Chapter #18

COPING STRATEGIES AND SELF-MEDICATION OF FRENCH CONSULTING PATIENTS WITH FUNCTIONAL DIGESTIVE DISORDERS

Mina Ananda Yenkamala
Department of Research, Ayurvedic Institute of Guadeloupe, Capesterre-Belle-Eau, 97130, French West Indies

ABSTRACT
Background: Functional digestive disorders, including irritable bowel syndrome and functional dyspepsia, are a very frequent reason for consultation which leads to self-medication. Aim: The objectives of our research are to study the impact of different factors on the subject's adjustment to functional digestive disorders and to assess the specific quality of life, the evolution of the disease and the self-medication over a three-month period. Methods and Materials: During this longitudinal and prospective study, we met 20 subjects at time 1, and saw again 10 of them, three months later. Thanks to previous work using the same methodology, our total population consists of 42 subjects. In two times of the study, we made fill out several questionnaires concerning various variables. Results: Our main results allow showing that most of the subjects have a stable or better quality of life, have seen their disorders stabilize between the two stages of the research and they have a high recourse to self-medication. Our linear regressions and our comparisons of averages allowed us several relations about quality of life and coping strategies. Conclusion: Supporting therapies and self-management programs would be beneficial for the patients who avoid their functional digestive disorders by self-medicating.

Keywords: functional digestive disorders, irritable bowel syndrome, dyspepsia, coping strategies, self-medication, quality of life.

1. INTRODUCTION

At the anatomical level, Ayurvedic medicine considers in addition to individual constitutions: the different tissues (plasma, blood, muscles, fat, bones, marrow and nerves, sexual organs); several channels which nourish the tissues and the body, and which evacuate wastes outside the body; as well as bodily waste (sweat, stool and urine). Tissues are the places where disease can take place (Ayurveda Program for a Long and Healthy Living, 2015).

Functional is defined as disturbances in the functioning of the organ and therefore, functional digestive disorders constitute a set of digestive symptoms for which no organic sign is diagnosed. Depending on the location of the abdominal pain, we distinguish:

- Irritable Bowel Syndrome (or functional colopathy) which is a dysfunction of the lower digestive tract
- Dyspepsia which is a dysfunction of the upper digestive tract

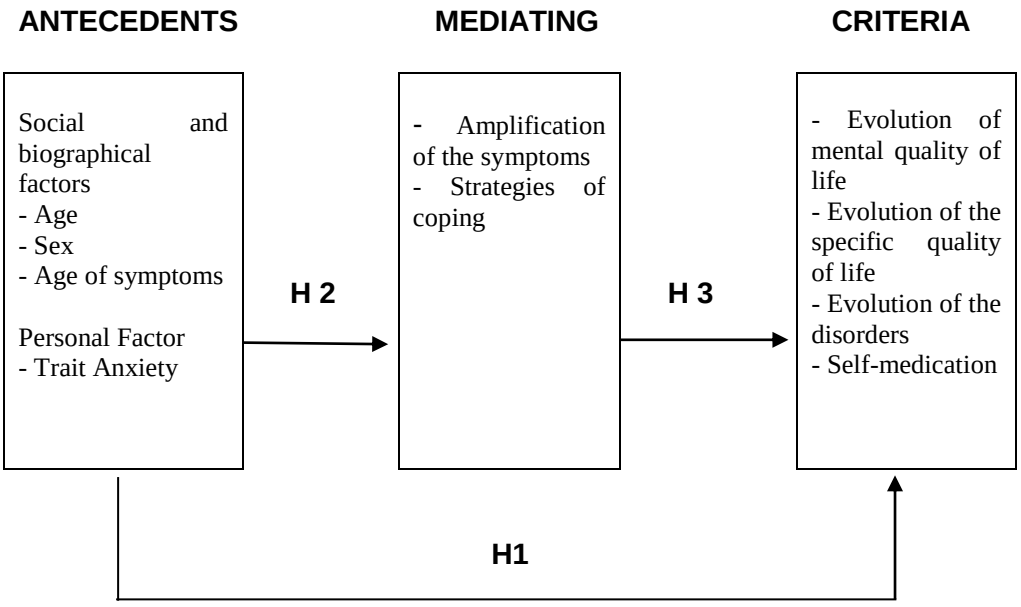
Many previous studies have focused on the role of psychosocial factors in the functional digestive disorders. Some social and demographical factors as the age and the female sex have an impact on the quality of life, on the evolution and on the somatic (Everhart et al., 1989) and emotional adjustment in the disease.

Some psychological factors as the trait anxiety and amplification of symptoms have an impact on the quality of life, on the self-medication and on the somatic and emotional adjustment of the disease (Bruchon-Schweitzer & Quintard, 2001).

The use of specific strategies of adjustment called coping strategies depends on social and demographical factors, on the self-medication and on certain psychological factors (Bruchon-Schweitzer, 2002).

Several types of strategies as coping focused on problem, coping centered on emotions, and seeking social support have an impact on the quality of life (American college of gastroenterology functional gastrointestinal disorders task force, 2002), on the somatic and emotional adjustment and on the evolution of the disease (Drossman, Whitehead, & Camilleri, 1997).

Based on the transactional model of health psychology, the objective of our study is to study the impact of antecedent and mediating variables on the subject's adjustment to functional digestive disorders and on the other hand to assess changes in quality of life on a three-month period.



Our multifactor model allows us to propose the following hypotheses:

Hypothesis 1 (H1): Certain socio-biographical factors (being a woman, being old, having old symptoms) and personal (significant anxiety) predict a bad evolution of functional digestive disorders, a poor evolution of the quality of life specific to functional digestive disorders and of the mental quality of life, and / or significant self-medication.

Hypothesis 2 (H2): Certain socio-biographical factors (being a woman, being old, having old symptoms) and personal (significant anxiety) predict a high amplification of symptoms and the use of dysfunctional coping strategies.

Hypothesis 3 (H3): High symptom amplification and the use of dysfunctional coping strategies predict poor development of functional digestive disorders, poor development of functional digestive disorders specific quality of life and mental quality of life, and / or the use of self-medication.

2. MATERIALS AND METHODS

In the two times of the study, the author met 20 patients at time 1 and 10 people three months later, from October 2004 to April 2005, in the public hospital of Bordeaux in France. In this prospective and longitudinal study, our 10 selected patients will be added to the population initially formed, i.e., 19 patients, 4 of whom had not sent the time 2 letter and then 23 subjects including one person who did not participate in time 2.

Our sample therefore consists of a total of 62 patients at time 1 and 42 subjects with a functional digestive disorder at Time 2. Our database will be based on data from these 42 people. On the other hand, the self-medication scores will concern the 20 patients we saw at T1. All participants got information about the study, and they gave informed consent.

At the first time, the author has collected the information and the questionnaires about the antecedents and the mediating factors.

At the second time, the participants have completed questionnaires concerning the adjustment criteria.

2.1. Questionnaires used for the antecedents' variables

Age is a quantitative variable and appears on the medical information sheet at time 1. This is then recoded according to four age groups: (1). 18 to 34 years old; (2). 35 to 49 years old; (3). 50 to 64 years old; and (4). 65 to 79 years old; to highlight the age group most affected by functional digestive disorders.

Sex is a qualitative variable shown on the medical information sheet at time 1. This variable is listed: (1) for men and (2) for women, allowing us to consider the category most affected by functional digestive disorders.

The STAI scale (Bruchon-Schweitzer & Paulhan, 1993).) is used to estimate the feelings of apprehension, tension, nervousness and worry that an individual feels "usually, generally", and each of the 20 items is next to 1 to 4 (almost never, sometimes, often, almost always). The overall score is between 20 and 80. The more the subject has a high score, the more he will have a high trait anxiety.

The reliability is very satisfactory as well as the validity and this tool has a stable factor structure (Bruchon-Schweitzer, 2002). We chose this anxiety-trait scale assessing anxiety to distinguish anxious subjects among patients with functional digestive disorders, and maybe if it would be related to self-medication.

2.2. Questionnaires Used for the Mediating Variables

The Barsky, Goodson, Lane, & Cleary (1988) **questionnaire** will allow us to measure **the amplification of symptoms** in patients with functional digestive disorders, and to show how they use self-medication. Its Cronbach's alpha is +0.72, for good internal consistency. The subject should rate their level of agreement from 0 (strongly disagree) to 4 (strongly agree) according to five propositions. The final score is ranged from 0 to 20, with an average of 8.9 and a standard deviation of 4.3.

The Coping with Health Injuries and Problems (CHIP) from Endler and Parker (2000) had been built, initially for cancer patients, then revised to suit very different groups of patients including patients with functional digestive disorders. This tool includes 32 items and allows 4 dimensions to be evaluated: palliative coping (8 items), instrumental coping (8 items), distraction (8 items), emotional coping (8 items).

Distractive coping describes the importance with which the subject uses actions and cognitions to avoid worrying about his health problem. This involves thinking about more pleasant things, engaging in activities without relationship with the disease and to look for the contact with others.

Palliative coping describes the various "self-management" responses used to diminish the unpleasantness of the situation. Responses to this type of coping include attempts to feel better through, for example, creating a comfortable environment or getting plenty of rest. These responses involve expanding one's beliefs about the disease.

Instrumental coping emphasizes various task-oriented strategies used to deal with the disease. Such a strategy can be classified as active or problem-focused because the individual is looking for help with their illness or trying to learn more about it.

Emotional coping is about how the individual focuses on the emotional consequences of his health problem. These coping behaviors relate to emotionally oriented coping and include responses such as self-concern and extravagance.

Respondents are asked to rate each of the 32 items on a 5-point scale from 1 (not at all) to 5 (completely). We obtain a raw score for each dimension, which we report on a profile, established by the authors according to age and sex, and a score ranging from 20 (low) to 90 (high) for each type of coping. The CHIP scale has good reliability and validity.

2.3. Questionnaires used for the adjustment criteria

The GHQ-12 (General Health Questionnaire) scale is a brief 12-item mental health scale that assesses the mental quality of life of patients with functional digestive disorders.

The GHQ-12 presents a strong internal consistency and a one-dimensional factorial structure across the different studies. This questionnaire also shows good reliability and good convergent validity. The mental quality of life is assessed at time 1 and time 2 (three months later), it is the difference in mental quality of life between time 1 and time 2.

The FDDQL questionnaire (Functional Digestive Disorders Quality of Life, 1999), validated by Chassany et al (1999), has a reliability expressed by a Cronbach's alpha coefficient of 0.94. The evaluation of its discriminant validity is significant ($p < 0.05$). The FDDQL has 43 items according to eight areas: Activities, Anxiety, Food, Sleep, Discomfort, and Reaction to illness, Control, and Impact of stress. Scores on these dimensions are weighted to obtain an overall score out of 100. A high score corresponds to a better quality of life. The quality of life specific to functional digestive disorders is evaluated at time 1 and time 2 (three months later), it is the difference in quality of life specific to functional digestive disorders between time 1 and time 2.

The evolution of the disorders is evaluated at time 2 to find out whether the patient's disorders worsened (1), stabilized (2), or improved (3) three months after time 1.

We built a **questionnaire of self-medication** whose score is from 1 (low) to 14 (high).

3. RESULTS AND ANALYSIS

Data from 42 patients who consulted for functional digestive disorders at two times, were compared using average, t-test for paired samples and linear regression analysis. All analyses were done using SPSS software (SPSS 17.0).

3.1. Descriptive analysis

The average age of the patients is 47 years old, and ranges from 22 to 70 years old. We find that many patients (40.5%) are between 50 and 64 years old.

Our sample is 81% women and 19% men.

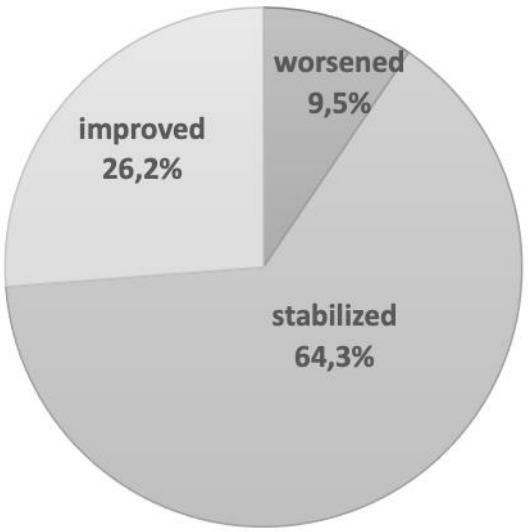
Most subjects experienced their digestive problems during adolescence (33%). On the other hand, the disorders very rarely appeared after 60 years.

The average trait anxiety score obtained by our sample is 46.10. Nevertheless, the scores are quite heterogeneous (standard-deviation of 9.48) ranging from 21 to 63 out of 80. Nearly 60% of our population presents a score higher than or equal to 48/80. So, the major part of the subjects have high trait-anxiety.

With averages of 59.38 and 59.90 on 90, the emotional and the instrumental coping are the strategies most used by our sample compared to palliative or distractive coping. Indeed, 14% of subjects have low palliative coping scores compared to nearly 55% of the subjects who use the emotional coping strategy.

We find that the disorders stabilized for 64.3% of our population, while it worsened for 9.5%.

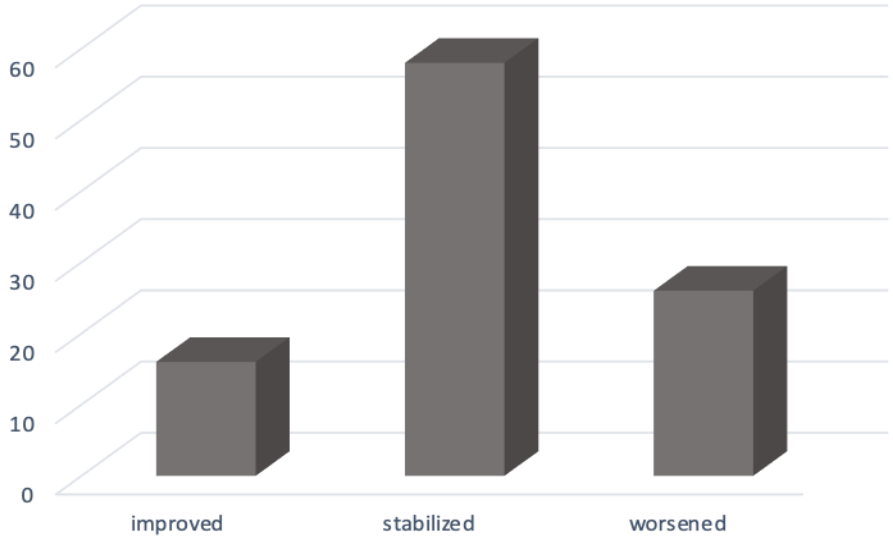
Figure 1.
Percentage distribution of the age of onset of the first functional digestive disorders symptoms.



The average score obtained on the GHQ (**mental quality of life at T1**) is 13.5/36. Significant mental discomfort is noted in nearly 64.3% of our sample. In addition, we find that one subject has severe depression (score of 29/36).

At time 2, the average score obtained on the GHQ is 12/36. We find a good mental quality of life at T2 for 11.9% of them, this percentage is significantly higher than at T1 (4.8%).

Figure 2.
Percentage distribution of subjects with functional digestive disorders according to the evolution of their mental quality of life.



The average score on the FDDQL at T1 is 42.31 out of 100. The scores range from 16 to 64 with a standard-deviation of 13.17. In the one hand, 33.3% of subjects believe that they have a good **quality of life specific to functional digestive disorders** (score ranging from 48 to 64 on 100), and in the other hand, 67% of the subjects report an impaired quality of life due to their digestive disorders.

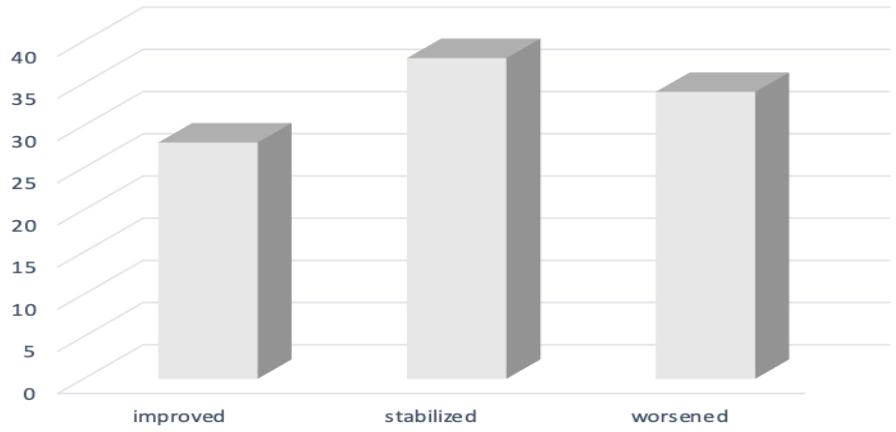
At Time 2, 26.2% of our population consider that they have a good quality of life specific to their disorders, while the others report an impaired quality of life.

The mean score on the FDDQL at T2 is 42.93/100 and is stable between T1 and T2.

The comparison of means t-test for paired samples shows a difference in means between the subjects' mental quality of life at T1 (m = 15.02) and those at T2 (m = 13.00). This difference is statistically significant (t = 2.16; degree of liberty = 41; p <.05). Thus, subjects with functional digestive disorders appear to have a better mental quality of life at T2 than at T1. By recoding this variable in our database, nearly 74% of subjects with functional digestive disorders have stabilized or have improved their quality of life during the three-month period.

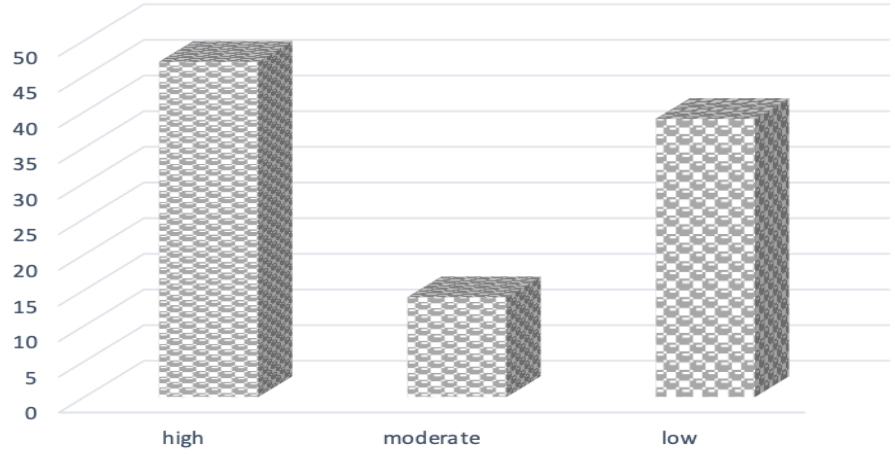
The comparison of means t-test for paired samples does not show any significant difference between the means depending on whether the subjects assess their quality of life specific to their disorders at T1 (m = 42.31) and at T2 (m = 42.93). This difference is not statistically significant (P> 0.05). Nevertheless, there is a positive and significant link between the FDDQL scores at T1 and those at T2 (r = 0.15). By recoding this variable in our database, we find that nearly 67% of subjects with functional digestive disorders have stabilized or have improved their quality of life between T1 and T2.

Figure 3.
Percentage distribution of TFD subjects in relation to the evolution of the quality of life specific to their disorders.



The average score **of self-medication** is 7.5/14 and the scores range from 3 to 11/14. Most subjects (45%) have a score higher than or equal to 9/14 which means that many subjects with functional digestive disorders have a high self-medication. In addition, 40% of the subjects have a score lesser than or equal to 5/14 for a low recourse to self-medication.

Figure 4.
Percentage distribution of subjects having functional digestive disorders according to their use of self-medication.



3.2. Inferential Analysis

An inferential analysis from data 42 patients will allow bringing to light the dysfunctional or functional impact of the antecedents and the mediating variables in the adjustment to functional digestive disorders.

To test the hypotheses 1, 2 and 3, the significance of models between the antecedents and the mediating variables (Table 2) and, the relation between the antecedents' variables and the criteria adjustment (Table 1) and finally between the mediators and the criteria adjustment (Table 3) are tested by an analysis of linear regression. Only the significant results were considered.

4. DISCUSSION

First, we did not take sex into account in the statistical calculations because the strong predominance of the female sex in the population with functional digestive disorders is confirmed in our sample. With only 19% of men, the male population remains less represented. For nearly 60% of our sample, the disorders started before 30 years old.

Our statistical results show that young subjects with functional digestive disorders will have a good evolution of their quality of life specific to their disorders. Then, a recent appearance of symptoms predicts a good evolution of the mental quality of life. The chronic nature of this pathology and the partial effectiveness of the treatments cause impotence of the patient. Therefore, young subjects with recent functional digestive disorders can deal with their disorders and suffer less in their daily life.

Table 1.
Predictive role of socio-biographical and personal factors on the criteria for adjustment to functional digestive disorders.

	Degree of liberty	F	R^2	Standardized β
Model 1 -Age	41	4.290*	0.097	-0.311*
Model 2 - Age of symptoms - Trait anxiety	41	3.049*	0.135	 -0.162* 0.308
P values assessed by linear regression analysis. Results are the significance of models. *p<0.05 ; **p<0.01				

We noted that high anxiety very significantly predicted strong reliance on distractive and emotional coping strategies, which are generally dysfunctional. But for chronic diseases, the use of these long-term strategies seems justified (Bruchon-Schweitzer, 2002). Numerous authors have shown the pathogenic role of the anxious personality. The

American College of Gastroenterology Functional Gastrointestinal Disorders task force (2002) suggests that the improvement in irritable bowel syndrome is linked to the improvement in anxiety. These patients are sensitive to events because of anxiety. Therefore, they must avoid everything that increase their disorders by thinking about pleasant things or by looking for company.

Table 2.
Predictive role of socio-biographical and personal factors on the mediators to functional digestive disorders.

	Degree of liberty	F	R^2	Standardized β
Model 1	41	9.667**	0.433	
-Trait anxiety				0.662**
-Age of symptoms				-0.058
-Age				0.078
Model 2	41	3.049*	0.135	
-Age of symptoms				-0.269
-Trait anxiety				0.400**
-Age				0.175
P values assessed by linear regression analysis. Results are the significance of models. *p<0.05 ; **p<0.01				

Finally, a weak recourse to the emotional coping predicts a good evolution of the disorders three months later. Indeed, the use of this strategy is associated with unfavorable outcomes. Indeed, the subjects with functional digestive disorders, who do not dramatize their troubles and who do not think about the situation will have good evolution three months later.

Table 3.
Predictive role of the mediators on the adjustment criteria to functional digestive disorders.

	Degree of liberty	F	R^2	Standardized β
Model 1	41	3.548*	0.154	
-Emotional coping				0.279
-Distractive coping				-0.215

Model 2	41	2.503*	0.258	
- Age of symptoms				-0.087
- Emotional coping				-0.440*
- Distractive coping				-0.057
- Palliative coping				-0.160
- Instrumental coping				0.258
P values assessed by linear regression analysis. Results are the significance of models. *p<0.05; **p<0.01				

Through the results observed previously, we were able to confirm our general hypothesis that certain antecedent or mediating variables have an impact on the adjustment to functional digestive disorders. Indeed, socio-biographical, and personal antecedent variables, and mediating variables such as coping strategies and symptom amplification have an impact on emotional outcomes (change in mental quality of life and change in quality of life specific to disorders), somatic (evolution of disorders) of subjects suffering from functional digestive disorders.

Tissues are the places where disease can lodge. However, it is possible to balance the tissues or even heal them with an appropriate diet and lifestyle, before the disease sets in. As part of the prevention, this balance can be supported by the daily intake of regenerating plants and in small doses. Thus, Arrowroot is considered a substitute food for people with gluten intolerance who suffer from malabsorption of the small intestine (Yenkamala, 2015).

5. CONCLUSION

Health psychology will rely above all on how the patient is able to cope with the chronic disease, to help him adapt and improve his quality of life. The patients with functional digestive disorders we met used so-called avoidance strategies (emotional and distractive coping). Self-management programs can be offered to them, these techniques being already used for a variety of chronic diseases such as diabetes and asthma. The main goal of these self-management programs is to give the patient an active role in controlling, stabilizing, or slowing his disease and preventing unwanted consequences and complications.

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APPENDIX 1

INFORMATION FOR THE PATIENTS

Dear Sir or Madam,

We would like to better understand the impact of the functional digestive disorders on your quality of life and to improve care for patients. So, your participation will be particularly valuable in a study which the aim is to estimate your experience about the announcement of the recurrence of your cancer. This study involves two times. The first time is an interview lasting approximately one hour, to better understand the way you cope with the disease. The second time will be held by emailing about three months after the first meeting.

During this interview, the psychologist will ask you to complete various questionnaires, to relate the way you are and behave in everyday life and with your symptoms.

This assessment won't affect your medical care. You can feel free to stop participating if you want and without having to explain it.

We will ensure anonymity and privacy of your answers throughout your participation, and they will be protected by medical confidentiality. We are aware that such participation may require efforts. So, thank you in advance for your help.

APPENDIX 2

QUESTIONNAIRE OF SELF-MEDICATION

1. Do you ever self-medicate?
yes no

2. What are the circumstances that lead you to self-medicate?

3. Tell me how it is for you when you are in pain.

4. How often do you use these medications?
Between 1 and 5 times between 5 and 10 times more than 10 times

5. What motivates you to use these drugs?

6. When do you use these medications?
every day several times a month once a time

7. How long have you been using them?
less than a month from 1 month to 1 year over 1 year

8. How do you perceive the medicine?
efficient dangerous useless / I don't know

9. Medicines prescribed by the doctor: (list them)

AUTHOR INFORMATION

Full name: Mina Ananda Yenkamala
Institutional affiliation: Department of Research, Ayurvedic Institute of Guadeloupe
Institutional address: Capesterre-Belle-Eau, 97130 Guadeloupe, French West Indies
Short biographical sketch: She was born in Guadeloupe in 1983. At the end of her studies in psychology at the University of Bordeaux in France, she obtained the title of Psychologist in 2006. She followed the training of Master-Practitioner in Neuro-Linguistic Programming, also in Neuropsychology as well as the Diploma of Ayurvedic Medicine Practitioner. Since 2008, she has been working as a Neuropsychologist in a public hospital. On July 16, 2013, she founded the Ayurvedic Institute of Guadeloupe to promote Ayurveda. She also spoke in several psychology conferences in Norway, South Africa, France, Spain, Guadeloupe, and Japan. Her work has given rise to several scientific publications. For three years, she led a pilot study on the prevention of memory disorders involving 102 elderly people in Guadeloupe. This work culminated in the publication of the 116-page book entitled "Ayurveda Program, to Live Long and Healthy".