

Full name: Kathleen Walsh, M.A.

Institutional affiliation: The University of British Columbia

Institutional address: 2125 Main Mall, Vancouver, BC, Canada, V6T 1Z4

Short biographical sketch: Kathleen Walsh is doctoral student in the School and Applied Child Psychology program at the University of British Columbia (UBC). Kathleen is a certified school psychologist and is currently completing her doctoral practicum with the Ministry of Children and

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Family Development. Through this placement, Kathleen has been offered the opportunity to work in an assessment and therapeutic capacity with special populations in both the Gender Health Program and the Adolescent Sexual Health Program. Previously, Kathleen worked as an Applied Behaviour Analysis therapist and has since sought clinical training in autism assessment and intervention planning for persons on the autism spectrum. Kathleen's current research interests include school-based mental health support for special populations, identity formation in youth with exceptionalities, and exploring attachment relationships between students and teachers.

Full name: Melissa Jonnson, M.A.

Institutional affiliation: Simon Fraser University

Institutional address: 8888 University Drive, Burnaby, BC, Canada, V5A 1S6

Short biographical sketch: Melissa Jonnson is a doctoral student in the Clinical Psychology program at Simon Fraser University (SFU). Her research focuses on sexual and gender minorities, recidivism risk assessment, and intimate partner violence. She has published six peer-reviewed journal articles and presented her work at national and international conferences. She is also an ad-hoc reviewer for *Translational Issues in Psychological Science*. Clinically, she has worked with adolescents involved in the justice system, adults at risk for homelessness, children with selective mutism, and a variety of other clients in general outpatient settings. She is currently completing her second graduate-level practicum with the Ministry of Children and Family Development (MCFD), where she is providing assessment and treatment services to children and youth with mental health, sexual health, and gender-related concerns under the supervision of Dr. Wallace Wong.

Full name: Wallace Wong, Dr., PsyD, R.Psych

Institutional affiliation: Diversity Emotional Wellness Centre, Canada

Institutional address: 212-2902 West Broadway, Vancouver, BC, V6K 2G6

Short biographical sketch: Dr. Wallace Wong is a registered psychologist in both California and British Columbia. He has been working with the LGBTQ population since 1996. While continuing to work with the LGBTQ population, over the past 23 years, he also specialized in working with children and youth who present with different sexual health issues. He currently works at the Ministry of Children and Family Development as a clinical psychologist of the Adolescent Sexual Health Program (ASH) and Gender Health Program (GHP). Dr. Wong also has a private practice where he sees children and youth with different sexual health issues. Dr. Wong has been doing research on topics relating to transgender children and youth for a number of years that can be found in different professional journals. He is also an author of two transgender related children books called, *When Kathy is Keith*, and *It's So Gay and It's Okay*.

Full name: Veronique Nguy, M.Ed.

Institutional affiliation: The University of British Columbia

Institutional address: 2125 Main Mall, Vancouver, BC, Canada, V6T 1Z4

Short biographical sketch: Veronique Nguy is a doctoral student from the School and Applied Child Psychology Program at the University of British Columbia (UBC). Veronique worked as an Applied Behavior Analysis (ABA) therapist before completing her Master's degree in School Psychology at UBC. Veronique has been working in schools as a School Psychologist in British Columbia (BC) since 2012. Over the years, she has also worked in university clinics, hospital settings and private clinics in different roles and capacities. As a multilingual practitioner, Veronique's research focuses on understanding multicultural assessment practices of psychologists in BC. She has also recently completed her specialty practicum training with Dr. Wallace Wong at the Ministry of Children and Family Development, where she provided clinical services to children and youth referred through the Child and Youth Mental Health Clinic (CYMH), Adolescent Sexual Health Program (ASH) and Gender Health Program (GHP).

Chapter #21

STRESS, EXHAUSTION AND DEPRESSION: THE CENTRAL VARIABLES IN HIGH-RISK PROFESSIONS AND THE ROLE OF PERSONAL RESOURCES

Jana Nezkusilova¹, Martina Chylova², & Monika Seilerova³

¹ Department of Psychology, Faculty of Arts, P. J. Safarik University, Kosice, Slovakia

² First Department of Psychiatry, Faculty of Medicine, P. J. Safarik University, Kosice, Slovakia

³ Department of Labour Law and Social Security Law, Faculty of Law, P. J. Safarik University, Kosice, Slovakia

ABSTRACT

The importance of personal resources in the context of high demanding work conditions is often being reported. However, when and what type of personal resources are the beneficial ones is not fully understood. The aim of this study is to apply network analysis and explore closeness of relationships between personal resources, occupational stressors, perceived stress, the three areas of burnout, depressive symptoms and self-rated health in individuals working in high-risk professions. The study sample comprised 277 police officers, prison guards, customs officers and NHS physicians and nurses (68,6% men, Mage = 36.97, SDage = 8.98). Observed variables included perceived stress (PSS), occupational stressors (OSI-R ORQ) and personal resources (OSI-R PRQ), depressive symptoms (SDS), burnout (MBI) and self-rated health (item from SF-36). The network analysis (EBICglasso) was performed. Network analysis revealed that the most central (degree indicator) variables were depressive symptoms, stress, emotional exhaustion and particular occupational stressor-role ambiguity. These variables are potentially the most useful to be directed by intervention programs. Activating recreation, rational coping and social support could be potentially beneficial strategy in alleviating depressive symptoms. Recreational activities could protect health deterioration. Self-care strategies did not have a strong position in the network model.

Keywords: personal resources, depressive symptoms, self-rated health, occupational stress, burnout.

1. INTRODUCTION

Stress is inherent part of human life. According to Fink (2016), in ages between 1983 and 2009 the stress levels increased by 10-30 % among all demographic groups in the USA. Cohen and Janicki-Deverts (2012) in their large study revealed that between years 1983, 2006 and 2009 the subjectively perceived stress levels in the USA had been significantly increasing. The growing levels of perceived stress are not localized plausibly only in the USA. The stress levels in selected professions, which are potentially prone to stress, have been assessed also in Slovak settings (Nezkusilová, Hricová, & Mesárošová, 2019). The results revealed that in large representative sample of 729 individuals working in professions prone to burnout, perceived stress was relatively high in average, yet not significantly different to the stress levels of the employed workers in the USA (Nezkusilová et al., 2019) based on the results of perceived stress from the year 2009 (Cohen & Janicki-Deverts, 2012). Approaches interpreting the increasing stress levels in various populations across continents all seem to acknowledge that stress is highly personalized and its sources vary greatly between individuals in society. In the current cross-sectional study,

we explore professions that are objectively classified by consortium of occupational physicians as the occupations with increased physical and mental demands. The levels of stress, depression, burnout symptoms and their relationship with personal resources are being explored.

2. BACKGROUND

There are presumably multiple reasons for the increased levels of stress. Among core sources of the stress, Fink (2016) considers occupational stress related to little control but too many demands at work. Based on systematic meta-review Harvey et al. (2017) identified twelve work-related risk factors: “*high job demand, low job control, low workplace social support, effort–reward imbalance (ERI), low organisational procedural justice, low organisational relational justice, organisational change, job insecurity, temporary employment status, atypical working hours, workplace conflict/bullying and role stress*” (Harvey et al. 2017, p. 2). In past few years, another category of job related stressors has been studied. Significant percentage of the working population is influenced also by information and communication technologies - ICT (Stacey et. al., 2018). World health organization (WHO, 2014) stated possible negative effect of ICT onto physical and mental health of the working individuals. There is increased necessity of adjustability to new forms and types of work. In the digital age, the online working space combined with flexible working hours, increasing average hours of home-office is making it more difficult to set the work-life boundaries (Kossek, 2016; Seilerová, 2019). The support of these changes is the growing number of scientific articles and changing discourse in society, which is converging from topics of work-life balance to work-life integration and work-life blending (e.g. Kossek, 2016).

The increasing levels of perceived stress could be explained also by the Conservation of Resources theory (Hobfoll, 1989, Hobfoll, Halbesleben, Neveu & Westman, 2018). The COR theory (Hobfoll et al, 2018) assumes that the stress emerges when important resources are too difficult to gain, are threatened with loss, or are lost already. In contrast to other stress theories, COR assumes that humans have built-in bias that tends to exaggerate the loss of resources and underestimate the gain of sources. Then, the stress is connected especially to the loss of valued resources. Based on the COR theory it can be assumed that the surge of perceived stress in society could be caused also by perceiving oneself as possessing less than others possess. Due to the rapid changes in society, sequential multiple careers and instability of work opportunities combined with unrealistic images from social media, a working individual is constantly comparing himself to the representations of skills, capabilities, “wealth”/salary, fitness and other attributes he does not have at the moment. In addition, humans have a tendency of being more sensitive to perceiving the “lack of” (skills or wealth), rather than concentrating on actual available resources.

Harvey et al. (2017) in the systematic meta-review explored several models, which are explaining the relationship between occupational risk factors and mental health, among them the job-demand-control-support model and ERI model - the effort and the reward imbalance at work. In the study, authors propose a unifying model with evidence-based potential latent variables behind the relationship between occupational stress and deteriorated mental health. The authors suggest three clusters of occupational risk factors: “1. Imbalanced job design (job demands, job control, ERI, occupational social support), 2. Occupational uncertainty (job control, procedural justice, organisational change, job insecurity, temporary employment status) and 3. A lack of value and respect within the

workplace (ERI, procedural justice, relational justice, temporary employment status, occupational social support)” (Harvey et al., 2017, p. 7).

In summary, several large meta-analytic studies supported the assumptions identifying the occupational stress as a trigger of depressive symptoms, psychiatric health and well-being (e.g. Madsen et al., 2017; Nieuwenhuijsen, Bruinvels, Frings-Dresen, 2010). A more profound meta-review of occupational stress and general deterioration of well-being and health offer Harvey et al. (2017). The work environment, night shifts, changing working hours and emergency service are also contributing to sleep disorders, depression and health deterioration (Bara & Arber, 2009). In high-risk professions, stress, anxiety and depression are among common reasons leading to work absence and formal disability (Baumann, Muijen, & Gaebel, 2010). A meta-analysis of 153 studies tested the evidence of relationship between job strain and absenteeism and assumed that the relationship is small but significant and the link is possibly mediated through the psychological and physical symptoms of illness (Darr & Johns, 2008). Depressive disorders without psychotic symptoms are on rise in Slovakia as well as in Western Europe. Depressive symptoms are often related to burnout, however, burnout is a specific syndrome, while depressive symptoms may be indicators of diverse mental disorders.

Besides the universally raising levels of stress, there are particular professions that are objectively considered as even more physically and mentally demanding and potentially more stressful than other professions. In these occupations there are additional distinct factors contributing to the levels of stress and greater risk of physical and mental health deterioration. In this chapter, we are exploring police officers, prison guards, customs officers, and NHS doctors and nurses, who are in direct contact with every day threatening situations, violent assaults, death of co-workers or clients and patients, are exposed to shift work and work in emergency. A meta-analysis of police personnel by Syed et al. (2020), which involved 272 463 police personnel, showed prevalence of depression (14,6%), PTSD (14,2%), generalized anxiety disorder (9,6%) or alcohol dependence (5%). Occupational stress was related to depression and PTSD symptoms. The authors suggest that the partial cause may be potential poor social support and maladaptive coping strategies (Syed et al., 2020). Similarly, emergency doctors experience higher rates of anxiety, depression and burnout when compared to other medical professions (Estryn-Behar, 2010).

Reflecting the need to relieve working population from stress, anxiety and depressive symptoms, the intervention programs aiming at decreasing stress or burnout are multiplying. In a systematic review, Basu, Qayyum, and Mason (2016) explored 63 stress-oriented interventions, of which only three suggested changes in burnout. Most of the treatments were based on secondary-level intervention and aimed at increasing resilience by mindfulness or other cognitive-behavioral approaches (Basu et al., 2016). On the other hand, Dreison et al. (2018), in his large meta-analysis of 27 samples (1894 participants) of past 35 years of interventions of burnout, concludes that intervention programs in mental-health providers were, in general, successful. The outcomes were, however, not always with effect size that would compensate the energy and costs of employers and employees undergoing them. Leiter, Laschinger, Day, and Oore (2011) in his systematic review reports that a primary-level (preventive) interventions seem promising, especially when aiming at improving communication and relationships at the workplace or if aiming at improving work schedules (Ruotsalainen, Verbeek, Mariné, Serra, & Ruotsalainen, 2015). On the other hand, mentoring programs did not seem to be effective (Ruotsalainen et al., 2015). Nowadays, especially in crises such as COVID-19 crisis, it is extremely useful to realize which strategies work for who in order to optimize them, activate and support the evidence-based strategies. The importance of useful interventions is indisputable.

Osipow (1998) in his process of creating theoretical framework of occupational stress and its prevention, characterized four main areas of personal resources. They included social support, recreation, self-care and person's rational/cognitive coping. Personal resources help the individual maintain his physical and mental health – in his private as well as working life. Historically, there can be found significant connection between personal resources, health maintenance and self-care strategies. The connection is prevalent since 1979, when almost 50% of deaths in the USA were accounted to “unhealthy lifestyle” (US Department of Health, Education and Welfare, 1979). Even nowadays unhealthy lifestyle still accounts for high percentage of deaths not only in the USA. WHO states that non-communicable diseases kill 41 million people every year, which is equal to 71% of all deaths globally (WHO, 2018). Physical factors are still being studied in relation to health, such as alcohol consumption (Burton, & Sheron, 2018), diet (e.g. Afshin et al., 2019), or physical exercise (e.g. Abidin, Welch, Byron-Daniel, & Meyrick, 2018). Yet, the research has been leaning also towards maintaining mental well-being by self-development, recreation/leisure, emotion regulation or other self-care strategies. Self-care has been defined as one's ability to regulate, initiate or maintain health (WHO, 2009), but also improve health and overall physical and psychological well-being and personal growth (Lovaš, 2014).

Several meta-analytical studies and literature reviews suggest that personal resources – such as recreation, leisure, physical and psychological self-care, social support, rational coping and emotional control may function as strategies, which protect from the development of depression, physical and mental health deterioration or burnout (Dreison et al., 2018; Leiter et al., 2011; Abidin et al., 2018; Ruotsalainen et al., 2015). Particular mechanisms may, however, differ in specific sub-populations. Misunderstanding needs and preferences of particular groups of people could be among core problems why many interventions reducing stress, burnout and their symptoms fail or have very weak effect sizes (Basu et al., 2016; Dreison et al., 2018; Hricová, Nezkusilová, & Ráčzová, 2020). Studies of Aust, Rugulies, Finken, & Jensen et al. (2010) or Nielsen, Fredslund, Christensen, & Albertsen (2006) highlight the importance of screening for specific needs of individuals working for the organization as well as customizing particular intervention programs. The authors propose that unfulfilled expectations about the usefulness of an intervention or any educational event may play a role in even worsening symptoms of stress and burnout. Nowadays research is shifting towards understanding preventive mechanisms and coping strategies in particular subgroups, in contemplation of avoiding or alleviating the occupational stress. In this study, we are further exploring specific strategies of activating personal resources that may potentially buffer the effects of occupational stress.

3. OBJECTIVE

Based on the results from studies and large meta-analyses, it can be assumed that there is a relationship between the individual's personal resources and perceived stress, areas of burnout, individual's health status and depressive symptoms. Yet, the particular relationships between the variables may be specific for every sub-population and cannot be generalized. The aim of a further cross-sectional analysis is to explore in depth which personal resources are related to stress, areas of burnout and depression in the individuals working in occupations which are classified by consortium of occupational physicians as the occupations with increased both physical and mental demands. A network analysis was computed to identify central variables that could be targeted by intervention programs in order to improve well-being and health in the studied professions.

If the central variables are identified, network analysis may be used to assess also the closeness of the relationships with particular personal resources that may be used in future interventions to diminish the stress, areas of burnout or health deterioration.

The centrality resembles the importance of each variable (node) in the studied network. Network analysis is a corrected partial correlational network useful also for understanding the strength of the relationships between multiple variables. The strength suggests which variables are directly connected to other variables and may be tested in complex predictive models or intervention studies in the future.

4. METHODS

4.1. Participants

The sample consisted of 277 (87 women) professionals from the high-risk professions. It comprised police personnel (N = 70), Prison and Court Guard Service (N = 71), customs officers of the Financial Administration of the Slovak Republic (N = 65), and physicians (N = 55) and nurses (N = 16) from the National Health Service, who are working in state hospitals. These high-risk professionals are directly participating in every day threatening situations, violent and aggressive assaults, death of co-workers or clients/patients, they are exposed to shift work and have higher rate of emergency duty. Further description of the sample is available in Table 1. The Table 1 summarizes also descriptive statistics of the examined populations.

Table 1.
Descriptive characteristics of the sample.

Characteristic	Profession			
	Customs officers	Prison guards	NHS doctors and nurses	Police personnel
Gender				
Male	43	66	28	53
Female	22	5	43	17
	M (SD)	M (SD)	M (SD)	M (SD)
Age	36.6 (8.4)	36.8 (7.2)	39.6 (11.2)	35.0 (8.3)
Depressive symptoms (Zung)	35.6 (8.1)	35.3 (7.7)	35.0 (9.5)	34.9 (7.9)
Self-rated health	2.38 (0.8)	2.25 (0.8)	2.1 (0.8)	2.3 (0.9)
Burnout				
Exhaustion	1.7 (1.2)	1.8 (1.0)	2.0 (1.2)	2.0 (1.2)
Depersonalization	2.1 (1.4)	1.3 (1.2)	1.3 (1.3)	1.5 (1.3)
Personal Accomplishment	3.0 (1.1)	3.3 (1.0)	4.5 (1.0)	3.8 (1.1)
Perceived stress	24.6 (6.0)	25.3 (6.1)	24.7 (6.5)	24.3 (6.1)
Occupational roles				
Role overload (RO)	20.6 (5.8)	22.4 (4.8)	24.0 (7.1)	21.6 (5.2)
Role insufficiency (RI)	30.4 (7.3)	21.5 (5.0)	20.1 (5.6)	23.2 (6.1)
Role ambiguity (RA)	22.9 (6.9)	20.0 (5.7)	21.3 (6.6)	20.1 (5.8)
Role boundaries (RB)	24.6 (4.8)	22.9 (4.3)	24.4 (3.8)	24.3 (4.5)
responsibility (R)	17.9 (6.1)	15.6 (4.2)	18.1 (4.7)	17.8 (5.6)
physical environment (PE)	19.5 (6.4)	15.0 (4.5)	19.9 (6.6)	19.0 (5.9)
Personal resources				
Recreation (RE)	33.2 (6.6)	30.3 (5.8)	32.3 (7.5)	30.8 (6.9)
Self-care (SC)	25.4 (5.7)	23.6 (5.3)	27.4 (6.3)	24.5 (6.6)
Social support (SS)	38.7 (8.6)	41.0 (7.6)	42.8 (7.8)	41.0 (10.6)
Rat./Cognitive coping (RC)	36.9 (6.7)	34.8 (6.2)	36.0 (6.5)	34.2 (6.9)

4.2. Measures

Respondents fulfilled sociodemographic variables (age, gender, nightshifts, type of work).

Respondents also self-rated their health status by answering selected single item from the multipurpose *Short Form Health Survey*, SF-36 (Medical Outcomes Trust, Boston, MA). Respondents rated their health on the 5-point scale with verbal anchors (1 = excellent to 5 = poor). Bowling (2005) proposes that the single item has very good validity and is satisfactory in revealing currently perceived health of the person. The higher the score is, the worse is the perceived health by the respondent – it reveals the perceived deterioration of health. Similar version of the item is frequently used by OECD countries in the health interview surveys (<http://www.oecd.org/publications>).

The Occupational Stress Inventory – Revised was used (OSI-R, Osipow, 1998; with validity and reliability of the Slovak translation confirmed in Osipow, 2010). The inventory measures three work-related areas: 1. Occupational stress (Occupational Roles Questionnaire – ORQ), which is assessed by using six scales examining roles that have been connected to perceiving stress at work: Role Overload, Role Insufficiency, Role Ambiguity, Role Boundary, Responsibility, and Physical Environment; 2. Psychological strain (PSQ) and 3. Coping resources (Personal Resources Questionnaire - PRQ): Recreation, Self-Care, Social Support, and Rational/Cognitive Coping. In this study, the measure of psychological strain was not used, because other questionnaires assessing mental health have better validity and reliability (such as Zung's Depression Scale). Cronbach's α reliability of the ORQ is 0.89, PSQ is 0.87, and PRQ is 0.90.

Perceived stress was measured by using *Perceived stress scale* (Cohen, Kamarck, & Mermelstein, 1983); validity and reliability of the Slovak questionnaire by Ráčová, Hricová & Lovašova, 2018). It is a 10-item measure, in which respondents report their feelings of stress during the last month on a 5-point scale (0 = never; 4 = very often). In the current study, the Cronbach's α reliability of the perceived stress scale was 0.85.

Maslach Burnout Inventory (Maslach et al. 1996, validity of the Slovak questionnaire by Ráčová, & Köverová (2020); translation agreement TA-673. The instrument consists of 22 items, which measure three aspects of burnout syndrome, the level of emotional exhaustion, depersonalization (cynicism) and personal accomplishment. Respondents indicate the frequency of experiencing work-related feelings using a 7-point scale (0 = never; 6 = every day). Cronbach's α reliability of the exhaustion is 0.89, depersonalization is 0.72, personal accomplishment is 0.75.

Depressive symptoms were rated by using the Slovak version of the *Zung Self-Rating Depression Scale* (Zung, 1991). The scale comprises 20 items, in which the respondent indicates the degree of depressive symptoms in past two weeks on a 4-point scale. The Cronbach's α reliability of the SDS questionnaire in this dataset was 0.88.

4.3. Data analysis: The network analysis

Psychology network analysis is a form of exploratory analysis. Between each node (variable) are edges - representing the partial correlation between the two variables controlled for all other relationships in the network. The scales scores represent variables - "nodes" in the network. The network of complex interactions between personal resources, occupational stressors, perceived stress, burnout, depressive symptoms, and self-rated health was estimated using the estimation technique: graphical LASSO (Glasso). The bootstrapping 3000 was used. The color of the edges signifies the positive (blue color) relationship or negative relationship (red color) between the variables; the thickness of edges represents the strength of each relationship. The used algorithm places nodes with a

stronger relationship closer to the center of the graph. In the network analysis, several indices are computed to estimate the importance of each node. In this analysis, the indicator “strength” was of our main interest, since bootstrapped stability analyses indicated that the closeness and betweenness estimates were too instable across subsamples of the data. The strength indicates the number and the magnitude of the direct relationship with other nodes in the network. The estimation of the stability of the centrality indicators and the stability of edge weights, the accuracy of networks, were also computed.

The analysis of the stability of edge weights and nodes was performed by using 3000 bootstrap samples. The nodes indicated acceptable stability. Supplementary material of the stability of nodes and edge weights, as well as difference test between nodes centrality may be sent upon the request.

5. RESULTS

Inspection of the network analysis (Figure 1, Figure 2 and supplementary material) aiming at the strength, as a centrality measure of our main interest, reveals that the most central nodes in this network are *depressive symptoms*, *perceived stress*, *burnout - exhaustion* and occupational stressor - *role ambiguity* (RA). Significantly less central were Occupational stressors - boundaries (RB) and feelings of insufficiency at work related tasks (RI), personal resources - recreation (RE). Even less central were occupational stressors - responsibility (R), MBI - personal accomplishment, MBI - depersonalization, personal resources - rational coping (RC) and social support (SS).

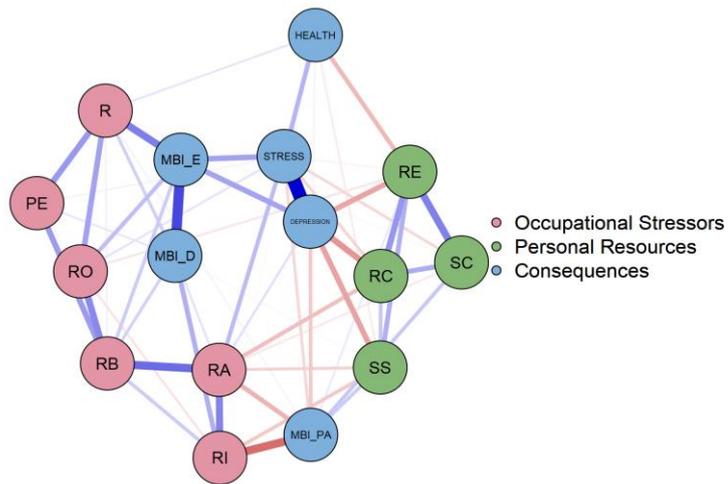
Conversely, the following variables (nodes) were not central in the network: Personal resources - self-care activities, self-reported (low) health, and occupational stressors - physical environment (PE) and work overload (RO) The estimated network and selected centrality indicators are presented in Figure 1 and 2.

It is important to note (Figure 1) the significant relationship between depression, stress and MBI - emotional exhaustion, creating a triangle of strong significant relationships. MBI - emotional exhaustion was significantly connected also to the occupational stressor - responsibility (R). Occupational stressor - role ambiguity (RA) was also positively connected to stress. These variables may trigger each other. On the other hand, low feelings of insufficiency at work (RI) are positively related to feelings of high personal accomplishment (MBI-PA).

After examining the personal resources (Figure 1) of recreation, rational coping and social support, it is clear that they have direct negative relationship with depressive symptoms and the deterioration of health. Personal resource – using rational coping (RC) strategies and to certain degree also having a social support (SS) was linked negatively to perceiving ambiguity at work. Self-care (SC) did not have a strong position in the network model.

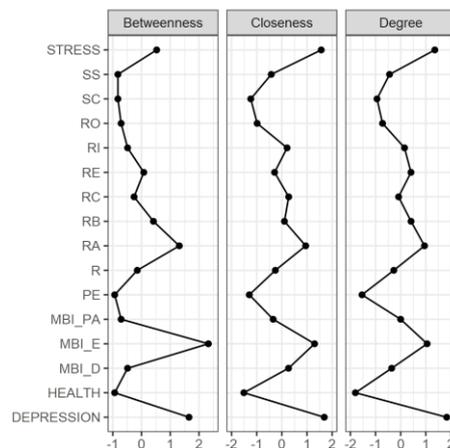
To summarize, *personal resources – rational coping, social support and recreation* are directly linked to the two most central variables in the model – *depressive symptoms and role ambiguity (occupational stressor)*.

Figure 1.
Estimated network of the professionals from the selected high-risk occupations.



Note. SS – Social Support; SC – Self-Care; RO – role overload, RI – role insufficiency, RE – recreation, RC – rational coping, RB – role boundaries at work, RA – role ambiguity at work, R – responsibility at work, PE – physical environment at work, MBI_PA – Personal accomplishment (burnout), MBI_E – exhaustion (burnout), MBI_D – depersonalization (burnout)

Figure 2.
The plots of centrality indicators in the selected high-risk professionals. Only the Degree (strength) was analyzed in this study.



Note. SS – Social Support; SC – Self-Care; RO – role overload, RI – role insufficiency, RE – recreation, RC – rational coping, RB – role boundaries at work, RA – role ambiguity at work, R – responsibility at work, PE – physical environment at work, MBI_PA – Personal accomplishment (burnout), MBI_E – exhaustion (burnout), MBI_D – depersonalization (burnout)

6. DISCUSSION AND CONCLUSION

The study explored importance (centrality) of particular nodes: perceived stress, burnout areas (emotional exhaustion, depersonalization, personal accomplishment), depressive symptoms, decrease of self-reported health, occupational stressors (roles) and areas of personal resources. The central, or the core variables in this study are those that are directly connected to other variables. These are the variables that are the most „dominant“ and could be targeted by potential interventions. It can be concluded, that *depressive symptoms, emotional exhaustion, and stress*, but also occupational stressors, especially *role ambiguity (RA)* are among the central variables that should be targeted by intervention programs supporting the health and well-being of the selected high-risk professions.

Notably, depressive symptoms, stress and exhaustion dominated in the network. They formed a triangle of interrelationships. These variables may be triggering symptoms of each other, which is in line with clinical observations and with previous studies (Koutsimani, Montgomery, & Georganta, 2019). However, from the evolutionary perspective, the depressive symptoms may not be simply good or bad, but rather function as a compass revealing a person his own inner dissatisfaction with current state of his life - whether the dissatisfaction is in his personal life, working life or work-life balance, or inability of blending the two worlds (Andrews & Thomson, 2009).

Importantly, *personal resources – rational coping, social support and recreation* seem to have an important role in the network, as they are directly linked to the two most central variables in the model – *depressive symptoms and role ambiguity (occupational stressor)*. The strongest benefit of personal resources may be in diminishing or buffering the depressive symptoms of the working personnel. Especially the recreation (RE), rational coping (RC) and social support (SS) could have promising results in intervention programs. Additionally, recreation could support health of the working individual.

Unsurprisingly, rational coping (RC) strategies and social support (SS) may prevent from occupational stressor - the work ambiguity (RA), which is related to unclear work content, misunderstanding of directions and expectations from employer. Rational coping and social support may refine the ambiguity at work by having good relationships with colleagues at work, improving communication and understanding the content of one's job position.

To summarize, intervention program makers may want to create programs, which would activate particularly useful strategies, especially recreation, but also rational coping and social support. On the other hand, self-care subscale (sleep, meditation, relaxation, diet, exercise or regular health checks) was not directly connected to negative symptoms, such as depression or stress. There are many programs aiming at increasing self-care nowadays (e.g. Mesárošová et al., 2019), yet, it seems that self-care is not a core issue for all participants. For the studied risk-group of professionals, there may be strategies that are more suitable and effective in alleviating the depressive symptoms and maintaining good health, such as supporting recreation, leisure and hobby activities. In addition, depression could be relieved also by rational coping strategies (setting priorities, facing problems systematically, evaluating results of decisions), or social support.

Additionally, based on the results from this study, the intervention program makers aiming at increasing personal resources and decreasing negative aspects of work, may wish to assess the effectiveness of the intervention by measuring the differences in depressive symptoms, as they may be among the first to be affected by the changes of personal resources (due to direct connection). However, intervention maker aiming at changing work environment and occupational stressors may wish to measure effect of the intervention by

assessing the symptoms of particular areas of burnout, as the areas of burnout are directly connected to occupational stressors.

The changes in well-being of the working individual may arise not only from the intervention programs, but also from the companies and organizations themselves. Either by supporting employees' recreation activities (RE), such as vacations, leisure time, doing fun activities during weekends, hobbies, disconnection from work; or by decreasing occupational stressors, mainly the central ones that are connected directly to other negative symptoms or other occupational stressors, such as role ambiguity (RA), boundaries (RB) and feelings of insufficiency at work (RI).

Undoubtedly, the results should be further tested and experimentally verified. It is necessary to distinguish correlative study results from causal studies and be very careful with the interpretations. The cross-sectional character of the study lets us only to hypothesize the causal relationships. The outcomes of the study may help human resource managers and work-psychologists create and test specific programs based on individual needs of the employers.

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AUTHORS' INFORMATION

Full name: Jana Nezkusilová, Mgr., PhD.

Institutional affiliation: Department of Psychology, Faculty of Arts, P.J. Šafárik University in Košice, Slovakia

Institutional address: Moyzesova 9, Košice 041 80, Slovakia

Short biographical sketch: Jana Nezkusilová works as a lecturer and researcher at the Department of Psychology. Her main field of research is stress, health-related behavior, and high-risk professions. She is also part of an international team at the project COVIDiSTRESS global survey, studying the effect of COVID-19 pandemic on mental health and the behavioral response to the pandemic situation. At the university, she teaches psycho-diagnostics, developmental disorders, research methods and qualitative research. She works also as a counselor.

Full name: Martina Chylová, PhDr., PhD.

Institutional affiliation: 1st Department of Psychiatry, Faculty of Medicine, P.J. Šafárik University in Košice, Slovakia

Institutional address: Tr. SNP 1, Košice 040 11, Slovakia

Short biographical sketch: Martina Chylová is a clinical psychologist and assistant professor. She completed her doctoral program in Health Sciences (University Medical Center Groningen, the Netherlands) in 2009. Her teaching and practical activities associate with health psychology, clinical psychology, and psychopathology in adulthood. She conducts investigations in the research projects focusing on employees' mental health and its assessment, improving mental health status in patients with psychiatric illnesses. She also helps students with psychological problems as a counselor at University counselling center UNIPOC in Košice. She is a member of the Slovak Chamber of Psychologists.

Full name: Monika Minčičová Seilerová, JUDr., PhD.

Institutional affiliation: Department of Labour Law and Social Security Law, Faculty of Law, P.J. Šafárik University in Košice, Slovakia

Institutional address: Kováčska 26, Košice 040 75, Slovakia

Short biographical sketch: Monika Seilerova works as a researcher at the Department of Labour Law and Social Security Law. Her research concerns several areas. She currently focuses mainly on the possibilities of improving the legal framework for employees' health care and wellbeing, including the legal regulation of employees' health assessment. In publications, she also deals with issues of the interconnection of civil law with labour law, with issues of employment services or consequences of digitisation on labour law relations. She partially participates as a teacher, lecturing in the field of labour law. She is also active in the organisation of scientific conferences, student symposiums and other science popularisation activities.

Section 4
Legal Psychology

Chapter #22

PARENTAL ATTACHMENT AND PHYSICAL INTIMATE PARTNER VIOLENCE IN YOUNG ADULTS: MEDIATIONAL ROLE OF DYSFUNCTIONAL ATTITUDES

Chloe Cherrier¹, Catherine Potard², Alice Richard¹, Emmanuel Rusch³, & Robert Courtois¹

¹EE 1901 QualiPsy, University of Tours, France

²EA 4638 LPPL, University of Angers, France

³EA 7505 EES, University of Tours, France

ABSTRACT

Introduction. Physical Intimate Partner violence (PIPV) is a prevalent problem throughout the world, with serious negative impacts for the victims. A great deal of research is aimed at identifying vulnerability and protective factors among victims. Previous studies have associated PIPV victimization with *insecure* parental attachment. However, little is known about the role of dysfunctional attitudes (DA) in Intimate Partner Violence (IPV). This study aimed to evaluate DA as a mediator between parental attachment and PIPV victimization of young adults. *Methods.* Self-report questionnaires were completed by 915 young French adults to assess their attachment styles, DA (related to sociotropy and autonomy), and history of physical assault. *Results.* Two hundred and six participants (21.1%) reported having been victims of PIPV. Path analyses confirmed the indirect effect of DA in the relationship between parental attachment styles and PIPV victimization in young adults. DA related to sociotropy appeared to be a partial mediator of attachment to the mother and PIPV victimization, while DA related to autonomy appeared to be a partial mediator of attachment to the father and PIPV victimization. *Conclusion.* *Insecure* parental attachment is associated with more DA and a risk of PIPV victimization in emerging adulthood.

Keywords: physical intimate partner violence, dysfunctional attitudes, parental attachment style, young adults.

1. INTRODUCTION

Intimate partner violence (IPV) is a worldwide public health issue that can take different forms: psychological, physical and sexual. Physical intimate partner violence (PIPV), associated with other forms of violence, has serious consequences on mental and physical health. It is defined as “the intentional use of physical force with the potential for causing death, disability, injury, or harm” (Saltzman et al., 1999) in a romantic relationship. It can be used by the intimate partner as an inappropriate strategy to keep control of the relationship and/or the partner. PIPV victims are in a subjugated relationship and do not always have the personal resources to get out of it. In France, women are the main PIPV victims, with 154,000 cases identified in 2018 (MIPROF, 2019). According to the National Survey of Violence Against Women in France (2001), 20% of victims are 20–24 years old. Young adult victims of IPV are exposed to a risk of re-victimization in adulthood (e.g., Smith, White, & Holland, 2003). Young adulthood is a time of discovering oneself and others and of identity building, and is thus a crucial developmental period.

Many studies have examined the vulnerability, risk and protective factors of PIPV (Stith, Smith, Penn, Ward, & Tritt, 2004), and one of the most widely recognized links is parental attachment style. Bowlby's theory (1980) is based on the fact that all human beings continually try to develop bonds of attachment with those around them in order to survive. Three styles of parental attachment have traditionally been described: *secure*, *insecure-avoidant* and *insecure anxious-ambivalent* (Ainsworth, Blehar, Waters, & Wall, 1978). A *secure* attachment to parents enables young adults to form positive interpersonal relationships. Young adults with *insecure* attachment to their parents find it difficult to establish intimate relationships with others and are unable to find the right emotional distance with their partners (too close or too distant). Furthermore, the family environment during childhood determines how individuals construct their representations of the self, of others and of the world around them. These representations are known as internal working models (Pietromonaco & Barrett, 2000); they may change throughout life, but are predefined during childhood and are linked to the type of parental attachment.

There are some similarities between dysfunctional attitudes (DA) and distorted working models. Beck's cognitive theory (1976) postulates that childhood maladaptive beliefs will be retained in adulthood and will lead to DA when negative or stressful events occur. DA have often been studied as a component of depressive self-schemas and are defined as negative, excessive and inflexible if-then statements concerning the self (Clark, Beck, & Alford, 1999). Weissman and Beck (1978) developed the Dysfunctional Attitude Scale (DAS) to evaluate these maladaptive self-schemas. Bouvard et al. (1994) carried out a factor analysis of the DAS items and obtained four factors which they termed *seeking the esteem of others*, *the capacity to oppose others*, *independence from others*, and *seeking approval of others*. These types of DA are strongly associated with sociotropy or autonomy personality traits (Esther De Graaf, Roelofs, & Huibers, 2009). Sociotropy is characterized by excessive investment in interpersonal relationships; sociotropic individuals need encouragement and attention from others (cf. the DAS dimensions of *seeking the esteem of others* and *seeking approval by others*). By contrast, autonomy is characterized by independence, self-control and achievement (cf. the DAS dimensions of *the capacity to oppose others* and *independence from others*). DA related to sociotropy are linked to negative self-beliefs, and those related to autonomy are negative beliefs of others (Otani, Suzuki, Matsumoto, & Shirat, 2017). Previous studies have also supported the link between DA and parental attachment styles (Fuhr, Reitenbach, Kraemer, Hautzinger, & Meyer, 2017; Roelofs, Lee, Ruijten, & Lobbestael, 2011). *Insecure* attachment has been found to predict later development of DA in adolescents (Zhou, Arend, Mufson, & Gunlicks-Stoessel, 2020) and young adults (Bosmans, Braet, & Van Vlierberghe, 2010; Hankin, Kassel, & Abela, 2005). *Insecure* attachment to the mother seems more predictive of DA than *insecure* attachment to the father (Ingram, Overbey, & Fortier, 2001). *Insecure* attachment to the same sex parent may increase DA (Ingram et al., 2001; Otani et al., 2011; Otani, Suzuki, Matsumoto, Sadahiro, & Enokido, 2014), but there is no consensus on this point. Otani et al. (2011) found that women with *insecure* attachment to their mother showed greater sociotropy than the others, but in a later study (Otani et al., 2014), they found higher levels of autonomy. For men, no significant association between *insecure* parental attachment and any specific type of DA was found in the earlier study (Otani et al., 2011), but in the second study (Otani et al., 2014), men with *insecure* attachment to the father reported higher autonomy.

Miljkovitch and Cohin (2007) showed that parental attachment and internal working models are lifelong and therefore continue throughout adulthood, notably affecting intimate relationships. Adults who are *insecure* in their relationships retain their childhood working

models. However, *secure* adults tend to adjust their representations to those of their partner. If these “encoded schemas” are negative, they can be the source of various mental health problems (Bosmans et al., 2010), such as depression (Hankin et al., 2005; Otani, Suzuki, Matsumoto, & Shirata, 2018). However, to our knowledge, very few studies have explored the relationships between IPV victimization, especially PIPV, and DA. Kaygusuz (2013) showed that young adults who have negative beliefs about themselves and others are more likely to have non-harmonious and conflicting interpersonal relationships. Dye and Eckhardt (2000) investigated PIPV perpetration in a student population, and its links in particular with DA. No significant difference in DA was observed between the violent and non-violent groups. The authors suggested that future research should investigate whether cognitive distortions are present during affect-inducing partner conflict situations.

The aim of the present study was to examine the mediating role of DA between parental attachment and PIPV in young adults. We hypothesized that *insecure* attachment styles would lead individuals to inappropriate beliefs about themselves and others, resulting in DA that could be a factor of PIPV vulnerability. More specifically, we explored whether the four dimensions of DA (related to sociotropy or autonomy) are mediation variables in the relationship between attachment to the mother or father and PIPV victimization.

2. METHODS

2.1. Procedures and participants

The current study had a cross-sectional design. A self-administered online questionnaire designed for young adults aged 18–30 years old was distributed through various networks (university, sports clubs, professional, etc.). The inclusion criteria were for participants to have been involved at least once in their life in a romantic relationship and to have been in contact with at least one parent. The sample consisted of 915 participants including 84.8% ($n = 776$) women, with an average age of 23.59 years \pm 3.35, and average level of education of 15.07 years \pm 2.70 (corresponding to a bachelor's degree).

2.2. Measures

The Revised Conflict Tactics Scale 2 (CTS2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996 translated by Lussier, 1998) was used to measure the level of conflict and abuse between partners. We only used the physical assault subscale and the form for victims (39 items). We used a dichotomous scoring method (yes (1): victim of at least one act of PIPV, no (2): never been a victim of PIPV). *The Inventory of Parent and Peer Attachment* (IPPA; Armsden & Greenberg, 1987 translated by Vignoli & Mallet, 2004) measures young adults' attachment to their mother and father. It has 28 items measuring three dimensions of attachment: communication, trust, and alienation. Based on these dimensions, the scale identifies three attachment styles (Vivona, 2000). In the present study, only *secure* and *insecure* styles were studied. *Insecure-avoidant* and *insecure anxious-ambivalent* styles were combined in the *insecure* category. *The Dysfunctional Attitude Scale* (DAS; Weissman & Beck, 1978, translated by Bouvard et al., 1994) evaluates the level of DA, based on Beck's cognitive theory. We used form A of the scale, which has 29 items investigating 4 factors: DA1 *Seeking the esteem of others*; DA2 *The capacity to oppose others*; DA3 *Independence from others*; DA4 *Seeking approval of others*. DA1 and DA4 refer to the personality dimension of sociotropy, and DA2 and DA3 to autonomy (Esther De Graaf et al., 2009). A high score indicates greater cognitive bias.

2.3. Statistical analysis

Data were analyzed using SPSS version 25 and the *process* module developed by Hayes (2018). Participants were divided into two groups: victims of PIPV and non-victims of PIPV. Independent sample *t*-tests and chi-square tests were used to compare the characteristics of the participants in the two groups.

A series of logistic (top-down using the likelihood ratio) and linear regressions were conducted, based on the four steps proposed by Baron and Kenny (1986), to examine whether DA mediate the relationship between parental attachment and PIPV. Next, a bootstrap analysis was performed to demonstrate the indirect (mediated) effect of DA. In this analysis, if the 95% confidence interval (CI) for the indirect effect does not include zero, then it can be concluded that the indirect effect is significant at the 5% level. As the dependent variable was dichotomous, the effect size of the mediation could not be analyzed (MacKinnon, Fairchild, & Fritz, 2007). Models of attachments to the mother and the father were tested separately.

3. RESULTS

3.1. Descriptive and bivariate statistics

Table 1.
Comparison of independent variables between victims of PIPV groups.

Independent variables	Non-victims of PIPV		Victims of PIPV		X^2	<i>t</i>
	<i>n</i>	<i>M</i> ± <i>SD</i> or %	<i>n</i>	<i>M</i> ± <i>SD</i> or %		
Age	709	23.58 ± 3.38	206	23.63 ± 3.28		-.18
Sex	709		206		2.19	
Male	101	14.2	38	18.4		
Female	608	85.8	168	85.6		
Education (years)	709	15.17 ± 2.66	206	14.75 ± 2.83		1.95
Attachment to mother	593		172		13.27***	
Secure	368	62.1	80	46.5		
Insecure	225	37.9	92	53.5		
Attachment to father	531		142		12.35***	
Secure	338	63.7	70	47.6		
Insecure	193	36.3	72	52.4		
DA total	709	3.19 ± 1.00	206	3.43 ± .88		-3.20**
DA1	709	3.41 ± 1.09	206	3.65 ± 1.01		-2.70**
DA2	709	2.68 ± 1.20	206	2.94 ± 1.14		-2.79**
DA3	709	3.12 ± 1.19	206	3.39 ± .99		-3.27**
DA4	709	3.07 ± 1.28	206	3.35 ± 1.19		-2.76**

Data are presented as % or mean ± standard deviation; PIPV: physical intimate partner violence; DA total: Total score of dysfunctional attitudes; DA1: *Seeking the esteem of others*; DA2: *The capacity to oppose others*; DA3: *Independence from others*; DA4: *Seeking approval of others*. ** $p < .01$, *** $p < .001$.

Victims of PIPV represented 21.1% ($n = 206$) of the sample. There was no significant difference between the non-victim group and victims of PIPV group in age, sex or level of education. More victims than non-victims reported an *insecure* style of attachment to the mother (53.5%, $X^2 = 13.27$, $p < .001$), and to the father (52.4%, $X^2 = 12.35$, $p < .001$). Victims also had higher DA scores than non-victims, overall ($t = -3.20$, $p < .01$) and on the

4 dimensions (DA1: $t = -2.70, p < .01$; DA2: $t = -2.79, p < .01$; DA3: $t = -3.27, p < .01$; DA4: $t = -2.76, p < .01$) (Table 1). The young adults with an *insecure* style of attachment to their mother or father had more DA (overall and on the 4 dimensions, $p < .001$) than those with an *secure* style (Table 2).

Table 2.
Comparison of dysfunctional attitudes and parental attachment between victims of PIPV groups.

Independent variables		Non-victims of PIPV <i>M</i> ± <i>SD</i>	Victims of PIPV <i>M</i> ± <i>SD</i>	<i>t</i>
DA total	Attachment to the mother			
	<i>Secure</i>	3.05 ± .97	3.31 ± .85	-2.21*
	<i>Insecure</i>	3.31 ± .96	3.58 ± .87	-2.45*
	Attachment to the father			
DA1	<i>Secure</i>	3.04 ± .96	3.34 ± .97	-2.32*
	<i>Insecure</i>	3.44 ± .98	3.56 ± .82	-.91
	Attachment to the mother			
	<i>Secure</i>	3.30 ± 1.04	3.55 ± 1.00	-1.95
DA2	<i>Insecure</i>	3.50 ± 1.10	3.77 ± 1.00	-2.05*
	Attachment to the father			
	<i>Secure</i>	3.28 ± 1.05	3.56 ± 1.13	-2.01*
	<i>Insecure</i>	3.70 ± 1.09	3.72 ± .95	-1.16
DA3	Attachment to the mother			
	<i>Secure</i>	2.49 ± 1.15	2.77 ± 1.03	-2.01*
	<i>Insecure</i>	2.88 ± 1.04	3.12 ± 1.09	-1.67
	Attachment to the father			
DA4	<i>Secure</i>	2.51 ± 1.19	2.90 ± 1.31	-2.43*
	<i>Insecure</i>	2.91 ± 1.12	3.12 ± 1.06	-1.41
	Attachment to the mother			
	<i>Secure</i>	2.96 ± 1.20	3.23 ± .87	-2.42*
DA3	<i>Insecure</i>	3.23 ± 1.15	3.50 ± 1.01	-1.95
	Attachment to the father			
	<i>Secure</i>	2.99 ± 1.19	3.24 ± 1.01	-1.64
	<i>Insecure</i>	3.34 ± 1.20	3.58 ± .99	-1.60
DA4	Attachment to the mother			
	<i>Secure</i>	2.94 ± 1.26	3.18 ± 1.06	-1.63
	<i>Insecure</i>	3.23 ± 1.27	3.58 ± 1.28	-2.17*
	Attachment to the father			
DA4	<i>Secure</i>	2.93 ± 1.26	3.17 ± 1.19	-1.43
	<i>Insecure</i>	3.34 ± 1.28	3.58 ± 1.10	-1.40

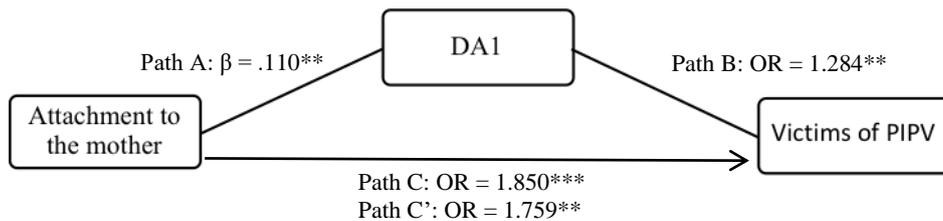
Data are presented as mean ± standard deviation; PIPV: physical intimate partner violence; DA total: Total score of dysfunctional attitudes; DA1: *Seeking the esteem of others*; DA2: *The capacity to oppose others*; DA3: *Independence from others*; DA4: *Seeking approval of others*. * $p < .05$.

3.2. Mediation analysis

The mediating models remained significant after adjusting for age, sex and education. The four dimensions of DA were included in a top-down likelihood-ratio logistic regression

model, with separate models for attachment to the mother and attachment to the father. Only DA1 (sociotropy) for attachment to the mother and DA2 (autonomy) for attachment to the father significantly improved the fit of the model.

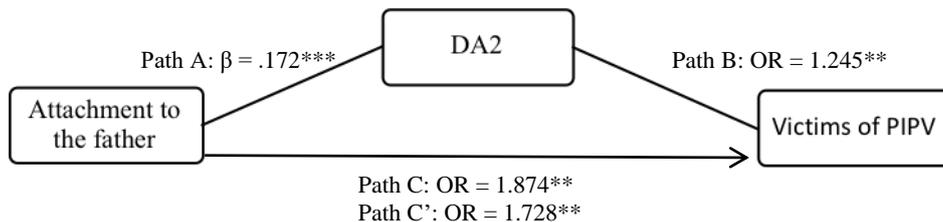
Figure 1.
Adjusted mediation model of dysfunctional attitudes between attachment to mother and PIPV.



β = standardized coefficient; OR= odds ratio; ** $p < .01$, *** $p < .001$. PIPV: physical intimate partner violence; DA1: Seeking the esteem of others.

Attachment to the mother (Figure 1). The first step, the direct path from attachment to the mother, was a significant association with PIPV (OR = 1.850, 95% CI = 1.311 to 2.611, $p < .001$). In the second step, there was a significant association between attachment to the mother and DA1 ($\beta = .110$, $p < .01$). In the third step, higher scores on DA1 were associated with PIPV victimization (OR = 1.284, 95% CI = 1.090 to 1.513, $p < .01$). In the final step, when DA1 was included in the regression model, the association between attachment to the mother and PIPV decreased (OR = 1.759, 95% CI = 1.241 to 2.490, $p < .01$), indicating a partial mediation effect of DA1. Bootstrap confidence intervals showed that the indirect effect of DA1 ($\beta = .059$, 95% CI = .013 to .123) in the association between attachment to the mother and PIPV victimization was significant, indicating partial mediation of the effect of attachment to the mother on PIPV victimization through DA1. More precisely, path analysis showed that an *insecure* style of attachment to the mother was positively associated with DA1, which in turn increased the risk of being a victim of PIPV.

Figure 2.
Adjusted mediation model of dysfunctional attitudes between attachment to father and PIPV.



β = standardized coefficient; OR= odds ratio; ** $p < .01$, *** $p < .001$. PIPV: physical intimate partner violence; DA2: The capacity to oppose others.

Notes Figure 1 and Figure 2: Path A: Test of whether parental attachment is a significant predictor of DA. Path B: Test of whether DA are a significant predictor of PIPV victimization. Path C: Test of whether parental attachment is a significant predictor of PIPV victimization. Path C': Test of whether parental attachment and DA together are significant predictors of PIPV victimization.

Attachment to the father (Figure 2). The first step, the direct path from attachment to the father was a significant association with PIPV (OR = 1.874, 95% CI = 1.292 to 2.717, $p < .01$). In the second step, there was a significant association between attachment to the father and DA2 ($\beta = .172$, $p < .001$). In the third step, higher scores on DA2 were associated with PIPV victimization (OR = 1.245, 95% CI = 1.069 to 1.450, $p < .01$). In the final step, when DA2 was included in the regression model, the association between attachment to the father and PIPV decreased (OR = 1.728, 95% CI = 1.185 to 2.519, $p < .01$), indicating partial mediation. Bootstrap confidence intervals showed that the indirect effect of DA2 ($\beta = .091$, 95% CI = .026 to .173) in the association between attachment to the father and PIPV victimization was significant, indicating partial mediation of the effect of attachment to the father on PIPV victimization through DA2. More precisely, path analysis showed that an *insecure* style of attachment to the father was positively associated with DA2, which in turn increased the risk of being a victim of PIPV.

4. DISCUSSION, LIMITATIONS AND IMPLICATIONS

The current study examined the mediating role of DA in the relationship between parental attachment and PIPV victimization. In our sample, 21.1% of the participants had already been victims of at least one act of PV by one of their partners. The prevalence of victims of PIPV varies from 9% to 49% across studies (WHO, 2010). In this study, we were interested to see whether there was a history of PIPV in the life of young adults, in order to determine whether negative beliefs that developed during childhood could be a vulnerability factor for PIPV later in life. The results showed that participants' sex was not associated with PIPV victimization, as both women and men had experienced PIPV, highlighting the fact that physical victimization is not specific to women. These results support those of previous studies (Straus, 2008). They also show that *insecure* attachment to the father or mother increased the risk of being a victim of PIPV by 1.9 compared to *securely* attached participants. Parental attachment is an important vulnerability factor for PIPV victimization (Velotti, Zobel, Rogier, & Tambelli, 2018). Young adults with *insecure* parental attachment have a greater propensity to have DA as a whole (Hankin et al., 2005). When DA was included in the mediational model, only DA1 (sociotropy) - *Seeking the esteem of others* - for attachment to the mother and DA2 (autonomy) - *The capacity to oppose others* - for attachment to the father increased the model's significance. These results are similar to those in the literature, showing that *insecure* attachment to the mother is related more to sociotropy (Otani et al., 2011, 2014), and that attachment to the father is related more to autonomy (Otani et al., 2014). Indirect paths of both mediation models were significant using the bootstrap method. *Insecure* attachment to the mother would lead to more DA1 (sociotropy), with a 1.3 increase in the risk of being a victim of PIPV at least once in a lifetime. Similarly, *insecure* attachment to the father would lead to more DA2 (autonomy), increasing by 1.2 the risk of being a victim of PIPV at least once in a lifetime. These mediations are partial. These first results in the field of IPV can be compared with results obtained in studies of mental health disorders, such as depression (Hankin et al., 2005; Otani et al., 2018).

These findings suggest that approval and dependence patterns formed during young adulthood may be induced by insecure relationships with the mother, which may in turn be related to victimization by an intimate partner. By contrast, greater autonomy, notably the capacity to oppose others, is likely to be induced by *insecure* relationships with the father, in turn related to physical victimization by an intimate partner. These findings are in accordance with those of Stith et al. (2004), who suggested that young adults' personal

characteristics could represent vulnerabilities increasing the risk of being a victim of PIPV. Based on the current results, DA could compromise the ability of young adults to have harmonious romantic relationships, because they will tend to be drawn to partners who fit their dysfunctional internal working models, heightening their vulnerability to PIPV experiences.

Limitations. Several limitations should be borne in mind. First, the sample was composed solely of young French adults, which may reduce the generalizability of the findings. Secondly, self-report questionnaires reflect a subjective perception and may be influenced by social desirability, and a multi-method approach would be preferable (e.g., semi-structured interviews). Furthermore, the scoring method used to evaluate PIPV was dichotomous and it was therefore not possible to test the size of the indirect effects. Participants were mainly female, and it is possible that the lack of difference in PIPV experiences between women and men was biased. Considering the relational nature of partner violence in young adults, it also seems important to take into account the potential relationship dynamics involved in the participants' experiences, such as dyadic adjustment. In this study, we focused only on PIPV victims, but it would be interesting to study other forms of violence and the bi-directionality of PIPV among young adults. Finally, the cross-sectional nature of the data restricted our ability to test causal relations and to understand the mechanisms behind the path leading from emotional insecurity to IPV. It would be useful to replicate this research in a different cultural context, to examine whether these interactions are culturally specific. Additional research is needed to determine cognitive and emotional vulnerability factors in the risk of PIPV among insecurely attached individuals.

Implications. No published studies have investigated the link between PIPV and DA. Young adults with *insecure* internal working models will tend to have DA and to turn to partners with the same profile, thus increasing the risk of dysfunctional relationships. The current study provides an exploratory basis for appropriate prevention or intervention programs for young adults. For example, while it does not seem possible to act on the attachment of young adults to their parents, we can try to act on their beliefs and representations in an attempt to deconstruct them. Universal prevention programs to strengthen life skills such as cognitive skills (e.g. critical thinking, problem solving and decision-making) or even emotional skills (e.g. being aware of oneself, of one's history and one's limits), could be moderated and reduce dysfunctional beliefs or attitudes built up since childhood. Thus, this research provides some initial ideas for interventions to prevent IPV, and particularly PIPV, in young adults.

5. CONCLUSION

Insecure parental attachment and DA can be factors of vulnerability to PIPV. Further analysis of the results shows that dysfunctional sociotropic attitudes appear to partially mediate attachment to the mother and PIPV victimization among young adults, while dysfunctional autonomous attitudes appear to partially mediate attachment to the father and PIPV.

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AUTHORS' INFORMATION

Full name: Chloe Cherrier

Institutional affiliation: EE 1901 QualiPsy, University of Tours, France

Institutional address: Faculté Arts et Sciences Humaines, 3 rue des Tanneurs, BP 4103 – 337041 Tours cedex 1

Short biographical sketch: Chloe Cherrier is a PhD student in psychology in the Quality of Life and Psychological Health unit (QualiPsy). Her research interest focuses mainly on IPV among young adults and particularly the links with parental attachment and cognitive skills. She also works in the community FRAPS Centre-Val de Loire (*Fédération Régionale des Acteurs en Promotion de la Santé* / regional federation of health promotion Actors) and conduct educational programs on emotional and sexual life with young people.

Full name: Alice Richard

Institutional affiliation: EE 1901 QualiPsy, University of Tours, France

Institutional address: Faculté Arts et Sciences Humaines, 3 rue des Tanneurs, BP 4103 – 337041 Tours cedex 1

Short biographical sketch: Alice Richard is a post-graduate student in Clinical Psychology and Psychopathology at the University of Tours. She is involved in the research of Chloe Cherrier, a PhD student in psychology in the QualiPsy unit, sharing her interest in IPV among young adults and its links with parental attachment and cognitive skills.

Full name: Robert Courtois

Institutional affiliation: EE 1901 QualiPsy, University of Tours, France

Institutional address: Faculté Arts et Sciences Humaines, 3 rue des Tanneurs, BP 4103 – 337041 Tours cedex 1

Short biographical sketch: Robert Courtois is an associate professor / senior lecturer in psychopathology and clinical psychology. He is also a part-time hospital psychiatrist (Psychiatric University Clinic, University Hospital of Tours, France). He manages the CRIAVS Centre-Val de Loire (*Centre de ressources pour les intervenants auprès des auteurs de violences sexuelles* / regional resource center for people working with sexual offenders).

Full name: Catherine Potard

Institutional affiliation: EA 4638 *Laboratoire de Psychologie des Pays de la Loire* (regional Psychology Research Laboratory), University of Angers

Institutional address: Université d'Angers, Maison de la Recherche Germaine Tillion, 5 bis, boulevard Lavoisier, 49045 Angers Cedex 1, France

Short biographical sketch: Catherine Potard is currently Associate Professor of Psychology at the University of Angers, principal member of the regional psychology research laboratory (EA 4638)

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and associate member of the Emerging Team QualiPsy (EE 1901). She is also a psychologist in the Resource Centre for people working with perpetrators of sexual violence - CRIAVS – Centre-Val de Loire (University Hospital of Tours, France). Her research topics focus on the study of psychological risk, vulnerability, and protective factors in the development and maintenance of risk behaviors and interpersonal violence during developmental transition periods such as adolescence and early adulthood.

Full name: Emmanuel Rusch

Institutional affiliation: EA 7525 *Education Ethique Santé* (EES - Education Ethics Life), University of Tours

Institutional address: Faculté Arts et Sciences Humaines, 3 rue des Tanneurs, BP 4103 – 337041 Tours cedex 1

Short biographical sketch: Emmanuel Rusch is an university professor and director of EES unit. He is also doctor in public health and hospital practitioner in hospital of Tours. He is president of FRAPS and of the French Society of Public Health.

Section 5
Educational Psychology

Chapter #23

EXAMINING HOW POSITIVE AND NEGATIVE EMOTIONS INFLUENCE COGNITIVE PERFORMANCE IN SECONDARY SCHOOLS

Sonya Yakimova, Célia Maintenant, & Anne Taillandier-Schmitt

Psychologie des âges de la vie et Adaptation (PAVeA) - EA 2114, Université de Tours, France

ABSTRACT

Few studies have examined the impact of emotions on cognitive (not only academic) performance among adolescents and this is the objective of our research. After ethic committee agreement and parents' authorization, we asked 158 adolescents in secondary schools to respond to the French version of Differential Emotion Scale adapted for school context and to nineteen syllogisms which evaluated cognitive nonacademic performances. As results, we expected that negative emotions related to academic achievement would reduce performance in reasoning and positive emotions would improve it. Our hypotheses were partially validated. The impacts of the results as well as perspectives of future researches in relation with self-esteem, psychological disengagement, dropping out of school were discussed.

Keywords: emotions, cognitive performance, deductive reasoning, early- and mid-adolescence, secondary school.

1. INTRODUCTION

How emotions could play on cognitive performance in secondary schools? It is still too little known about their influence on cognitive performances at the crucial period of early- and mid-adolescence when many psychological and physical changes take place in a short time (Braconnier & Marcelli, 1998). In the literature concerning the adults, the results can be contradictory and contingent upon the perceived specific emotion. The affective state is however likely to influence cognitive performances (Blanchette & Richards, 2010; Oaksford, Morris, Grainger, & Williams, 1996; Tricard, Maintenant, & Pennequin, 2018).

1.1. Age and cognitive performances

The transition from childhood to adulthood is marked by an increasing in cognitive performances in many domains (Roalf et al., 2014). In the study of age change in cognition the most commonly studied cognitive processes are various forms of reasoning (Byrnes, 2008). Reasoning skills appear early and are developed with advancing age with the exception of elderly people when we observe a progressive decrease in performance in reasoning tasks (De Neys & Van Gelder, 2009). This improving of performance with age is therefore observed for the different type of reasoning: deductive reasoning (De Neys & Van Gelder, 2009; Hawkins, Pea, Glick, & Scribner, 1984), inductive reasoning (Csapó, 1997; Galotti, Komatsu, & Voelz, 1997) or quantitative reasoning (Chiesi, Gronchi, & Primi, 2008; Denison, Reed & Xu, 2013).

Reasoning performances are often measured by syllogisms, for example, Premise 1: Four legged animals walk / Premise 2: Tigers are four legged animals / Conclusion: Tigers walk. In this example, the conclusion is valid because it follows logically from the premises, and also credible because it is consistent with the established knowledge. The syllogisms reflect mainly the level of deductive reasoning, which corresponds to the use of general laws to draw a conclusion on a particular case (Tricard et al., 2018). The deductive reasoning would be possible from age of 4 years but under certain conditions (Hawkins et al., 1984): when the syllogisms are plausible (valid and credible) rather than imaginary and when there is a correspondence between the formulation and the validity. That is to say when it comes to answering "yes" this syllogism is valid for the syllogisms formulated positively and "no" this syllogism is not valid for the syllogisms formulated negatively. This correspondence would help young children (4 years old) to succeed without using logical reasoning (Markovits, Schleifer, & Fortier, 1989). Then, we could situate from age of 9 years the possibility of understanding the difference between valid and invalid conclusion about imaginary syllogisms (Galotti et al., 1997). But we could observe a full understanding of the relationship between the premises and the conclusion at age of 11 years (Markovits et al., 1989). During early adolescence, individuals show marked improvements in deductive reasoning (Steinberg, 2005) and the development of deductive reasoning skills would continue until the age of 17-18 years old.

1.2. Emotions and cognitive performances

The cognitive performances are not only improved with age. They may also be influenced by other factors and since many decades emotions are mentioned in particular (e.g. Channon & Baker, 1994; Oaksford et al., 1996; Melton, 1995; Radenhausen & Anker, 1988). Huntsinger, Isbell, and Clore (2014) remind that affective feelings have an important feedback and an adaptive function and provide information for many cognitive processing outcomes. Schwarz (2012) underlines that affects could influence our cognitive processing by informing us about our psychological environment: for example, negative affect flags the presence of a problem and positive affect notifies a favorable and safe environment. Blanchette (2006) points out that research on psychopathologies with important affective components showed an effect on reasoning as well as the research on cognition, in positive or in negative mood condition, with non-clinical samples. But in which way exactly negative and positive emotions could influence cognitive performances?

1.2.1. Deleterious effect of negative emotions

According to Tricard et al. (2018) the deductive reasoning of young people is influenced by emotions. These researchers examined the influence of inducing joy and sadness emotional states on deductive reasoning performances, measured by syllogisms, of children aged from 9–10 years old. They founded a negative effect of sadness on the scores of correct answers to syllogisms compared to joy. Fartoukh, Chanquoy and Piolat (2014) also examined the effect of a mood induction but on phonological working memory capacity in fourth and fifth graders. Their results showed a decreasing of phonological working memory performances in the case of negative mood induction procedure. Tricard and her colleagues (2018) as well as Fartoukh et al. (2014) specify that a negative affective experience will lead to a poor cognitive performance. Thus, experiencing a negative affective state should weaken the performance of pupils in cognitive tasks like reasoning task.

1.2.2. Facilitative effect of positive emotions

According to Bryan and Bryan (1991) a positive emotional state about school and learning promotes success and speed in solving reasoning problems. They randomly assigned children (third to fifth grades) and students in junior high and high school to a positive-mood induction condition or a no-treatment control condition. The objective was to assess the impact of positive moods on students' feelings of self-efficacy and math performance. The results showed that children in the positive-mood condition completed significantly more problems accurately than children in the no-treatment control condition. They also showed that students (in junior high and high school) in the positive-mood induction condition expressed greater self-efficacy for math than students in the control condition. Thus, feeling positive emotions towards learning and college would encourage better results in logical reasoning on a task. For Caparos and Blanchette (2015) positive emotions would indeed have a facilitating effect during a cognitive task. Giroux, Blanchette and Gosselin (2014) confirm that subjects with the induction of a positive emotional state perform better on a reasoning task with syllogisms. The objective of this study was to explore the influence of music-induced joy and sadness on deductive reasoning. The reasoning performance in a music-induced joy condition was much more higher compared to inducing sadness and the absence of emotional induction.

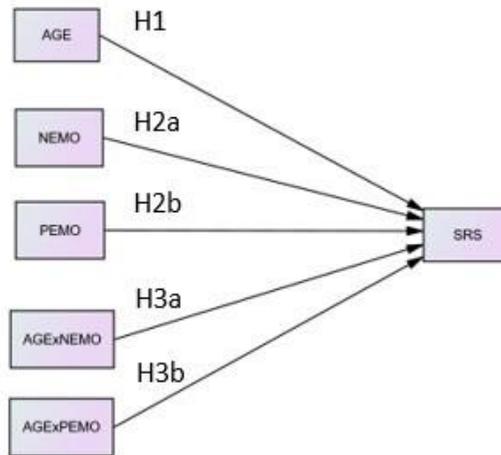
1.3. Objectives

The overall conclusions of all the studies in the “Emotions and cognitive performances” section were that there is a deleterious effect of negative emotions as well as a facilitative effect of positive emotions on cognitive performances. These studies were also done with a public of adults or young children. However, few studies have concretely examined the influence of affective state on cognitive and not only academic performance among adolescents. The objective of our research is to bring more information about that topic. As mentioned previously, cognitive performances are influenced by emotions and are improved with age. However, it could exist a differential effect of emotions on cognitive performances. Early adolescents could be more sensitive to emotions because of a poorer development of emotional regulation (Ahmed, Bittencourt-Hewitt, & Sebastian, 2015). Thus, we also wanted to explore the interaction effect of emotion and age on reasoning at this stage of early- and mid-adolescence which are marked by several changes in a short time.

1.4. Hypotheses

As our first hypothesis, we made the assumption that there was a significant correlation and a significant effect of the age on the cognitive performances: the cognitive performances should increase with age (H1). Second, we expected a significant correlation and a significant effect between the emotions about school and the cognitive performances: more the emotions about school are negative the lower should be the cognitive performances (H2a); more the emotions are positive the higher should be the cognitive performances (H2b). Finally, we expected a significant interaction effect between the age and the emotions about school on the cognitive performances: more the emotions about school are negative and more the age is low the lower should be the cognitive performances (H3a); more the emotions are positive and more the age is high the higher should be the cognitive performances (H3b). All the hypotheses are summarized in Figure 1.

Figure 1.
Hypotheses.



Legend: *NEMO* = Negative emotions; *PEMO* = Positive emotions; *SRS* = Syllogism reasoning score as a measure of Cognitive performances; *AGExNEMO* = interaction between Age and *NEMO*; *AGExPEMO* = interaction between Age and *PEMO*.

2. METHODS

2.1. Participants

158 students in secondary school (83 boys and 75 girls) participated in our research. They were 12 years-old on average (11-14 years, $SD = 0.78$). The most of them were in 6th (11-12 years old) and in 5th class (12-13 years old); two participants were in 4th (13-14 years old) and two others in 3th class (14-15 years old). 92% of the participants were French native speakers and the others were speaking French since more than five years. It is important to precise that we did not finish our data collection because of the Covid-19 crisis and we chose to include all the participants that we met. That is why we have only four participants in total for 4th (13-14 years old) and 3th class (14-15 years old).

2.2. Procedure

We obtained an ethic committee agreement for our study. We asked first school principals a permission to realize our study in their establishment and then we sent an authorization form to the parents to obtain a permission for the participation of their children. All participants also completed a consent statement and responded to the questionnaires at school, in group.

2.3. Measures

Our study contains as measures two questionnaires.

To measure negative (e.g., “Do you have any regrets, do you feel guilty for something that you have done?”) and positive emotions (e.g., “Do you feel happy?”) related to academic situations, participants completed the 36 items of the French validation of the

Differential Emotion Scale (DES) proposed by Ricard-St-Aubin, Philippe, Beaulieu-Pelletier and Lecours (2010) adapted firstly to the school context by Galand and Philippot (2005). Items were rated on a 5-point Likert scale ranging from 1 (Rarely or never) to 5 (Very often). The Cronbach's alpha coefficients for both groups of items measuring positive emotion ($\alpha = 0.65$) or negative emotions ($\alpha = 0.92$) were high and so we could construct two composite variables: positives emotions and negative emotions.

To measure cognitive nonacademic performances, we proposed 19 syllogisms, staying in line with previous studies which used this type of measurement rather than others. We counted the total number of right answers for every participant. She or he needed to choose the fine answer between four different propositions of a possible conclusion of every syllogism (example):

*"We tell to the aliens: "All printers need ink"
We also say to them: "My pen needs ink"
What conclusion would the aliens have made?"*

- o My pen is a printer*
- o My pen is not a printer*
- o My pen is a felt*
- o The aliens could not have concluded"*

Our syllogisms had neutral emotional content and they were pretested about this in Tricard (2018). The emotionality of the experiment's content has an effect on the cognitive performances (Blanchette & Richards, 2004; Gosselin & Blanchette, 2018) and that is why we chose to include this type of syllogisms.

2.4. Statistical analysis

We analyzed our data within a Network (see Fonseca-Pedrero, 2018; Hevey, 2018) and SEM approaches framework. The Network analysis allowed us to explore the partial correlations and links between our different variables. The SEM analysis permitted us to test the impact of emotions on cognitive performances. More precisely the later was a path analysis with a maximum likelihood estimation and we applied bias-corrected percentile bootstrap confidence intervals to test the significance of the different effects. In order to assess the fit of the models, the following indices were used: the ratio χ^2/df (chi-square/degree of freedom), the p value, the CFI (Comparative Fit Index), the GFI (Goodness-of-Fit Index), the AGFI (Adjusted Goodness-of-Fit Index), the RMSEA (Root Mean Square Error of Approximation) including the associated 90% confidence interval (CI) and the RMR (Root Mean Square Residual). The fit of a model is considered excellent for a value of the ratio χ^2/df less than 2 and a non-significant p value (Kline, 2011), for CFI, GFI and AGFI coefficient values greater than 0.90 (Mokhtarian & Ory, 2009), for RMSEA values less than 0.07 (MacCallum, Browne & Sugawara, 1996) and a maximum upper bound of the 90% CI of 0.10 (Browne & Cudek, 1993) and for RMR values less than 0.08 (Gana & Broc, 2018).

Descriptive Statistics and Network analysis were done with JASP software (JASP Team, 2019) and SEM analysis was realized with AMOS software (Arbuckle, 2014).

3. RESULTS

Descriptive statistics and the zero-order correlation matrix are presented in Table 1 and Table 2. The correlation matrix indicated that there were only two significant correlations between the variables of our interest: a positive relation between Positives emotions and Cognitive performances ($r = .22$, $p < .01$) as well as a negative relation between Positives emotions and Age ($r = -.17$, $p < .05$). This was not a surprise then when we integrated our hypotheses in a model to test with SEM analysis and the fit of the model was very poor ($\chi^2/df = 228$; $p = 0.000$; $CFI = 0.343$; $GFI = 0.662$; $AGFI = -0.589$; $RMSEA = 1.200$, 90% CI [1.142 – 1.260]) and the path coefficient weren't significant except the effect of positive emotions on cognitive performance. As a next step in our analysis we put the three variables from the two significant correlations from Table 2 to a network analysis (Figure 2). This time three partial correlations were significant: the relation between Age and Cognitive performances (H1), between Positives emotions and Age, and, between Positives emotions and Cognitive performances (H2b). Age and Cognitive performances were also negatively connected via Positives emotions. Thus we transposed this model in SEM framework by orienting the effects of the variables in accordance with our hypotheses (e.g. a direct effect from Positives emotions and Cognitive performances, etc.). We obtained a good model fit ($\chi^2/df = 1.247$; $p = 0.274$; $CFI = 0.998$; $GFI = 0.995$; $AGFI = 0.979$; $RMSEA = 0.010$, 90% CI [0.000 – 0.060]) but the effect of Age on Cognitive performances wasn't significant ($\beta = 0.06$, $p = .34$, 95% CI [-0.119 – 0.251]). We redid the analysis by omitting this link of the tested model (Figure 3) and the fit was very good ($\chi^2/df = 0.745$; $p = 0.338$; $CFI = 1.00$; $GFI = 0.997$; $AGFI = 0.981$; $RMSEA = 0.000$, 90% CI [0.000 – 0.020]). The direct effect from Age to Positive emotions was significant and negative ($\beta = -0.17$, $p < .05$, 95% CI [-0.308 – -0.017]), with $R^2 = 0.03$ for Positive emotions. The direct effect from Positive emotions to Cognitive performances was significant and positive ($\beta = 0.22$, $p < .05$, 95% CI [0.045 – 0.381]), with $R^2 = 0.05$ for Cognitive performances. The indirect effect from Age to Cognitive performances was also significant but negative ($\beta = -0.04$, $p < .05$, 95% CI [-0.104 – -0.003]).

Table 1.
Descriptive statistics.

	Sexe	Classe	Age	SRS	NEMO	PEMO
Mean			11.873	8.595	2.063	3.177
Median			12.000	8.000	1.963	3.194
Std. Deviation			0.780	2.481	0.617	0.565
Skewness	0.102	-0.813	0.552	0.578	0.749	-0.038
Kurtosis	-2.015	1.742	-0.243	1.570	0.631	0.117
Shapiro-Wilk	0.635	0.694	0.824	0.960	0.962	0.993
P-value of Shapiro-Wilk	< .001	< .001	< .001	< .001	< .001	0.703
Minimum			11.000	3.000	1.037	1.667
Maximum			14.000	18.000	4.370	4.889
25th percentile			11.000	7.000	1.593	2.889
50th percentile			12.000	8.000	1.963	3.194
75th percentile			12.000	10.000	2.426	3.556

Legend: NEMO = Negative emotions; PEMO = Positive emotions; SRS = Syllogism reasoning score as a measure of Cognitive performances.

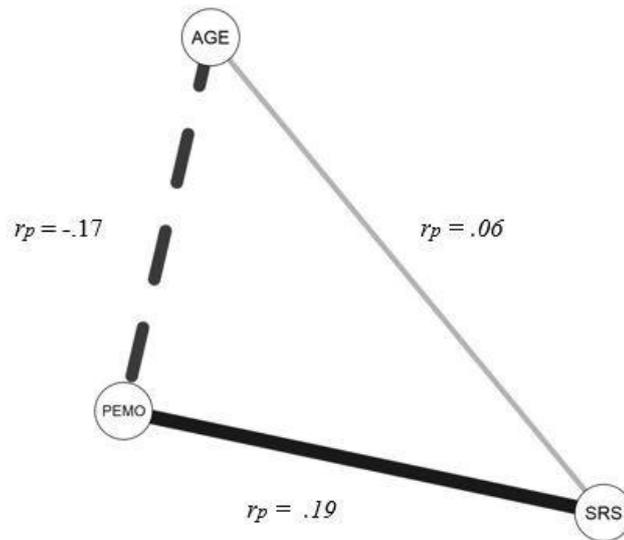
Table 2.
Correlation matrix.

	Gender	Class	Age	SRS	NEMO	PEMO
Gender	—					
Class	0.209 **	—				
Age	-0.188*	-0.800***	—			
SRD	0.038	-0.049	0.029	—		
NEMO	0.122	-0.085	0.084	-0.035	—	
PEMO	-0.039	0.099	-0.167*	0.220**	0.068	—

* p < .05, ** p < .01, *** p < .001

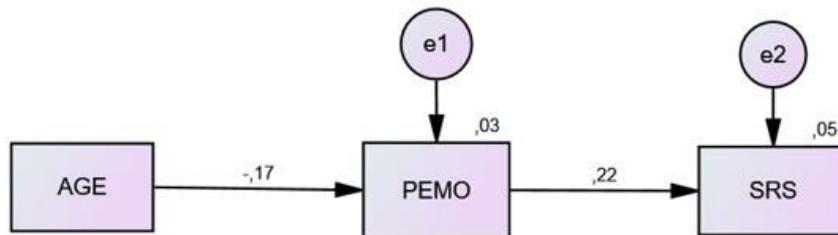
Legend: NEMO = Negative emotions; PEMO = Positive emotions; SRS = Syllogism reasoning score as a measure of Cognitive performances.

Figure 2.
Network analysis.



Legend: NEMO = Negative emotions; PEMO = Positive emotions; SRS = Syllogism reasoning score as a measure of Cognitive performances. Solid lines correspond to positive links; dashed lines correspond to negative links. The broader and darker the line, the stronger the link.

Figure 3.
Path analysis and synthese of the different effects.



Legend: *PEMO* = Positive emotions; *SRS* = Syllogism reasoning score as a measure of Cognitive performances; *e1* =residual variance of *PEMO* ; *e2* = residual variance of *SRS*.

4. DISCUSSION

Our hypotheses were partially validated. Concerning our first hypothesis, the age didn't directly affect the cognitive performances in our sample. The problem is that the majority of our participants was only 11-12 years old and this is not what we wished. It will be necessary to include more participants who are older (13-14 years old) for the next stage of our research. Thus we can investigate if there is a difference, at least, between the group of 11-12 years old and the group of 13-14 years old pupils. The age had also a partial positive correlation and an indirect negative relation on the cognitive performances via the positive emotions in a network analysis. This negative indirect relation might have a suppression effect on the positive one and may explain why we didn't obtain a significant direct effect. These results give us an insight that the relationship between age and cognitive performance isn't probably unequivocal.

Concerning our second hypothesis, the positive emotions correlated with the performance on the reasoning test but not the negative ones. Consequently, only positive emotions affected the cognitive performance and in connection with our third hypothesis, this is without an interaction with the age of the participants. This is in line with the results of Radenhausen and Anker (1988) and more recently with the results of Caparos and Blanchette (2015) or Wang, Chen, and Yue (2017) where positive emotions improve cognitive performances. This shows that in a learning situation or in a reasoning assessment it is particularly preferable to foster positive emotions, and the later might be encouraged and privileged to facilitate learning and the best possible conditions for pupils' evaluation. What about negative emotions? Some researchers (e.g. Fiedler, 1990; Forgas, 1995; Royce & Diamond, 1980) explain that reasoning tests are may be less constrained by emotions than other types of tests. It is also possible that pupils entered a state in which feelings do not influence the task performance like the state of flow (Csikszentmihalyi, Abuhamdeh, & Nakamura, 2005). This could be valuable when both positive and negative emotions don't interfere with cognitive performances but, in our case, there were still a significant relation and a significant influence from positive emotions to cognitive performances. Melton (1995) showed that negative emotions could even improve cognitive performance.

In our research, we investigated the emotions on a global level as positive and negative emotions. It will be interesting to study the link and the effect of emotions on cognitive performances on a specific level. Maybe some specific negative emotions could improve cognitive performances but others could do the opposite. Thus, this might explain why on a global level there was no relation and no effect from negative emotions to cognitive performances. Maybe there is also an explanation in descriptive statistics terms: the mean of negative emotions in our sample is under the theoretical mean of the composite variable. When we explored more in detail the descriptive statistics, 75% of the participants had a score under this latter mean. Which implies that the most of them feels rarely negative emotions about school and thus it is difficult to detect an effect on another variable.

Concerning our third hypothesis, age had a negative indirect effect on cognitive performances mediated by positive emotions. It wasn't in our hypotheses but age had a negative direct effect on positive emotions. These results are in line with those obtained by Galand and Philippot (2005) but on a specific positive emotion level. They found that the reported level of positive emotions decreases with the increase in adolescents' age. Thus decreasing positive emotions would provoke a decreasing in cognitive performances with increasing in age. This statement is opposite to what is generally mentioned in the literature: cognitive performances increase with age (e.g. Brehmer, Li, Müller, von Oertzen, & Lindenberger, 2007; Cromer, Schembri, Harel, & Maruff, 2015; Roalf et al., 2014). As we suggested it earlier, the relationship between age and cognitive performance isn't probably unequivocal at this stage of human development. This is important to take into account about an eventual decreasing in academic performances and dropping out of school in teenage period. Keating (2012) precise that it is possible that factors other than changes in logical structure with age would be implicated in task performance. Maybe for some pupils in secondary school this phenomenon of decreasing positive emotions is more present than for others and it would be necessary to learn more about it as well as its link with other variables which could interfere with it.

5. FUTURE RESEARCH DIRECTIONS

In future research, we must take also into account specific emotions and not only global emotions. We could also explore the influence of emotions on academic performances. Due to the risk of a vicious cycle between psychological disengagement and academic failure, better understanding of the link of emotions about school and academic performance appears like crucial. The understanding of this phenomenon added to the impact of self-esteem (a factor related to cognitive and academic performances, e.g. Simon & Simon, 1975) on these variables would be important to investigate in order to avoid dropping out of school. It will be also interesting to explore the influence of motivation within such a theoretical framework. As we know, the motivation is important in school learning (Nicholls & Thorikildsen, 1995). The perception of the school context by the students has an impact on their motivation (Ryan & Patrick, 2001) and emotional experience at school (Galand & Philippot, 2005). Thus, it is plausible that the emotions felt about school and motivation could influence academic performances (e.g. Valiente, Swanson & Eisenberg, 2012).

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AUTHORS' INFORMATION

Full name: Sonya Yakimova

Institutional affiliation: Psychologie des âges de la vie et Adaptation (PAVeA) - EA 2114, Université de Tours, France

Institutional address: 3 rue des Tanneurs, BP 4103, 37041 TOURS Cedex 1

Short biographical sketch: Sonya Yakimova obtained her Ph.D. in Differential Psychology from Rennes 2 University and her M.A. in Social and Cognitive Psychology as well as her title of Social and I-O Psychologist from University of Nice Sophia Antipolis. She is interested in the application of Social and Differential Psychology in the fields of education, health and work. She is currently a Post Doc Researcher for the project „Psychological disengagement and self-esteem: a vicious cycle of Dropping out of school?“ (DISESTEEM) at University of Tours and a member of the laboratory PAVeA- EA 2114. DISESTEEM is funded by a grant from the French National Research Agency (Agence Nationale de la Recherche): ANR-18-CE28-0004-01. This project represents an international collaboration between University of Tours (France), University of Clermont Auvergne (France) and University of Moncton (Canada) with project manager Prof. Delphine Martinot.

Keywords: Dropping out of school, Orientation, Personality, Emotions, Self-esteem and self-efficacy, Quality of Life, Intergroup Relations.

Examining how Positive and Negative Emotions Influence Cognitive Performance in Secondary Schools

Full name: Célia Maintenant

Institutional affiliation: Psychologie des âges de la vie et Adaptation (PAVeA) - EA 2114, Université de Tours, France

Institutional address: 3 rue des Tanneurs, BP 4103, 37041 TOURS Cedex 1

Short biographical sketch: Célia Maintenant is a lecturer of developmental psychology at University of Tours and a full member of the laboratory PAVeA- EA 2114. She received her Ph.D. in developmental psychology at University of Provence (France). Her research focuses primarily on the study of the development of reasoning and emotions and their links, and the development of categorization and executive functions. Her current project is titled: „Psychological disengagement and self-esteem: a vicious cycle of Dropping out of school?“. This project is funded by a grant from the Agence Nationale de la Recherche (ANR). The general objective is to better understand how psychological disengagement operates as the first step of a process that may result in behavioral disengagement, that is, the act of dropping out of school.

Full name: Anne Taillandier-Schmitt

Institutional affiliation: Psychologie des âges de la vie et Adaptation (PAVeA) - EA 2114, Université de Tours, France; Cognition, Comportement et Communication (LP3C) –EA 1285, Université de Rennes 2, France.

Institutional address: 3 rue des Tanneurs, BP 4103, 37041 TOURS Cedex 1

Short biographical sketch: Anne Taillandier-Schmitt is a lecturer of social psychology at University of Tours and a full member of the laboratory PAVeA- EA 2114. Her research focuses on the relations between minority and majority groups. More specifically, on the relationship between immigrants and members of host societies. Another focus of his research is gender stereotypes. Her current project is titled: Psychological disengagement and self-esteem: a vicious cycle of Dropping out of school?“ (ANR-18-CE28-0004-01) where she studies the effects of Organizational Citizenship Behaviors and their link with self-esteem.

Chapter #24

IMPROVING THE HEALTH BEHAVIOURS OF COPD PATIENTS: IS HEALTH LITERACY THE ANSWER?

Tracy A. Freeze¹, Leanne Skerry², Emily Kervin², Andrew Brilliant³, Jennifer Woodland¹, & Natasha Hanson¹

¹Ph.D., Research Services, Horizon Health Network, Canada

²M.A., Research Services, Horizon Health Network, Canada

³BSP., Pharmacy, Horizon Health Network, Canada

ABSTRACT

Chronic Obstructive Pulmonary Disease (COPD) is a leading cause of morbidity and mortality (Vogelmeier et al., 2017). Adherence to prescribed medications and adequate medication inhalation technique (MIT) is critical for optimal management of COPD, as is the proper use of the medication delivery device. O'Connor et al. (2019) found that lower health literacy (HL) was associated with both poor medication adherence and MIT. HL, according to the Process-Knowledge Model, consists of both processing capacity and knowledge (Chin et al., 2017). COPD most commonly occurs in older adults (Cazzola, Donner, & Hanania, 2007). Older adults tend to have lower processing capacity (Chin et al., 2017). The purpose of this study was to determine if HL was associated with medication refill adherence (MRA) and/or MIT. Fifty-seven participants completed a questionnaire package that included demographic questions, measures of HL, and assessments of MRA and MIT. A subset of twenty patients participated in qualitative interviews. Results indicated that lower HL was associated with both lower MRA and poor MIT, and qualitative findings revealed the need for further information. Future research should focus on testing educational materials that have been designed and/or reformatted to meet the lower processing capacity of older adults.

Keywords: chronic obstructive pulmonary disease, medication adherence, health literacy, health behaviours, cognition, older adults.

1. INTRODUCTION

COPD is a globally prevalent chronic disease that results in an obstruction in airflow from the lungs and varying respiratory symptoms (Vogelmeier et al., 2017). COPD is a leading cause of morbidity and mortality globally and contributes to substantial social and economic burden (WHO, 2011). Both medication adherence and adequate inhalation technique are essential for controlling symptoms and slowing COPD disease progression (Melani et al., 2011; Rodríguez-Rosin, 2005). Nevertheless, rates of medication adherence and adequate inhalation technique remain low (see Restrepo et al., 2008). Literature reviews have found that low medication adherence and poor inhalation technique are associated with a lack of understanding of the disease and its treatment (e.g., Blackstock, ZuWallack, Nici, & Lareau, 2016; Bryant et al., 2013). Very few studies, however, have examined the association of medication adherence and inhalation technique with health literacy. The purpose of the current research was to determine if health literacy was related to medication adherence and/or inhalation technique in a sample of older adults and to propose next steps for targeted educational materials and interventions.

2. BACKGROUND

Health literacy can be defined as “the ability to access, understand, evaluate and communicate information as a way to promote, maintain and improve health in a variety of settings across the life-course” (Rootman & Gordon-El-Bihbety, 2008, p.11). It is estimated that 55% of Canadians aged 16 to 65 have low health literacy, with approximately 88% of individuals over the age of 65 having low health literacy (Rootman & Gordon-El-Bihbety, 2008). Concerning COPD specifically, Omachi, Sarkar, Yelin, Blanc, & Katz (2013) collected data on a cohort of 277 individuals, including measures of health literacy, health status, quality of life, and healthcare utilization. Even after controlling for sociodemographic factors, Omachi et al. (2013) found that lower levels of health literacy were associated with higher levels of healthcare utilization due to a worsening of symptoms. They postulated that higher healthcare utilization among participants with lower health literacy may be due to a lack of confidence in self-management skills, and they suggest that improving self-management skills may reduce healthcare utilization.

Two important health behaviours concerning the self-management of COPD are medication adherence and inhalation technique. Medication adherence refers to the patients’ use of medication as it is prescribed (Bryant et al., 2013). Patients that use their medication more than the recommendations of the prescriber request refills sooner than expected and patients who underuse their medication request refills later than expected. Neither of these situations is optimal, and both are considered non-adherence. Medication inhalation technique refers to the technique used to inhale medication (Melani et al., 2011). Incorrect technique prevents patients from receiving the dosage of medication that is prescribed. Bryant et al. (2013) reported that rates of non-adherence to COPD medication were between 41.3% and 57% and that 31% exhibited incorrect inhalation technique.

Medication adherence and inhalation technique are critical for optimal disease management and prevention of exacerbations (Global Initiative for Chronic Obstructive Lung Disease, 2018). O’Conor et al. (2019) conducted an observational cohort study to determine if health literacy (i.e., Short Test of Functional Health Literacy in Adults) and cognitive abilities (i.e., global, fluid or crystallized) predicted medication adherence and inhalation technique of COPD patients living in the United States. These researchers found that both health literacy and certain cognitive abilities predicted medication adherence and inhalation technique. For example, they found that deficits in fluid cognitive abilities (e.g., processing capacity), but not crystallized cognitive abilities (e.g., knowledge), were associated with lower levels of medication adherence and poorer inhalation technique. Fluid cognitive abilities, but not crystallized verbal abilities, decrease across the life cycle (Park et al., 2002); thus, making this an important consideration when working with older adults as discussed in further detail below. Though their results could not be generalizable to non-urban areas, they suggest that both health literacy and lower processing capacity should be taken into consideration when caring for patients with COPD.

Processing capacity and health literacy are not unrelated. According to the Process-Knowledge Model, both processing capacity and knowledge are components of health literacy (Chin et al., 2017). Knowledge about a disease and the respective treatment is essential, but the effective delivery of knowledge may be hindered if a patient has lower processing capacity (e.g., working memory and processing speed). According to Chin et al. (2017), knowledge and processing capacity have two different age-related trajectories with processing capacity declining with age and knowledge remaining constant or increasing with age. COPD is primarily a disease of older adults (Cazzola, Donner, & Hanania, 2007). Therefore, understanding the role of health literacy in older adults and its association with the health behaviours of patients with COPD is important for reducing symptom exacerbation as well as healthcare utilization.

3. PRESENT STUDY

O’Conor et al.’s (2019) study examined the relationship between health literacy, medication adherence, and inhalation technique in a sample of older adults in a large urban center in the United States. The primary objective of the present study was to determine whether health literacy was associated with the specific health behaviours related to the control and the management of COPD in a sample of older adults across a predominantly rural province in Canada. It was hypothesized that, in this sample of older adults, lower levels of health literacy would be associated with lower levels of medication adherence and inhalation technique. A secondary objective was to examine participants’ lived experience of COPD medication adherence and management, in order to inform the quantitative findings.

4. METHODS

4.1. Participants

See Table 1 for a description of all study participants compared to the qualitative interview subsample. Participants’ ages ranged from 55 to 94 years.

4.2. Measures

4.2.1. Participant demographics

Participants completed a nine-item questionnaire that included questions regarding age, gender, income, marital status, living arrangement, employment, education, years using a primary inhaler, and smoking history.

4.2.2. Rapid Assessment of Literacy in Medicine (REALM; Davis et al., 1993)

The REALM was used to determine the participants’ ability to *read* health terms. The REALM is a 66-item health-related word recognition test where the words are arranged in order of easy (i.e., fat) to increasing difficulty (i.e., Osteoporosis). For this research, the REALM was collapsed into two categories: inadequate ($\leq 6^{\text{th}}$ grade) and adequate ($\geq 9^{\text{th}}$ grade). The REALM had good internal reliability ($\alpha = .98$).

4.2.3. Test of Functional Health Literacy in Adults (TOFHLA; Baker et al., 1999)

The full-length version of the TOFHLA was used to measure the participant’s ability to *understand* health information. The TOFHLA consisted of a two-part assessment; part one provided the participant with medical information or instructions from which they answered questions to test their understanding of the information, and part two required participants to read text about medical topics and fill in the blanks of the text from a list of potential choices. For this research, TOFHLA had two categories: inadequate (0-74) and adequate (75-100). The TOFHLA had good internal reliability ($\alpha = .81$).

Table 1.
Descriptive Statistics for All Participants Compared to Interview Subsample.

Variable	All (<i>n</i> = 57)	Interview (<i>n</i> = 20)
Age, M(SD)	70.84 (9.51)	67.7 (7.02)
Gender, %		
Male	36.8	35.0
Female	63.2	65.0
Education, %		
< Grade 8	24.5	5.0
< High school	21.1	20.0
High school	42.1	60.0
College/University	12.3	15.0
Current Smoker, %		
Yes	33.3	25.0
TOFHLA^a, %		
Inadequate	38.6	35.0
Adequate	56.1	65.0
REALM^b, %		
Inadequate	38.6	25.0
Adequate	59.6	75.0
MRA^c, %		
Sub-Optimal	40.4	40.0
Optimal	56.1	60.0
MIT^d, %		
Poor Technique	10.5	5.0
Good Technique	82.5	95.0

^a TOFHLA = Test of Health Literacy in Adults; ^b REALM = Rapid Estimate of Adult Literacy in Medicine; ^cMRA = Medication Refill Adherence; ^d MIT = Inhalation Technique. Note: The discrepancies in totals reflect missing values.

4.2.4. COPD medication refill adherence (MRA)

Information regarding the participant's primary inhaler was gathered from pharmacy records. Participants were classified (see Hess, Raebel, Conner, & Malone, 2006) as having either optimal MRA (≥ 80) or sub-optimal MRA (< 80). For participants who were prescribed more than one medication for COPD, the MRA score was calculated for their primary inhaler.

4.2.5. COPD medication inhalation technique (MIT)

Inhalation technique checklists were used to assess MIT for individuals who were using either a metered-dose inhaler (MDI) or the HandiHaler (HH). As different steps are required for each device, different checklists were used to score inhalation technique depending on the type of device that they were using. Each checklist contained five critical errors. Participants were determined to have poor technique if they did not perform all of the essential steps correctly and good technique if they performed all of the essential steps correctly. These checklists were based on arbitrary criteria related to the proper technique of using an inhalation device and were developed by Melani et al. (2011). The initial Intraclass Correlation Coefficient of the first 30 inhalation technique videos did not meet the minimum criteria of .7. Raters met to discuss areas of disagreement and completed the remaining videos. The final inter-rater reliability was 1.0.

4.3. Procedure

Ethics approval was obtained by the Horizon Research Ethics Board before recruitment. Participants were recruited by 1) using pharmacy patient records from New Brunswick pharmacy databases; and, 2) recruiting participants themselves directly to the study by advertising the study online, in newspapers, on the radio, and other public places (e.g., COPD support groups). Patients were invited to participate in the study by the pharmacist and/or pharmacist-assistant if they were at least 40 years of age, had a smoking history, a self-reported diagnosis of COPD, and a targeted inhaler scheduled for daily use for at least one year. Only participants who had been prescribed a MDI or a HH were included in the study. Participants were excluded from participation if they had: an asthma diagnosis; been enrolled in a formal disease self-management program; refilled their medication(s) at more than one pharmacy within the past year; or, if they had three or more of the targeted inhalers for scheduled daily use. Once permission to contact and eligibility were established, a research assistant collected the measures and inhalation technique video from participants at their homes. All patients who agreed to participate were included in the study.

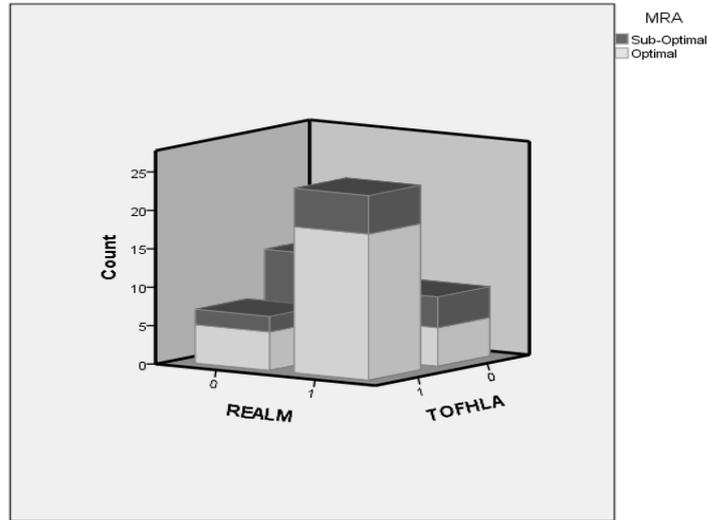
Finally, qualitative semi-structured interviews were conducted with a self-identified subsample of 20 participants. All those participants that consented (at the time of the initial questionnaire) to being contacted for an interview were then telephoned by research team members for further oral consent, upon review of the consent form (emailed or mailed to participants). Research team members conducted interviews over the telephone, which were digitally recorded. The interview questions pertained to their experiences of having COPD, adhering to medication, and what could facilitate adherence. The interview guide was piloted with two participants and, the questions were adjusted to gain as much information as possible, with possible lower literacy levels taken into account. The interviews were transcribed verbatim and uploaded to NVivo. Iterative thematic analysis (Braun & Clarke, 2006) was conducted on the qualitative data by three members of the research team (NH, LS, EK). Consensus of themes was reached between team members.

5. RESULTS

5.1. Quantitative

Two 2 x 2 chi-squares were used to analyze the relationship between health literacy and MRA. There was a significant association between health literacy, as measured by TOFHLA and REALM, and MRA (see Figure 1 and Table 2). The odds of adequate REALM was 4.67 (95% CI = 1.47, 14.86) times higher for the group with optimal MRA. Similarly, the odds of adequate TOFHLA was 7.35 (95% CI = 2.15, 25.14) times higher in the optimal MRA group.

Figure 1.
Bar Graph of REALM and TOFHLA by MRA.



Two additional 2 x 2 chi-squares were conducted to analyze the relationship between health literacy and MIT. There was a significant association between health literacy, as measured by TOFHLA and REALM, and MIT (see Table 2). The odds ratios for MIT and health literacy could not be calculated given that none of the COPD participants with adequate health literacy had poor MIT. In both chi-squares, 50% of the cells had expected values < 5. Even though Fisher's exact test was used, the result for MIT must be interpreted with caution. It should also be noted that, because four tests were conducted, a Bonferroni correction was applied and the significance level was set to .0125.

Table 2.
Results of Chi-Square Tests for Healthy Literacy, Medication Adherence, and Inhalation Technique.

		TOFHLA ^a			REALM ^b			
		Cramer's V	OR	CI	X ²	Cramer's V	OR	CI
MRA ^c	Sub-Optimal	11.02***	.46		7.17**	.36	2.33	1.23-4.43
	Optimal			.41			.22-0.78	.50
MIT ^d	Poor	7.07 ^e	.38		9.25 ^f	.42		
	Good			.77			0.62-0.97	.73

^a TOFHLA= Test of Health Literacy in Adults; ^b REALM = Rapid Estimate of Adult Literacy in Medicine; ^c MRA = Medication Refill Adherence; ^d MIT = Inhalation Technique; ^e Fisher's Exact Test, $p = .012$; ^f Fisher's Exact Test, $p = .004$; * $p < .05$; ** $p < .01$; *** $p < .001$

5.2. Qualitative

Iterative thematic analysis resulted in six themes emerging from the semi-structured interview data: *continuity of care*; *importance of pharmacy for information and care*; *medication self-management*; *“there needs to be more information”*; *drug costs a concern*; and, *“it’s a lonely battle.”* (Please note that the full qualitative study will be published at a later date).

Within the theme of *continuity of care*, participants discussed inconsistencies across the trajectory of care for their COPD, leading to the need to act as self-advocates for their healthcare and a lack of preventative care. However, within the theme *importance of pharmacy for information and care* community pharmacists were found to be important to participants in supporting their management of COPD. The theme *medication self-management* contained the explication by participants of their experiences managing COPD medications and the strategies they use to do so. Participants also discussed: the emotional social tolls of living with COPD, in the theme *“It’s a lonely battle”*; and, concerns about the cost of COPD medication, in the theme *drug costs a concern*.

One of the themes directly related to health literacy and the formulation of educational materials was *“there needs to be more information”*. In this theme many participants (12/20) expressed that they desired more information, including at the time of diagnosis, about the disease itself, how they can impact disease progression, how to get help when needed, and the supports available. Regarding what they perceived to be the overall need for more information, one participant stated, *“my big concern is on the COPD end of it is the lack of information that’s available to anybody that has the particular problem”*(P29). When asked what information they were provided with upon diagnosis one participant stated, *“Um, really nothin’. They just come in and told me I had COPD and gave these puffers and, that was it.”* (P42). There were also participants who specifically wanted to know what to expect as their disease progressed, *“You know, what... what signs there is, like, when um, when I’m talking a lot you might notice my voice gets different and I think that must be from the COPD?...I don’t know if it is, but if it is, people, they should tell you what, what to expect.”*(P4).

6. DISCUSSION

In our study of 57 older adults, we found that health literacy was associated with health behaviours that are important to the management of COPD. More specifically, we found that lower levels of health literacy were associated with lower levels of MRA and MIT. We also determined that one of the themes of our qualitative study directly related to issues surrounding health literacy, supporting the quantitative results. More specifically, *“there needs to be more information”* not only reflected that the majority of participants expressed the need for a variety of information about COPD, but also that the information be provided throughout the progression of their chronic illness.

Our research supports and extends the findings of O’Conor et al. (2019). First, O’Conor et al. used the short version of the TOFHLA (s-TOFHLA) to measure health literacy, but we used both the TOFHLA (the full-length version) and REALM. Both measures of health literacy were significantly associated with COPD health behaviours. Second, O’Conor et al.’s sample consisted of patients located in two major cities in the United States. Our sample, though small, consisted of patients in a relatively rural area in Canada. Therefore, although O’Conor et al.’s study was limited by the lack of a non-urban sample, our research used a relatively non-urban sample, and our results supported the generalizability of their findings. Also, our research is novel in that it included the results

of qualitative interviews examining the lived experiences of patients with COPD. To our knowledge, no previous study has examined health literacy, MRA, and MIT using mixed methods.

Our research also supports a focus on the specific needs of older adults as it pertains to health literacy and the management of health behaviours. Patients with COPD tend to be older adults. Older adults are more likely to have lower levels of health literacy, and patients with lower levels of health literacy are more likely to have lower levels of MRA and poorer MIT. This is in turn associated with uncontrolled COPD symptoms and advancing disease progression (Melani et al., 2011; Rodríguez-Rosin, 2005). Further, one of the themes that emerged from the qualitative interviews was the need for more information about the prognosis, management, and treatment of COPD. Providing such information on COPD repeatedly and over the progression of the disease would address the informational needs of COPD patients as identified by our sample. Though increasing knowledge will help improve health literacy, it is only one part of health literacy.

According to the Process-Knowledge Model of health literacy and the findings of O'Connor et al.'s research, processing capacity also needs to be considered. Indeed, it may be crucial when the primary age group of the disease is older adults. Older adults are most likely to be affected by a decline in cognitive abilities such as processing speed (e.g., O'Connor et al., 2019). Therefore, the information that is provided to older adults needs to be tailored to meet their needs. In other words, information on COPD needs to improve not only in quantity but also in quality.

O'Connor et al. (2019) offered some suggestions. They noted that COPD educational materials may be improved by designing materials for the low reading grade level and providing concrete instructions (p. 24). They also noted that multi-step behaviours, like MIT, should be 'chunked' to enhance memory (e.g., "Ready, Set, Go!", p. 24). Chin et al. (2017) noted that materials should signal key concepts and present the information in a way that reduces the demands on processing skills such as search and reorganization. The use of timeline icons is another method suggested to reduce cognitive demand. In a series of experiments, Morrow, Hier, Menard and Leirer (1998) found that the use of timeline icons improved medication adherence.

Designers of COPD educational materials may consider the importance of information delivered via the internet. Morrow and colleagues (e.g., 2016, 2017) offered many important insights into how to effectively deliver electronic health information to older adults with low health literacy. In their review, Azevedo and Morrow (2018) note that presenting electronic information in icon (e.g., picture) format reduces cognitive load and improves memory. They suggest that icons for emotion improve comprehension given that it provides a means to evaluate without the need for an extensive written explanation. Finally, Azevedo and Morrow (2018) propose that presenting educational information in video-enhanced formats provides both verbal and non-verbal cues as well as face-to-face communication.

6.1. Study limitations

The major limitation of this study is the small sample size. Despite all of our attempts, only 57 patients with COPD agreed to participate. Another limitation was the initial issues with MIT coding. However, these issues were resolved between two experienced hospital pharmacists. Finally, though the qualitative study presented here is minimal, it does describe the results that are relevant to the quantitative study. The entire qualitative study is, as a whole, beyond the scope of the current study and is currently being reviewed for publication.

7. FUTURE RESEARCH

Though this research is limited by the sample size and initial issues with MIT coding, other researchers (e.g., O’Conor et al., 2019) have reported similar results. Future research should replicate this study with a larger sample size and consider the specific needs of older adults in regard to health literacy, medication adherence and inhalation technique. Specifically, designing and/or re-formatting and testing COPD patient materials with a focus on the specific needs of older adults with COPD should be considered. Materials that reduce cognitive demand by providing visual messages alongside simple wording, grouping material into chunks, and providing repeated messages should be considered. The most efficacious method may be an action-oriented research project where pharmacists, cognitive psychologists, and COPD patients collaborate to design needed educational materials and interventions.

8. CONCLUSION

Quantitative findings indicated that HL was associated with both lower MRA and poor MIT among older Canadian adults living with COPD. Participants in the qualitative sub-study reported unmet informational needs concerning COPD. A holistic and individualized approach to education and interventional efforts, encompassing both health literacy and appropriateness for older adults, is needed.

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AUTHORS' INFORMATION

Full name: Tracy Freeze, Dr.

Institutional affiliation: Horizon Health Network

Institutional address: Saint John, NB, Canada

Short biographical sketch: Dr. Freeze is currently a Research Methodologist for the Support Opportunities and Assistance for Research (SOAR) program.

Full name: Leanne Skerry, M.A.

Institutional affiliation: Horizon Health Network

Institutional address: Saint John, NB, Canada

Short biographical sketch: Leanne Skerry is currently a Research Coordinator for the Support Opportunities and Assistance for Research (SOAR) program.

Full name: Emily Kervin, M.A.

Institutional affiliation: Horizon Health Network

Institutional address: Saint John, NB, Canada

Short biographical sketch: Horizon Health Network

Full name: Andrew Brillant, BSP

Institutional affiliation: Horizon Health Network

Institutional address: Saint John, NB, Canada

Short biographical sketch: Andrew Brillant is a manager for pharmacy services at three Horizon Health facilities in the Saint John area. He was previously the pharmacist for St. Joseph's Community Health Centre where he provided pharmacy services to community-based clients.

Full name: Jennifer Woodland, Dr.

Institutional affiliation: Horizon Health Network

Institutional address: Saint John, NB, Canada

Short biographical sketch: Horizon Health Network

Full name: Natasha Hanson, Dr.

Institutional affiliation: Horizon Health Network

Institutional address: Saint John, NB, Canada

Short biographical sketch: Dr. Hanson currently is the Research Manager for the Support Opportunities and Assistance for Research (SOAR) program.

Chapter #25

CRITICAL THINKING SKILLS AMONG MOROCCAN PHD STUDENTS OF HEALTH SCIENCES

Imane Ghazlane^{1,2}, Bouzekri Touri¹, Mohamed Bergadi¹, & Khalid Marnoufi¹

¹*Multidisciplinary Laboratory of Information, Communication and Education Sciences and Technology (LAPSTICE), Ben M'sik Faculty of Science, Hassan II University, post box 7955, Casablanca, Morocco*

²*Higher Institute of Nursing and Health Technology Professions Casablanca-Settat, Morocco Street Faidouzi Mohamed, 20250 Casablanca, Morocco*

ABSTRACT

The significant weakness in problem solving and innovation continues to affect scientific production in Morocco. That's why, many reforms are set up to address the various problems raised.

The national strategy for the development of scientific research by 2025 indicates the proper conduct and methodological integrity of research work.

Literature states that critical thinking is the intellectual basis of the scientific research method. Furthermore, it has been empirically demonstrated that students with strong critical thinking skills (CTS) perform well in research methodology subjects. Therefore, the close relationship between critical thinking skills and performance in the research methodology application highlights the potential of young researchers in this area.

The present work is the subject of an exploratory study that intends to reveal CTS, considered as an essential foundation for any research methodology, among 25 participants registered as researchers belonging to health sciences majors.

The findings of this study scored moderate overall results of CTS. A significant correlation has been found between the overall score skills of the HSRT and the scores of the marks of their final projects. The correlation indicates that the success of their dissertation work was related to the deduction, evaluation, and inference subscales of the HSRT.

Keywords: scientific research, critical thinking skills, health science, HSRT, method.

1. INTRODUCTION

The Delphi Consensus Experts (American Philosophical Association, 1990) states that critical thinking skills include analysis, inference, evaluation, induction, and deduction, and each of these skills has a list of subskills, defined as:

Analysis: is the process of identifying the anticipated inferences relating statements, questions, concepts, descriptions or other representation forms intended to express beliefs, judgments, experiences, reasons, information or opinions.

Evaluation: is assessing the reliability of statements which might be viewpoints, claims or perceptions, personal experiences, judgments, beliefs, or any other representation, and review the logical bounds or intended inferences linking the abovementioned.

Inference: is to recognize constituents required to sketch reasonable conclusions; to formulate speculation and hypotheses as well as mull over significant information and to presume the consequences generated from data, statements, principles, evidence, judgments, beliefs, opinions, concepts, descriptions, questions, or other forms of representation.

Induction: is defined as decision-making in contexts of uncertainty. Then inductive reasoning skills based on inferences about what we think are based probably true on analogies, case studies, prior experience, statistical analyses, simulations, hypotheticals, and patterns recognized in familiar objects, events, experiences, and behaviors. Deduction: is decision-making in precisely defined contexts where rules, operating conditions, core beliefs, values, policies, principles, procedures, and terminology completely determine the outcome depends on strong deductive reasoning skills.

According to Benítez and Canales (2013), Boisvert (2015), Case (2005), Ennis (1985), Ennis (1993), Facione (1990), Halpern (1998), Lipman (1988), Paul (1992), Willingham (2007), critical thinking includes component skills of analyzing arguments, making inferences using inductive or deductive reasoning, judging or evaluating, making decisions or solving problems, and become stronger to face new challenges.

Otherwise, Innis (2015) stipulates that critical thinking involves several steps, most of which adults' breeze through without much thought. These steps include, identify the issue, think about the goal, brainstorm possible solutions, think through possible results, try one of the solutions, and finally, evaluate the outcome.

While Abrami et al. (2015) indicates that Critical thinking (CT) is purposeful, self-regulatory judgment that results in interpretation, analysis, evaluation, and inference, as well as explanations of the considerations on which that judgment is based.

These critical thinking skills are still in high demand in the research method. Accordingly, they are mandatory for any researcher for a better understanding and monitoring of the research process (Indrawatiningsih et al., 2019), because they are immediately apparent interactively through the research method used by researchers, which is a systematic way of achieving the objectives of the research process.

The critical thinking skills ensure a quality approach that fosters certain methodological integrity, which ultimately provides useful results for research users (Roller & Lavrakas, 2015).

Furthermore, Collins and Onwuegbuzie (2000) states that students with higher critical thinking skills perform well in research methodology courses, thus, several disciplines unanimously agree on the need to develop a way of thinking that can respond to different challenges. They stipulate an education based on reasoning, criticism, and stimulation of intelligence, to serve and facilitate training, improve practice and excel in the field of scientific research, which remains the most powerful engine for the socio-economic and cultural development of nations in a constantly changing world.

In fact, these critical thinking skills were implemented during the design of the research method at the end of the study; according to Fortin (2010), the sampling phase involves the selection of inclusion and/or exclusion criteria, the choice of sampling technique, the number and characteristics of participants and the description of the study environment. This step could induce all the cognitive skills of critical thinking.

The second phase, which includes the type and design of research, also calls for critical thinking skills that consider the research questions, purpose, and objective of the study in relation to the other components of the method.

The third phase of data collection involves defining the variables and relating them to the measurement instruments that require clarity (scale, questionnaire, etc.), and their reliability and validity must be clearly designed. This stage may also involve skills related to the analysis and evaluation of critical thinking.

Regarding the step that concerns the procedure, this should describe in detail the activities that are to follow such as recruitment of participants, data collection.

In addition, the data analysis' section describes the statistical test used and it must justify its choice and its compatibility with the purpose of the study, so it is interesting to note that the ability to analyze critical thinking is in high demand.

Regarding the results, it serves to summarize the outcomes of the application of the data collection method and the statistical test used. It includes descriptive, inferential statistics, and the significance score. This also calls for critical thinking skills related to interpretation and inference according to the research framework.

Precisely in health sciences, many researchers have proven the significant relationship between critical thinking skills and academic performance through the HSRT. In other words, HSRT is positively related to academic performances with significant correlations.

Indeed, critical thinking skills are increasingly needed in academic and clinical settings to ensure evidence-based practice (Wallmann & Hoover, 2012; Meherali, 2016).

However, there are few empirical studies to assess the relationship between the Critical Thinking Skills Test and students' skills in applying the research methodological process and to see how well the "HSRT" can predict students' skills in applying the research methodology and how successful students are in developing the final project work. Thus, the objective of this study was to assess the relationship between the grades obtained by health science students in their final research projects and their ability to think critically through the HSRT.

2. METHOD

2.1. Participants

There are 25 PhD students in health sciences from Casablanca School of Medicine, selected using a random sampling technique where 79% were female. 82 % represents a bracket-age of 24 and 30 years old.

2.2. Instrument

The HSRT is conceived as a multiple-choice format test and the time required to complete the test is 50 minutes. Items require no health science knowledge. The questions on the HSRT test varied in difficulty and complexity. HSRT test items are developed in clinical and professional practice settings. The question itself provides specialized information needed to answer correctly.

According to the American Philosophical Association (1990), The HSRT invites participants to apply their skills to the information provided in a variety of different scenarios. The information is presented in both textual and schematic formats; responses involve inference, interpretation, and analysis of information, drawing justified inferences, identification of claims and reasons, and assessment of the quality of arguments.

Each test question is based on 40 years of Insight Assessment research on the measurement of critical thinking; the questions are multidimensional and interrelated, so that individual and group test, results provide meaningful information about specific critical thinking skills.

The HSRT designed to provide both an overall score for critical thinking and a selection of scale scores to help the instructor to get the target training programs and opportunities to address the particular weaknesses of individuals and groups. The HSRT Global Raising Skills score targets the strength or weakness of an individual's ability to make thoughtful, reasoned judgments about what to believe or do. Scores reported for analysis, inference, evaluation, induction, and deduction.

The test was available in three languages: Arabic, French, English, and the doctoral student had the possibility to choose his or her language. HSRT is the most reliable and widely used for measuring critical thinking skills in the health sciences (CCTST User Manual and Resource Guide, 2019).

2.3. Procedure

A pre-test has administered to 09 students to see its adaptability and validity in our target population.

After receiving permission from the committee, and in order to ensure that the test was administered in good conditions, the head of the research pole gave us a large, well-equipped room. In addition, despite all this, there were time constraints on the study participants and it was difficult to recruit participants for a period of fifty minutes.

The participants took the Health Sciences Critical Thinking Skills Test (HSRT) for a period of one month.

3. RESULTS

The descriptive results of this study are presented in the table below which are “the means, the medians and the standard deviation pertaining to the full HSRT scales and the analysis evaluation and inference subscales. These averages were compared to the averages reported by HSRT developers (HSRT user Manual 2019). Based on the distribution of overall score percentile for participants in this study, as compared to an aggregate sample of four-year HSRT students, the percentile rank for this group is 35.

In the other words, a median score equivalent to the percentile rank was calculated by comparing the median score of the full HSRT scale in this study to the percentile rank norms reported by insight assessment for health science students. Thus, the calculated percentile of 35 for the full HSRT scale indicates that at least 50% of the present sample scored higher than the 35% norm group. As a result, the participants in the study exhibited poor critical thinking skills as compared to an aggregate sample of HSRT Undergraduate Health Sciences

Interestingly, the overall critical thinking skills score among study participants is statistically barely moderate compared to the participants' HSRT 33-Point Scale Score Interpretation.

*Table 1.
HSRT descriptive statistics.*

Measures	Average	Standard Deviation	Median
HSRT Total Score	14.25	2.6	14.5
Analysis	2.91	0.77	3
Evaluation	3.16	0.70	3
Inference	3.41	1.05	3.5

Table 2.
Correlation of test to end-of-study project scores.

Measure	Correlation coefficient
HSRT Overall score	0.73
Induction	0.51
Deduction	0.59
Analysis	-0.06
Inference	0.60
Evaluation	0.69

Pearson's correlation coefficients revealed moderate statistically significant relationships between general critical thinking skills and research work scores.

In the other words, there is a significant correlation between the overall score of the HSRT and the average score obtained from the participant's thesis rating which is 0.73.

Table 2 presents the correlation matrix involving the five subscales of the HSRT and the scores of the research papers from which the canonical correlation analysis was undertaken.

The relationship between the two sets of variables was assessed by examining the magnitude of the canonical correlation coefficients of the end-of-study project and overall HSRT scores and of each HSRT sub-scale. Thus, the Pearson correlation coefficients represented the degree of relation between the two sets of variables.

Because the strength of the relationship is indicated by its closeness to the positive or negative absolute value of (+or-1) (Fortin, 2010), thus the Pearson correlation coefficients represented the degree of relationship between the two sets of variables which stipulates being close to the positive absolute value 1.

In the present study, the correlation coefficient "r" related to evaluative reasoning skills is ($r = 0.69$), this canonical correlation is statistically significant.

Then the correlation coefficient "r" related to inference and deduction subscales with the values of 0.60 and 0.59 respectively, consequently this canonical correlation seems statistically significant

However, the canonical correlation relative to induction seems statistically moderate. There is a moderate correlation between induction and these scoring with a coefficient lower than (0.50).

Furthermore, the correlation coefficient "r" related to the analysis skills was not statistically significant with an ($r = -0.06$), consequently, there is 'not a correlation between analysis skills and their thesis rating.

This explains that the participants of the study have a lack of analytical skills. Therefore, it can be said that the overall score for critical thinking skills, which is barely moderate, returns to the low sub-scales related to analysis

In this regard, the research success of participants in the study is related to skills related to respectively evaluation, inference, deduction, and induction, nevertheless, the weakness in the overall score of the HRST is explained by the deficit related to analytical skills.

The analytical reasoning skills provide researchers with the ability to identify hypotheses, reasons, and to investigate how they interrelate in the formation of arguments. They use analysis to collect and analyses information. Furthermore, Strong analytical skills can contribute to high-quality outcomes by providing insight into the significance (American Philosophical Association, 1990).

The present study reveals a barely moderate score on all critical thinking skills among the study participants compared to the participants' HSRT 33-Point Scale Score Interpretation. In addition, there is a statistically significant correlation between the overall HSRT score and their end-of-study scores with a correlation coefficient ($r = 0.73$).

Moreover, there is a statistically significant correlation between evaluation, inference, deduction, and induction skills, while, compared to the participants' HSRT 33-Point Scale Score Interpretation, the participants in the study have insufficient analytical skills. Furthermore, there is no significant correlation between the analysis skills and study participants' research scores, with a correlation coefficient ($r = -0.06$).

4. DISCUSSION

The objective of this study was to highlight the relationship between health science students' final research work scores and critical thinking skills in the health science disciplines by the health science-reasoning test "HSRT". The significant correlation between the two research variables and the HSRT global score indicates that the HSRT generates reliable and valid critical thinking skills scores and can predict their capacity in the application of research methodology and hence their potential in scientific production.

In fact, the elaboration of research projects in particular and scientific production, in general, is dependent on critical thinking skills. Furthermore, the bidirectional relationships between these two variables, as students improve their critical thinking skills, their ability to understand and control the research process increases, and vice versa.

Consequently, in health sciences, the higher-order critical thinking skills are increasingly necessary for research and success, as clinicians are required on a daily basis to evaluate multiple bits of information about patients with multiple-systemic health concerns and make appropriate treatment decisions based on this information. Because students who have given up on continuing their work projects are the ones who lack the critical thinking skills necessary for success (Wallmann & Hoover, 2012).

In addition, student's graduates with lower critical thinking gains have higher unemployment rates (Kelsch & Friesner, 2014), moreover, university graduates lack critical thinking and problem-solving skills, both in the classroom and in the labor market (Nold, 2017).

These results are also consistent with those of a meta-analysis of studies evaluating critical thinking test scores and academic achievement of health professional students (Reale, Riche, Witt, Baker, & Peeters, 2018; Touri & Marquardt, 2013).

The principals' results of this study indicate a significant correlation between the overall score of the HSRT and participants' final dissertation scores. However, there are just moderate overall score skills than the sample of four-year HSRT health science graduate students.

Independently of the low overall score of the HSRT's participants, the competencies that are missing and that affect the global score of critical thinking skills are the analysis competencies.

However, (Collins & Onwuegbuzie, 2000) in their experimental study indicated that achievement scores were related to analysis with other skills

Because, the Analytical reasoning skills allow people to identify assumptions, reasons, and claims, and to examine how they interact in forming arguments. Moreover, the analysis enables us to gather information from tables, graphs, diagrams, spoken language, and documents. Therefore, people with strong analytical skills pay attention to diagrams and details. They identify the elements of a situation and determine how these elements interact. Strong analysis skills can contribute to a high-quality analysis by providing insight into the meaning of what a person says or what something means (American Philosophical Association, 1990). Furthermore, conclusions, assumptions, recommendations, or decisions based on erroneous analyses can bias the study, even if they have been using excellent inference skills (Facione, 1990).

To address this deficit in critical thinking skills the critical thinking skills and abilities can be developed, with specific and effective pedagogical strategies that have implemented in this field (Abrami et al., 2015; Setiawati & Corebima, 2017). For example, the implementation of Problem based learning is used to improve critical thinking skills (Puspita & Aloysius, 2019).

Furthermore, Willingham (2019) announces that in order to strengthen critical thinking skills among students, a continuous practice of critical thinking remains essential. Moreover, professors who have been trained in the concepts of critical thinking and the methods necessary to develop critical thinking skills must train novice researchers (Nold, 2017). In addition, they must assist them from their initiation to research, in the other words, from the first cycle to becoming competent researchers.

Whereas students who have critical thinking skills are able to apply the research method correctly in their research work and students who excel in applying the right research method have strong critical thinking skills, it is interesting to start research activities from an early age and provide students with activities to operationalize each critical thinking skill. Moreover, to prepare tests targeting high levels of the cognitive domain, and to present probing questions, encouraging students and instructors to participate in problem analysis and discussions, and the promotion of autonomous learning.

5. CONCLUSION

This study reveals the set of critical thinking skills of an elite group of students in health sciences through the HSRT, thus it highlights their potential of application of research method through a correlational study of their dissertation works and their overall critical thinking skills scores.

The results indicate a significant correlation between final projects and the overall score of the HSRT. A deficit in terms of analytical skills requires intervention to build capacity in this area.

Thus, whatever the field of research, whatever the knowledge acquired and whatever the quality framework developed, the apprentice researcher is expected to perform on all critical thinking skills and in particular the evaluative and analytical skills which provide useful results in a constantly changing world.

Thus, it will be useful to integrate the critical thinking approach in the training program, in particular in university studies, it, therefore, remains essential to merge critical thinking in the various teaching programs from an early age, for more practice. The critical thinking skills manage The Smart method will definitely lead to smart results that will serve society's prosperity in general.

It is interesting to note that among the limitations of the study is the high cost of the test, the unavailability of student researchers, and the time allocated to its administration.

An evaluation of research methods for graduate work in the health sciences will be the subject of a future study.

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AUTHORS' INFORMATION

Full name: Imane Ghazlane

Institutional affiliation: Multidisciplinary Laboratory of Information, Communication and Education Sciences and Technology (LAPSTICE), Ben M'sik Faculty of Science, Hassan II University, Casablanca (Morocco). Higher Institute of Nursing and Health Technology Professions Casablanca-Settat, Morocco Street Faidouzi Mohamed, 20250 Casablanca (Morocco)

Institutional address: Ben M'sik Faculty of Science, Hassan II University, Post Box 7955, Casablanca (Morocco)

Short biographical sketch: Professor in Higher Institute of Nursing and Health Technology Professions Casablanca-Settat, Morocco, and currently PhD Student in Ben M'sik Faculty of Science, Hassan II University Casablanca.

Full name: Bouzekri Touri

Institutional affiliation: Multidisciplinary Laboratory of Information, Communication and Education Sciences and Technology, Ben M'sik Faculty of Science, Hassan II University in Casablanca.

Institutional address: Ben M'sik Faculty of Science, Hassan II University, Post Box 7955, Casablanca (Morocco)

Short biographical sketch: Director of the Multidisciplinary Laboratory of Information, Communication and Education Sciences and Technology, Ben M'sik Faculty of Science, Hassan II University in Casablanca.

Full name: Mohamed Bergadi

Institutional affiliation: Multidisciplinary Laboratory of Information, Communication and Education Sciences and Technology, Ben M'sik Faculty of Science, Hassan II University in Casablanca

Institutional address: Ben M'sik Faculty of Science, Hassan II University in Casablanca

Short biographical sketch: Higher education Professor in the multidisciplinary laboratory of information, communication and education sciences and technology, Ben M'sik Faculty of Science, Hassan II University in Casablanca.

Full name: Khalid Marnoufi

Institutional affiliation: Multidisciplinary Laboratory of Information, Communication and Education Sciences and Technology, Ben M'sik Faculty of Science, Hassan II University in Casablanca.

Institutional address: Ben M'sik Faculty of Science, Hassan II University Casablanca.

Short biographical sketch: PhD student in Multidisciplinary Laboratory of Information, Communication and Education Sciences and Technology, Ben M'sik Faculty of Science, Hassan II University Casablanca.

Chapter #26

THE DESIGN OF THE RESEARCH METHOD IN GRADUATE RESEARCH WORK

Imane Ghazlane^{1,2}, Bouzekri Touri¹, Mohamed Bergadi¹, & Khalid Marnoufi¹

¹Multidisciplinary Laboratory of Information, Communication and Education Sciences and Technology (LAPSTICE), Ben M'sik Faculty of Science, Hassan II University, post box 795, Casablanca, Morocco

²Higher Institute of Nursing and Health Technology Professions Casablanca-Settat, Morocco Street Faidouzi Mohamed.20250 Casablanca, Morocco

ABSTRACT

Regardless of the discipline or institution in which scientific research will be conducted, the "method" is present. It remains fundamental of all research work that can inevitably affect problem-solving, development of the nation, and threaten quality of life.

This is an exploratory study on research methods used in graduation projects in the following disciplines (health sciences, engineering, biological and agronomic sciences, and social sciences).

The method used in this work is based on: (a) semi-structured survey by interviewing supervisors of final dissertations and theses in different selected disciplines (b) systematic analysis of the fifty-research work of graduate students. The works obtained from the libraries of the University Hassan II of Casablanca in different disciplines, submitted between 2014 and 2018. The parts of the empirical phase were analyzed, according to the processes and concepts of each discipline, to highlight the elements of the research method.

The findings indicated the influence of the national scientific production by the design of the research method. The data collection and analysis are the sections that may affect the integrity of the research method. Our contribution is to remedy the standardization of the method and adapting it to the contexts of the needs of different disciplines.

Keywords: scientific research, research method, dissertation work, data collection, data analysis.

1. INTRODUCTION

Research is not limited to science and technology. There are vast areas of research in other disciplines such as languages, literature, and history. So whatever the discipline and or subject, research must be an active, diligent and systematic process of inquiry not only to discover, interpret or revise facts, events, behaviors, and theories but also to refine knowledge in other fields or to improve the quality of human life (Rajasekar, Philominathan, & Chinnathambi, 2006).

Yin (2003) adds that "in everyday language, a research process is a plan of action to get from here to there, where 'here' can be defined as the initial set of questions that need to be answered and 'there' is a set of answers.

Crotty (1998) states that a methodology is a strategy, plan of action, the design process that underlies the selection and use of certain and by linking the selection and use of methods to desired outcomes. In addition, Methods are the techniques or procedures used to collect and analyze data related to a research question or hypothesis.

For example, the research design considers itself as the logic or blueprint for a research study that highlights the method of the study. It shows how to develop all major parts of the research study - samples or groups, measures, treatments, or programs.

Fortin (2010) stipulates that the method is one section of the research process and contains the sub-sections that are sample, type of study, data collection and instruments, procedure and the details of all the previous parts, and data analysis.

In the same order of ideas, research methods help us collect samples, data, and find a solution to a problem. Particularly, scientific research methods call for explanations based on collected facts, measurements, and observations and not on reasoning alone (Rajasekar et al., 2006).

However, certain factors can bias, corrupt research and lead to erroneous scientific judgment and decision-making (Steneck, 2004; Shamoo & Resnik, 2015),

These factors can affect epistemology, theoretical perspective, methodology, and methods as basic elements in any research process (Crotty, 1998).

The research is composed of these four elements, which are interrelated, the methodology and method remain the representation of the previous ones because any question about epistemology and theoretical perspective of any research work appears in the methodology and method of research.

Thus, scientific integrity is under threat throughout the research process. This is why many strategies have been developed to promote it.

This scientific integrity encompasses both "integrity of results" and "integrity of the process". With respect to the "integrity of results", it is the achievement of goals and the production of results that are empirically adequate; while "integrity of the process" is the adherence to standards that promote these goals (Shamoo & Resnik, 2015).

In addition, from a methodological perspective, if these subsections are not applied precisely, and if they do not meet standards, they can lead to empirically inadequate results. (Shamoo & Resnik, 2015)

Accordingly, where the researcher has used inappropriate tools or inadequate methods to obtain his or her results, and if the standards are not properly adhered to scientific integrity, the latter is certainly violated (Douglas, 2014).

Therefore, the methodological integrity of the research is a priority. It is an approach relevant to all areas of scientific research in order to produce empirically adequate conclusions.

Furthermore, the lack of preconditions in the conduct of research is at the root of the difficulties in publishing quality papers, and the delay in the promotion of many African researchers, and the share of Africa's scientific production in the world does not exceed hardly exceeds 1% (Bossali et al., 2015).

In addition, the number of publications is growing less rapidly than in other countries and does not correspond to the number of research projects funded (sources: the National Statistics Department).

The number of doctoral students is growing, although the graduation rate is not the same. In 2009, the number of doctorates awarded, all disciplines combined, was 676 and in 2018, the number of doctorates awarded is 392 (sources: the National Statistics Department).

In 2014, the number of students reached nearly 18600 while the number of doctorates supported was less than 1200, with a graduation percentage of 6.4. This rate is relatively low rather than to Tunisia, which is 7.2%, South Africa 12.6, and France 19.3 (Gaillard & Bouabid, 2017).

From this observation, it can be said that the number of doctorates has decreased, and consequently the decline in scientific production. In addition, there are several reasons related to the system and/or process that constrain research in Morocco.

Otherwise, the Higher Council of Education, Training, and Scientific Research (2017) indicated that 60% of Ph.D. students have not received training in bibliographical research and there is any access to knowledge without methodological preparation and initiation to bibliographical research. However, no study is interested in research design.

To deal with this problem, the research method must be adapted and based on norms and standards to meet the research objectives and provide useful results and conclusions to serve sectors of society.

This study is both descriptive and exploratory. Its purpose is to explore the research methods of empirical studies of the basic disciplines of scientific production at the University HASSAN II OF CASABLANCA.

In the other words, the chapter reviews the research methods and design used in the research work-study including strategies, instruments, and methods for data collection and analysis, results, and discussion in order to compare and contrast them with the norms.

The scientific disciplines taken into account in this study are (engineering sciences, health sciences, biological and agricultural sciences, social sciences); in addition, these fields have made a considerable contribution to national scientific research in recent years.

2. METHOD

2.1. The interview survey

The majority of Hassan II University establishments have research units and laboratories, which represent official bodies responsible for scientific production, and they are also the first involved in any research process or methodology.

The interview involved teacher-researchers supervising theses and dissertations at the end of the study, all the interviews were recorded in audio to be processed on "Nvivo" after having received their consent through an explanation of the purpose and orientation of the study, the survey lasted five weeks to reach a sample of 6 participants.

The interview is designed in three parts: the first part focuses on the general data of study participants, a second part focuses on the process of the end-of-study paperwork, and the third part opts for participants' suggestions for achieving research method integrity.

2.2. Analysis of dissertation work

Fifty dissertations and end of study projects obtained through the libraries of Hassan II University. For each discipline, ten end-of-study dissertations were taken randomly, we have included only those disciplines that have recorded a strong scientific production in the major fields mentioned above, which are engineering; medicine, biology and agriculture, and sociology.

These studies will exploit using different variables that may conceptualize the research design, which includes the type of study, sample, instruments, data collection, results, analysis, and discussion.

The triangulation of the three survey methods, which involves the collection of a few indicators at the doctoral cycle level, the semi-structured interview of teacher-researchers, and the analysis of the research work of master's students, was undertaken in order to compare and reinforce the results and the objective of the study.

3. RESULT

3.1. Interview results

3.1.1. Factors influencing scientific production

A textual analysis of the interviews revealed some repeated concepts. The table below shows the frequency of each concept.

*Table 1.
Word Frequency Query.*

WORD	LENGTH	NUMBER	WEIGHTED PERCENTAGE
Method	7	15	15.79
Ressources	10	8	8.42
Thematic	10	8	8.42
Data	7	5	5.26

*Figure 1.
Textual Analysis Word Clouds.*



From the table and textual analysis, it is clear that the method is the predominant factor affecting the students' research work.

3.1.2. The sections that may affect the integrity of the research method

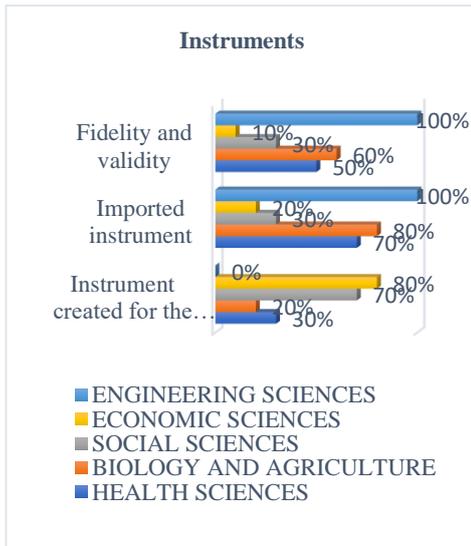
A textual analysis of the interviews revealed some repeated concepts. The table Bellow shows the frequency of each concept.

*Table 2.
Word frequency query.*

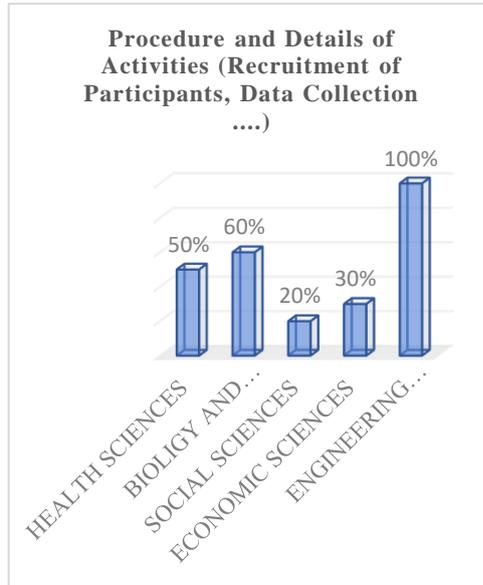
WORD	LENGTH	NUMBER	WEIGHTED PERCENTAGE
Data	7	21	6.25
Collection	8	10	2.98
Analysis	7	11	3.27
Standard	6	6	1.79
Procédure	9	6	1.79

According to the table, the concept of "data" is predominant, and it is linked to the other two concepts of collection and analysis.

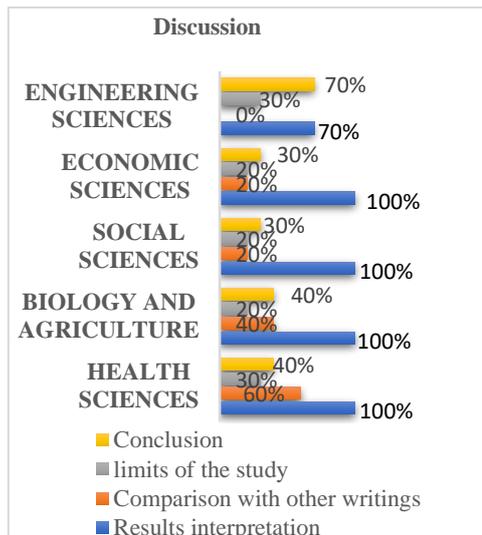
Graph 3.
Instruments used in each study for the five fields studied (Fidelity and validity, instrument imported or created for study).



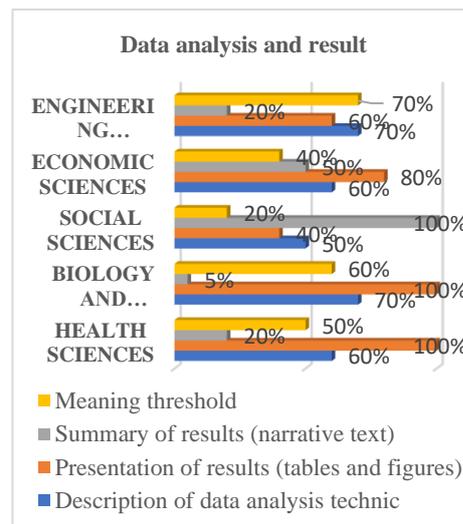
Graph 4.
Procedure and detail of activities (Recruitment of participants and data collection).



Graph 5.
The section «discussion» in the five disciplines studied.



Graph 6.
Data analysis and results with (Meaning thresholds, Presentation of results, description of data analysis technic).



The results of the study showed that in medicine: the type of study and ethical considerations are taken into account in all work. 60% of the studies indicated the number and characteristics of the sample and only 40% mentioned their sampling techniques, however, the fidelity and validity of the data collection instruments were highlighted in only 40% of the studies,

All the works described their procedure, the statistical analysis generated results in all the works, however, the discussion section considers the other writings in only 40% of the cases, and the conclusion section appears in only 40% of the works.

In biology and agriculture, just 30% of the studies declared the type of study, the predominant criterion in the sampling section is the study environment in 100% of the cases. The sampling technique, the number, and characteristics of the sample appear in only 40% of the cases, and the precision and validity of the measuring instruments were not explicit in 40% of the cases,

Moreover, just 40% explain their significance level; however, in the discussion section, all cases indicate that the results are consistent with other publications through comparative studies.

In sociology, the type of study appears in only 10% of the cases. The study environment and the number and characteristics of the sample appear in 60% of the cases. 70% of the writings create their instruments however their validity was not maintained, the statistical analysis reveals raw descriptive results, and only 10% of the cases carry out a discussion part which indicates an interpretation of the results,

In economics, 40% of the works indicate their type of study; the study environment is present in all the works. however 50% are interested in sample size and characteristics, however, 80% use instruments created for the purpose of the study and just 10% clarified their validity, 30% of the cases described their procedure in detail, 40% pronounced their significance of the results. The discussion section just deals with the interpretation of the results in 100% of the cases, and 20% of the works used other literature, and just 30% cited their study limitations.

In engineering sciences, the total of work mention their study environment, but the type of study is not reported in all of the paper. The instruments are all imported and their validities were clear, whereas 20 % of the projects have not given results, by the way, 30% of the studies reported their study limitations.

Consequently, the majority of the research work lacks a part of the method that affects methodological integrity

4. DISCUSSION

This survey is necessary because it highlights the practice of research methodology that is as the guarantor of methodological rigor, as it contains subsections, and because they influence each other.

The present study concerns the most productive disciplines in Morocco. This diagnosis makes it possible to raise the gaps in the practice of the research method for improvement purposes.

The present study has identified several particularities that each section of the method can take into account in each discipline.

Because, the hierarchical nature of the research process determines that the assumptions embedded in the primary element inform each subsequent element (Crotty, 1998). Furthermore, the research process is the representation of a logical sequence determined by epistemology and theoretical perspective.

Given the results of the interviews with teacher-researchers, the sections most at stake are data collection and data analysis.

However, for all scientific disciplines, depending on the object of study, the researchers should consider and choose one or more methods for their scholarly endeavors (Chu & Ke, 2017).

For instance, research conducted using the given data collection method is related to the particular methodology, which itself has been adapted to a particular theoretical perspective, which related to epistemological current. Nevertheless, there are specific research designs that take into account different research paradigms (Feast & Melles, 2010), which requires a sufficiently vigilant conception to have results incorporated into reality.

Our discussion focuses much more on the operational section, which is necessary for any empirical phase regardless of the field of application of the research,

First, these procedures use instruments that must obtain a certain validity and reliability to ensure methodological rigor (Fortin, 2010).

This study has reviewed the practice of these procedures, most disciplines do not describe their procedures for either data collection or data analysis, which limits their transparency (Fortin, 2010).

Similarly, and in the health field, statistical analysis is the main component that allows research to be empirical rather than abstract, it allows us to confirm our findings (observations and experiments), moreover, the accuracy of the statistics depends heavily on the accuracy of the data collected (Manille, 2003).

Thereby in a study by Wayant, Ross, and Vassar (2020), the Clinical trials in oncology had methodological shortcomings, these shortcomings include alpha values and confidence intervals that do not match, lack of citations for data that justify the chosen non-inferiority margin, and pre-specification of only one analysis. By the way, the methodological shortcomings may lead to spurious conclusions that may be due to study design.

In the social sciences, Campenhoudt, Marquet, & Quivy, (2017) assert that it is not a matter of proceeding anyhow but of "method", and the group "data collection and analysis" into a single "epistemological act".

On the other hand, Campenhoudt et al. (2017) and De Ketele and Roegiers (1991) stipulates the proper conduct of data collection and the validity of these tools to provide some veracity to the information collection process, however in the projects of the students the validity is not demonstrated in most graduate work. Furthermore, regarding the interpretation, which remains the core of the social sciences and humanities, the Scientists should avoid violating the research integrity, not only in designing experiments, and accepting hypotheses or theories but also in interpreting data (Resnik & Elliott, 2018).

In engineering sciences, Assar (2015) stipulates that the artifact must meet the needs of the claimant; by the way, the rigor in data collection and processing is necessary to have scientifically valid results. Moreover, it must be adequate with the context of use, however, in our study 20 % of the projects have not given result in this way, furthermore, the researchers refer to replication to extend knowledge and this remains a guarantee of rigor in data collection and analysis, nonetheless, in this study, some works cited their replication.

In order to confront the different deficiencies in research method design, there are several strategies and approaches that the precursors of research methodology have talked about.

Onboard, there is critical thinking, which is the intellectual basis of the research method, it is used for undertaken the valid and reliable research method and to verify the veracity of the information, that scientific knowledge is constructed and developed by scientists (Halim & Mohtar, 2015).

Furthermore, the norms for research methods by Shamoo and Resnik (2015) include evidentiary support, rigor, objectivity, carefulness, openness /transparency.

Evidentiary support may take the form of facts and statistics, expert opinions, or evidence, to prove the validity of the research work, in order to draw inferences based on the empirical evidence and/or sound logical, statistical, or mathematical arguments. While the rigor is subjecting research to rigorous tests; critically scrutinizing research; considering the limitation of one's methods and results, whereas objectivity aimed at minimizing or controlling experimental, theoretical, and other biases. Whilst carefulness is intended for minimizing human and instrumental errors; keeping good research records. And the openness/transparency consists of disclosing methods and assumptions; sharing data, results, ideas, and materials)

In addition, the same authors stipulate among others, the policies that define and prohibit research misconduct, such as the procedures for reporting, investigating, and adjudicating research misconduct, and the procedures for auditing data and other research records. Furthermore, the rules for designing experiments, the rules concerning standards of evidence for accepting or rejecting hypotheses, and the rules concerning good statistical practice.

5. CONCLUSION

Students in different disciplines at the Hassan II University of Casablanca carried out this study with the aim of diagnosing the application of the research method. The results obtained show that the method is intact, thus, the rules and standards relating to the normative practices of the methods are not respected in most of the works.

For this, some recommendations in order to remedy the standardization of the research method, and its adaptation to the contexts of the needs of different disciplines, raised throughout the study. and which include: the non-reporting of the type of study, the non-respect of standards in the design of instruments for data collection and analysis as well as the absence of reporting of some particularities of the method in certain disciplines such as (sampling technique, size, representativeness ...), recommendations have been formulated:

- The reinforcement of research methodology courses within training courses (bachelor's degrees, master's degrees, and doctorate) in all disciplines.
- The requirement for the development of a research work plan and the clarification of the method
- The characterization of each method section and linking all parts of the method in order to respect the epistemological act and ensure their monitoring and evaluation
- Teaching based on the universal standards of critical thinking to generate critical thinkers.
- At the strategic level, embedding the research culture and adherence to norms, rules, and standards to ensure the integrity of the research method
- The choice and/or design of data collection and analysis instruments must be justified, rational, and clarified.

It is also interesting to compare research designs in different research works that use quantitative, qualitative, or mixed methods. While such surveys increase the understanding of the research design, as they have an impact on the results for the research users.

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AUTHORS' INFORMATION

Full name: Imane Ghazlane

Institutional affiliation: Multidisciplinary Laboratory of Information, Communication and Education Sciences and Technology (LAPSTICE), Ben M'sik Faculty of Science, Hassan II University, Casablanca (Morocco). Higher Institute of Nursing and Health Technology Professions Casablanca-Settat, Morocco Street Faidouzi Mohamed, 20250 Casablanca (Morocco)

Institutional address: Ben M'sik Faculty of Science, Hassan II University, Post Box 7955, Casablanca (Morocco)

Short biographical sketch: Professor in Higher Institute of Nursing and Health Technology Professions Casablanca-Settat, Morocco, and currently PhD Student in Ben M'sik Faculty of Science, Hassan II University Casablanca.

Full name: Bouzekri Touri

Institutional affiliation: Multidisciplinary Laboratory of Information, Communication and Education Sciences and Technology, Ben M'sik Faculty of Science, Hassan II University in Casablanca

Institutional address: Ben M'sik Faculty of Science, Hassan II University, Post Box 7955, Casablanca (Morocco)

Short biographical sketch: Director of the Multidisciplinary Laboratory of Information, Communication and Education Sciences and Technology, Ben M'sik Faculty of Science, Hassan II University in Casablanca.

Full name: Mohamed Bergadi

Institutional affiliation: Multidisciplinary Laboratory of Information, Communication and Education Sciences and Technology, Ben M'sik Faculty of Science, Hassan II University in Casablanca

Institutional address: Ben M'sik Faculty of Science, Hassan II University in Casablanca

Short biographical sketch: Higher education Professor in the multidisciplinary laboratory of information, communication and education sciences and technology, Ben M'sik Faculty of Science, Hassan II University in Casablanca.

Full name: Khalid Marnoufi

Institutional affiliation: Multidisciplinary Laboratory of Information, Communication and Education Sciences and Technology, Ben M'sik Faculty of Science, Hassan II University in Casablanca.

Institutional address: Ben M'sik Faculty of Science, Hassan II University Casablanca.

Short biographical sketch: PhD student in Multidisciplinary Laboratory of Information, Communication and Education Sciences and Technology, Ben M'sik Faculty of Science, Hassan II University Casablanca.

Chapter #27

TEACHERS' AWARENESS OF SOCIAL, EMOTIONAL AND BEHAVIOURAL DIFFICULTIES IN STATE PRIMARY SCHOOLS IN MALTA: A CASE STUDY

Victor Martinelli, Mario Cutajar, Martina Debattista, & Amira Mangion

Department of Educational Studies, Faculty of Education, University of Malta, Malta

ABSTRACT

This study explores teachers' awareness of social, emotional and behavioural difficulties (SEBD) in primary schools. Data was collected through questionnaires, and semi-structured interviews carried out with teachers teaching Years 2, 3, and 4. This study revealed that teachers who supported students with SEBD were more aware of strategies to be used in the classroom than those who never supported such students. However, the strategies adopted were largely self-devised. These included establishing a good relationship with the student and keeping daily routines consistent. All respondents expressed the desire to be provided with further training opportunities. Training would help teachers gain a deeper understanding of SEBD and develop strategies to manage such challenges more effectively.

Keywords: social, emotional and behavioural difficulties (SEBD), education, teachers, strategies, primary school.

1. INTRODUCTION

This study is particularly relevant to the current situation of social, emotional, and behavioural difficulties (SEBD) in Malta because of the varying discourse and debate about the issue of inclusion and how such children could be excluded (Fenech, 2012). It examines issues central to teachers' awareness of SEBD. Specifically, the goal of this study was to explore and describe how school systems respond to the needs of children with SEBD and examine the preparedness of teachers to address these needs at the level of the individual child in an inclusive setting. It also examines the historical background, risk factors and current developments in SEBD research. Given the nature of the intricacies of teaching and managing children with SEBD, we underpin this complexity with theoretical perspectives. Our intention in this paper is to give central place to primary school teachers' perceptions of the behaviours of students with SEBD and explore the form of professional training and strategies necessary to help them manage children's behaviour more effectively in the specific context of the Maltese educational system.

2. BACKGROUND

Given that the United Kingdom can be considered to be one of the pioneers in addressing the education of SEBD students, and that the Maltese Islands share a colonial past of over one and a half centuries with the UK, this impacted the foundations of the Maltese educational system. It is for this reason that we shall begin by referring to the legal context central to SEBD in the UK. The notion of SEBD emerged in the UK in the 1990s, but its

roots can be traced back decades. Reference to SEBD had already been made in 1944 using different terminologies (Squires, 2012). The UK Education Act of 1944 (Legislation.gov.uk, 1944) explained how students labelled as maladjusted or educationally sub-normal received special education in distinct schools. It was not until the publication of the Warnock Report in 1978, followed by the UK Education Act of 1981 that such labels were replaced by less stigmatising terms like learning difficulties and special educational needs which covered a broad spectrum of difficulties or disabilities, including SEBD.

The term SEBD was first acknowledged legally within the English Special Educational Needs Code of Practice in 1994. It was then amended in the 2001 version as indicated by Armstrong (2013). An important sub-strategy of this Code was the organisation of policy agendas to enhance educational practice, including the change in teachers' perception of pupil behaviour and its potential causes. Kay (2007) emphasised that the Special Educational Needs (SEN) Code of Practice was designed to support teachers in identifying, assessing and supporting students with SEBD. The duties presented in the Special Educational Needs and Disability Act (SENDA) 2001 are part of the said Code and included the rights of students with SEBD in the education sector. Subsequently, the Equality Act 2010 (Legislation.gov.uk, 2010) aimed to provide tailored treatment and equal educational opportunities to individuals, regardless of their abilities or disabilities, including those with SEBD. A year later, the Conservative/Liberal Democrat Coalition Government launched a consultation document entitled *Support and aspiration: A new approach to special educational needs and disability* (Department for Education, 2011). This document suggested a different approach to better support children with SEN and disability. The *Special Educational Needs and Disability (SEND) Code of Practice: 0 to 25 years* (Department for Education, 2014) was enshrined in the Children and Families Act 2014 – Childrens, 2014. Although it is not without its detractors, it is of particular relevance to the field of special education. It drives for early intervention and the growth of developmentalism and emphasises adulthood, employment and independence, with the individual ideally being managed from birth through to a productive life (Penketh, 2014). The SEND Code of Practice (Department for Education, 2014) refers to the issues discussed in this study as falling under the umbrella term of social, emotional and mental health.

SEBD is a wide-ranging term that is generally used in Education to refer to those students who exhibit difficulties in behaviour, emotions, and relationships, which are so persistent that they inhibit children's learning and development (Visser, Daniels, & Macnab, 2005). Cooper (2010) provides a broader application to the term and remarks that SEBD is often found across the field of social policy, including Social Well-being, Mental Health and Criminal Justice, besides Education. Cooper and Cefai (2013) observed that in Education, the term SEBD is generally associated with those students who exhibit disturbing or disruptive behaviours that can hinder their ability to socialise with others or regulate their emotions. Breen, Edgar, Farrell, Kealey and McFadden (2014) describe the behaviour of these students: seeking to distract by using humour or violence; attracting positive attention by provoking the teacher; and disrupting classroom-learning activities. The social difficulties of students with SEBD include the challenges they experience in establishing relationships with peers and the subsequent developing of confrontational relationships with teachers (Diener & Milich, 1997). Furthermore, in these situations, there is a good likelihood that these students develop feelings of depression and low self-worth (De Leeuw, De Boer, Bijstra, & Minnaert, 2018).

Macleod (2010) observed how the term SEBD is so broad and vague that it often overlaps with labels such as disaffected, disengaged, disruptive, and, challenging and with disorders such as Attention Deficit Hyperactivity Disorder (ADHD), Oppositional Defiant

Disorder (ODD) and Conduct Disorder (CD). These labels and disorders are, in fact, all linked to external behaviours. These behaviours, which Cooper and Cefai (2013) qualify as 'acting-out' (disruptive behaviours) and 'acting-in' (withdrawal, low self-esteem, exclusion, and extreme fear) can pose a threat to the child's health and safety, particularly in students who do not share their difficulties but internalise their emotions. The reason is that these students are less likely to draw their teachers' attention to their state of mind since they do not cause any apparent disruption to the learning process (Bennathan, 2003).

There is concurrence among researchers that children diagnosed with SEBD exhibit frequent emotional or behavioural difficulties within or across specific settings (Ayers & Prytys, 2002). Jones, Dohrn, and Dunn (2004) contended that "students with emotional and behavioural problems differ from other students in the frequency, intensity, and duration of their behaviours" (p. 71). It is not the behaviour itself that determines whether the student has SEBD or not, but the gravity of the behaviour and the length of time it is manifested (Fovet, 2011). Reflecting this diversity, the SEND Code of Practice (Department for Education, 2014) paragraph 6.32, refers to SEBD tangentially under the caption of social, emotional, and mental health difficulties. The term encompasses a wide range of social and emotional difficulties such as withdrawal and isolation, challenging, disruptive or disturbing behaviours. Underlying these disorders may be mental health difficulties such as anxiety or depression, self-harming, substance misuse, eating disorders or physical symptoms that are medically unexplained.

Cefai, Cooper, and Camilleri (2008) reported that about 10% of Maltese students exhibit traits of SEBD. Looking at some international research, this compares with the 10% proportion established internationally (Goodman, 1997; Meltzer, Gatward, Goodman, & Ford, 2000). Another study based on Danish teachers' perceptions suggested that 10% of the school population has serious behaviour difficulties (Egelund & Hansen 2000), while Dutch teachers estimated that about 11% of students exhibit SEBD (Smeets, Van der Veen, Derricks, & Roeleveld, 2007). While in the past, there was a trend to see SEBD as a problem residing within the child, a biopsychosocial approach explains how the critical elements in the child's life like predisposition, home, peers, school, and community contribute to its development (Cooper & Jacobs, 2011). Recently there has been a shift from the traditional academic instruction to one that tries to educate the student holistically through social and emotional learning and skill-building that are essential to lifelong achievement and happiness (Reyes, Brackett, Rivers, White, & Salovey, 2012).

During the second half of the twentieth century, it was the norm in Malta, to refer to individuals with behavioural problems as maladjusted or handicapped (Bartolo, 2001). The 1974 Education Act (Laws of Malta, 1974) made provisions for these individuals. This Act decreed that students with some mental, emotional or physical handicap were to attend a special school.

The term SEBD was introduced locally around 2003 and eventually became associated with nurture groups (Cefai & Pizzuto, 2017) within an inclusive education system. The *National Minimum Curriculum* (NMC) (Ministry of Education, Youth and Employment, 1999) and the *Inclusive Education Policy* (Ministerial Committee on Inclusive Education, 2000) were introduced to enhance inclusive education for all Maltese students (Cefai & Cooper, 2006). This reform saw the introduction of Learning Support Assistants (LSAs), today known as Learning Support Educators (LSEs), to support students with Special Educational Needs. In Malta, nurture classes were created to provide support to schools, and as part of an early intervention strategy to mitigate and counteract the effects of SEBD within an inclusive setting and enhance schools' capacity to respond to diversity (Cefai & Cooper, 2011). Currently, teachers are expected to cater for the diverse needs of students (Verhoeven,

Aleتمان, Rots, & Buvens, 2006), and this can only be accomplished through the implementation of inclusive educational practice (Pit-ten Cate, Markova, Krischler, & Krolak-Schwerdt, 2018).

The aim of inclusive education is not to simply integrate students in mainstream education but to enhance the overall participation of the students in different classroom activities (Rodriguez & Garro-Gil, 2014). Inclusion in education is a process and approach that nurtures diversity and promotes equal opportunities for all students, no matter what their needs and abilities are. It is the way of addressing student diversity by improving participation in classrooms and reducing segregation in education (United Nations Educational, Scientific, and Cultural Organisation, 2017). Nel, Engelbrecht, Swanepoel, and Hugo (2013) emphasised the dignity of inclusive education whereby "every student is viewed as a child/human being first with his/her own specific needs and is not stereotyped and/or labelled because of poverty, illness, disability or any other barrier to learning" (p. 785). Conscientious and professional teachers organise and manage the spatial structure of their classrooms for students with SEBD such that it becomes a predictable and comfortable environment which facilitates positive relationships with peers and adults (Schloss & Smith, 1998; Wannarka & Ruhl, 2008).

Inclusive education is underpinned by several interrelated values, some of which include equality, participation, community, compassion, and love (Ainscow & Miles, 2008). These can assist in fostering fruitful relationships and social engagement among students with SEBD. Barton and Armstrong (2008) and Cole (2005) argued that inclusive education can be a hard and complex process and should be interpreted in various ways. Giangreco (2007) acknowledged this complexity but emphasised that students with different needs and abilities should take part in common educational activities while pursuing personally suitable learning outcomes with tailored support and adaptations. Inclusive education can only be successful if students are provided with a child-friendly environment where they can enhance their learning and development, no matter what their needs and abilities are (Itfaq, Shujahat, & Khanum, 2017).

Teachers' attitude and their interaction with students is a significant factor that defines success in teaching students with different needs and abilities (Foreman, 2008). When teachers demonstrate a positive attitude towards these students, they are more likely to develop effective strategies to support them and thus make a success out of inclusion (Beacham & Rouse, 2012). Similarly, a healthy collaboration between the teacher and LSE facilitates the sharing of knowledge about the student's emotional state and improves overall management (Devecchi & Rouse, 2010).

In Malta, teachers' views and teaching skills central to SEBD diverge considerably. Some teachers believe that they are not fully equipped with the necessary skills to manage students' behavioural difficulties (Papantuono, Portelli, & Gibson, 2014). They are concerned about their effectiveness as educators and feel that they need more training and assistance (Nias, 1989). Kindzierski, O'Dell, Marable, and Raimondi (2013), and Cefai and Cooper (2006) opined that most teachers have very little knowledge of the best practices for teaching students with SEBD due to lack of training. Most teachers feel that they need more training and support and want to enhance their knowledge about what triggers challenging behaviours and the strategies that can be implemented to manage such behaviours (Childerhouse, 2017).

Various strategies can be used with students with SEBD (Lukowiak, 2010) and teachers should be knowledgeable about such strategies since SEBD students respond differently to diverse approaches (Jensen, 2005). Additionally, teachers need to know that forcing students to work might evoke extreme fearfulness in them (Nieman & Shea, 2004). Chhetri (2015) found that teachers believe that they learn about teaching students with SEBD when they

start working with them through a laborious process of trial and error. Teachers' ability to integrate tactile activities in their planning has been found to minimise problematic behaviours, particularly when they use visual timetables (Burton, 2006; Parsonson, 2012; Obaid, 2013; Spriggs, Mims, van Dijk, & Knight, 2017).

When working with students with SEBD, teachers experience a range of behaviours, from the defiant to the dangerous (Albrecht, Johns, Mounstevan, & Olorunda, 2009). Hence, these students challenge teachers at pedagogical and emotional levels. This means that, without adequate training, teachers may find themselves growing anxious, stressed, depressed and frustrated. Training encourages teachers to develop an understanding of SEBD, an awareness of strategies to manage SEBD and consciousness of when to raise concerns (Breen et al., 2014) and consequently experience less anxiety and frustration. Moreover, teachers can become effective when they learn by doing; they learn through reflective practice such that critical reflection leads to the best way to improve the education of their pupils (Meierdirk, 2016).

Classroom management is a significant characteristic of the teaching experience, which, if ignored, can lead to escalations of difficult and challenging behaviours. Teachers' lack of training and experience can affect their efficacy when dealing with SEBD (Cassady, 2011). Hence, teachers should be trained how to manage their classroom effectively since this increases students' engagement which, in turn, decreases the disruptive behaviour that is often displayed by students with SEBD (Postholm, 2013; Smeets, 2009). Moreover, classroom management has a dual role: to establish specific rules and routines to conduct various classroom activities; to give explicit information on academic and social responses required for learning (Brophy, 1996; Lane, Gresham, & O'Shaughnessy, 2002). Equally important is the teacher-LSE relationship and their response to the student's needs. At a professional level, the relationship between the teacher and the LSE should be underpinned by the sharing of knowledge about the child's emotional state, the ability to create facilitative resources and the provision of another educator in the classroom (Devecchi & Rouse, 2010).

The absence of a primary caregiver can create insecurity for the child, which can lead to challenging and aggressive behaviours (Kaiser & Rasminsky, 2011). In this case, parent-school partnership and collaboration with LSEs become other important aspects of school improvement and success (Katz & Miranda, 2002). More specifically, parents' involvement in their child's education tends to affect positively the pupil's classroom behaviour, self-esteem, and engagement (Michael, Dittus, & Epstein, 2007). Inversely, a lack of parental involvement can be inimical to the successful outcome of managing a child with SEBD at school, because of the need for an ongoing, honest parent-teacher collaboration (DiJohn, 2015).

3. OBJECTIVES

The objectives of this study were to 1) explore teachers' knowledge of SEBD, 2) examine their ability to respond to children's needs in an inclusive setting, and 3) consider their views about their continuing professional development in the area.

4. DESIGN

The non-probability sampling techniques (purposive and convenience sampling) was adopted to select the sample of 180 teachers from 29 Maltese primary schools, within the State Colleges located in a particular geographical zone in the Maltese islands. Only eighty

self-completed questionnaires were collected for the study. Ten teachers working in the same primary schools with students with SEBD were randomly selected to participate in semi-structured interviews. The 11-item questionnaire covered necessary demographic information such as gender, years of teaching experience and the grade taught at the time. The majority of the questions focused on: the respondents' understanding of the term SEBD and whether they perceived it to be different from 'maladjustment', their years of experience of teaching children with SEBD and the strategies they found to work best with such children. The final questions tapped whether respondents felt that their initial teacher education was adequate to assist them in responding to the needs of children with SEBD. The interview schedule based on 9 questions explicitly concentrated on issues of strategies used with children thus affected, cooperation with learning support educators, the stress experienced in dealing with classroom situations involving children with SEBD and respondents' general preparedness for their work with such children.

5. METHOD

The research method adopted the interpretative paradigm and descriptive approach to "understand the subjective world of human experience" (Cohen, Manion, & Morrison, 2003, p. 22). We sought to comprehend how the respondents and interviewees interpreted their role in teaching students with SEBD, as well as the world presented by the participants, which "will be glossed with meanings ... of those people who are their source" (Cohen et al., 2003, p. 17). Furthermore, piecing together the participants' social constructions and the meanings they attributed to them, including their verbal and non-verbal communication, their tone of voice and facial expression helped us gain a more robust and comprehensive understanding of their reality as suggested by Klein and Myers (1999).

Our position in this regard is underlined by Burrell and Morgan (1979). They maintained that social science researchers, directly or indirectly, approach their research via four philosophical assumptions: ontology, epistemology, human nature and methodology. They sustained that assumptions about human nature are linked to issues of an ontological and epistemological nature, since these address the relationship between human beings and their environment. They argued that ontology helps the researcher understand the different ways in which the world around us can be investigated and understood and whether the collected data is real or the product of the participants' perception. Burrell and Morgan (1979) added that the assumptions of an epistemological nature deal with how researchers understand and communicate the knowledge that is collected.

Furthermore, as suggested by Burrell and Morgan (1979), human nature assumptions help researchers establish if the environment conditions the actions of human beings (mechanistic view), or if human beings play a leading role in the creation of their environment (deterministic stance). Finally, according to these sources, the fourth set of assumptions of a methodological nature focuses on the methodology researchers employ to conduct their studies. Burrell and Morgan also contended that the first three assumptions mentioned above have direct implications for the kind of study undertaken.

We employed the descriptive analysis method to summarise the data that emerged from the questionnaires, as stated by Best and Kahn (1998) since it allowed both the researcher and the reader to visualise and interpret the collected data. Hence, the descriptive analysis was the best method to describe the basic features of the study rather than presenting data through graphs and statistics, which can only provide simple summaries.

Informed consent was obtained from the participants, and their anonymity was respected. The tally approach was followed to analyse the questionnaire data. The responses of the close-ended questions were grouped in a frequency table, to minimise repetition of data, whilst the data from the open-ended questions were analysed by recording the codes in a frequency table. Hence, we could outline the most common key terms used by the respondents. For the analysis of the qualitative data, we used the effective thematic approach as advocated by Haralambos and Holborn (2008), since we planned to identify the themes that emerged. For this procedure, we followed the six significant guidelines (becoming familiar with the data; generating initial codes; searching for the themes; reviewing the themes; defining and naming themes, and producing the report) established by Braun and Clarke (2006).

6. FINDINGS

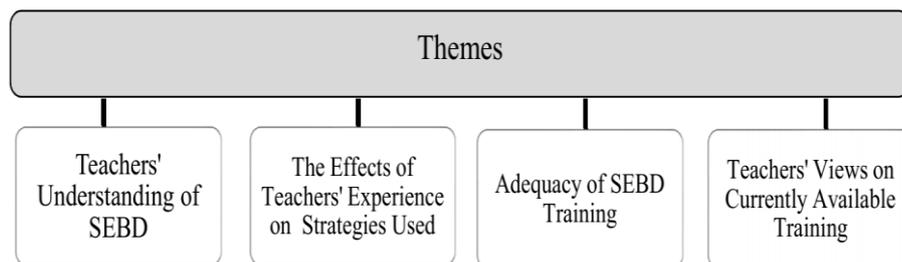
6.1. Demographics

The data collected from the survey, together with the interviews, helped us analyse: the aim central to teachers' current knowledge of SEBD, strategies they used to attend to the needs of students with SEBD, and the secondary aim of acquiring information on what can assist teachers to grow professionally and develop skills that enhance the pedagogical process for SEBD students. The following is a breakdown of the 80 respondents answering our questionnaire; eight (10%) were male, and 72 (90%) were female. Thirty-one respondents (39%) were teaching Grade 3, 25 (31%) were teaching Grade 4, and 24 (30%) were teaching Grade 5. Thirty-two (40%) of respondents had been teaching for 1 – 5 years, 12 (15%) had been teaching for 6 – 10 years, 10 (13%) had been teaching for 11 – 15 years, nine (11%) had been teaching for 16 – 20 years, and 17 (21%) had been teaching for over 21 years.

6.2. Questionnaires

The data obtained from the collected 80 questionnaires generated four themes, as explained in Figure 1.

Figure 1.
Four themes that emerged from the questionnaires.



The respondents' understanding of the term SEBD varied and ranged from *children who are troubled and cause trouble to an issue that includes ADHD and anxiety*. When asked about the relationship between the terms maladjustment and SEBD, the majority saw the two terms as dissimilar. A good number recorded that SEBD occurred regardless of the environment; some considered maladjustment and SEBD as two different conditions and a few recorded that SEBD was a more complex term than maladjustment. A smaller number

considered the two terms to be similar. The majority of this cohort claimed that both conditions were characterised by the same traits such as those demonstrating physical and verbal aggression, whereas a few claimed that maladjustment caused SEBD.

The participants' responses about behaviours emanating from SEBD varied between 'acting-out' and 'acting-in' behaviours. Acting-out behaviours ranged from outbursts of extreme anger, persistent bullying of other children, aggression, constantly challenging and contradicting teachers, to arguing with the teacher. The most commonly identified acting-in behaviours were: withdrawal, and being antisocial and shy around children.

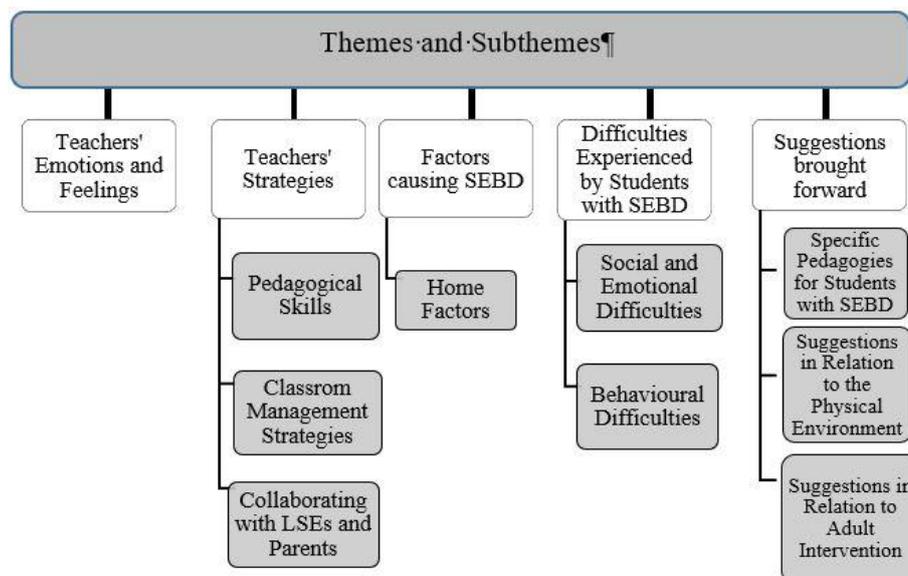
Sixty, of the 80 questionnaire respondents, had the experience of teaching students with SEBD, and 57 of them, indicated that their preferred strategy was establishing a good relationship with the student. The same group suggested counselling, positive reinforcement, focussing on the child's strengths, attending a nurture class and maintaining a constant routine. The other three respondents, with no experience of teaching students with SEBD, indicated patience and focusing on the child's strengths as possible strategies.

Items in our questionnaire also addressed the issue of the appropriateness of training that would support teachers with knowledge and skills to help them meet the needs of students with SEBD. Forty-five respondents claimed that their University teacher training course gave them specific skills to meet the needs of students with SEBD; the remaining 34 respondents were uncertain about this claim. None of the respondents claimed that the training they received prepared them very well for teaching such children. Overall, the majority concurred that their training gave them some level of skills, albeit limited.

6.3. Interviews

Ten interviews were conducted, which generated the themes and sub-themes illustrated in Figure 2.

Figure 2.
A thematic map presenting the five themes and nine sub-themes that emerged from the interviews.



All 10 interviewees reported that they had worked with SEBD students throughout their careers, some of whom claimed no formal preparation in teaching such students. As a result, these interviewees experienced stress when working with students with SEBD. They attributed this to their lack of formal preparation and felt unable to understand and deal with the student's behaviours, particularly when they could not devise appropriate intervention strategies (theme 1). Interviewees suggested several ad hoc strategies that could be executed in the classroom, but in their narratives, they did not put forward specific evidence-based intervention exemplars. Interviewees voiced the need for formal training in SEBD and improved staffing ratios in classes with children with SEBD.

We identified pedagogical and classroom management strategies as two of the subthemes falling under the theme of Teachers' Strategies in Figure 2 (theme 2). Teachers remarked that when they observed students regularly and kept a running record of events, they could track students' progress, helping them to identify events triggering inappropriate behaviours. They stressed the importance of a safe classroom environment, where students experiencing family problems and parental separation, which were cited as the primary causal factors of SEBD (theme 3), could feel secure. Such a positive classroom environment served to establish trusting relationships. Teachers collaborated closely with LSEs (another subtheme we listed under the second theme, Figure 2) by sharing schemes of work, planning the day's schedule of activities, and exchanging important information in a bid to address daily challenges. One interviewee explained how together, teachers and LSEs identified triggers of unacceptable behaviours and worked together to circumvent such occasions. In one such case, the LSE (who worked very closely with and knew the student much better than the teacher) guided the respective educator about which strategies to adopt with him. Other interviewees suggested parent partnerships in the learning process. They claimed that parents were a useful source of information on how they handled and dealt with their children at home. This offered the opportunity for mutual learning because parents could also learn from how their children's needs were addressed in the classroom, which could be adopted and continued at home.

Interviewees opined that students with SEBD found it challenging to voice their thoughts and express emotions. They claimed that children with SEBD exhibited two separate classes of problematic behaviours; loneliness and aggression (theme 4). These affected children's social development with deleterious effects on class participation. Aggressive behaviour that included rough play and hitting others tended to characterise children with SEBD. This fuelled distrust and unhealthy relationships. Moreover, difficulty with following routines and general impulsivity hindered learning in such children. While on the one hand, students with SEBD would act-out by throwing tantrums, others could act-in and suffer in silence.

These interviews helped us to identify three additional sub-themes: specific pedagogies, school environment and adult intervention (theme 5). There was consensus among interviewees that group work was one of the strategies that would improve children's social skills. The use of a graphic timetable was another strategy which interviewees agreed gave the students some idea of the day's proceedings. Another strategy involved spending time in multi-sensory rooms and attending nurture classes; this relieved children's classroom induced stress (Figure 2, theme 5 above). Interviewees concurred that these two environments provided the ideal atmosphere for the students who enjoyed some quiet time and could express their emotions, frustrations and anger through play. Two interviewees claimed that gardening released some of the students' anxiety, enhanced concentration skills and improved socialisation skills.

7. DISCUSSION

We contextualised the four themes (Figure 1) that emerged from the questionnaire data in the reviewed literature. A robust emergent theme was that the majority of respondent teachers were knowledgeable about the concepts surrounding the umbrella term of SEBD as Breen et al., (2014) claimed in their research. Respondents' concurrence, that students with SEBD were not only prone to misbehaviour but also found it challenging to communicate their emotions, and that such behaviour could hamper the individual's socialising ability, found support in the research of Cooper and Cefai (2013). Likewise, the respondents' position on a real difference between 'maladjustment' and SEBD found concurrence with Cooper and Cefai (2013). Their experience that children with SEBD generally display extreme outbursts of anger and aggression concurred with Breen et al., (2014), Cooper and Cefai (2013), and Kaiser and Rasminsky (2011).

The data continued to draw attention to the way teachers' experience impacted on how they managed pupils with SEBD. It emerged that their experience stood them in good stead because they were more resourceful and mentioned more strategies than those who had never supported such pupils. Their experience helped teachers to teach and guide pupils when correcting those with SEBD rather than coercing them to do something, in line with Nieman and Shea's (2004) claim. Our finding that experience armed teachers with many strategies to support children with SEBD, in contrast to those with no experience concurs with Cassidy's (2011) findings.

Disconcertingly, there was consensus among the respondents that their tertiary level training in the Faculty of Education had left them unskilled in developing an evidence-based approach to SEBD. Such a finding suggests that initial teacher training courses may not equip educators with the necessary skills to manage students with behavioural difficulties as claimed by Papantuono et al. (2014). The reported dearth of professional training in SEBD sheds light on the quality of the existing available training, which explains the general lack of practical strategies and skills that teachers possess. We agree with the findings of Smeets (2009) and Childerhouse (2017) that such training would be the way forward for teachers to manage and help students with SEBD develop socially acceptable behaviours.

This part of the article discusses the issues that emerged from the face-to-face semi-structured interviews. The exemplars provided by the interviewees, were central to the adaptation of content related pedagogy. This involved the application of tactile activities as found in Parsonson (2012) and Obaid (2013) and helped us to identify the sub-themes of content related pedagogy, classroom management strategies and collaborating with parents and LSEs. Given the emergent sub-themes, we came to an understanding of the importance of teacher strategies in minimising problematic behaviours. We also understood, as emphasised by Schloss and Smith (1998), and Wannarka and Ruhl (2008) that conducive classroom environments need clear rules, routines and positive relationships if they are to minimise children's unacceptable behaviours. Furthermore, as advocated by Devecchi and Rouse (2010), we recognised that close teacher-LSE collaboration benefits children. Contrary to Michael et al's (2007) study, this same mindset as evident in the data did not feature so strongly in fostering and sustaining a partnership with parents. Only one interviewee mentioned parental involvement. This suggests that Maltese educators do not recognise the importance of a family-school partnership. We believe that schools need to explore and develop wider collaborative practices with their stakeholders.

8. FUTURE RESEARCH DIRECTIONS

Further research in this area could address more directly the specific knowledge base and skills that teachers possess in relation to SEBD, and the level of support they require to adequately respond to children's needs at a systemic level. Teachers participating in this study indicated that they needed ongoing emotional support as well as adequate professional preparation. This can, in part, be achieved by continuing professional development, and future research may consider this issue as one of its focal points.

9. CONCLUSIONS

Issues of emotions and stress were central to SEBD students and teachers. These led us to understand how difficult it is for SEBD students to build and maintain relationships with their peers. This impacted on relationships and fuelled feelings of depression and low self-worth as claimed by Diener and Milich (1997) and De Leeuw et al. (2018), hence affecting the social and emotional development of SEBD students as claimed by Cooper and Cefai (2013). We conclude, as Camilleri and Cefai (2013) claimed, that on their part, teachers' ineptitude in responding to these needs, which they believed were caused by the home environment, could very well fuel their anxiety as stated by Papantuono et al. (2014). Lukowiak's (2010) call for effective approaches with SEBD students, is underpinned by the reference that interviewees made to several strategies. These strategies echo findings by Burton (2006), Obaid (2013), and Spriggs et al. (2017), and were a leitmotif in this study. On a different plane, the majority of the interviewees recognised the positive impact that the physical environment had on SEBD students in line with Postholm (2013) and Smeets (2009). The use of multi-sensory rooms and nurture group settings was a popular suggestion indicating an awareness of the impact that adults could have on students' behaviour. This continued to accentuate parental partnership, ongoing training of staff and the employment of a teacher assistant in every class as in Breen et al. (2014).

All students are eligible for the provision of appropriate support in their learning and behaviour in schools. This right is enshrined in Article 28 of the United Nations Convention of the Rights of the Child (1989). In the case of those students presenting with SEBD, mainly because of their acting-out and acting-in behaviours and the challenges these pose to teachers, one cannot but provide teachers with the opportunity for continuous professional development in SEBD to ensure that such students get their full entitlement to an education. Primary years teachers should be well equipped to meet the needs of these students and to develop an effective repertoire of strategies that are tailored to the student's individual needs, ensuring that class time becomes an engaging and fruitful experience for all.

Being a small- scale study conducted in a limited geographical area, and tapping only the primary school sector, creates its limitations. These limitations are compounded by a questionnaire response rate of 45%, by incomplete questionnaire items and only relatively few participants consenting to be interviewed. Nevertheless, in spite of these limitations, this study contributes to another facet of research in this area, particularly given its local flavour.

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AUTHORS' INFORMATION

Full name: Victor Martinelli

Institutional affiliation: University of Malta

Institutional address: Department of Educational Studies, Faculty of Education, University of Malta, Msida MSD20280, Malta

Biographical sketch: Victor Martinelli is an associate professor at the University of Malta and has been lecturing in Educational Psychology and Education in general for many years. As a practising educational psychologist, he has an interest in specific learning difficulties and special educational needs and has published in these areas over these last years.

Full name: Mario Cutajar

Institutional affiliation: University of Malta

Institutional address: c/o Department of Educational Studies, Faculty of Education, University of Malta, Msida MSD20280, Malta

Biographical sketch: Dr. Mario Cutajar, is a Senior Lecturer at the University of Malta with an educator's career spanning over 4 decades. His main areas of research comprise intra- and inter-school collaboration, educational leadership, and governance and governing of schools. He published papers in Maltese and international peer-reviewed journals and reviewed several books and official documents.

Full Name: Martina Debattista

Institutional affiliation: University of Malta

Institutional address: c/o Department of Educational Studies, Faculty of Education, University of Malta, Msida MSD20280, Malta

Biographical sketch: Martina Debattista majored in Early Childhood Education from the University of Malta. She works as an Early Years teacher in a state school, teaching year 2 children.

Full Name: Amira Mangion

Institutional affiliation: University of Malta

Institutional address: c/o Department of Educational Studies, Faculty of Education, University of Malta, Msida MSD20280, Malta

Biographical sketch: Amira Mangion majored in Early Childhood Education from the University of Malta. She is currently teaching an early years class of children from very diverse social and ethnic backgrounds.

Chapter #28

STUDENTS' EMPATHY AND CLASSROOM CLIMATE AS PREDICTORS OF ATTITUDES TOWARDS IMMIGRANTS A case study in three EU countries

Manja Veldin¹, Ana Kozina¹, Mirta Mornar², & Helene Dahlström³

¹Educational Research Institute, Slovenia

²Institute for Social Research in Zagreb, Croatia

³Mid Sweden University, Sweden

ABSTRACT

The development of positive attitudes towards immigrants among students can be addressed at the individual level through their empathic abilities and at the school or classroom level, where the classroom climate plays an important role. In the present study, we have taken a closer look into the relationship between *attitudes towards immigrants*, two components of empathy (*perspective taking*, *empathic concern*), quality of student-teacher relations (both *positive* and *negative*) and *inclusive classroom climate* (presented as perceived intercultural sensitivity of teachers) in a sample of 814 8th-grade students in three EU countries (Slovenia, Croatia, and Sweden). The findings show only empathy (especially *perspective taking*) was associated with better *attitudes towards immigrants* in all three countries. Additionally, in two out of three countries, the importance of the relationship with teachers and inclusive classroom climate was important as well. The results are discussed in the light of guidelines for school practice.

Keywords: attitudes towards immigrants, empathy, classroom climate, students, teachers.

1. INTRODUCTION

As anti-immigrant attitudes are associated with discrimination, hostility, and exclusion (Brenick, Titzmann, Michel, & Silbereisen, 2012), it is of importance that we address them in schools and wider. As important socialization agents, schools can provide an open climate as a contextual framework for the development of tolerant attitudes (Gniewosz & Noack, 2008). Reducing prejudice and building positive attitudes towards outgroups, can be addressed on an individual and school level. On an individual level, empathy is negatively connected to the development of prejudice (Miklikowska, 2018) by enabling us to perceive similarities between ourselves and others (Davis, Conklin, Smith, & Luce, 1996). On the school and class level, classroom climate influences on students' attitudes towards immigrants (Gniewosz & Noack, 2008), where exposure to hate speech leads to desensitization and increasing outgroup prejudices (Soral, Bilewicz, & Winiewski, 2018). On the other hand, perceived equality, inclusion, and cultural pluralism are positively associated with a sense of school belonging (Schachner, Schwarzenthal, van de Vijver, & Noack, 2018) and students who perceive teachers as fair, report more tolerant views of immigrants (Gniewosz & Noack, 2008).

2. BACKGROUND

Classroom climate is a shared perception held by students and teachers concerning the quality of the classroom learning environment (Adelman & Taylor, 2005; Fraser, 1989) and is referred to as a combination of relationships, personal development and system maintenance and change (Moos, 1979). Relationship is understood as the quality of personal relationships between teachers and students, as well as between students, and the extent to which they are involved in the environment and support each other and treat each other with respect. Personal development is the extent to which an environment is in place that supports the personal growth and self-enhancement of everyone in this environment. Lastly, system maintenance and change are meant as the extent to which the environment is orderly, clear with respect to expectations, maintains control, and is responsive to change.

A positive classroom and school climate is associated with lower levels of externalization problems (e.g. aggression) as well as fewer internalization problems (e.g. anxiety) (McEvoy & Welker, 2000; Schwartz, Gorman, Nakamoto, & McKay, 2006) and higher learning achievement (Brown, Anfar, & Roney, 2004). A positive and inclusive classroom climate offers more opportunities for social and emotional learning and at the same time supports it more (Zins, Weissberg, Wang, & Walberg, 2004). One of the key ingredients of social, emotional, and intercultural competencies is empathy (Zorza, Marino, & Mesas, 2015).

The ability to empathize allows us to understand others and feel connected to people (Eisenberg et al., 1996). One of the most recent definitions says that empathy is a person's emotional response (the emotional component) that depends on the interaction between an individual's characteristics and the situation. Empathic processes are supposed to be triggered automatically, but at the same time, they can also be controlled (with the help of higher cognitive processes). The experienced emotion is similar to the perception (direct experience or imagination) and understanding (the cognitive component) of another person's emotions, by recognizing that the sources of emotion are not their own (Cuff, Brown, Taylor, & Howat, 2016). Due to the rapid and automatic connection with the emotional states of others, it plays an important role in social interactions (de Waal, 2008), moral development (Hoffman, 2000), intercultural competencies (Deardorff, 2006) and represents one of the key components of socio-emotional competence (Collaborative for Academic, Social, and Emotional Learning, 2012).

Beelmann and Heinemann (2014) discovered that training, aimed at preventing prejudice or improving intergroup relationships, is most effective when it includes empathy training. Stephan and Finlay (1999) state empathy as a possible mediator in the processes that lead to changing prejudices (e.g. through reducing perceptions of diversity). Batson et al. (1997) recommend promoting better relationships and changing prejudices towards stigmatized groups, by giving instructions that stimulate the emotional component of empathy. They also discovered that the empathic response to one individual from the stigmatized group improves the attitude towards the whole group. Furthermore, perceived teacher support is associated with less prejudice, therefore, authors state that teachers can counteract the development of prejudice (Miklikowska, Thijs, & Hjerm, 2019). Gniewosz and Noack (2008) encourage schools to promote an open climate for the development of tolerant attitudes among students. Nonetheless, school leaders can influence teachers' beliefs, attitudes, and practices, which are all important elements of inclusive education (Ainscow, 2005).

The present study aimed to analyse the associations between students' attitudes towards immigrants with their empathic abilities, perceived classroom climate (relations with teachers and teachers' attitudes towards different cultural groups) in three EU countries (Slovenia, Croatia, and Sweden). Based on the theoretical background, we presume that higher empathy, positive relations with teachers and an inclusive classroom climate will be positively connected to positive attitudes towards immigrants. Furthermore, we presume the pattern will be similar in all participating countries.

3. METHODS

3.1. Participants

The randomized sample included 814 8th-grade students from 36 primary schools, living in three EU countries (Croatia, Slovenia, and Sweden; 12 schools per country). The Croatian sample consisted of 268 students ($M = 13,60$ years, $SD = 0,54$; 47,4% female), the Slovenian sample of 271 students ($M = 12,91$ years, $SD = 0,44$; 56,3% female), and the Sweden sample of 275 students ($M = 13,88$ years, $SD = 0,45$; 48,0% female).

3.2. Instruments

Interpersonal Reactivity Index (Davis, 1980) was used as a measure of empathy. It consists of four scales: *empathic concern*, *personal distress*, *perspective taking*, and *fantasy*. In our study, two scales (*empathic concern* and *perspective taking*) were included, where students assessed how well the (7) items described them (1 – “Not at all like me”, 4 – “Very much like me”). The *empathic concern* scale assesses the tendency to have sympathy or consideration for other people's negative experiences. The *perspective taking* scale assesses the ability to take the perspectives of other people and see things from their point of view. Cronbach's α 's ranged from .61 to .63 for *empathic concern* and from .63 to .74 for *perspective taking*.

Perceived quality of student-teacher relations (positive relations; Fischer, Decristan, Theis, Sauerwein, & Wolgast, 2017; *negative relations*; OECD, 2018a) was used as a measure of classroom climate. In the *positive relations*, students assessed the number of teachers the (8) statements apply to (1 – “To none or almost none of them”, 4 – “To all or almost all of them”). The *negative relations* were assessed by the frequency of the negative experience between the teachers and students, with 7 items (1 – “Never or almost never”, 4 – “Every day or almost every day”). Cronbach's α 's ranged from .87 to .93 for *positive relations* with teachers and from .77 to .90 for *negative relations* with teachers.

Inclusive classroom climate (OECD, 2018b) measures student's perceived quality of student-teacher relations, with a focus on teacher's sensitivity towards cultural and ethnic groups. Students assessed the number of teachers the (6) statements apply to (1 – “To none or almost none of them”, 4 – “To all or almost all of them”). Cronbach's α 's ranged from .81 to .86.

Attitudes Towards Immigrants (Schleicher & Ramos, 2016) was used to evaluate students' attitudes towards people from a different cultural background. Students assessed their agreement with the (6) statements (1 – “Strongly disagree”, 4 – “Strongly agree”). Cronbach's α 's ranged from .71 to .82.

3.3. Procedure

The study is a part of an Erasmus + project: HAND in HAND: Social and Emotional Skills for Tolerant and Non-discriminative Societies (A Whole School Approach) (Kozina, 2020). Out of a list of eligible schools in each country (the criteria of the target group was "schools with a high percentage of students at risk"), 12 schools were randomly sampled, including one 8th-grade class within each school. In September 2018, after providing informed consent, signed by their parents, students completed a battery of questionnaires tapping socio-emotional and intercultural (SEI) competencies, classroom climate, and demographic variables, either in the paper version (Slovenia and Croatia) or online (Sweden). For this study, we only present data for the selected measures. Reliability tests, descriptive statistics, correlations, and hierarchical multiple regression analysis (method: Enter) were calculated with IBM SPSS Statistics 21.

4. RESULTS

We present the descriptive statistics and correlations between scales, followed by hierarchical regression models for each participating country. Means, standard deviations, and correlations for the scales in all three countries are presented in Table 1. In Slovenia, we can see all the correlations between the scales are significant. *Attitudes towards immigrants* have the largest positive correlation with *inclusive classroom climate*, where students assessed their teacher's sensitivity towards cultural and ethnic groups, followed by the *perspective taking* scale and *empathic concern*, while a significant negative correlation is found with the frequency of *negative relations* with teachers and a positive with the amount of teachers they have *positive relations* with. In Croatia, 9 out of 15 (60%) correlations between scales are statistically significant. *Empathic concern* and *perspective taking* have the largest correlation with *attitudes towards immigrants*, followed by the perceived teacher's sensitivity towards different groups (*inclusive classroom climate*). Although *positive* and *negative relations* with teachers do not correlate significantly with *attitudes towards immigrants*, they follow the same expected pattern. In Sweden, only the correlation between *perspective taking* and the perceived teacher's sensitivity towards different groups (*inclusive classroom climate*) is not significant, still, it is correlated in the expected direction. The largest positive correlation with *attitudes towards immigrants* is found with the amount of *positive relations* between student and teachers, followed by both empathy scales. A significant negative correlation can be found with the frequency of *negative relations* with teachers the students have.

Table 1.
Descriptive statistics and Pearson correlation coefficients between the scales in Slovenia, Croatia, and Sweden.

Scale	M	SD	1.	2.	3.	4.	5.
Slovenia							
1. Empathic concern	3,57	0,54					
2. Perspective taking	3,09	0,57	,48**				
3. S-T relations (+)	2,94	0,65	,27**	,31**			
4. S-T relations (-)	1,55	0,52	-,13*	-,18**	-,36**		
5. Inclusive classroom climate	3,46	0,52	,18**	,13*	,25**	-,46**	
6. Attitudes towards immigrants	2,90	0,48	,26**	,28**	,20**	-,26**	,33**
Croatia							
1. Empathic concern	3,55	0,65					
2. Perspective taking	3,23	0,61	,36**				
3. S-T relations (+)	2,81	0,69	,22**	,11			
4. S-T relations (-)	1,59	0,53	-,14*	-,12	-,48**		
5. Inclusive classroom climate	3,62	0,53	,10	,10	,17**	-,43**	
6. Attitudes towards immigrants	3,00	0,52	,33**	,28**	,11	-,07	,19**
Sweden							
1. Empathic concern	3,49	0,61					
2. Perspective taking	3,03	0,63	,45**				
3. S-T relations (+)	3,05	0,74	,17*	,14*			
4. S-T relations (-)	1,45	0,64	-,22**	-,17*	-,45**		
5. Inclusive classroom climate	3,74	0,44	,20**	,09	,36**	-,57**	
6. Attitudes towards immigrants	3,03	0,59	,31**	,32**	,34**	-,21**	,16*

Notes: ** $p \leq 0.01$; * $p \leq 0.05$. M = mean, SD = standard deviation, S-T=student-teacher, (+) = positive, (-) = negative.

In Table 2, 3 and 4, hierarchical multiple linear regressions are presented for each participating country, Slovenia, Croatia, and Sweden, respectively. We aimed to predict *attitudes towards immigrants* with two empathy components (*empathic concern* and *perspective taking*) (Step 1), quality of student-teacher relations (*positive* and *negative*; Step 2) and *inclusive classroom climate* (in form of intercultural attitudes of teachers; Step 3).

Table 2.
Hierarchical multiple regression analysis of variables that predict Attitudes towards immigrants in the sample of students from Slovenia.

	Attitudes towards immigrants					
	Model 1		Model 2		Model 3	
	<i>B</i>	β	<i>B</i>	β	<i>B</i>	β
Step 1:						
Empathic concern	0,15	0,17*	0,14	0,15*	0,11	0,13
Perspective taking	0,16	0,19**	0,13	0,15*	0,13	0,16*
<i>R</i> ²	0,097***					
Step 2:						
S-T relations (+)			0,04	0,05	0,023	0,03
S-T relations (-)			-0,19	-0,20**	-0,09	-0,10
ΔR^2				0,046**		
Step 3:						
ICC					0,21	0,23**
ΔR^2						0,039**
<i>R</i> ²	0,097***		0,143**		0,182**	
<i>F</i> for ΔR^2	14,141***		6,937**		12,188**	

Notes. *** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$ (significant β 's in bold); *B* = estimated value of raw regression coefficient; β = estimated standardized value of regression coefficient; *R*² = percentage of explained variance; ΔR^2 =change in the percentage of explained variance; S-T=student-teacher; ICC=Inclusive classroom climate.

In Slovenia, empathy scales are important predictors of *attitudes towards immigrants*, they alone explain almost 10% of the variance. They also stay important positive predictors when adding student-teacher relations into the regression model, whereas only the frequency of *negative relations* with teachers (and not the amount of teachers they perceive their relations as positive) significantly predicts more negative attitudes of students. Model 2 explains 14% of the variance in attitudes towards immigrants. In the last step, when we add the students' perceived intercultural attitudes of their teachers, as one of the inclusive classroom climate components, the frequency of the negative experiences loses its predictive significance. In Model 3, where all constructs are included, out of empathy subscales, only *perspective taking* is an important predictor, while the teachers' intercultural attitudes add 4% to the explained variance of students' attitudes. When we only include these two into a regression, they alone explain 15,4% of the variance. Overall, the last model explains more than 18% of the variance in *attitudes towards immigrants* in Slovenian students.

Table 3.
Hierarchical multiple regression analysis of variables that predict Attitudes towards immigrants in the sample of students from Croatia.

	Attitudes towards immigrants					
	Model 1		Model 2		Model 3	
	<i>B</i>	β	<i>B</i>	β	<i>B</i>	β
Step 1:						
Empathic concern	0,21	0,26***	0,2	0,25***	0,2	0,25***
Perspective taking	0,16	0,19**	0,16	0,18**	0,15	0,18**
R^2	0,138***					
Step 2:						
S-T relations (+)			0,03	0,05	0,04	0,05
S-T relations (-)			0,00	0,00	0,08	0,08
ΔR^2			0,002			
Step 3:						
ICC					0,17	0,18**
ΔR^2					0,026**	
R^2	0,138***		0,139		0,165**	
<i>F</i> for ΔR^2	19,540***		0,258		7,481**	

Notes. *** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$ (significant β 's in bold); *B* = estimated value of raw regression coefficient; β = estimated standardized value of regression coefficient; R^2 = percentage of explained variance; ΔR^2 =change in the percentage of explained variance; S-T=student-teacher; ICC=Inclusive classroom climate.

In Croatia, empathy scales are important predictors of *attitudes towards immigrants*, they alone explain almost 14% of the variance. They also stay important positive predictors when adding student-teacher relations into the regression model, as none of them (not positive, not negative) adds significantly to explaining the variance in attitudes of students towards immigrants. Model 2, therefore, explains the same amount of the variance as the first model. In the last step, when we add the students' perceived intercultural attitudes of their teachers, both empathy subscales stay important predictors and the teachers' intercultural attitudes add 2,6% to the explained variance of students' attitudes. When we only include these three into a regression, they alone explain 16% of the variance, so the last model explains only 0,5% more variance in *attitudes towards immigrants* in Croatian students.

Table 4.
Hierarchical multiple regression analysis of variables that predict Attitudes towards immigrants in the sample of students from Sweden.

	Attitudes towards immigrants					
	Model 1		Model 2		Model 3	
	<i>B</i>	β	<i>B</i>	β	<i>B</i>	β
Step 1:						
Empathic concern	0,18	0,19*	0,14	0,14*	0,13	0,14
Perspective taking	0,23	0,24**	0,21	0,22**	0,21	0,22**
R^2	0,141***					
Step 2:						
S-T relations (+)			0,23	0,27***	0,27	0,27***
S-T relations (-)			-0,03	-0,03	-0,03	-0,03
ΔR^2	0,078**					
Step 3:						
ICC					0,03	0,03
ΔR^2	0					
R^2	0,141***		0,220**		0,220	
<i>F</i> for ΔR^2	17,093***		10,355***		0,001	

Notes. *** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$ (significant β 's in bold); *B* = estimated value of raw regression coefficient; β = estimated standardized value of regression coefficient; R^2 = percentage of explained variance; ΔR^2 =change in the percentage of explained variance; S-T=student-teacher; ICC=Inclusive classroom climate.

In Sweden, empathy scales are important predictors of *attitudes towards immigrants*, they alone explain more than 14% of the variance. They also stay important positive predictors when adding student-teacher relations into the regression model, whereas only the amount of teachers with which they have *positive relations* (and not the frequency of *negative relations*) significantly predicts more positive attitudes of students. Model 2 explains 22% of the variance in attitudes towards immigrants. In the last step, when we add the students' perceived intercultural attitudes of their teachers, the subscale of empathy, empathic concern, loses its predictive significance (still marginally significant, with $p = .53$), while the teachers' intercultural attitudes do not add significantly to the explained variance of students' attitudes. When we only include *perspective taking* and *positive relations* with teachers into a regression, they alone explain 20% of the variance (21,7% if we also add *empathic concern* into the model).

5. DISCUSSION

In the present study, we have taken a closer look into the relationship between *attitudes towards immigrants*, two components of empathy (*perspective taking*, *empathic concern*), quality of student-teacher relations (both positive and negative) and *inclusive classroom climate* (presented as perceived intercultural sensitivity of teachers) in samples

of 8th-grade students in three EU countries (Slovenia, Croatia, and Sweden). We were interested in which individual and classroom-level components are significant predictors of *attitudes towards immigrants*, and if the findings are similar across different countries.

Findings showed that on the individual level, empathy is an important predictor in all three countries. Consistent with previous studies (i.e. Miklikowska, 2018), students who reported a higher ability to take the perspective of another person and express more empathic concern, have more positive attitudes towards immigrants. Both components (*empathic concern* and *perspective taking*) are significant predictors, at least until we add the classroom-level variable (*inclusive classroom climate*) into the model (third step). In the last step, empathic concern loses its predictability significance in two countries (still marginally important in Sweden), leaving *perspective taking* as the one component of empathy, which seems to be more important when addressing attitudes towards outer groups. Which is not surprising, considering perspective taking involves the ability to see and understand the situation from the perspective of others. Our findings are consistent with studies (Stephan & Finlay, 1999) that show perspective taking is especially crucial when diminishing prejudices because it helps to acknowledge and understand diversities. This finding can be used in tackling prejudice in the school setting. Based on our findings and confirmed positive associations between *perspective taking* and *empathic concern* with *attitudes towards immigrants* in all three samples, we would promote empathy-based programs for fostering positive attitudes towards immigrants and other outer groups. Different authors report the efficacy of such training (i.e. Teding van Berkhout & Malouff, 2016). Furthermore, Beelmann and Heinemann (2014) discovered positive effects of empathy training on prejudice prevention and fostering positive in-group relationships in childhood and adolescence samples.

At the classroom level, classroom climate was measured with the perceived quality of the relationship between students and teachers (both positive and negative) and the perceived intercultural attitudes of their teachers. Our findings differ between countries in a manner of (in)significance (and not as unexpected or ambiguous results). In Slovenia, the frequency of *negative relations* with teachers is an important negative predictor of attitudes, while in Sweden the amount of teachers, the students have *positive relations* with, is an important positive predictor. In Croatia, none of the perceived relationships with teachers is a statistically significant predictor of students' attitudes. We have added the predictor of *inclusive classroom climate* as a teacher level variable in a separate step (it consists of the assessment of teachers' intercultural attitudes). It is an important positive predictor in Slovenia and Croatia, and not in Sweden. Similarly, authors discovered classroom climate, exposure to hate speech, inequality, and unfair teachers, leads to increased prejudice (i.e. Gniewosz & Noack, 2008; Schachner et al., 2018; Soral et al., 2018). Although the results of the regression on the classroom level are not consistent between countries, a common thread can be seen, which is consistent with previous studies (Gniewosz & Noack, 2008). When trying to address the attitudes of students, the relationships with teachers and teacher's attitudes should also be considered. As the teachers' influence on the students is widely recognized, a whole-school approach should be considered when creating an intervention. This supports the development of a programme, aiming at improving the empathic abilities of students and teachers, especially focused on perspective taking. Prevention and intervention of different prejudices and diverse ways of discrimination can be, besides on the individual level, addressed also on a classroom and school level, by trying to influence classroom/school climate and especially by working with teachers. Raising awareness of their influence and the importance of the relationship with each

student should be the focus of these training sessions. One way this could be addressed is by using existing socio-emotional and intercultural programmes (i.e. Jensen et al., 2020).

Our findings provide an interesting insight into the complex relationship between empathy, classroom climate and attitudes towards immigrants in different EU countries, putting empathy in a spotlight. Empathy was associated with better attitudes towards immigrants in all three countries. Additionally, at least in two out of three countries, the importance of the relationship with teachers and an inclusive classroom climate was important as well. Nevertheless, the limitation of the study is the age-specificity of the sample and reliance on the self-report measures. In the future, a multi-method and longitudinal research design are advised.

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AUTHORS' INFORMATION

Full name: Manja Veldin

Institutional affiliation: Educational Research Institute

Institutional address: Gerbičeva ulica 62, 1000 Ljubljana, Slovenia

Short biographical sketch: Manja Veldin holds a BA in Psychology and works as a researcher at the Educational Research Institute. She used to cooperate with the Centre for Psycho-diagnostic Assessment, Chameleon consulting and participated in the study “The quality of life of patients after kidney transplantation” and a Slovenian project: Explaining effective and efficient problem solving of

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the triplet relationship in science concepts representations. She also cooperated on EU projects (HAND in HAND, BRAVEdu, ETTECEC) and led the evaluation of a national project (Inovativna učna okolja podprta z inovativno pedagogiko 1:1). She is currently working on several EU projects (HEAD, DITEAM and NEMO) and is a PhD candidate in Experimental psychology.

Full name: Ana Kozina

Institutional affiliation: Educational Research Institute

Institutional address: Gerbičeva ulica 62, 1000 Ljubljana, Slovenia

Short biographical sketch: Ana Kozina is a researcher, assistant professor, and a head of the Centre for evaluation studies in Educational Research Institute. She is interested in the factors related to students' achievement and well-being (social and emotional learning, school climate, motivation...). In the last years, she has led HAND in HAND: Social and Emotional Skills for Tolerant and Non-Discriminative Societies and is currently actively involved in an international research project Positive Youth Development Across Cultures (led by Nora Wiium, Bergen University). She is a member of the Editorial board: Educational research Institute Press and a president of Slovenian Educational Research Association (SLODRE).

Full name: Mirta Mornar

Institutional affiliation: Institute for Social Research in Zagreb

Institutional address: Amruševa 11/II, 10000 Zagreb, Croatia

Short biographical sketch: Mirta Mornar holds BA and MA in Psychology from the University of Zagreb, Faculty of Humanities and Social Sciences. Since 2018 she has been working in the Centre for Educational Research and Development at the Institute for Social Research in Zagreb as a research assistant and is currently a PhD candidate in Psychology at the University of Zagreb. She has participated in several national and international research projects, including Hand in Hand: Social and Emotional Skills for Tolerant and Non-discriminative Societies (A Whole School Approach). Her research interests include educational psychology, particularly social and emotional learning, and well-being in the educational context.

Full name: Helene Dahlström

Institutional affiliation: Mid-Sweden University

Institutional address: Holmgatan 10, 85170 Sundsvall, Sweden

Short biographical sketch: Helene Dahlström is an assistant professor in education at Mid-Sweden University. Her research interest is mainly on multi-modality, literacy, and student agency with a special focus on diversity in the school context. Prior to working at the university, Helene worked as a teacher and a special education teacher. Helene is a member of the Swedish HAND in HAND team.

Chapter #29

THE FUNCTIONALITY PROFILE OF CHILDREN WITH AUTISTIC SPECTRUM DISORDERS (ASD) IN THE AZORES – COMMUNICATION, LEARNING AND AUTONOMY

Tânia Botelho¹, Ana Matos¹, Pilar Mota¹, Bárbara Romão¹, Suzana N. Caldeira², Isabel E. Rego³, Osvaldo Silva², & Áurea Sousa⁴

¹*Centro de Desenvolvimento Infanto-Juvenil dos Açores, Portugal*

²*Universidade dos Açores, CICS.UAc/CICS.NOVA.UAc, Portugal*

³*Universidade dos Açores, IVAR, Portugal*

⁴*Universidade dos Açores, CEEAplA, Portugal*

ABSTRACT

Autism is a disorder of the neuro-development characterized by persistent difficulties in communication, cognitive processes, social interaction and also by restrict interests and repetitive and stereotyped behaviours. Regarding to the vision of Universal Design for Learning (UDL), the educational approach should enhance not only the academic acquisitions but also the prognosis of the evolution of the clinical condition and of the functionality of children with Autistic Spectrum Disorders (ASD). Thus, it was considered important to know the perspective of educators / teachers and parents / guardians for the 121 children with ASD who participated in this study.

These children, aged 3-11 years old, live in the Azores (ARA) and are enrolled in kindergarten and in primary schools. Data were collected with a questionnaire (educators/teachers) and in an interview (parents/caretakers). Results suggest that there are different perspectives between the two groups, with educators/teachers viewing the functionality profile of these children as being more aggravated. These differences are statistically significant, especially in terms of the functionalities assessed by the items of communication and learning. The analysis of these different perspectives evidences the importance of the communication between these educational providers regarding the work developed by them.

Keywords: autism, functionality, family, school, universal design for learning.

1. INTRODUCTION

1.1. Autism spectrum disorder

According to the American Psychiatric Association, Autism Spectrum Disorder (ASD) have as their etiology a central nervous system disorder whose manifestations affect a child's normative development. These symptoms may appear during the first 3 years of life, affecting interpersonal communication, social interaction, and interests, causing repetitive behavior and, therefore, impairing the daily functioning of children (APA, 2013).

In regard to the worldwide prevalence of this pathology, it is estimated that it is at least 1.5% in developed countries, with recent increases, especially in cases where there is no associated intellectual deficit (Lyll et al., 2017). Studies related to the epidemiological profile of the ASD, such as Reis, Neder, Moraes and Oliveira (2019), report a higher frequency of diagnoses in males (77%), compared to females. Regarding the age group, there was a greater occurrence in the 5-8 years (44%), followed by the 9-12 years (29%),

13-16 years (15%), 1-4 years (11 %) and between 17-20 years (1%). As for education, most of these children attended primary (49%) and pre-school (33%) education. In 18% of the cases, they did not attend school.

This clinical dysfunctionality is mainly reflected in resistance to common teaching methods and changes in routine. It may also involve cognitive impairment, changes in sleep patterns, difficulties in establishing eye and physical contact with others, difficulties in playing symbolic and “make-believe” games, fascination or obsession with specific subjects, hyper or hypersensitivity to auditory, visual and tactile stimuli, intense motor activity, among others (Lobo, 1998). To recognize all these characteristics is also to understand that children with ASD need differentiated educational responses and that providing the necessary support simultaneously promotes the acquisition of learning and optimizes communication and socialization skills (Pereira, 2008). In 2001, the World Health Organization made it possible to understand the ASD through a biopsychosocial and integrated model of human functionality and disability - the International Classification of Functioning, Disability and Health - Children and Youth (ICF-CY). This Classification served the purpose of standardizing the language on the subject and allowed educational, health, and rehabilitation professionals to describe the functionality profiles of children up to 18 years of age by assessing development and behavior in dimensions such as communication, learning, and autonomy (CPDEC, n.d).

1.2. Communication, learning and autonomy in autism spectrum disorder

ASD is usually diagnosed during early childhood and is characterized by a triad of symptoms that includes the presence of a compromise in the quality of social interactions associated with the existence of deficits in interpersonal relationships, a delay in the development of communication and, furthermore, the presence of restrictive interests and / or repetitive movements (body stereotypes) (APA, 2013; Who, 1993). In addition to these characteristics designated by essential criteria for the diagnosis of ASD, these individuals can frequently present significant comorbidities such as: intellectual deficits (Matson & Shoemaker, 2009; Matson et al., (1996), psychiatric conditions (White, Oswald, Ollendick & Scahill, 2009), delay or atypical development of motor behaviors (Green et al., 2008) and difficulties related to the abilities to imagine. It is common to see that these symptoms persist throughout life, vary and influence, in the long run, the individual's development potential and independence (Sigafos, Roberts-Pennell & Graves, 1999).

Research unanimously refers to changes in communication and language as the main factors of ASD and as having a strong impact on the quality of these individuals' social interaction and behavior (Fernandes, 1994). This communication deficit also reflects a severity spectrum that can range from the total absence of communication to fluent language (Oliveira, 2005). However, what characterizes the communication profile of individuals with ASD, even the high functioning ones, is the existence of deficits in the level of social pragmatics and in the comprehension of language as a whole. The delay in the development of expressive language, and even its absence, is one of the main reasons for clinical referral.

The learning profile of children with ASD is related to the various cognitive abilities that these children may have, ranging from deep mental disability to higher intelligence (Abreu, 2013). Children with ASD may be more frequently impaired in four specific areas of cognition: imitation, social interaction, play and skills, and ability to develop “theory of mind” skills (Brown & Whiten, 2000). According to Ortiz (2005), ASD children have cognitive rigidity. Given this characteristic, and in order to facilitate learning processes,

these children benefit from learning based on concrete and contextual stimuli (Mota, 2008). The resistance to change and new learning also has its origin in the children's limited imaginative capacity and symbolic play, what can have negative repercussions on their development of conceptual structures and in the ability of solving problems of a symbolic nature, such as calculus, reading and writing (Hewitt, 2006)

Autonomy is a process that begins in the early years of the individual's life and develops throughout life (Silva, 2015). This ability for an individual's personal, domestic and social performance is one of the most important achievements in attaining their social independence. Thus, it is essential to evaluate the adaptive behavior that characterizes this domain of the personal development of children with ASD (Oliveira, 2005). According to Oliveira (2005), results from the application of the Griffiths Mental Development Scale in children with ASD show low rates in the areas of language and practical reasoning and higher rates in the areas of achievement, global motor skills and social staff (autonomy). However, individuals with ASD have a significantly lower environmental adaptive capacity when compared with groups of other individuals without ASD (Oliveira, 2005).

1.3. The contribution of the universal design for learning (UDL) in the learning of students with autism

Universal Design for Learning (UDL), developed by the Center for Special Applied Technology (CAST), takes a contemporary stance in the development of innovative approaches, with the aim of creating universal access to educational curricula for all students, including students with disabilities. This methodology adopts the purpose that all school environments reduce the barriers that hinder the learning of the curricular plan. To this end, the DUA methodology advocates the exercise of flexible teaching approaches and the teaching of meaningful learning to students (Meyer, Rose, & Gordon, 2014).

Meyer et al. (2014), CAST co-founders, assume that there is no single way of learning. The theoretical framework of DUA presents some guidelines for the development of curricula, which include: (a) multiple means of representing content in order to allow students to acquire knowledge; (b) multiple means of action and expression so that students can demonstrate their knowledge, the learning achievements and (c) multiple means of participation and involvement, considering their interests and motivations, in presenting new challenges in their curriculum (Denning & Moody, 2013).

This methodology has been recognized as an asset in supporting the inclusion of students with special educational needs, such as students with ASD. Denning and Moody (2013) report that the principles of the UDL methodology are very valid responses in adapting the classroom environment, as these students may find it difficult to maintain attention, filter out unnecessary information and the ability to change the attentional focus. Another concern to address concerns the need to adapt the presentation of content considering the limitations that these students may feel at the level of information processing or even regarding the requirement for cognitive flexibility (Goldstein, Johnson & Mineshew, 2001). The concept of self-involvement, considered of great importance in the UDL, is also one of the main objectives to consider when including a student with ASD in the classroom, especially since routines are an important factor for the adequacy of their behavior and for the consolidation of learning (Mancil & Pearl, 2008).

According to Mcleskey and Wldron (2007), effective inclusion fits into the UDL methodology given that, as this theory predicts, support for students with special educational needs in the classroom should be discrete. That is the only way they can feel naturally belonging to a school context. According to these authors, teachers should use supports and teaching methods that are effective for all students.

Ultimately, and from the perspective of Denning and Moody (2013), the application of UDL in pupils with ASD may represent an advance in improving school achievement as this approach promotes understanding, independence and performance of these children. The same authors point out that the principles of UDL include the use of supports for routines and procedures, the preparation / anticipation of material and subjects that can assist in the selection of content that constitutes meaningful learning related to skills and previous knowledge of the students; also the use of visual clues (such as symbols or photos) and other tools that increase the forms of representation, and the use of structured tools for the analysis and expression of content; finally, as a primary advantage, to consider and value the interests of the student, with a view to enhancing their involvement and active participation.

1.4. Importance of school-family articulation

In the school context, teachers try to know and understand the student through what he shows him directly, however he must also understand him in the light of a systemic perspective, that is, behind each student there is a family made up of several members, with their values, functioning and material and emotional needs (Carvalho, 2017). Thus, when a student enters school, he should not be considered as an individual, but as someone inserted in a cultural, social and family context (Reis, 2012).

In fact, the school context as well as the family context must remain linked and predisposed to share information they have, in order to act together in the success of the development of the child's cognitive and social skills, this involvement of the parents in the child's educational process with special educational needs (SEN), as is the case with children with Autism Spectrum Disorder (ASD), assumes an even more fundamental character for their educational success (Reis, 2012). Nevertheless, Reis (2012) states that there is a willingness of parents to get involved in their children's educational practices, but that many of them do not know how to do it, do not have the time available and / or refer that the school does not encourage this involvement and participation. Carvalho (2017) understands the notable difference in terms of the nature of each of these two contexts mentioned above, however the author stresses that both have very similar objectives and concerns with regard to their students and, for this reason, the school context should create the conditions necessary to foster frequent contact with the families of their students.

In addition to a curriculum that considers the needs of children with ASD and values their interests, the articulation between the School and the family system is equally relevant. Success in acquiring the different stages of the process of communication, learning, and autonomy of a child ASD is closely related to their skills, but also with the attitude and skills of their family members to face of this disturbance (Gomes, 2013). The birth and growth of a child with neurodevelopmental problems encourage parents to accept their condition, and to seek to apply the responses that best fit their child's real needs and abilities (Gomes, 2013). Likewise, according to Gomes (2013), it is of great importance that parents share information about the child to school so that the institution meets the necessary conditions for the promotion and enhancing their skills. Similarly, it is essential that these families, as well as schools, are aware of the importance of implementing strategies that enhance the development of communication, learning, and autonomy, and where students perform domestic tasks, solve problems and are stimulated in negotiation skills as a way of promoting responsibility and self-control (Silva, 2015).

The coordination between the school and the families of children and/or young people with special educational needs should also take into account the fragility that this type of family system experiences, with a great tendency towards social isolation that makes these

families often have difficulties in taking the initiative to address and articulate with the school (Carvalho, 2017). In order to be able to promote resilience in a child, especially those with SEN, it is first necessary to work on the resilience of their families, through guidance, emotional support and psychological support, so that they feel able to interact and educate their children (Carvalho, 2017). Guidance should occur because, generally, this type of families, given the emotional overload they feel and the consequent social isolation, are often little and / or inadequately informed about the best procedures to be carried out to satisfy emotional, social and educational needs for their children. For this reason, the articulation between schools and families of children and / or young people with SEN is crucial and inevitable, where formal and / or informal meetings should be given priority, providing these families with pedagogical guidance but also emotional and psychological support. (Carvalho, 2017).

A close sharing relationship between family and school is a fundamental factor for the good prognosis in the evolution of the functionality of children with neurodevelopmental disorders (Martins, Acosta & Machado, 2016).

2. METHODOLOGY

The present study started in 2017, with data collection and dissemination of results taking place in 2019.

The first stage was to carry out a review of relevant literature on the different topics covered, with a view to the elaboration of data collection protocols, through two structured interviews addressed to the parents and to the teacher (s) / educator (s) of the student diagnosed with ASD.

This investigation, called the Epidemiological Study of the ASD in the Azores assumed as a general objective:

Assess and update the Azores data regarding the prevalence of children diagnosed with ASD, from 3 to 11 years of age, who were enrolled in kindergarten and in the 1st cycle of basic education. Given the vast selection of variables under study, which make up the data collection protocols, the following objectives were also defined as specific objectives of this study:

Characterize the functional profile of children with ASD in pre-school and school age living in the Azores, from the perspective of caregivers;

To characterize the functional profile of children with ASD in pre-school and school age living in the Azores, in the perspective of the educator (s) / teacher (s);

Characterize the impact of the diagnosis on the family of the child with ASD, regarding psychological well-being; Personal-Social and material.

In the case of this article, in specific, the procedures will be described and the data related to the first two specific objectives, mentioned above, will be presented.

After a positive opinion by the Ethics Committee of the University of the Azores and the Regional Directorate for Education of the Azores, the research team initiated contacts with the Executive Councils and Directive Councils, for the application of the Education Protocol and the Family Protocol, in the Organic Units (30), Private Schools (8) and Kindergartens of the Network of Public Institutions of Social Solidarity (PISS) (40) of the entire Azores.

All the parents who consented to participate in this investigation signed an informed consent document that guaranteed the anonymity and confidentiality of the information obtained.

Together with all of the top departments for these educational institutions, the number of children enrolled, per cycle, within the age groups that the study comprises was determined, as well as the number of children diagnosed with ASD, for the purposes of treatment and statistical analysis of data.

The target population comprises 172 children with a diagnosis of ASD. It was used a sample of 121 children whose parents agreed to participate in the study, mostly boys (82%), the average age of 6 and a half years old. Half of the children have mildly severe ASD, 32% a moderate degree, 4% a severe degree, and 14% did not report.

The data were collected through structured interviews, based on a literature review on autism, instruments used in the identification and characterization of autism, and the variables of the International Classification of Functioning, Disability, and Health (ICF) in the domain of communication, learning, and autonomy. The interview with caregivers was composed of five dimensions: i) personal data of the child; ii) socio-family characterization; iii) clinical history; iv) functionality and participation profile; v) impact of ASD on the family. The interview with educators comprised three dimensions: i) data from the institution; ii) student's personal data; and iii) functionality and participation profile.

This study was previously submitted to the Regional Directorate of Education and to the Ethics Committee of the University of the Azores, having been issued by both entities in favour of its realization. The parents were also auscultated, through the respective educational institutions, who explained the nature and purpose of the study. Families who agreed to collaborate and consented to the consultation of their children's Individual Educational Programs (IEP) signed their Informed Consent. All collected data were entered into IBM SPSS Statistics, constituting a database with 121 rows, each of which refers to each case of ASD. Data were analyzed using some methods of Descriptive Statistics and the hypothesis test for the difference between two proportions, with the purpose of verifying whether the perceptions of the school and the family differ significantly or not regarding the functionality of the profile of children with ASD, with regard to communication, learning and autonomy.

2.1. Presentation and analysis of results

Tables 1, 2 and 3 present a summary of the results regarding the functionality profile of children with ASD, regarding, respectively, “Communication”, “Learning and Application of Knowledge” and “Autonomy” (self-care), from the perspective of educators/teachers and of parents/family/ caregivers. The last column of each table is concerning the hypothesis test for the difference between two proportions.

It was found that there are statistically significant differences ($p < 0.01$) between the perceptions of the school and the family regarding all items of functionality, associated with communication and learning, presented in tables 1 and 2.

Table 1.
Communication: Comparison between the two perspectives (%).

Communication	Does not do it alone/Some kind of disability		Statistic of test (Z)
	“School” Perception	Family Perception	
Communicate and receive oral messages	88.2	47.9	6.54*
Communicate and receive nonverbal messages	87.5	57.9	4.63*
Speak	82.4	52.1	4.85*
Produce nonverbal messages	86.4	57.9	4.31*
Conversation	92.1	63.6	4.76*
Discussion	91.5	62.0	4.45*
Use of communication devices	73.4	39.7	3.86*

* Difference is significant at the 0.01 level (2-tailed)

The biggest difference between both perspectives lies in the task of “Communicate and receive oral messages” and the smallest differences lie in the tasks of “Conversation” and “Produce nonverbal messages”. However, in both cases, school elements perceive greater difficulties.

Table 2.
Learning and Knowledge Application: Comparison between the two perspectives (%).

Learning and Knowledge Application	Does not do it alone/Some kind of disability		Statistic of test (Z)
	“School” Perception	Family Perception	
Observe	67.0	19.0	7.07*
Listen	59.8	20.7	5.84*
Imitate	75.8	22.3	7.90*
Learn By Interacting with Objects	71.4	20.7	6.38*
Acquire information	80.0	40.5	5.84*
Acquire language	82.7	50.4	4.97*
Rehearse (Repeat)	77.3	52.1	3.72*
Think	89.0	33.9	7.77*
Solve Problems	93.3	68.3	4.09*
Make Decisions	91.4	54.5	5.56*

* Difference is significant at the 0.01 level (2-tailed)

The biggest differences between both perspectives are in the items “Think” and “Imitate” and the smallest differences are in the items “Solve Problems” and “Rehearse”. However, both parts consider that the most significant difficulties are located in the areas of problem solving and decision making.

The autonomy skills were analysed in the light of self-care. The observation of Table 3 indicates that this is the area of greatest consensus between Educators/teachers and parents/family. In this context, it was found that there were no statistically significant differences between the perceptions expressed by the two parties regarding the items “Take care of body parts”, “Care related to excretion processes”, “Dress up”, “Take care of their own health”. However, significant differences were found between the perceptions of the two parties regarding the functionalities related to the items “Eat” ($p < 0.01$) and “Drink” ($p < 0.05$), with the school perceiving greater difficulties, compared to families.

Table 3.
Self-care: Comparison between both perspectives (%).

Self-care	Does not do it alone/Some kind of disability		Statistic of test (Z)	p
	“School” Perception	Family Perception		
Take care of body parts	57.4	69.4	-1.61	0.107
Care related to excretion processes	51.9	58.7	-0.96	0.338
Dress up	60.5	60.3	0.02	0.984
Eat	50.0	28.9	3.06	0.002*
Drink	31.7	17.5	2.38	0.017**
Take care of their own health	50.0	62.0	-1.26	0.209

* Difference is significant at the 0.01 level (2-tailed)

** Difference is significant at the 0.05 level (2-tailed)

The results of the present study prove the existence of a very different perspective about the skills of children with ASD, by caregivers and educators, mainly in the fields of Communication and Learning and Application of Knowledge. Although both perspectives identify limitations regarding the functionality of children with ASD, it is clear that caregivers have a more optimistic view of their children's skills. The average age of children in the sample, 6 years old, may partially explain these findings. It might be not easy for educators to find and implement teaching and interaction methodologies that overcome ASD's limitations

This brings us to the importance of practicing a teaching methodology such as UDL that enables these children to demonstrate their knowledge through multiple forms of expression and motivates them to achieve curriculum learning goals effectively and with significant involvement and participation. The positive results of this involvement in learning could contribute to cooperative work and closer communication between school and family, encouraging more realistic and objective expectations regarding the empowerment of children with ASD. In addition, it is important to increase training opportunities for professionals in various areas to improve their performance regarding the ASD.

3. CONCLUSION

The present work aimed to perform a characterization of the functionality profile of children with ASD in Azores, according to the perspectives of their educators / teachers and families. Children with ASD usually have significant difficulties in the areas of communication, socialization and behaviors. As such, it is essential to know not only the level of these limitations, but above all their areas of interest and their skills so that staff and family members can be successful in carrying out their mission. Pedagogical assessment and teaching methodologies with an emphasis on the active and motivated participation of these students can, according to current literature, contribute more efficiently to the optimization of these children as autonomous students and future youth and adults with a proactive role in society.

This study pointed out differences in the way parents and teachers think about children with ASD and their learning. Knowing these differences can be advantageous, for several reasons, namely for allowing a greater articulation between parents and teachers.

As limitations of the study, we identify the information collection instrument itself, which is used as an evaluation instrument in school contexts, and did not allow characterizing the sample profile regarding its areas of interest and motivations. Another weakness of this study was the failure to collect information regarding the methodology, strategies and learning support materials used by schools. Future research in this domain should improve data collection methods and contribute to optimizing the response in the areas of training, consulting and intervention within the scope of the ASD. It is also suggested to expand the study to other age groups.

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AUTHORS' INFORMATION

Full name: Tânia Silva Botelho

Institutional affiliation: Centro de Desenvolvimento Infante-Juvenil dos Açores (CDIJA)

Institutional address: Av. Natália Correia, n51, 2ª, 9500-435 Ponta Delgada

Short biographical sketch: Graduated in Speech Therapy from the School of Technologies and Health of Porto. She began her professional activity in 2009, in school's context, as part of the Special Education Center, as a speech therapist. Took two Post-Graduations in the fields: "Orofacial Motricity" and "Developmental Disorders" – from early childhood to adolescence". In 2015 participated in the creation and launch of a didactic application, "Júlia e Gui – Uma Aventura na ilha das palavras", whose content is intended to stimulate preschool and school level language skills. In 2011, she made part of the multidisciplinary team at the "Centro de Desenvolvimento Infante- Juvenil dos Açores (CDIJA)", where she works as a speech therapist and researcher in the Epidemiological Study of the Disorder of the Spectrum of Autism in the Autonomous Region of the Azores, until today.

Full name: Pilar Veríssimo Mota

Institutional affiliation: Centro de Desenvolvimento Infante-Juvenil dos Açores (CDIJA)

Institutional address: Av. Natália Correia, n51, 2ª, 9500-435 Ponta Delgada

Short biographical sketch: Degree in Psychology, Faculty of Psychology and Educational Sciences, University of Porto, in 2004; Between 2004 and 2013, "Integração na Rede de Apoio à Mobilidade Humana", as a clinical psychologist at ARRISCA, having as target audience, a public in severe social exclusion; Advanced specialty in Community Psychology, by the Order of the Portuguese

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Psychologists; Specialty in Clinical and Health Psychology, by the Order of the Portuguese Psychologists; Intensive Postgraduate in Cognitive-behavioral Therapies: Evaluation and Intervention, by CRIAP; Since 2014 she has worked as Clinical Coordinator of the multidisciplinary team of the “Centro de Desenvolvimento Infanto-Juvenil dos Açores (CDIJA)”, supporting the management of human resources, intervention of clinical meetings, as well as project management, among which stands out the Epidemiological Study of Perturbation of the Autism Spectrum in the Autonomous Region of the Azores.

Full name: Ana Patrícia Ribeiro de Matos

Institutional affiliation: Centro de Desenvolvimento Infanto-Juvenil dos Açores (CDIJA)

Institutional address: Av. Natália Correia, n51, 2ª, 9500-435 Ponta Delgada

Short biographical sketch: Born in Lisbon in 1990, currently residing in Ponta Delgada. Completed the Integrated Master in Clinical Psychology, with a merit diploma, at the “Instituto Universitário de Ciências Sociais e da Vida”, in Lisbon. In 2013 obtained training and participated in the content analysis of a qualitative study, integrated in a research project of the educational establishment where she took her studies. She completed her professional internship for the Order of the Portuguese Psychologists at the “Centro de Desenvolvimento Infanto-Juvenil dos Açores (CDIJA)” in Ponta Delgada, where she currently works as a clinical psychologist and researcher on the project “Perturbação do Espectro do Autismo no Arquipélago dos Açores – Estudo Epidemiológico (PEA-EEAz)”, financed by the Gaspar Furtuoso Foundation.

Full name: Bárbara Romão

Institutional affiliation: Centro de Desenvolvimento Infanto-Juvenil dos Açores (CDIJA)

Institutional address: Natália Correia, n51, 2ª, 9500-435 Ponta Delgada

Short biographical sketch: Degree in Medicine from the University of Porto; Specialization in Child and Adolescent Psychiatry at Centro Hospitalar do Porto, with training in Early Childhood; Post-graduation in Family Therapy by the Portuguese Society of Family Therapy; Post-graduation in the DIR / Floortime Model (intervention in autism and other development challenges); Responsible for the creation of the Children's Day Hospital and for the Early Childhood Consultation of the Centro Hospitalar Gaia / Espinho; Clinical supervisor of ART “(Associação de Respostas Terapêuticas)”; Collaborator and author of several scientific articles in magazines specializing in Child and Adolescent Psychiatry. 1st place at “Prémio João dos Santos” in 2008 with the scientific article “Desdiagnosticar Autismo”, published in “Revista Portuguesa de Pedopsiquiatria”.

Full name: Áurea Sandra Toledo de Sousa

Institutional affiliation: University of the Azores, School of Sciences & Technology and CEEAplA

Institutional address: Rua Mãe de Deus, 9500-321, Ponta Delgada

Short biographical sketch: BSc in Mathematics, Universidade dos Açores, 1992. MSc in Statistics and Management of Information, Universidade Nova de Lisboa, 1997. PhD in Mathematics in the speciality of Probability and Statistics, Universidade dos Açores, 2006. Professor at Universidade dos Açores since 1992 and researcher at Center of Applied Economics Studies of the Atlantic since 2011. Her primary research interests are in the areas of Multivariate Data Analysis, Probability and Statistics, Symbolic Data Analysis (SDA), and Computational Statistics. In these areas, she has presented national and international communications, and has published several research papers in international peer-reviewed journals. Also co-authored of some books. ORCID: <http://orcid.org/0000-0003-3151-5237>

Full name: Isabel Maria Cogumbreiro Estrela Rego

Institutional affiliation: University of the Azores and member of IVAR

Institutional address: Rua Mãe de Deus, 9500-321, Ponta Delgada

Short biographical sketch: has a B.A. in Psychology from Northeastern University (1980), an M.A. in Counseling Psychology from Boston College (1982), and a Ph.D. in Educational Psychology from the University of the Azores (1999). She is currently Associate Professor in the Department of Psychology, at the University of Azores where she has been teaching social, community,

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developmental, and environmental psychology. She was a member of the Research Centre for Biodiversity and Genetic Resources (CIBIO – Azores Group) until October of 2013 and has afterwards joined the Research Institute for Volcanology and Risk Assessment (IVAR). Her research interests have initially included attitudes and behavior in the field of education and, more recently, risk perception and communication, disaster preparedness, pro-environmental attitudes, sustainable behavior, community development, and person-place relationships.

Full name: Osvaldo Dias Lopes da Silva

Institutional affiliation: University of the Azores and member of the Interdisciplinary Center for Social Sciences at the Universidade Nova de Lisboa (CICSNOVA.UAc)

Institutional address: Rua Mãe de Deus, 9500-321, Ponta Delgada

Short biographical sketch: Assistant Professor at Department of Mathematics and Statistics, Faculty of Science and Technology, University of the Azores (UAc), Portugal. He holds a PhD in Mathematics – Probability and Statistics from the University of the Azores and is an integrated member of the Interdisciplinary Center for Social Sciences at the Universidade Nova de Lisboa (CICSNOVA.UAc). His interests in the areas of research include Data Analysis, especially Multivariate (exploratory and confirmatory techniques); Sampling, Quality Control and Statistical Methodologies applied (with particular interest in Social and Health Sciences). He is author and coauthor of several articles in national and international magazines, chapter of books and proceedings in these areas. ORCID: <http://orcid.org/0000-0002-0269-8153>

Full name: Suzana Nunes Caldeira

Institutional affiliation: University of the Azores, School of Social Sciences & Humanities and member of the Interdisciplinary Center for Social Sciences at the Universidade Nova de Lisboa (CICSNOVA.UAc)

Institutional address: Rua Mãe de Deus, 9500-321, Ponta Delgada

Short biographical sketch: Associate Professor in the Psychology Department at the University of the Azores (UAc) and, currently, Vice-President of the School of Social Sciences and Humanities. She completed the undergraduate degree in Psychology at the University of Lisbon in 1986 and the PhD in Educational Psychology at the University of the Azores in 2000. She has published extensively and her main research interests are in the field of disruptive/ conflictive behavior in different contexts and conflict management and prevention. In these areas, she has presented national and international communications, and has published several research papers in international peer-reviewed journals. Also co-authored of some books. ORCID: <https://orcid.org/0000-0002-1024-6958>

Chapter #30

ATTITUDES TOWARD LEARNING PREFERENCE: THE RELATION WITH PERSONALITY

Lilly E. Both

Department of Psychology, University of New Brunswick, 100 Tucker Park Road, Saint John, NB E2L 4L5, Canada

ABSTRACT

In this study, 106 women (M age = 23 years) completed a series of questionnaires online assessing personality traits and facets (subscales), learning preferences (Activist, Reflector, Theorist, Pragmatist), and attitudes toward learning preferences. The vast majority of participants in this study believed that students are more likely to have academic success when teaching and learning strategies match their learning style. However, the results of several hierarchical regression analyses found that a large proportion of variance in learning style was accounted for by personality traits or facets. For example, 43% of the variance in the Activist Learning Style was accounted for by higher scores on Extraversion, and lower scores on Conscientiousness and Negative Emotionality. When personality facet scores were used as predictors, the proportion of variance jumped to 55%. Similarly, between 27-31% of the variance in Reflector, Theorist and Pragmatist Learning Style was accounted for by personality facet scores alone. The results are discussed in terms of learning style attitudes and myths pervasive in the literature, and the need for evidence-based practices.

Keywords: personality, learning styles, attitudes.

1. INTRODUCTION

The concept of learning styles has been around for some time and has garnered much attention in the literature over the past few decades. There are numerous measures and definitions of learning styles (see Cassidy, 2004 for a review) yet there is no consensus on what learning styles are, or how they should be assessed. Regardless of this lack of a cohesive model, many educational settings encourage students to assess their learning style, in hopes of assisting them to achieve success in their academic studies. Unfortunately, there is little evidence to support the claim that learning styles (however defined) are related to academic outcomes (Pashler, McDaniel, Rohrer, & Bjork, 2008). Furthermore, Pashler et al. (2008) argue that although there is a large number of studies on learning styles, few use experimental designs with random assignment. As well, the literature generally does not support the notion that teaching styles have to “mesh” with learning styles. Yet, this belief seems ubiquitous in the general public. Despite a large body of evidence that learning styles are unrelated to educational outcomes, many people still believe that information is best learned when it is presented in a way that matches their style.

2. BACKGROUND

In a classic study, Jackson and Lawty-Jones (1996) found that learning styles (more accurately called learning preferences) can be explained in terms of personality traits. In other words, learning preferences are a subset of personality types. They conducted a factor

analysis with the items from Eysenck and Eysenck's (1975) Personality Questionnaire and the items from Honey and Mumford's (1992) Learning Styles Questionnaire. They found considerable overlap between the items and argued that learning preferences could be explained in terms of personality traits. The Eysenck Personality Questionnaire, however, only measured Extraversion, Neuroticism and Psychoticism. In recent years, newer and updated measures of personality – measuring all “Big Five” traits (Neuroticism, Extraversion, Openness, Agreeableness and Conscientiousness) and their subscales or facets – have become available. Thus, there is a need to re-evaluate the relation between learning preferences and personality traits and facets using the newer measures.

2.1. Purpose of the present study

The purpose of this study was to replicate and update the literature by examining the relation between all Big Five personality traits and facets (Soto & John, 2017), learning preference (Activist, Reflector, Theorist, Pragmatist; Honey & Mumford, 1992), and attitudes toward learning preferences.

3. METHOD

3.1. Participants

The sample consisted of 106 women (M age = 23; SD = 7.6, range = 19-54 years) who completed an online survey. The majority of women were university students who were made aware of the study on SONA, an online recruiting platform. However, members of the general public could access the survey online and participate. In terms of education, 14.2% of the sample had a high school diploma, 70.8% had some university or community college courses, 14.2% had a university or community college degree, and .9% had some graduate studies training. In terms of marital status, 85% of the women were single; 12% were married or common law; and 3% were divorced. The majority of the sample was Caucasian (92% White or Caucasian, 3% Asian, 1% Black or African Canadian; 4% Other). As an incentive to complete the survey, participants could choose to be entered into a draw for a \$50 Amazon gift card. As well, students attending university could earn a bonus point toward their final grade in their course.

3.2. Measures

3.2.1. Demographic questionnaire

Participants completed a brief demographic measure that assessed age, gender, marital status, education level, and race/ethnicity.

3.2.2. The big five inventory – 2 (BFI-2; Soto & John, 2017)

This inventory assesses personality in terms of five common universal traits or factors. As well, each factor is comprised of three subscale scores known as facets. The scale provides scores for Extraversion (with facets Sociability, Assertiveness, Energy Level), Agreeableness (with facets Compassion, Respectfulness, Trust), Conscientiousness (with facets Organization, Productiveness, Responsibility), Negative Emotionality (with facets Anxiety, Depression, Emotional Volatility), and Open-mindedness (with facets Intellectual Curiosity, Aesthetic Sensitivity, Creative Imagination). In the present study, the measure had excellent internal reliability (Extraversion Cronbach's α = .86; Agreeableness = .78; Conscientiousness = .85; Negative Emotionality = .90; Open-mindedness = .82).

3.2.3. Learning styles questionnaire (Honey & Mumford, 1992)

This questionnaire was chosen to assess learning preferences in order to compare the results with those of Jackson and Lawty-Jones (1996). It consists of 80 items that assess preferred learning preferences in four domains. The Activist style characterizes people who like to jump right into learning activities and enjoys group problem-solving. They are often leaders in discussion groups. The Reflector style characterizes people who are introverted and like to give careful thought to their approach. They like to observe and gather evidence before drawing conclusions. Theorists are analytical and logical. They like to test theories and ask the big questions. Finally, Pragmatists like concrete, real world problems with hands-on practical solutions. This measure is commonly used in research. However, in the present study, the internal reliability was questionable (Activist Cronbach’s $\alpha = .75$; Reflector = .63; Theorist = .58; Pragmatist = .68).

3.2.4. Attitudes toward learning preferences

Participants completed 6 questions (designed for this study) to assess their attitudes toward learning preferences. For each item, they rated their response on a scale from 1 = strongly disagree to 5 = strongly agree.

3.3. Procedure

Participants had access to the survey via their smart phone, tablet or computer, by accessing a link to Qualtrics, an online survey tool. The survey began with a description of the study that included a consent form. Once participants provided consent, the survey began with the demographic measure, and then the remaining measures were presented in random order. The survey took about 30 minutes to complete.

4. RESULTS

4.1. Attitudes toward learning preferences

See Table 1 for responses to these items. The majority of participants believed that there should be a match between teaching and learning styles.

*Table 1.
Attitudes toward Learning Preferences by Response Percentages.*

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Students are more likely to achieve academic success when their learning style matches the instructor’s teaching style.	0	2.8	2.8	32.1	62.3
Students learn best when they know what their learning style is and use strategies to match their style.	0	0	2.8	33.0	64.2

Information is best learned when it is presented in a way that matches the student’s learning style.	.9	0	1.9	36.8	60.4
If students use study strategies that match their learning style, they are more likely to have academic success.	.9	.9	1.9	33.0	63.2
Learning style matters more than motivation when learning difficult information.	2.8	41.5	21.7	26.4	7.5
Learning style matters more than effort and persistence when learning difficult concepts.	6.6	50.0	16.0	18.9	8.5

4.2. Correlations among personality traits and learning preferences

The correlations among personality traits and learning preferences are presented in Table 2. Extraversion correlated positively with Activist and Pragmatist styles, and negatively with the Reflector style. Agreeableness correlated positively with the Reflector style and negatively with the Pragmatist style. Conscientiousness was positively related to the Reflector and Theorist styles, and negatively to the Activist style. Negative Emotionality correlated negatively with the Activist style, and Open-mindedness did not correlate with any style.

*Table 2.
Correlations Among Personality Traits and Learning Preferences.*

	E	A	C	N	O
Activist	.492**	-.119	-.254**	-.282**	-.004
Reflector	-.199*	.210*	.351**	.120	-.028
Theorist	.097	-.055	.346**	.038	.002
Pragmatist	.229*	-.213*	.042	-.006	-.087

*p<.05; **p<.01

E=Extraversion; A=Agreeableness; C=Conscientiousness; N=Negative Emotionality; O=Open-mindedness

4.3. Hierarchical regression analyses

A series of hierarchical regression analyses were conducted predicting each of the four learning preferences. In each case, age was added on the first step for control for its effects. On the second step, the 5 personality factor scores were added. Similarly, the regressions were also conducted substituting the personality factor scores with the facets. In all regression analyses, Tolerance and VIF were well within acceptable levels (Keith, 2006).

4.3.1. The activist learning style

The overall model was statistically significant and accounted for 43% of the variance in Activist Learning Styles ($F_{(6,99)} = 12.56, p < .001$, multiple $R = .66$). Age was not a statistically significant predictor, but the personality factors produced a statistically significant change in the model (R^2 change = .41, $F_{inc(5,99)} = 14.30, p < .001$). Significant predictors were Extraversion ($\beta = .52$), Conscientiousness ($\beta = -.45$) and Negative Emotionality ($\beta = -.20$). The adjusted R^2 value of .40 in the overall model indicates that a large proportion of the variability in the Activist Learning Style was predicted by the personality traits, namely higher scores on Extraversion and lower scores on Conscientiousness and Negative Emotionality.

When facet scores were substituted for the personality factor scores in a separate analysis, the proportion of variance accounted for in Activist Learning Style jumped to 55% ($F_{(16,89)} = 6.68, p < .001$, multiple $R = .74$). Significant predictors were Respectfulness ($\beta = -.28$) Trust ($\beta = .20$), and Responsibility ($\beta = -.22$). The adjusted R^2 value of .46 in the overall model indicates that a large proportion of the variability in the Activist Learning Style was predicted by lower scores on Respectfulness and Responsibility, and higher scores on Trust.

4.3.2. The reflector learning style

The overall model was statistically significant and accounted for 23% of the variance in Reflector Learning Styles ($F_{(6,99)} = 5.00, p < .001$, multiple $R = .48$). Age was not a statistically significant predictor, but the personality factors were. Significant predictors were lower Extraversion ($\beta = -.22$), and higher Conscientiousness ($\beta = .44$).

When facet scores were substituted for the personality factor scores in a separate analysis, the proportion of variance accounted for in Reflector Learning Style increased to 27% ($F_{(16,89)} = 2.10, p = .015$, multiple $R = .52$). Significant predictors were higher scores on Organization ($\beta = .29$) and Responsibility ($\beta = .30$).

4.3.3. The theorist learning style

The overall model was statistically significant and accounted for 24% of the variance in Theorist Learning Styles ($F_{(6,99)} = 5.27, p < .001$, multiple $R = .49$). Age was not a statistically significant predictor, but the personality factors were. Significant predictors were lower Agreeableness ($\beta = -.41$), and higher Conscientiousness ($\beta = .63$).

When facet scores were substituted for the personality factor scores in a separate analysis, the proportion of variance accounted for in Theorist Learning Style increased to 31% ($F_{(16,89)} = 2.45, p = .004$, multiple $R = .55$). Significant predictors were lower Compassion ($\beta = -.31$), and higher Organization ($\beta = .26$).

4.3.4. The pragmatist learning style

The overall model was statistically significant and accounted for 13% of the variance in Pragmatist Learning Styles ($F_{(6,99)} = 2.55, p = .025$, multiple $R = .37$). Significant predictors were Extraversion ($\beta = .23$) and Agreeableness ($\beta = -.32$).

When facet scores were substituted for the personality factor scores in a separate analysis, the proportion of variance accounted for in Pragmatist Learning Style jumped to 28% ($F_{(16,89)} = 2.13, p = .013$, multiple $R = .53$). Significant predictors were lower Respectfulness ($\beta = -.40$) and lower Aesthetic Sensitivity ($\beta = -.34$).

5. DISCUSSION

Over 90% of women in this study believed that students are more likely to have academic success when teaching and learning strategies match their learning style or preference, despite vast amounts of literature debunking this myth (Pashler et al., 2008). Thus, this attitude is still being perpetuated in educational settings. The downside of this belief is that it may hinder students from achieving success if it becomes a self-fulfilling prophecy. If students believe their instructor's teaching style does not match their learning style, they may be less inclined to engage with the material. This lack of engagement, in turn, may lead to lower grades, reinforcing their original belief. As such, there is a need for evidence-based practice. Educators should address the learning strategies and outcomes with their students by providing them with empirical evidence from peer-reviewed studies. This recommendation is useful as educators and students are entering the "new normal" of COVID-19 instruction. Online teaching and learning can be quite effective (Nguyen, 2015), yet, some students are expressing dismay that somehow, they are receiving an inferior education. It is also important to note, that many participants in the current study recognized that motivation, persistence, and effort were more important factors than learning style when learning difficult concepts.

Another purpose of the current study was to examine the relation between learning preference and all Big Five personality traits and facets. The Activist style is characteristic of someone who likes to get to work and enjoys group problem-solving. It is not surprising, then, that the personality factor of Extraversion accounted for the largest proportion of variance in this type. Activists also scored lower on negative emotionality, making them calm and well-balanced individuals, but their lower scores on Conscientiousness means they need to pay more attention to details. The Reflector style characterizes introverts who carefully approach their work by observing and gathering evidence before proceeding. In the current study, the lower scores on the personality factors of Extraversion (i.e., introverts) and higher scores on Conscientiousness lend validity to this description. Theorists, on the other hand, are described as analytic and logical; they scored higher on Conscientiousness, but lower on Agreeableness in the current study. As well, Pragmatists, who like concrete, hands-on solutions, scored higher on Extraversion, but lower on Agreeableness.

The results of this study support the findings of previous research. Jackson and Lawty-Jones (1996) examined the same learning styles, but only measured the personality traits of Extraversion, Neuroticism and Psychoticism. In their study, Extraversion correlated positively with the Activist and Pragmatist styles, and negatively with the Reflector style; thus, it was the identical pattern to the current study. However, Neuroticism did not correlate with any learning style in their study, whereas it correlated negatively with the Activist style in the current research. Komarraju, Karau, Schmeck, & Avdic (2011) also examined the relation between personality traits and learning styles, using a different measure of learning processes (reflective synthesis analysis, reflective elaborative processing, agentic methodological study, and agentic fact retention). Interestingly, although they used a different measure of learning styles, Conscientiousness and Agreeableness correlated positively with each style. It appears that regardless of learning style, Conscientiousness is a common attribute. One could argue that paying attention to details is important for any learning outcome.

The results of this study found that a large amount of variance in learning preferences was accounted for by personality scores. Notably, 43% of the variance in the Activist Learning style was accounted for by higher scores on Extraversion, and lower scores on Conscientiousness and Negative Emotionality (i.e., neuroticism). Thus, this study extended

the work by Jackson and Lawty-Jones (1996) by underscoring the importance of all 5 personality factors in relation to learning preferences. Komarraju and colleagues (2011) also used all five personality factor scores in their research, and although they used a different measure of learning styles, they found that 9-30% of the variance in learning styles was explained by personality factors. As well, when personality and learning styles were used to predict self-reported GPA in their study, most of the variance (14%) was accounted for by personality scores, and very little (3%) by learning styles.

A unique contribution of this study was the use of personality facet or subscale scores. When these subscales were substituted in the regression, there was an increase in the proportion of variance accounted for in all four learning styles. Indeed, 55% of the variance in the Activist learning style was accounted for by lower scores on Respectfulness and Responsibility, and higher scores on Trust. Jackson and Lawty-Jones (1996) argued that learning preferences were a subset of personality types. The large proportion of variance in the Activist learning style lends credence to this claim. However, personality facets scores accounted for less variance in the other styles (27%-31%). Although this proportion is still quite large, there is still a significant proportion of unexplained variance. Von Stumm and Furnham (2012) also found overlap between personality traits and learning styles (measured as learning that is surface, deep, and achieving or grade oriented). However, they argued that personality and learning styles should not be treated as redundant, as there is still a large proportion of unaccounted variance.

6. FUTURE RESEARCH DIRECTIONS

Future studies need to further examine the relation between learning preference and personality. In the current study, the internal reliability of the learning preferences measures was less than optimal. Future studies need to examine measures with good reliability and validity. For a construct that is commonly used (Cassidy, 2004), there appears to be a lack of reliable measures to assess preferences. As well, future research should examine other predictor variables that may contribute variance. The idea that learning preferences are a subset of personality styles (Jackson & Lawty-Jones, 1996) should also be examined further. Finally, this study only examined the relation in women. A study of men and transgender men and women is warranted.

7. CONCLUSION

Nancekivell, Shah and Gelman (2020) called learning styles "... one of the most pervasive myths about cognition" (p. 221). Although there is little evidence to support the claim that students learn best when the method of instruction matches their learning style (Pashler et al., 2008), many educators endorse this myth, especially for younger learners (Nancekivell et al., 2020). There is a need for evidence-based practice in the learning styles/preferences literature. Educators and educational institutions need to stop perpetuating this myth as it may actually have negative consequences – students who think their instructors' method of teaching does not reflect their learning style may feel unnecessarily stressed, anxious, and disadvantaged.

In this study, the majority of respondents believed that academic success was more likely when teaching and learning styles were matched, yet empirical studies largely refute this claim (Pashler et al., 2008). Furthermore, personality accounted for a large proportion of variance in learning style scores.

L. E. Both

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AUTHOR INFORMATION

Full name: Lilly E. Both

Institutional affiliation: Department of Psychology, University of New Brunswick

Institutional address: 100 Tucker Park Road, Saint John, NB E2L 4L5 Canada

Short biographical sketch: Lilly E. Both is a faculty member in the Department of Psychology at the University of New Brunswick in Saint John, New Brunswick, Canada. She received her PhD in psychology from the University of Waterloo. She teaches courses in developmental psychology and graduate research ethics. Her current research interests include peer relationships and social skills across the lifespan, the relation between personality and subjective well-being, and coping styles. She has served as Chair of the Psychology Department, Acting Associate Dean of Graduate Studies, and as an elected member of the University of New Brunswick Senate in Saint John.

Chapter #31

USING THE ATTACHMENT LENS AND THE DYADIC EXPANSION OF CONSCIOUSNESS APPROACH TO INCREASE SCHOOL ADJUSTMENT

Oana Dănilă

Faculty of Psychology and Educational Sciences, Alexandru Ioan Cuza University, Romania

ABSTRACT

When in danger, either we refer to menaces or just novel situations, the brain needs firstly to connect to another human brain in order to coregulate; only after, can that brain continue process/ learn, regulate behaviors and thus adjust to the environment. The purpose of this study was to explore the connection between the quality of the pupil-teacher relationship, assessed from the attachment perspective and different school adjustment aspects. A sample of 40 educators were invited to evaluate their attachment strategies and then assess at least 3 children from their current classes (primary school); results for a total of 121 pupils were collected. First of all, educators assessed the pupil's attachment needs using the Student-Teacher Relationship Scale; then, they were asked to assess social competencies using the Social Competence Scale and the Engagement versus Disaffection with Learning Scale, as facets of school adjustment. Results show that the strength of the pupil-teacher relationship is influenced by the particularities of the attachment strategies of both parties, and, in turn, this relationship, with its 3 dimensions (closeness, conflict and dependence) impacts adjustment. Results are discussed in the light of the Dyadic Expansion of Consciousness hypothesis – in a safe relationship, both the teacher and the pupil significantly expand the learning possibilities.

Keywords: attachment strategies, emotional coregulation, school adjustment, dyadic expansion of consciousness.

1. INTRODUCTION

Adjustment, as a condition for growth and development, is a process bidirectionally linked to learning; introducing the brain to the proper state for learning implies a couple of preconditions as well, amongst which, emotional regulation is critical.

Talking about attachment in the context of teaching, Cozolino (2017, p. 65) pinpoints: "The brain has been designed to develop when stimulated. In other words, the brain lives for the sole purpose of learning. This impulse is nurtured when rewarded by persons that are fully caring. If not properly rewarded or even punished for curiosity, the brain learns to hide, avoid risks and rely on what is familiar. Even if every child is capable to learn, some children have brains, minds and souls that have been shut down".

As such, it is our purpose to bring further evidence for the view that school adjustment is critical for the capacity of adjustment of the future adult as he or she should be educated to be a competent human being while "learning" that he or she deserves to be in close, caring relationships outside the family environment as well. We join the line or research that has already proved the importance of close teacher- student relationship, but bring to your attention a novel combination of lens for analyzing the critical role of these relationship: the attachment lens is enriched by the Dyadic Expansion of Consciousness hypothesis that posits that when safe together, the teacher and child significantly expand their capacities.

2. BACKGROUND

2.1. School adjustment

Adjusting to school/ educational system has been differently measured and described in time. For the purpose of this study, we considered the perspective of Ladd (1990) and Perry & Weinstein (1998) that broaden the definition to encompass the degree to which a child becomes interested, engaged, comfortable and successful in his educational environment (Buyse, Verschueren, Verachtert, & Van Damme, 2009). As such, one needs to look to the reality of adjusting considering a variety of aspects, amongst which the age is critically linked to the strength of the protective systems of the child.

In the first years of educational exposure, the adjustment refers to the extent to which preschoolers develop positive versus negative perceptions in regard to education, are comfortable or not in the classrooms, get involved or not in the tasks and other activities (Buyse et al., 2009; Ladd, 1990). Therefore, Ladd's model places a great value on the relationship in-between the child's characteristics and the support he or she gets from the main sources of reassuring connection, while considering the sources of stress as well coming from all contexts: family, educational system, community.

We embrace a perspective of the school adjustment as a complex process, with multiple facets, reflecting first of all (as the most traditional models were showing) the adjustment to academic requests, but critically adding the adjustment to socio-emotional tasks and other behavioral challenges, that in turn lead to the development of specific competencies that will be used and improved throughout the entire educational path (Magalinskaitė-Legkauskienė, Legkauskas, & Kepalaitė, 2018; Perry & Weinstein, 1998).

2.2. The attachment lens and emotional regulation in the educational context

Initially introduced by John Bowlby, the concept of attachment refers to an inherited system that is meant to insure survival in the psychological sense of the term. Bowlby (1973) unpacks the activation process of this system and suggests that interactions with significant others, particularly in moments of danger, are internalized in two specific mental models: the self-image and the image of others (the attachment models), that in turn organize cognitions, affects and social behaviors throughout our entire lives. What is the underlying mechanism? When attachment figures (primary caregivers) are perceived as available and ready to attend to the needs of the individual, in response, the child (and later in life, the adult) develops a sense of being secure in his/ her close relationships when perceived absent or lacking reaction, the same attachment figures can induce a terrible sense of insecurity (Mikulincer & Shaver, 2007). This experience of security/ insecurity is integrated in the internal working models of the individual, the self-image and the image of the others: if cared for and needs met, one feels worthy of love and belonging and can trust others to come when in need; as already stated above, these models influence cognitions, experiences and the capacity for emotional regulation, the expression of the need for closeness and various other behaviors, all across the life span (Collins, Guichard, Ford, & Feeney, 2004; Mikulincer, Shaver, Pereg, 2003).

As such, our view is that when entering the educational system children bring in their backpacks their attachment system as well. Collins and Sroufe (1999) are the authors of a transactional model whereby they underline that the early attachment experiences continue to affect children's functioning and all others relationships, while children also contribute to their own development and environments by responding and engaging with others relying on the previous patterns of adaptation and expectations. As such, various children might

experience safety for the very first time in the relationship with the educators as different background factors impeded their caregivers to offer them a safe upbringing environment. Adjusting to the school environment is a task of great novelty and challenge so the activation of the attachments system is a given from the very beginning. And yet researchers are not convinced that one should consider educators attachment figure as well. Verschueren (2015) believes that the teacher-pupil relationship cannot become an attachment in the true sense of the concept for all children due to the lack of exclusivity and sustainability, the differences in potential emotional investment teachers can make as compared to the parents. Unfortunately, this unanimous view translates into problems for all parties, children, caregivers and educators, especially when insecurity is the "key word". Insecurity can activate 2 different directions:

- anxiously seeking the proximity of an attachment figure and asking for comfort or
- persistent avoidance/ keeping away, both physically and mentally, as the sole solution to minimize the exposure to situations where one could feel helpless, extremely lonely or hurt.

So, what are the difference? Research shows that preschoolers who are securely attached to their mothers are more socially competent and thus adapt easier, they become leaders in peer groups, have more positive interactions with elders, are more empathetic, more popular, cooperate better, and are evaluated by educators as having a higher level of social skills (Mitchell-Copeland, Denham & DeMuler, 1997). How about the insecure ones? Children with an avoidant attachment have poorer vocabulary, limited creativity, demonstrate hostility toward the teacher and school tasks, and denied the need for help (Geddes, 2018). Sroufe (1983) in Pianta, Steinberg and Rollins (1995) argues that pupils with histories of anxious / avoided attachment make less contact with teachers, and teachers often react mostly with fury to these children. Children with an ambivalent or resistant attachment style are prone to absenteeism, tend to develop teacher addiction behaviors, have good verbal skills that can be used to dominate and manipulate the teacher's attention and experience a constant fear of losing the educator's attention (Geddes, 2018). In general, they are perceived by teachers as vulnerable and fragile (Sroufe, 1983 in Pianta, Steinberg and Rollins, 1995). Spilt and Koomen (2009), combining a qualitative and quantitative study approach, delineate several interesting findings: when teachers evaluate relationships as not too close to their pupils, they evoke feelings of ineffectiveness and that they are discouraged to invest in the child or find themselves searching for new strategies to assert influence; as well, teachers expressed more anger and helplessness concerning children they assessed as more disruptive in their class as compared to a nondisruptive child. Expanding their research, Spilt and Koomen (2012) point that the effects of the lack of teacher responsiveness might be wider when it comes to girls using disruptive behaviors to protest against the conflictual connection, whilst boys are more receptive to proactive strategies – when these are used by the teacher to regulate their behavior they are less inclined to act negatively; underlying mechanisms might be different, but irrespective of gender, children need the teacher to be involved in the relationship.

Various other studies bring arguments to show the value of a close relationship in the school environment by pinpointing the effects of a conflictual relation for specific disciplines. McCormick and O'Connor (2014) show that higher levels of teacher-child conflict are related to lower levels of reading achievement in elementary school, over and above a wide host of child, family, and teacher control variables; when teacher-child closeness across elementary school improves, this is then related to gains in reading achievement. After testing, as well, whether effects differed by gender, McCormick

& OConnor (2014) found that girls who had conflictual relationships with teachers experienced lower average levels of math achievement than did boys with conflictual relationships with teachers.

Particular values in explaining these critical aspects we found as well in the work of Dewitte and DeHouwer (2011); although not applied to the educational field, the authors research is of great interest for our purpose as it underlies the mechanisms involved in the processing of information that are the fundament for the internal working models, especially the *model of others*. Dewitte and DeHouwer (2011) points that building on a sense of trust, secure individuals inhibit the negative traits they perceive in other, a crucial inhibitory process that can be regarded as a buffer mechanism, protecting secure individuals from negative signals entering their attachment schemas (as Mikulincer & Shaver, 2007, were also proposing). At the end of the spectrum, insecure individuals were found to show difficulties with inhibiting negative cues they perceive from the others, which may explain their tendency to emphasize the attachment figure's bad intentions and negative traits." Such inhibitory deficits may foster a negative appraisal of the attachment figure, which makes it more likely that insecure individuals will act in a negative manner towards their significant others. This may turn the attachment figure to withdraw support over time, confirming one's negative other-view" (Dewitte & DeHouwer 2011, p.21). Applied in the educational system, children that perceive negative traits in teachers will act in manners that will further impede their proper emotional coregulation and thus strengthen their perception of an insecure relationship, whilst the teacher as well, if not secure, will be influenced to perceive the child as problematic, disruptive, hard to handle and lower his desire to support him/her.

2.3. The dyadic expansion of consciousness hypothesis

The Dyadic Expansion of Consciousness Hypothesis (Tronick at al, 1998) relying as well on the theory of attachment, expands it upon the analysis of the mother – infant interaction in the "Face-to face Still Face Experiment". The main postulate is that " ... each individual is a self-organizing system that creates its own states of consciousness—states of brain organization—which can be expanded into more coherent and complex states in collaboration with another self-organizing system. When the collaboration of two brains is successful each fulfills the system principle of increasing their coherence and complexity (Tronick at al, 1998, p. 296)." In order to fully grasp the value of this hypothesis in the educational environment, it is of paramount importance to identify the two steps of the process Tronick is describing: first, we rely on the significant relationships in our lives, hence on the brain of the significant person we interact with to help us regulate the emotions we are experiencing; if, and only when this first step is achieved, we then can have access to a wider part of our existing resources (cognitive, emotional ones); as such, we expand our knowledge and capacity to take in what is being taught/ introduced/ analyzed by the other brain, while offering back the possibility that this other brain expands as well. We teach to get taught and we allow to be taught so that we teach back!

Tronick and the collaborators (1998) point that " the process of mutual regulation, at the level of social emotional exchanges and more critically at the level of states of consciousness, determines much of the emotional, social, and representational course of the infant. When the affective regulation of interactions goes well, development proceeds apace. Increasingly, complex tasks are approached, resolved and incorporated, not by the child alone, but by the child in collaboration with others. But because of their resolution, the child expands and becomes more coherent. When failure occurs, development gets derailed and the child's complexity is limited or even reduced (i.e., the child may regress).

The effect is in the child, but the failure is a joint failure. With continued failure and the structuring that goes on around that failure, affective disorders and pathology may result (p. 297).”

Using Cozolino’s lens we argue that teacher-pupil relationships are key factors in strengthening internal working models of the child; adding the Dyadic Expansion of Consciousness Hypothesis (Tronick et al., 1998) we consider that the process is reflecting back on the teacher as well. Integrating these lenses, it is our goal to test the impact of the teacher-pupil similarity in terms of attachment characteristics upon the different facets of school adjustment as assessed by the teacher.

3. METHOD

3.1. Participants

The sample consisted of 121 educator-pupil pairs. The educators’ sample comprised 40 experienced, female graduate-level educators with at least 3 or more years of teaching experience (20.5 mean of teaching experience): ten 1st grade teachers, ten 2nd grade teachers, eleven 3rd grade teachers, nine 4th grade teachers. The sample of children involves 121 pupils (mean age=9.52, SD=1.7), 30 in the first grade, 29 in the 2nd grade, 31 in 3rd, 31 in 4th, 51.2 % males and 48.7% females. The sample was recruited from schools in a mid-low-socio-economic status area in north-east Romania. Parental permission was obtained prior to initiating the collection of the data.

3.2. Measures

Student-Teacher Relationship Scale (Koomen, Verschueren, van Schooten, Jak, & Pianta, 2012) as one of the most used instrument to assess the strength of the attachment relationship of teachers and pupils includes 32 items divided over three scales: Conflict (11 items) (e.g. *Dealing with this child drains my energy*), Closeness (14 items) (e.g. *I share an affectionate, warm relationship with this child*), and Dependency (7 items) (e.g. *This child looks to me for help, appreciation and support*). Cronbach’s α coefficients from .67 to .84 indicated respectable to very good reliability according to the standards for research. Next, teachers self-rated their attachment style using the Relationship Structures (ECR-RS) (Fraley, 2011). The test includes 9 items (e.g. *It helps to turn to people in times of need*) that can refer to different relationships and has a Cronbach’s α coefficient .81.

Educators were asked to assess pupils’ social competencies as well using the Social Competence Scale (Corrigan, 2002) and the Engagement versus Disaffection with Learning Scale (Skinner, Kindermann, & Furrer, 2009), as facets of school adjustment. Developed ever since 2003, the Social Competence Scale includes 25 items that refer to the prosocial behavior (8 items – e.g. helpful to others), emotional self-regulation (10 items – e.g. controls temper when disagreement) and the academic abilities of a child (7 items – e.g. can cope with failure). Cronbach’s α coefficients from .92 to .94 indicate very good reliability according to the standards for research. The Engagement versus Disaffection with Learning Scale is comprised out of 32 items as well divided into different subscales, such as behavioral engagement (e.g. *In class, I work as hard as I can*), emotional engagement (e.g. *I enjoy learning new things in class*), emotional lack of involvement and re-engagement (e.g. *When in class I feel bad*). Cronbach’s α coefficients are as well according to the standards for research from .80 to .94 indicated respectable to very good reliability.

4. RESULTS

4.1. Educator-Pupil Attachment-Like Relationships: A Person-Centered Approach

O'Connor et al. (2012) emphasized the significance of a person-centered approach to the comprehension of an educator-pupil relationship. Cluster analysis has been suggested as a useful method for classifying patterns or profiles in a sample. The silhouette measure of cohesion and separation for cluster quality is a measure of the overall goodness-of-fit of the clustering solution. It is based on the average distance between the objects and can vary between -1 and +1. A silhouette measure of less than 0.20 indicates a poor solution quality, one between 0.20 and 0.50 a fair solution, while values of more than 0.50 indicate a good solution. In our study, Two-Step cluster analysis yielded a two-group solution. The silhouette measure of cohesion and separation for cluster quality showed fair (0.4) overall goodness-of-fit, indicating that two groups are statistically the optimal number-of-clusters solution. The two-cluster solution distribution also corresponds to the theoretical typology regarding schoolchildren's secure and insecure attachment styles.

Table 1.
Cluster analysis for teacher-student attachment-like variables.

	TEACHER SELF -RATED ATTACHMENT STYLE				<i>t</i> -test values
	<i>Secure teacher (N=59)</i>		<i>Insecure teacher (N=62)</i>		
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	
STSR CLOSENES	55.98	9.12	52.56	9.8	1.98
STSR CONFLICT	19.50	11.09	22.01	10.61	-1.27*
STSR DEPENDENCY	18.20	5.84	19.93	4.91	-1.6

* $p < 0.05$

The first group (n=59, 48.8%) was labeled secure educator – pupil attachment-like style. The group is characterized by higher levels of perceived closeness, lower levels of conflict and dependency. The second group (n=62, 51.2%) was labeled insecure educator – pupil attachment-like style. The group is characterized by lower levels of perceived closeness, higher levels of conflict and dependency. Conflict is the sole dimension with significant differences.

4.2. Differences between pupils having secure educator -pupil attachment-like style and those having insecure educator -pupil attachment-like style in school adjustment

T-tests analyses, conducted to assess whether pupils having secure attachment-like relationships with their educators and those having insecure attachment-like relationships with their educators differed with regard to their social competencies and learning engagement, as facets of school adjustment, were found to be significant for most of the subscales.

Table 2.
T-test for the differences between the secure and the insecure educator -pupil attachment-like style groups in school adjustment variables.

	TEACHER SELF -RATED ATTACHMENT STYLE				<i>t</i> -test values
	<i>Secure teacher (N=59)</i>		<i>Insecure teacher (N=62)</i>		
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	
PROSOCIAL BEHAVIOR	4.31	.63	3	.92	-9.06***
EMOTIONAL SELF-REGULATION	4.22	.59	2.81	.95	-9.71***
ACADEMIC ABILITIES	4.29	.79	2.68	1.08	-9.29***
SOCIAL COMPETENCE	4.27	.60	2.84	.91	-10.12***
BEHAVIORAL ENGAGEMENT	3.38	.62	2.28	.85	-8.08***
EMOTIONAL ENGAGEMENT	3.50	.65	2.48	.84	-7.48***
RE-ENGAGEMENT	3.45	.43	2.42	.60	-10.75***

*** $p < 0.000$

As shown in Table 2, children with secure attachment-like relationships with their educators showed a higher tendency towards prosocial behaviors, can easier self-regulate, have overall better academic abilities, tend to get involved behaviorally and emotionally, and can as well re-engage after a context where he or she is prone to disengage.

5. FUTURE RESEARCH DIRECTIONS

Limitations are not to be ignored especially if one considers generalizing the results; the rather small sample, the fact that there are only female teachers, the fact that educators are the only ones to assess the child and this can create biases, are amongst the aspects that need to be properly controlled in a future study expanding the current one. Nevertheless, the combination of the two-explanatory lens, attachment and Dyadic Expansion of Consciousness remains the element of novelty that we believe will encourage researches in other education system to test the relationship as well. Multiple assessments of the attachment styles of both children and educators could bring value; repeated measures, across a full cycle would of course bring many other analysis possibilities, considering as well potential events that could interfere in all significant relationship of a child and thus impact his/ her internal models (as they are still forming), but as well in the lives of the teachers (their models are for sure more stable, but major events such as illness, loss of partners, lack of job security have been proven to shaken internal representations of safe relationship for adults as well).

6. CONCLUSION/DISCUSSION

Worldwide, educational policies continuously reevaluate the immediate measure that can be implemented in order to ensure proper adjustment to the school environment thus children can be properly educated, early school dropout can be prevented, and high academic achievement can be facilitated. The current research, with its limitation which we admit, shows once more that when attuned and safe together, the educator and the pupil enter a synergy that creates the platform of development for both.

The interaction between the teacher, the pupil and the learning task is a continuous dynamic loop where the task should be built on the teacher's awareness and understanding of the pupil, while the pupil deeply trusts that he/she can seek reliable support when challenged by the task. Teacher and pupil relate one to the other in a way that should foster curiosity; there is little space for learning, exploring and keeping curious if one is not helped to regulate the emotions. When in uncertainty, even if we refer to the plain not knowing how to solve a second-grade problem, the brain cannot avoid emotions as they are vigilant messengers of unmet needs.

Unregulated emotions put the child in a reactive position which in turn becomes the concern of the teacher; it is now his or her turn to experience emotions and have essential needs in danger. Paradoxically, the challenges of 'not knowing' are at the heart of all learning (Geddes 2006), while being in the very safe time the triggers of insecurity. As a stronger and wiser, self-regulated adult, the educator helps the child with the regulation and allows himself to be challenged by the brain that he or she is still shaping.

Unregulated adults have as well difficulties in shaping others brains in an efficient manner, so the attention should be oriented as well to the wellbeing of the educators, pointing that the pupils are not responsible for the coregulation of the teacher (another adult should be involved in that), but when safe together, both pupil and teacher can infinitely expand the amazing world of learning and adjusting.

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O. Dănilă

AUTHOR INFORMATION

Full name: Oana Dănilă

Institutional affiliation: Faculty of Psychology and Educational Sciences, Alexandru Ioan Cuza University (Romania)

Institutional address: Bld. Carol 1, nr. 5, Iași, Romania

Short biographical sketch: Lecturer Ph.D. Oana DĂNILĂ is teaching at the Faculty of Psychology and Educational Sciences, Alexandru Ioan Cuza University, Iași, Romania since 2007, various topics including couple and family psychology, group therapy, atypical profiles. She is also an emotionally focused psychotherapist and a business consultant/ trainer working with adults from various professions for personal development and essential skills shaping. The past three years she has developed and taught over 700 Romanian educators in *Attachment based teaching*, based on the work of Louis Cozolino.

Chapter #32

EVALUATION OF INTELLIGENCE SCORES AMONG STUDENTS FROM MOROCCAN URBAN AREAS

Khalid Marnoufi¹, Bouzekri Touri¹, Mohammed Bergadi¹, Imane Ghazlane^{1,2}, & Fatima Zahra Soubhi¹

¹*Multidisciplinary Laboratory of Information, Communication and Education Sciences and Technology (LAPSTICE), Ben M'sik Faculty of Science, Hassan II University of Casablanca, post box 7955, Casablanca, Morocco*

²*Higher Institute of Nursing and Health Technology Professions Casablanca-Settat, Morocco Street Faidouzi Mohamed, 20250 Casablanca, Morocco*

ABSTRACT

Our study carried on Moroccan students from urban areas. The basis will be for calculating the full-scale intelligence quotient FSIQ, which is positively, predicts school results, and determining the psychometric profiles of the samples participating in this study. By administering the fifteen subtests of the Wechsler Intelligence Scale for Children - 5th Edition WISC V and comparing the results to the average of the Wechsler tests. We have administered all subtests of WISC V, an individual general intelligence test for children aged between 6 and 16 based on the g-factor since the inception of the first Wechsler test. We ensure that every student participating in this study from the city of Safi has passed all the subtests. The participants are 101 students (59 girls and 42 boys) aged between 11 and 15 years old. The results of the samples who are urban public school students show a median of full-scale intelligence quotient, the average value of the verbal comprehension index is higher than the other four indexes of WISC V. In terms of correlations, the results show two types of relationships between the five indexes on the scale.

Keywords: FSIQ, WISC V, intelligence, students, urban.

1. INTRODUCTION

Permanent school disorders specialists are almost unavailable in Moroccan public schools. Consequently, poor school performance and increased dropout have evolved leaving an important number of pupils with difficulties facing their destiny (Sabir, Touri, & Moussetad, 2015; Soubhi, Lima, Talbi, Knouzi, & Touri, 2016; Touri & Marquardt, 2013). The role of this study is to reveal the Intelligence Quotient subtests scores in order to identify pupils with school disorders and study the impact on their schooling stability (Touri, 2013).

After a century of test development and theorizing, intelligence test scores remain a strong predictor of academic achievement (Deary, Strand, Smith, & Fernandes, 2007; Rohde & Thompson, 2007; Roth et al., 2015). The intelligence quotient estimates the development of intellectual capacity. However, many researchers have challenged the interpretation of the profiles with the intelligence quotient and have called for analysis at the level only (Glutting, Youngstrom, Ward, Ward, & Hale, 1997, Glutting, McDermott, Konold, Snelbaker, & Watkins, 1998; McDermott, Fantuzzo, & Glutting, 1990; Watkins, 2000). The Wechsler Intelligence Scale for Children has emerged as a downward extension of an adult intelligence test. After the launch of the Wechsler Bellevue Intelligence Scale

(WB), a rich history of research and clinical applications undoubtedly contributed to the development of WISC V. This Wechsler test is widely used for children from 6 years old to 16 years old and 9 months. It generally lasts between 65 and 80 minutes and produces a result reasonably typical of the standard measure of intelligence.

The developers are basing on the g-factor of Spearman, C. (1904). Thus, they stated that they were using the Cattell-Horn-Carroll Theory (CHC), which is a synthesis of earlier theories on the hierarchical structure of human cognitive abilities. The first of these two theories is the Gf-Gc theory (Raymond Cattell, 1941; Horn, 1965), and the second is Carroll's hierarchical stratified mode (Carroll, 1993). The development of education in France be linked to a Binet Simon mental test; several tests over a century to date have been developed to solve school problems. Discovery-based learning researchers tend to focus their research on specific areas such as mathematics/numbers, computer skills, science, problem-solving and physical / motor skills (Alfieri, Brooks, Aldrich, & Tenenbaum, 2011).

Three studies of the standard progressive matrices in morocco is proposed that the best estimate of the Moroccan IQ can be obtained as the average of the three results, giving an IQ of 76 (Bakhiet & Lynn, 2015). The first study in morocco consisted of 85 children (boys, girls; M age = 8.5 yr.) in the town of Kenitra and obtained a British IQ of 74. The second consisted of 202 adults (92 men, 110 women; M age = 26 yr.) in four cities and obtained a British IQ of 81. The third consisted of 1,177 secondary school children (723 boys, 454 girls; ages 12–17 yr.) in a rural area and obtained a British IQ of 73.3. The objective of our study is to calculate and interpret the full-scale intelligence quotient FSIQ among Moroccan students in the urban environment using the fifth edition of the Wechsler Intelligence Scale for Children. It consists of 15 sub-tests Similarities, vocabulary, information, comprehension, block design, visual puzzles, matrix reasoning, figure weights, arithmetic, digit span, picture span, letter-number sequencing, coding, symbol search and cancellation. The full-scale intelligence quotient is calculated by seven primary subtests similarities, vocabulary, block design, matrix reasoning, figure weights, digit span, and coding.

2. METHOD

2.1. Simple and procedure

Secondary schools access in the city should be by authorizations of the regional academies of education, training of Safi and the directors of the school. We administered all subtests of test by respecting the age order, for each student participates from the Safi city. The participants are 101 students (59 girls and 42 boys) aged between 11 years and 15 years and some months (mean age 12 years 8 months 27 days standard deviation 00 years 4 months 17 days). We use a parental questionnaire about the household income and educational level of parents, grandparents, uncles, and aunts. Our samples were students from the middle and primary schools of Safi. We chose students following the proposal of the teachers by agreement of the parents. The administrations accord availability during the vacations school hours, on the premises of the colleges and schools. The students are from the urban environment, other student didn't study they are internal Students of the College because of the impact of the urban environment on intellectual development respecting the age order of WISC V.

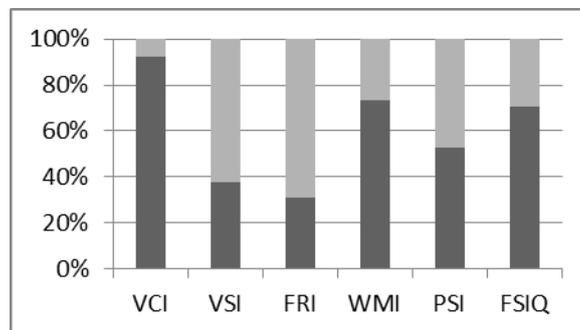
2.2. Instrument

We use the French version of the Wechsler intelligence scale for children WISC V Wechsler, D. (2016a, 2016b)., the intelligence test is used to determine whether a cognitive impairment underlies an academic difficulty, or to predict a child's ability to benefit from a special education placement. To achieve these goals, the current French version of WISC (WISC-V) distinguishes five indexes, the verbal comprehension index VCI [similarities, vocabulary, information, comprehension], visuospatial index VSI [block design, visual puzzles], fluid reasoning index FRI [matrix reasoning, figure weights, arithmetic], working memory index WMI [digit span, picture span, letter-number sequencing], and processing speed index psi [coding, symbols search, cancellation]. in addition to full scale intelligence quotient FSIQ is calculate by seven subtests on five areas the subtests are similarities, vocabulary, block design, matrix reasoning, figure weights, digit span and coding. also according to this test five additional indexes calculate quantitative reasoning (figure weights and arithmetic), auditory working memory (digit span and letter-number sequencing), non-verbal (block design, visual puzzles, matrix reasoning, figure weights, picture span and coding), general ability (similarities, vocabulary, block design, matrix reasoning and figure weights) and cognitive abilities (digit span, picture span, coding and symbol search). The calculation of three additional indexes from the complementary subtests the naming speed index, the symbol association index (or associative memory) and the information storage and retrieval index. The WISC V test for children aged between 6 years old to 16 years old and 11 months, usually lasts between 60 to 80 minutes and produces a typical fairly result.

3. RESULT

The table 1 shows the mean values and standard deviations of the five indexes and the full-scale intelligence quotient FSIQ of the participants in our test. We find that the two indexes: visuospatial index VSI and fluid reasoning index FRI are slightly lower than the theoretical mean 100, the two indexes: working memory index WMI and processing speed index PSI are above the theoretical average. Only the verbal comprehension index VCI is slightly above average.

*Figure 1.
Indexes Scores of urban pupils.*



The black in the figure 1 present the percentage of students with index scores greater than or equal to 100 and in grey show the percentage of students with index scores less than 100.

The attracted particular attention the difference between the VCI and the index closest to the WMI is 20 points, or one standard deviation higher. The standard deviation of the two indexes VCI and WMI is different by 6 points. The working memory index WMI is different from PSI by 6 points or half a standard deviation. The difference between the processing speed index PSI and the two indexes the Visuospatial index VSI and the fluid reasoning index FRI is 7 points. Note that the figure combines the percentages of children scoring high and low on the indexes and the FSIQ.

Table 1.
Mean and Standard Deviation of Five Index and Full Scale Intelligence Quotient of WISC V.

	VCI	VSI	FRI	WMI	PSI	FSIQ
M	127,54	94,9	93,67	107,4	101,77	107,87
SD	19,31	10,85	10,94	13,96	15,27	13,67
M Girls	126,32	93,95	93,41	109,97	106,32	108,64
M Boys	129,26	96,24	94,05	103,79	95,38	106,79

M=Mean, SD=Standard Deviation, VCI= Verbal Comprehension Index, VSI = Visuospatial index , FRI= Fluid Reasoning Index, WMI= Working Memory Index , PSI= Processing Speed Index, FSIQ=Full Scale Intelligence Quotient.

The four indexes VCI, WMI, PSI and FSIQ indicate that a large percentage of children scored above the theoretical average 100, which is shown in the figure 1, whereas the percentage of children scored above the theoretical average 100 in the two indexes VSI and FRI doesn't exceed 40%. Table 2 shows the correlation matrix between the five WISC V indexes administered in the samples.

Table 2.
Matrix of correlations between the five indexes in WISC V for the children.

	VCI	VSI	FRI	WMI
VSI	0,47			
FRI	0,49	0,59		
WMI	0,38	0,36	0,42	
PSI	0,38	0,33	0,37	0,43

The correlation between VSI and FRI is the strongest among all correlations followed by the correlation between VCI and FRI and the correlation between VCI and VSI. The correlation between the two indexes the FRI and the VSI with a low mean is a strong positive relationship. The other correlations between all five indexes are between strong positive relationship and moderate positive relationship. The samples are from students of public schools with 9.90% an average of low in the full-scale intelligence quotient FSIQ,

47.52% of average and 19.80% of strong average, 17.82% with a high FSIQ and 4.95% with a very high FSIQ, the high potential is means a very high (FSIQ equal to or greater than 130).

The results of the scores of the WISC V psychometric test for Moroccan students indicate a Cronbach alpha coefficient of 0.87 in the urban environment. Also, the correlation between the average of the class scores of the two semesters and the FSIQ for the participating students is 0.56.

The girls scored 108.64 in the FSIQ higher than the 106.79 score obtained by boys. The confirmatory factor analysis to one-factor yielded satisfactory adjustment statistics; RMSEA = .047, CFI = .965 and TLI = .954. Based on the results of the exploratory factor analysis, a one-factor model was tested with the sample. The two- and three-factor models did not yield higher saturation coefficients and communities than the one-factor model.

4. DISCUSSION

The administration of WISC V for Moroccan secondary schools in urban areas received a very significant Cronbach's coefficient on the administration of the test between students, so the correlation between the full scale intelligence quotient scores and the school year average scores gave a strong positive correlation. Girls scored higher on the FSIQ, which is consistent with the difference in intelligence of gender despite the number of girls participating in this study being more than half of all samples, which is consistent with the same results on sex difference in the world. In addition, the levels of education are found to be an important social factor in IQ. Gender and education are known contextual variables that predict performance on IQ tests. Test duration was an important factor in our subjects, with several students treated in two sessions.

The results of our studies show a high mean of the verbal comprehension index to the theoretical mean of the samples even for girls and boys, the standard deviation of this index is high compared to other standard deviations. This index mobilizes the knowledge acquired over the course of life and is the best indicator of crystallized intelligence, which implies the academic performance of the participants. It show that several students reach 155 in the results of this test, which is identical with the results obtained by high potential students. The academic orientation and grades of the students participating in this study play a role on the average value obtained in the verbal comprehension index, because the average value of the class grades are very high in the Arabic language either for the students having the scientific or letter choice in the high school period. Most of the parents are educated without a high level of education, so all the samples are educated in the pre-school period.

The working memory index and the processing speed index are higher than the theoretical mean hundred and their standard deviation of both indexes is close to each other. The working memory index is responsible for the learning, which is well shown for the results of the children participating in this study, as well as the percentage of students with above-average scores. In addition, concerning the processing speed index, which means the speed of information processing, the results are satisfactory for this sample of students because a little more than half of them are above one hundred.

The visuospatial index which calculates visual intelligence is below average, for this index the students with low scores could predict difficulties in mathematics at school which shows their academic performance in mathematics. The fluid reasoning index is lower than the mean and the standard deviation is close to the visuospatial index. It is a specific form

of fluid intelligence (Gf) which represents the ability to solve new or abstract problems and which also involves some quantitative knowledge.

The mean values of the full scale intelligence quotient for each level for the participants show higher values for the verbal comprehension index VCI compared to the other indexes. Grégoire (2009) has shown the influence that these variables can have on IQ scores and particularly on the verbal comprehension index VCI. On the other way, proponents of a multifactorial intelligence model assume that there is a variety of cognitive abilities and useful intelligence tests should measure a variety of abilities rather than a single IQ (e.g., Guilford, 1967; Horn & Cattell, 1967; Thurstone, 1938). The average value of the full scale intelligence quotient is higher than the theoretical average and is better according to the more than three study of IQ in Morocco by Raven test. Clinicians have often argued that intelligence quotient can misrepresent an individual's level of cognitive functioning when differences between component scores are extreme (Kamphaus, 2001; Kaufman, 1994; Prifitera, Weiss, & Saklofske, 1998).

5. CONCLUSION

After Administration of the Wechsler Intelligence Scale for Children, the full-scale intelligence quotient in urban areas revealed the cognitive profiles of the participants in this study: we found low income per dominant household among the schoolchildren and that their parents and grandparents were illiterate. The full-scale intelligence quotient of the participants in this test is on average above the theoretical average. The two indexes visuospatial index IVS and the fluid reasoning index FRI founded to be slightly below the theoretical average and the two indexes working memory WMI and processing speed PSI are above the theoretical average. Only the verbal comprehension index VCI is slightly above average. The results are very significant for the cognitive state need to develop in low scoring students also to look for other types of intelligence to process and to direct students towards specific training.

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AUTHORS' INFORMATION

Full name: Khalid Marnoufi

Institutional affiliation: Multidisciplinary Laboratory of Information, Communication and Education Sciences and Technology (LAPSTICE), Ben M'sik Faculty of Science, Hassan II University of Casablanca

Institutional address: post box 7955, Casablanca, Morocco

K. Marnoufi, B. Touri, M. Bergadi, I. Ghazlane, & F. Soubhi

Short biographical sketch: PhD student in Multidisciplinary Laboratory of Information, Communication and Education Sciences and Technology, Ben M'sik Faculty of Science, Hassan II University Casablanca.

Full name: Bouzekri Touri

Institutional affiliation: Multidisciplinary Laboratory of Information, Communication and Education Sciences and Technology (LAPSTICE), Ben M'sik Faculty of Science, Hassan II University of Casablanca

Institutional address: post box 7955, Casablanca, Morocco

Short biographical sketch: Director of the Multidisciplinary Laboratory of Information, Communication and Education Sciences and Technology, Ben M'sik Faculty of Science, Hassan II University in Casablanca.

Full name: Mohammed Bergadi

Institutional affiliation: Multidisciplinary Laboratory of Information, Communication and Education Sciences and Technology (LAPSTICE), Ben M'sik Faculty of Science, Hassan II University of Casablanca.

Institutional address: post box 7955, Casablanca, Morocco

Short biographical sketch: Higher education Professor in the multidisciplinary laboratory of information, communication and education sciences and technology, Ben M'sik Faculty of Science, Hassan II University in Casablanca.

Full name: Imane Ghazlane

Institutional affiliation: Multidisciplinary Laboratory of Information, Communication and Education Sciences and Technology (LAPSTICE), Ben M'sik Faculty of Science, Hassan II University of Casablanca & Higher Institute of Nursing and Health Technology Professions Casablanca-Settat

Institutional address: post box 7955, Casablanca, Morocco & Street Faidouzi Mohamed, 20250 Casablanca, Morocco

Short biographical sketch: Professor in Higher Institute of Nursing and Health Technology Professions Casablanca-Settat, Morocco, and currently PhD Student in Ben M'sik Faculty of Science, Hassan II University Casablanca.

Full name: Fatima Zahra Soubhi

Institutional affiliation: Multidisciplinary Laboratory of Information, Communication and Education Sciences and Technology (LAPSTICE), Ben M'sik Faculty of Science, Hassan II University of Casablanca

Institutional address: post box 7955, Casablanca, Morocco

Short biographical sketch: PhD in Educational sciences. Multidisciplinary Laboratory of Information, Communication and Education Sciences and Technology (LAPSTICE), Ben M'sik Faculty of Science, Hassan II University of Casablanca.

Chapter #33

INTELLIGENCE ANALYSIS AMONG RURAL LEARNERS IN MOROCCO

Khalid Marnoufi¹, Bouzekri Touri¹, Mohammed Bergadi¹, & Imane Ghazlane^{1,2}

¹*Multidisciplinary Laboratory of Information, Communication and Education Sciences and Technology (LAPSTICE), Ben M'sik Faculty of Science, Hassan II University of Casablanca, post box 7955, Casablanca, Morocco*

²*Higher Institute of Nursing and Health Technology Professions Casablanca-Settat, Morocco Street Faidouzi Mohamed, 20250 Casablanca, Morocco*

ABSTRACT

The full scale intelligence quotient is a strong predictor of educational success. The aim of this study was to calculate the full scale intelligence quotient (FSIQ) of Moroccan rural students in the Safi region. The psychometric test Wechsler intelligence scale for children and adolescents - 5th edition WISC V was used by administering the five indexes, namely the verbal comprehension index, visuospatial index, fluid reasoning index, working memory index and processing speed index, to compare them to the average of the Wechsler tests. The study carried on 104 students (46 girls and 58 boys) between the ages of 12 and 15 years old, 67% of the students were boarders and 33% were external students. We administered all the 15 subtests of WISC V on each participant. The results showed that the verbal comprehension index was higher than the other four indexes in WISC V. In terms of correlations among the five indexes, the results show different types of relationships among the test indexes.

Keywords: FSIQ, WISC V, intelligence, learners, rural.

1. INTRODUCTION

Intelligence tests were first developing in France for the explicit purpose of predicting school success (Binet & Simon, 1904). Then Wechsler's three intelligence tests appeared in the United States and became the most widely used cognitive tests in the world (Camara, Nathan, & Puente, 2000; Georgas, van de Vijver, Weiss, & Saklofske, 2003; Lichtenberger & Kaufman, 2009). All three tests are administered individually for adults, adolescents, and children. All Wechsler tests have been translated, adapted, and standardized in many countries. Since the launch of the Wechsler Bellevue intelligence scale (WB), this rich history of research and clinical applications has undoubtedly contributed to the development of these three tests. From the creation of the Wechsler tests to the latest edition, they based on the g-factor of Spearman (1904). He observed that children's performance on different school subjects was positively correlated.

Thus, the developers of these tests stated that they not only used the general intelligence factor but were also open to cognitive theories to guide creation. Such as use of Cattell-Horn-Carroll theory (CHC). This theory used to classify performance tests to facilitate the interpretation of academic ability and to provide a basis for organizing assessments for those suspected of having a learning disability. In 1993 by Carroll, the CHC theory came together. after several legendary analyses in psychology over the past 60 or 70 years concerning the nature, identification and structure of human cognitive abilities

and is dividing into three hierarchical levels (Carroll, 1993). The third level is dominated by the general factor (g), which is a common factor among tests after factor analysis by Spearman (1927). In 1941 Raymond Cattell identified two factors of intelligence, fluid intelligence and crystallized intelligence (Gf-Gc), but in 1965 John L. Horn developed this theory from his supervisor, Cattell, through an empirical study in his PhD. Six factors in the first edition and fourteen factors by McGrew. (Quantitative knowledge (Gq), short term memory (Gsm), visual processing (Gv), long term memory (Glr), processing speed (Gs), decision/reaction time) / Speed (Gt), Reading and writing ability (Grw). Auditory Processing (Ga), Domain-specific knowledge (Gkn), Psychomotor Capacity (Gp) and Psychomotor Velocity (Gps) including tactile (Gh), kinesthetic (Gk), and olfactory (Go)) plus the two Cattell-Horn factors (Gf-Gc) that take the second level in CHC theory which are then subdividing into four, then come ten prime factors such as induction (I), language development (LD), lexical knowledge (LK) by Schneider and McGrew (2012).

The search for IQ in Morocco has started according to Richard Lynn's announcement to bring together IQ values from all countries of the world. The three studies that are done locally by the Raven Progressive Matrix Standard (SPM) test to provide better estimates of the results. It is proposed that the best estimate of Moroccan IQ that can be obtained on average from the three results is an IQ of 76. The first study was spread over a sample of 85 children (boys, girls, age = 8.5 years) in the city of Kenitra with a result of a British IQ of 74. The second study spread over a group of 202 adults (92 men, 110 women, average age = 26 years) consisting of administrators, cleaners, waiters and cooks in the rooms of residence in university in the cities of Casablanca, Marrakesh, Meknes and Tangiers and earned a British IQ of 81. While the third study consisted of 1,177 high school students (723 boys, 454 girls, aged from 12 to 17 years) in the village of Sidi El Kamel a rural area and obtained a British IQ of 73.33 (Aboussaleh, Ahami, Bonthoux, Mareddaz, & Valdois, 2006, Sellami, Infanzón, Lanzón, Díaz, & Lynn, 2010, Sbaibi, Aboussaleh, & Ahmani, 2014). SPM scores by age group for the Sidi El Kamel Children's College (rural area) 2012 are slightly similar to those obtained in 2007 in Sidi El Kamel by Latifi et al. (2009) and slightly lower than those of the children of the college of M'rirt, Morocco (semi-urban area) reported by El Azmy et al. (2013), but better than those of Indians, tribal children noted by C.G. Deshpande and Patwardhan (2006), and considerably lower compared to children of the same age in developed countries. And let us not forget the almost total absence of preschool education, combined with the absence of any cultural and creative activity in rural areas. Previous studies have been limited to samples with literacy difficulties in people over the age of 50, whose families had low incomes compared to those of European origin. Most of the targeted cities are neglected cities. In addition, these samples scored lower.

This study is carried by the latest version of Wechsler Intelligence Scale for Children and Adolescents - 5th edition WISC V. The WISC V is a test of children cognitive abilities and for learning outcomes. It describes the cognitive processes, the theoretical link between cognitive processes and specific academic skills and how to use performance on the WISC-V to generate hypotheses about processing deficits. That considered the score that is most representative of global intellectual functioning (g). Traditionally, FSIQ has been the first score to be considered in profile interpretation. The aim is to calculate the full scale intelligence quotient by the seven subtests of WISC V for Moroccan students in rural. In addition to the comparison of results related to the five indicators specified in WISC V and the comparison between boys and girls, as well as the correlation with other variables such as school performance.

2. METHOD

2.1. Participants and procedure

We sought to administer the test to a sample of families understanding the psychometric analyses of the people in this rural area with the help of the executives and teachers of the regional academy of education and training of the Marrakech-Safi region in order to allow the testing to be administered by parents within the school. The study carried on 104 pupils in rural areas: the participants are (46 girls and 58 boys) between the ages of 12 and 15 years old (mean = 13.11 months & 23 days with a standard deviation of 01 year, 1 month & 27 days), 67% of whom were boarders and 33% were students who commuted to and from school once a day. We administered all subtests of the Wechsler Intelligence Scale for Children and Adolescents - 5th Edition WISC V on each of the students participating in this study who are enrolling in a rural middle school commune called Khmis Naga in Safi province after adapting it to the Arabic language. We have chosen the samples according to their availability after or before classes. Without forgetting students suggested by the general supervisor of the boarding school and who are all boarding students respecting the age order of WISC V. We also carried a parental questionnaire on the educational level of student's parents, uncles, and aunts. Without forgetting household income, access to drinking water and electricity, transport, and pre-school education.

2.2. Instrument

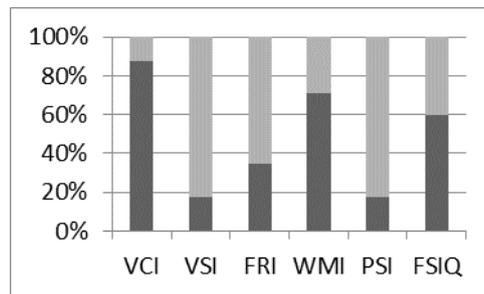
The Wechsler Intelligence Scale for Children and Adolescents - Fifth Edition (WISC - V) administered in the order of the manual. This test of cognitive ability administered to participants aged 6 years to 16 years and 11 months. It consists of 15 subtests. Ten main sub-tests: similarities, vocabulary, block design, visual puzzles, matrix reasoning, figure weights, digit span, picture span, coding and symbol search plus five additional subtests: information, comprehension, arithmetic, letter-number sequencing, and cancellation. All subtests designed to measure five scales: verbal comprehension, visual spatial, fluid reasoning, working memory and processing speed. The score hierarchically ordered full scale intelligence quotient (FSIQ) is composed of only seven primary subtests and not ten subtests like the fourth version of WISC to measure five scales: verbal comprehension (similarities, vocabulary), visual spatial (block design), fluid reasoning (matrix reasoning, figure weights), working memory (digit span) and processing speed (coding) Wechsler, D. (2016 a,b). In statistical analysis to study correlations, factorial analysis ... we have worked with SPSS for analysis and excel for figure.

3. RESULT

The correlation between the averages of the overall grades of the two semesters of the student's class where the average is 13.48 and the full scale intelligence quotient (FSIQ) for the students is 0.62. The results of the WISC V psychometric test scores for Moroccan students gave a Cronbach's alpha coefficient of 0.85 in rural areas. Not to mention that girls scored 103.26 in the FSIQ lower than the 104.26 score obtained by boys. As for the educational level of the students' parents, uncles, and aunts, it is non-existent or very weak, without forgetting the poor income of the family, access to drinking water, electricity, transportation, and pre-school education.

Table 1 presents the mean values and standard deviations of the five indexes and the full scale intelligence quotient (FSIQ) for all participants in this test. We find that the visuospatial index VSI, the fluid reasoning index FRI and the processing speed index PSI are below the mean, while the working memory index WMI is above the mean. Only the verbal comprehension index VCI is slightly above average.

Figure 1.
Indexes Scores of rural pupils.



The figure 1 show in black, the percentage of students with index scores greater than or equal to 100 and in grey, the percentage of students with index scores less than 100. With 40% of children don't have a average in VSI FRI and PSI.

Note that the difference between the VCI and the closest index WMI is 17 points or one standard deviation. The standard deviation of the two indexes VCI and WMI is different by 7 points. The difference between mean of the WMI and the three indexes VSI, FRI and PSI is between 11 and 15 points or more than one standard deviation. To refine the point about the superiority of the mean VCI over the other mean factor indexes, we note that the figure illustrates the different percentages of children scoring high and low on all indexes and on the full scale intelligence quotient (FSIQ).

Table 1.
Mean and Standard Deviation of Five Index and Full Scalle Intelligence Quotient of WISC V.

	VCI	VSI	FRI	WMI	PSI	FSIQ
M	122,67	92,21	94,52	106	91,17	104,05
SD	19,81	9,07	12,05	12,99	11,75	12,35
M Girls	122,59	91,24	92,54	104,76	92,54	103,26
SD	20,67	8,92	13,53	13,13	12,6	13,84
M Boys	122,74	92,98	96,09	106,98	90,09	104,67
SD	19,29	9,2	10,6	12,91	11,01	11,11

M=Mean, SD=Standard Deviation, VCI= Verbal Comprehension Index, VSI = Visuospatial index , FRI= Fluid Reasoning Index, WMI= Working Memory Index , PSI= Processing Speed Index, FSIQ=Full Scale Intelligence Quotient.

A large percentage of the children scored above the theoretical one hundred average in the VCI, WMI and FSIQ which is shown in the figure, whereas less than forty percent of the students scored below the theoretical one hundred average in the VSI, FRI and PSI.

Based on the results of the exploratory factor analysis, a one-factor model was tested with the sample. The two- and three-factor models did not result in saturation coefficients and communities higher than the one-factor model. The confirmatory factor analysis one-factor gave satisfactory adjustment statistics; RMSEA =, 043, CFI =, 967 and TLI =, 956.

The participants in this study compared themselves to the theoretical average 100 in the Full Scale Intelligence Quotient (FSIQ) with a rate of 13.46% average low, 56.73% average and 15.38% average high. For those participants who achieved a high Full Scale Intelligence Quotient (FSIQ), the study recorded 12.5%. As for the high Full Scale Intelligence Quotient (FSIQ), the study recorded only 1.92% very high according to the Wechsler psychometric test (the Full Scale Intelligence Quotient (FSIQ) equal to or greater than 130).

Table 2.
Matrix of correlations between the five indexes for the group of children.

	VCI	VSI	FRI	WMI
VSI	0,44			
FRI	0,5	0,51		
WMI	0,38	0,4	0,54	
PSI	0,02	0,26	0,28	0,4

Table 2 shows the matrix of correlations between the five WISC V indexes with the strong and weak positive correlation. It can be seen that the correlation between the four indexes VCI, FRI, WMI and VSI are between strong positive relationships and moderate positive relationships but the correlations between PSI with the three indexes are between moderate positive relationship and no or negligible positive relationship.

4. DISCUSSION

The full scale intelligence quotient is used to solve school problems among learners. The results of our study are very satisfying because the average value of the full scale intelligence quotient is situated at the theoretical average, which is in contrast with studies already carried on the full scale intelligence quotient in Morocco, which revealed very inferior values. The studied samples showed a correlation between the general averages of the school year and the full scale intelligence quotient values. For students from rural areas there was a strong positive correlation with the reliability of administration given by alpha Cronbach. Girls scored lower in the full scale intelligence quotient which is contradictory to the difference in intelligence of gender despite the number of girls participating in this study being less than half of the entire sample. More generally, IQ is positively correlated with a wide range of life outcomes, including income (Zagorsky, 2007), mental and physical health (Der, Batty, & Deary, 2009; Gale, Hatch, Batty, & Deary, 2009), or life expectancy (Batty, Deary, & Gottfredson, 2007).

The mean of the verbal comprehension index VCI is high and the standard deviation of this index is higher than the other indexes. It is composed of two subtests similarities and vocabulary with a strong positive correlation between the two subtests. This index is used to measure crystallized intelligence related to the educational level of the child's parents and to the child's environment. However, only 5% of the sample has parents who were able to receive primary education even from their family circle, not forgetting that not all children were taught in the pre-school period and that the parents' socio-professional category environment is very low based on agriculture. This test, although very successful for children with high potential not forget the absence of permanent school disorders specialists in public schools has consequently reduced school performance and increased dropout in Moroccan public schools (Sabir, Touri, & Moussetad, 2015); Soubhi, Lima, Talbi, Knouzi, and Touri, 2016; Touri & Marquardt, 2013). This study comes to reveal the Intelligence quotient subtests role in finding pupils with school disorders and impact on their schooling stability.

The Visuospatial index VSI requires the child to use his or her visuospatial intelligence. It is composed of two subtests cubes and visual puzzles with a low positive correlation between the two subtests, this index designates the quality of perception and visual organization, motor/visual coordination, the ability to analyze, synthesize, encode and manipulate physically or mentally objects and shapes to give them meaning. The absence of all mental activities and technological means such as computers in this environment with the difficulty of access to electricity does not help develop this intelligence.

The score of the fluid reasoning index (FRI) for the sample is below average so their relationship with three indexes is strong positive relationship only the relationship of this index with the processing speed index is a weak positive relationship. This index is calculated by two subtests Matrices and Balances, it measures the quality of reasoning, the ability to classify and locate in space, and also the ability to solve problems independently of one's knowledge several studies carried locally in Morocco based on tests of fluid intelligence, the studies gave very low results of IQ in Morocco below the average.

The average of the working memory index WMI is above average. This index is calculated by the two subtests Memory of Numbers and Memory of Pictures, which have a low positive correlation. The objective is to use as much information as possible, going as fast as possible. Low scores are obtained in this index which will indicate learning difficulties and more repetitions to record them. The low scores of the children in this index compared with their school performance are evidence of their low academic achievement. It is observed that the links of the processing speed index PSI with the four indexes and the lowest correlations also the score obtained by the students is the lowest compared to the other indexes. It is calculated by the two subtests Code and Symbols with high positive correlation, this index for the speed and accuracy of assimilation of information by a child. Children with low scores in this index showed a delay in processing information. We note that the full scale intelligence quotient is at the average by the WISC V which is different from the studies already carried on Moroccans by Raven's matrices with very low IQ (fluid intelligence) despite the fact that Raven's matrices calculate fluid intelligence.

5. CONCLUSION

The results of this study are dominated by the average for the full scale Intelligence Quotient also for the five indexes of the test, in spite of the problems that surround the life of students in rural areas due to the absence of several essential conditions caused by poverty without forgetting illiteracy in the families. We have noticed that the average of the verbal comprehension index that represents the crystallized intelligence in the study samples that is high in comparison with the other indexes followed by the index of working memory, these two indexes are related to school success. The averages of the three indexes are inferior to the theoretical average for the visuospatial index VSI, the fluid reasoning index FRI and the processing speed index PSI. The problems of education are related to several factors like disorders of communication economic and social state need to be developed by specialists. Rather, the fluid intelligence by fluid reasoning index of WISC V in rural areas for Moroccans is better according to the more than three study of IQ in Morocco by Raven test.

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AUTHORS' INFORMATION

Full name: Khalid Marnoufi

Institutional affiliation: Multidisciplinary Laboratory of Information, Communication and Education Sciences and Technology (LAPSTICE), Ben M'sik Faculty of Science, Hassan II University of Casablanca

Institutional address: post box 7955, Casablanca, Morocco

Short biographical sketch: PhD student in Multidisciplinary Laboratory of Information, Communication and Education Sciences and Technology, Ben M'sik Faculty of Science, Hassan II University Casablanca.

Full name: Bouzekri Touri

Institutional affiliation: Multidisciplinary Laboratory of Information, Communication and Education Sciences and Technology (LAPSTICE), Ben M'sik Faculty of Science, Hassan II University of Casablanca

Institutional address: post box 7955, Casablanca, Morocco

Short biographical sketch: Director of the Multidisciplinary Laboratory of Information, Communication and Education Sciences and Technology, Ben M'sik Faculty of Science, Hassan II University in Casablanca.

Full name: Mohammed Bergadi

Institutional affiliation: Multidisciplinary Laboratory of Information, Communication and Education Sciences and Technology (LAPSTICE), Ben M'sik Faculty of Science, Hassan II University of Casablanca

Institutional address: post box 7955, Casablanca, Morocco

Short biographical sketch: Higher education Professor in the multidisciplinary laboratory of information, communication and education sciences and technology, Ben M'sik Faculty of Science, Hassan II University in Casablanca

Full name: Imane Ghazlane

Institutional affiliation: Multidisciplinary Laboratory of Information, Communication and Education Sciences and Technology (LAPSTICE), Ben M'sik Faculty of Science, Hassan II University of Casablanca & Higher Institute of Nursing and Health Technology Professions Casablanca-Settat

Institutional address: post box 7955, Casablanca, Morocco & Street Faidouzi Mohamed, 20250 Casablanca, Morocco

Short biographical sketch: Professor in Higher Institute of Nursing and Health Technology Professions Casablanca-Settat, Morocco, and currently PhD Student in Ben M'sik Faculty of Science, Hassan II University Casablanca.

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