

Chapter 30

PSYCHOSOCIAL FACTORS OF PROBLEMATIC INTERNET USE AND BINGE DRINKING AMONG SLOVAK UNIVERSITY STUDENTS

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ABSTRACT

Objectives: To explore the associations between gender, academic performance, relationship status, personality factors and risk behaviours (problematic internet use and binge drinking) among the first year university students. *Methods:* 817 first year university students from Slovakia (74.5% females, 19.6 mean age) provided data on their academic performance at high school prior to their university study (overall performance, amount of schoolwork, quality of schoolwork), relationship status, length of the relationship, filled in the ten item Personality Inventory and provided data on various risk behaviours (GPIU2 – generalized problematic internet use, AUDIT-C – binge frequency). Respondents were dichotomized according to their level of risk behaviours for the purposes of binary logistic regression. The complete model containing the predictors: gender, academic performance, relationship status and personality factors distinguished between students who reported and did not report risk behaviours. Gender, relationship status and academic performance contributed significantly to the model. *Conclusions:* Gender, duration of a romantic relationship and previous academic performance at high school may be important to acknowledge when targeting prevention programs for the first year students.

Keywords: psychosocial factors, problematic Internet use, binge drinking.

1. INTRODUCTION

The crucial period for studying risk behaviour among university students are the first years. This period requires successful adaptation, coping with qualitative and quantitative changes arising from coming into a completely new environment. The years spent studying at the university are also important for forming one's personal and social identity (Janovská, Petkeviciene, Lukacs, Orosová, & Gajdošová, 2013).

The research on risk behaviour of university students is also very important, because university students might have a significant influence on other young adults within society and significantly contribute to the perception of social norms. Moreover, after finishing their studies it is the university students that take on leading public roles in the society (Bačíková et al., 2011). Interestingly, risky behaviours are quite frequent in this group and follow a different pattern in comparison to other groups. For example risky patterns of alcohol consumption such as consuming large quantities of alcohol, or binge drinking are very common (Ansari, Stock & Mills, 2013).

A new phenomenon in risk behaviour, the problematic Internet use, has been recently introduced into current research. Up to now, problematic Internet use has not been extensively studied (Šebeňa, Orosová, & Benka, 2013). Nonetheless, it has been found to be highly relevant in the context of university study, however, its relation to other risk behaviours has been scarcely investigated.

Recently, it has been suggested that risk behaviours tend to co-occur and form clusters (Lippke, Nigg & Maddock, 2012). Thus monitoring the incidence of risk behaviour clusters could improve the understanding of the underlying processes of risk behaviour as such (Dusseldorp et al., 2014).

2. BACKGROUND

2.1. Binge drinking

Despite the findings that people with more years of education consume alcohol less frequently and less risky than those with fewer years of education, it has been shown in numerous countries that university students constitute a special group tending to consume alcohol more frequently and in larger amount in comparison to the rest of the population (Ansari et al., 2013). The prevalence of alcohol use and problems related to drinking have been shown to be higher among university students in comparison to the same age group of people who are not attending a university (Adámková, Vondráčková, & Vacek, 2009).

The problems connected to alcohol use can be divided into short term and long term (Benka & Orosová, 2013). The long-term problems are represented for example by deterioration of one's health, relationship problems, and presence of other risk behaviours. In the context of university students it can also be connected to specific study difficulties, inability to meet deadlines and not being able to manage the study load (Ansari et al., 2013; Gajdošová, Orosová, & Janovská, 2012).

Janovská et al. (2013) investigated the role of relationship status and found that having a partner served as a protective factor. Furthermore, Fleming, White, & Catalano (2010), based on the findings from a longitudinal study, concluded that a well-functioning relationship contributed to the reduction of alcohol use especially at the beginning of university studies. It has also been found that a supportive social network can moderate the extent to which university students consume alcohol in order to cope with difficult situations related to their university studies (Orosová, Šebeňa, Benka, & Gajdošová, 2013).

2.2. Problematic Internet use

The research suggests that in addition to the many benefits connected with the everyday use of Internet, a completely new form of risk behaviour has come to existence (De Leo & Wulfert, 2013). It has been shown that online activities might interfere with other life activities by spending too much time online playing interactive games, visiting chat rooms, emailing, visiting websites with sexual content and more importantly replacing real relationships with those online. This creates the basis for further risks of electronic communication such as cyberstalking, cybergrooming or sexting (Caplan, 2010). Problematic Internet use can cause a decrease of interests in real social contact and become subsequently a trigger of interpersonal problems, problems in relationship with a partner or even affect performance at work or school (Demetrovics, Szered, & Rósz, 2008). Caplan (2010) proposed a cognitive-behavioural model of Generalized Problematic Internet Use (GPIU). This model addresses why and how online social activities can be related to adopting an unhealthy pattern of Internet use. He identified what he called the individual components of problematic Internet use. According to his theory it is the preference for online communication versus face-to-face communication that triggers the GPIU. This is followed by compulsive Internet use, deficient self-regulation, cognitive preoccupation and negative consequences. The relationship between the preference for online communication is theorized to be mediated by deficient self-regulation and using the Internet for mood regulation. Further research has shown that problems with self-regulation and depression can indeed contribute to problematic Internet use (Šebeňa, Orosová, & Benka, 2013). It was also found that loneliness and social anxiety can increase the impact of GPIU on an individual and make people more vulnerable to GPIU (De Leo & Wulfert, 2013).

2.3. Psychosocial factors of problematic Internet use and binge drinking

Jessor and Jessor (1997) have formulated a problem-behaviour theory which claims that people who demonstrate a particular risk behaviour in one area have the tendency to engage in risk behaviours in other areas as well. The existence of health behaviour clusters has triggered the search for factors associated with these clusters (Brooks, Magnusson, Spencer, & Morgan, 2012). The combination of problematic internet use and binge drinking chosen in this study is rather an unusual cluster of substance and non-substance risk behaviours although few studies

have already tried to explore this issue. For example Orosová, Šebeňa, Gajdošová, and Kalina (2012) explored the differences in problematic Internet use between heavy drinking and non-heavy drinking university students. Her study showed that significantly higher levels of compulsive use as well as cognitive preoccupation were found among heavy drinking students (Orosová et al., 2012). Both of these behaviours are typical for university students and have been found to be strongly interfering with the ability to complete tasks (Bačiková et al., 2011). For example, poor academic performance has been shown to be significantly associated with both problematic Internet use and binge drinking (Frangos, Frangos, & Sotiropoulos, 2011, Ansari, et al. 2013). On the other hand, being in a relationship and a general presence of social support was found to be negatively related to both problematic Internet use and alcohol use (Janovská et al., 2013). It could be theorized that students may be using the Internet as well as bingeing to overcome the feelings of loneliness, depression and anxiety (Robinson, Sareen, Cox, & Bolton, 2011). Problematic Internet use seems to be much more complicated and the causal factors are often found to be contradicting. Online communication and its preference over face-to-face communication were found to be related to lower extraversion, emotional stability and openness to experience (Kopuničová, Orosová, & Gajdošová, 2012), whereas alcohol use has been more closely and consistently associated with gender and personality factors (Gajdošová et al., 2012).

3. DESIGN

A cross-sectional design was used.

4. OBJECTIVES

This study aimed to explore the associations between gender, academic performance, relationship status, personality factors and the risk behaviour cluster (general problematic internet use and binge drinking) of the first year university students.

5. METHODS

5.1. Sample

This study is part of a larger study – SLiCE (Student behaviour and Life perspectives Cohort study in Europe: <http://www.slice-study.eu/>), which is a five years follow-up up cohort study conducted among the first year university students from 13 European countries. However, this study will present findings only from the Slovak sample. It is a longitudinal investigation of life perspective and health-related behaviour, and psychosocial risk/protective factors of health-related behaviour among university students. The first year university students from four universities in the Eastern part of Slovakia were contacted via their university e-mail, as well as personally during their courses with the offer to participate in the study. In total 1272 students were approached and 817 completed the survey resulting in a response rate of 64.22%. The final sample consisted of 817 students, 75.2% were females and the mean age was 19.6 (0.81). Those first year university students, who signed the consent form, were asked to fill in on-line questionnaires covering various domains such as their academic performance, relationship status, personality factors and risk behaviours. The questionnaire was approved by the Institutional Review Boards of individual participating universities.

5.2. Measures

Academic performance. Academic performance (Markel & Frone, 1998) was assessed by three single-item indicators of school performance, which were represented by students' ratings of their overall performance, the amount of academic work completed in high school and the quality of their work in high school. Each item (overall performance during high school, the amount of work completed in high school, the quality of work) was evaluated on a 5-point Likert-type scale that ranged from 1 (poor) to 5 (excellent).

Relationship status. Relationship status was assessed by the question: “Do you have a romantic/steady relationship? If yes, how long ago did it start?” with possible answers: 1/ No romantic/steady relationship at present, 2/1-2 months, 3/6 months, 4/12 months, 5/more than 12 months.

Personality factors. TIPI - Ten Item Personality Inventory (Gosling, Rentfrow, & Swann, 2003) was used to measure five personality factors: extraversion, agreeableness, emotional stability, conscientiousness and openness to experience. Each item consists of two descriptors, separated by a comma, using the common stem, “I see myself as:” Each of the ten items was rated on a 7-point scale ranging from 1 (disagree strongly) to 7 (agree strongly). A higher score indicated a higher level in each factor.

Problematic Internet use. The Generalized Problematic Internet Use Scale 2 (Caplan, 2010) has 15 items in total and all items are evaluated on a scale ranging from 1 (definitely disagree) to 8 (definitely agree). A higher score indicates more problematic Internet use. Cronbach’s alpha in this study reached 0.91 for the whole scale. The Generalized problematic Internet Use Scale 2 consists of five subscales (preference for online social interaction ($\alpha = 0.75$), mood regulation ($\alpha = 0.87$), cognitive preoccupation ($\alpha = 0.88$), compulsive Internet use ($\alpha = 0.88$), negative outcomes ($\alpha = 0.88$)).

Binge drinking. Heavy episodic (binge) drinking was assessed by the third item of the AUDIT-C: “How often did you drink 6 or more standard drinks on one occasion in the past 30 days?” Respondents could answer on a scale from 0 – never to 4 –daily or almost daily.

5.3. Statistical analyses

Binary logistic regression models were conducted in order to explore the simultaneous contribution of the measured variables. The final sample was dichotomized according to students’ level of cumulative index of risk behaviours for the purposes of binary logistic regression.

Visual Binning was used to identify suitable cut-off points to divide the variables problematic Internet use (GPIU) into two approximately equal groups ($0^{(PIU/0)} = \leq 36,00$, $1^{(PIU/1)} = 37,00+$). Visual Binning was used to create groups (bins, categories) from a continuous variable and visually control the process.

Participants with AUDIT-C scores of zero (the “never” response) were categorized “AUDIT- 3 negative ($0^{auditC/0}$),” while participants with AUDIT-C scores from 1 (less than monthly) to 4 (daily or almost daily) were considered “AUDIT-C positive” ($1^{auditC/1}$).

Risk behaviours as dependent variables of logistic regression were dichotomised into categories RBS0 ($^{PIU/0+auditC/0, n=126}$) and RBS1 ($^{PIU/1+auditC/1, n=560}$).

All data were analysed using the statistical package for social sciences (SPSS 20).

6. RESULTS

In our sample, 80.5% of the first year university students fulfilled the criteria for binge drinking (6 or more drinks on one occasion) and reported some symptoms of problematic internet use. Only 19.5 % of these students scored very low on problematic Internet use and did not use binge drinking.

From the three single-item indicators of school performance: students' ratings of their overall performance, the amount of academic work completed in high school and the quality of their work in high school, the highest score was reached in overall performance.

Regarding the personality factors, the lowest score was found in emotional stability and the highest score in the factor openness to experience (Table 1).

Table 1. Psychosocial characteristics (percentages, means and standard deviations).

	N	%	Valid %	Mean	SD
RBS0 (PIU/0+audit 3/0)	126	15.5	19.5		
RBS1 (PIU/1+audit 3/1)	560	63.8	80.5		
Romantic relationship				3.4	1.8
Overall performance				4.1	0.8
Amount of schoolwork				3.0	0.9
Quality of schoolwork				3.7	0.8
Extraversion				9.9	3.2
Agreeableness				9.9	2.4
Conscientiousness				10.5	2.5
Emotional stability				8.9	2.9
Openness to experience				11.3	2.3

The complete model containing all predictors (gender, duration of a romantic relationship, academic performance: overall performance, the amount of academic work completed in high school and the quality of their work in high school and personality factors extraversion, agreeableness, conscientiousness, emotional stability, openness to experience) was statistically significant ($\chi^2 = 41.79$, $p < 0.001$) and distinguished between students reporting versus not reporting cluster of risk behaviours (problematic internet use and binge drinking) explaining 12% to 20% of the total variance. Gender, having a romantic relationship (1- 2 months, more than 12 months) and academic performance (total outcome while studying at college) made statistically significant contributions to the model (Table 2). The duration of romantic relationship of 1-2 month and more than 12 months decreased risk behaviours of problematic Internet use/binge drinking. Overall performance decreased this health behaviour cluster of problematic Internet use/binge drinking.

Table 2. The associations between gender, duration of romantic relationship, academic performance, personality factors and risk behaviours among Slovak university students.

	Odds Ratio (95% CI)	
Gender	0.22*	(0.06-0.78)
Romantic relationship 1-2months	0.19*	(0.04-0.85)
Romantic relationship 3-6 months	0.39	(0.08-1.88)
Romantic relationship 7-12 months	0.33	(0.08-1.39)
Romantic relationship more than 12 months	0.16***	(0.06-0.44)
Overall performance	0.63*	(0.39-0.99)
Amount of schoolwork	0.93	(0.60-1.44)
Quality of schoolwork	1.07	(0.69-1.66)
Extraversion	0.93	(0.81-1.06)
Agreeableness	0.95	(0.81-1.11)
Conscientiousness	1.00	(0.89-1.14)
Emotional stability	0.95	(0.84-1.07)
Openness to experience	1.03	(0.86-1.25)

* $p < 0.05$; *** $p < 0.001$

$\chi^2 = 41.79$ ***, $p < 0.001$

7. CONCLUSION/DISCUSSION

Based on the tenets of Problem-behaviour theory of Jessor and Jessor (1997) and recent concept of health behaviour clusters (Conry et al., 2011), this study addressed the combination of problematic Internet use and binge drinking among university students. Both of these behaviours are typical in university environment (De Leo & Wulfert, 2013; Howland et al., 2010; Shields & Kane, 2011). In our sample, 80.5% of the first year university students fulfilled the criteria for binge drinking (6 or more drinks on one occasion) and at the same time reported

some symptoms of problematic Internet use. Only 19.5 % of these students scored very low on problematic internet use and they did not engage in binge drinking.

Our research focused on three indicators of academic performance: students' ratings of their overall performance, the amount of academic work completed and the quality of their academic work during the past year. The overall performance indicator was associated with the explored risk behaviour cluster of problematic Internet use/binge drinking. Unhealthy Internet use may strongly interfere with their academic performance and may cause disruptions of daily routines and negatively influence academic performance (De Leo & Wulfert; 2013, Ansari et al., 2013; Anderson, 2001). Regarding alcohol use, similarly, it has been found that repeated periods of heavy alcohol consumption are related to achieving lower grades (Pascarella et al., 2007).

This study further showed that being in a relationship 1-2 month or more than 12 months was associated with the cluster problematic Internet use/binge drinking. According to Fleming et al. (2010) being in relationship is protective towards feelings of loneliness and can serve as an important source of social support. Also negative significant relationship was observed between social support and preference for online communication (Kopuničová et al., 2012). It has been shown that binge drinking is negatively associated with social support and loneliness (Ang, Chong, Chye, & Huan, 2012; Hetzel-Riggin & Pritchard, 2011; Tokunaga & Rains, 2010).

The effect of personality variables did not appear to be significant in our study. Significant differences regarding gender were observed. Some research has shown that gender differences in problematic Internet use exist but with a considerable inconsistency (Guertler et al., 2014; Odaci & Cikrikci, 2014). On the other hand, Internet use shows a similar pattern for both genders that also report similar risk behaviours (Kuss, Griffiths, & Binder, 2013). Current research of undergraduates found that more men than women have a problem with alcohol use (Ansari et al., 2013; Maggs, Williams, & Lee, 2011; Heather et al., 2011). Further research is needed regarding gender differences in GPIU. 74.5% of participants in our research were female students, which is one of the limitations of this study. On-line data collection, as well as self-report based research could be identified as further limitations of this study.

The results of this study generally supported existing research and confirmed a simultaneous contribution of gender, relationship status and school performance with a cumulative indicator of risk behaviours (problematic internet use/ and binge drinking).

The findings of this study further highlight the necessity of research-based preventions of risk behaviour of first year university students.

8. FUTURE RESEARCH DIRECTIONS

This research study is a part of a larger international longitudinal project focused on psychosocial factors of health related behaviour. Future research regarding the relationship between the studied risk behaviours of problematic Internet use and binge drinking should be investigated from a longitudinal perspective. Similarly, psychosocial characteristics could be addressed on a process level, studying changes in these variables over time, which might prove to be relevant and significantly associated with health related behaviour as well as clusters of specific risk behaviours.

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