

UNIVERSITY OF MEDICINE AND PHARMACY OF CRAIOVA
DOCTORAL SCHOOL

RELATIONSHIP BETWEEN ANXIETY AND COPING
STRATEGIES FOR STUDENTS IN ROMANIAN
MEDICAL ACADEMIC EDUCATION SYSTEM AND
COMPARISON WITH THE GENERAL POPULATION

PHD THESIS
SUMMARY

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Contents:

Abbreviations	3
Introduction. Importance of the Theme	4
PART I – KNOWLEDGE STAGE	6
<i><u>CHAP. I. Anxiety</u></i>	7
I.1. Anxiety. Conceptual Delimitations	7
I.2. Anxiety and its Connections	8
I.3. Anxiety in the Area of Medical Higher Education	15
<i><u>CHAP. II. Coping</u></i>	23
II.1. Coping. Conceptual Delimitations	23
II.2. Strategic, Behavioral, Problem-Focused Coping	26
II.3. Cognitive-Emotional Coping	28
PART II – PERSONAL CONTRIBUTIONS	33
<i><u>CHAP. III. Goal. Assumptions. Objectives. Methodology.</u></i>	34
III.1. Assumptions	34
III.2. Goal	35
III.3. Objectives	35
III.4. Instruments. Strategic Approach to Coping Scale	36
III.5. Instruments. Cognitive Emotion Regulation Questionnaire	37
III.6. Instruments. Endler Multidimensional Anxiety Scales	39
III.7. Statistical Apparatus	40
III.8. Batch Presentation	46
<i><u>CHAP. IV. Results</u></i>	50
IV.1. CERQ	50
IV.2. SACS	74
IV.3. EMAS and SAS	129
IV.4. Correlations	173
IV.5. Factor Analysis	181
<i><u>CHAP. V. Discussion</u></i>	187
<i><u>CHAP. VI. Conclusions</u></i>	205
<i><u>CHAP. VII. Research Directions</u></i>	207
<i><u>CHAP. VIII. Purpose and Usefulness of the Research</u></i>	209
Bibliography	212
ANNEXES	234

In literature, there are already innumerable researches that focus on studying anxiety in medical students. Similarly, a good part of literature addresses coping mechanisms as well, or the way in which students from the medical academic education system deal with stress. However, at a closer look, we noticed that until the writing of this paper, nowhere in the world, and even less in Romania, has anybody yet proposed, and made a study using an approach from a multidimensional perspective of anxiety as a characteristic in students at a medical university. Also, no other study has been made to capture its relationship with cognitive-emotional coping and multiaxial strategic problem-focused coping.

One of the proposed goals was that, once we identify the levels of anxiety as well as the types of coping used by students, we could provide some benchmarks on how to intervene in changing and restoring extremes in a healthier range.

The present paper has been divided into two large pieces of information: a general part that discusses the current state of knowledge and a particular part that reveals the personal contributions brought to the scientific community by research.

The **GENERAL PART** of the thesis, divided in two chapters, provides information on current research data in the areas we are concerned with, anxiety and coping strategies, respectively. In the first chapter, "**Anxiety**", after having realized some conceptual delimitations, we reviewed several studies that highlighted the links of anxiety with other internal phenomena and psychic processes, but also its influences on human behavior. Then we approached the problem of anxiety in the medical academic area, mentioning research data that focused on reporting levels of anxiety in students in these institutions, or on their influences on the students' life in the three specializations included in our study.

In chapter two, "**Coping**", we initiated the study with conceptual delimitations and definitions in the first part, starting from its earliest theoretical records. Then problem-focused strategic coping was brought into discussion, reaching up to current research, striving to capture the place and role of strategic, behavioral, multiaxial coping in literature and human functioning. At the same time, we also tried – though unsuccessfully – to obtain data on the current situation of students at medical universities regarding this type of functioning. In the last part of the chapter we discussed about cognitive-emotional coping, as it is theorized by the researchers who developed the instrument for measuring it. We took into consideration the development of the concept over time, the study of the forms under which it presents itself, and

finally we ended up identifying current researches using the tool on populations similar to those of the present paper.

The **SPECIAL PART** of the thesis is composed of six chapters, each of them addressing a necessary and important aspect of the personal contributions brought to literature by this study.

Chapter three – "**Goal. Assumptions. Objectives. Methodology**" – just as the name suggests, presents the dimensions needed for the study and obtaining the results, as well as the starting point in the research along with the description of the studied group and the tools used.

The assumptions that initiated the investigation were seven in total, starting from the existing research data with the tools used: 1. Students in Romanian medical education mainly use mechanisms of cognitive-emotional coping from the category of the maladaptive ones that correlate with pathology; 2. In a statistically significant way, women use behavioral pro-social coping strategies, while men use more antisocial strategies; 3. Women register significantly higher anxiety levels on all EMAS-T scales – social assessment, physical danger and ambiguity; 4. Women show significantly higher scores on all social anxiety scales than men; 5. Self-disclosure situations in social anxiety correlate directly with anxiety in situations of physical danger, anxiety in social assessment situations, and anxiety in situations of high degree of novelty and ambiguity; 6. There is no correlation between anxiety felt in self-disclosure situations and the person's ability to positively re-evaluate stressful situations; 7. All forms of anxiety studied here will strongly correlate with the maladaptive mechanisms of cognitive-emotional coping, rumination and acceptance mechanisms.

In addition to identifying in our students the existing relationship between trait anxiety and coping strategies, both problem-focused and emotional regulation through cognition, we also added to the **Goals** the glimpse upon the differences between genres among the three specializations studied, but also between the student group and the general population. In the same subchapter we also aimed at identifying and filling in the existing vacuum in the literature with regards to the studied aspects as well as to come up with solutions for the problems that our study would identify.

And among the **Objectives** we listed: a) measuring/assessing the trait anxiety level as well as the active problem-focused coping strategies and the mechanisms of cognitive-emotional coping; b) making comparisons between genres and then between specializations regarding all three directions and all four instruments; c) making

comparisons with the general population in terms of mental manifestation of these dimensions in the life of individuals; and last but not least, d) achieving a general profile of interaction of these phenomena in our students.

In the section on **Tools** we described the tests used for measuring active problem-focused coping, namely we used Strategic Approach to Coping Scale (SACS) with its subscales: assertive action, social relating, social support, cautious action, instinctive action, avoidance, indirect action, antisocial action and aggressive action.

In order to form an image regarding the type of cognitive-emotional coping used by our students, we used the Cognitive Emotion Regulation Questionnaire (CERQ) with its subscales: self-blame, acceptance, rumination, positive refocusing, refocus on planning, positive reappraisal, putting into perspective, catastrophizing and blaming of others.

Moreover, for measuring the trait anxiety we used Endler Multidimensional Anxiety Scales (EMAS-T) with its subscales: social evaluation, physical danger, ambiguity and daily routine; to it we have added its extension, the Social Assessment Scale, the feature form (SAS-T), with its subscales: separation, self-disclosure to family and self-disclosure to friends.

Then we reviewed the **Statistical Apparatus** used in the thesis, defining all the indices, parameters and processing made: Arithmetic mean, Standard deviation, Coefficient of variation, Minimum and maximum, Median and quartiles, t Student test, ANOVA test, Correlation, Coefficient of correlation, Chi-squared test and Factor analysis.

In the last subchapter, we conducted the **Batch Presentation**, consisting of 333 first year students in the following faculties: General Medicine, Medical Assistance and Pharmacy, with gender distribution as follows: 266 women, representing 79.88% of the total subjects and 67 males, i.e. 20.12% and ages between 18 and 20 years. By computing Chi-squared for the three subgroups of the faculties introduced, it is noted that there are no significant differences between the three studied segments (Chi-squared = 0.271312 > 0.05, insignificant), meaning that the three batches of the three specializations are comparable to each other.

Chapter four refers to **Results** and was treated in subchapters due to the richness of information obtained. Regarding **CERQ**, we would like to selectively mention that we have noticed a large number of subjects on average - and an important percentage above average – who use strategies such as rumination, self-blame and catastrophizing;

on the opposite side, the strategies are: positive refocusing, blaming of others and acceptance. Other significant outcomes include gender differences on the Self-blame, Catastrophizing, Refocus on Planning, and differences in specializations regarding the Putting into perspective and Catastrophizing scales.

As for SACS, briefly browsing through the results we noticed that comparing the average values obtained by all students (men and women) in all three faculties and on all nine scales, it results that there are no significant differences. We have also shown that the methods of behavioral coping most commonly used over the average population are, in order, cautious action, social relating and assertive action. Differences between genres have been found in the large batch on the Indirect Action and Antisocial Action scales, and within the different faculties on the Indirect Action and Avoidance scales.

In the subchapter on **EMAS and SAS**, the summarized results showed that most of our students (39.34%) recorded high scores on the Physical Dangers scale. Then a good part of them (30.33%) feel high levels of anxiety in the area of social anxiety in separation situations - separation anxiety. A consistent percentage of 24.02% have shown themselves as extremely anxious in social assessment situations. In order, the students of various medical specialties are very anxious in situations of social anxiety, in the area of self-disclosure to the family (22.52%) and self-disclosure to friends (14.71%) followed closely (14.41%) by new, strange or ambiguous situations (EMAS-T-M). The least cases of high anxiety were recorded in the Daily Routine (8.41%) direction, where only 28 students say they feel extremely anxious even in normal daily situations. Gender differences were obtained on the Scale of Self-disclosure to Family and Self-disclosure to Friends, but differences were also recorded within the groups divided into specializations.

The large number of **Correlations** found determined us to address only the issues of the highest ones. Also, these are discussed and widely presented in the related chapters. But in short, strong direct correlations were found between: Physical Danger scale and separation anxiety; between self-disclosure to the family and each of the scales Social Assessment, Physical Danger and Ambiguity; between the Self-disclosure to Friends Scale and Ambiguity Scale and between the Avoidance Scale and the Daily Routine Scale. There were also high indirect correlations between the Assertive Action Scale and each of the following scales: Social Assessment, Ambiguity, Daily Routine, and Self-disclosure to Friends.

Factor analysis showed that there are both direct and indirect correlations between the different aspects studied, these being extensively addressed both in results and in discussions.

Chapter Five, **Discussions**, aimed at explaining and broadly discussing the significant results highlighted in the study from the perspective of current research. Sometimes we noticed that the results obtained here contradict the data found by other researchers, some other times we noticed that they are in line with the existing trend, and in some cases we found that they differ greatly from the state of fact in the general population of which our students are part. Also, when writing this chapter, we identified a vacuum of scientific information on some of the issues addressed in the paper.

The sixth chapter, **Conclusions**, presented the ten most concentrated and important consequences emerging from the results and their interpretation. Seven out of the ten conclusions refer directly to the assumptions studied – out of which four failed, two confirmed and one partially confirmed. On the other hand, the last three conclusions refer to: the specificity and uniqueness of the mental construction of Romanians attracted by the careers in the medical field, the fact that students predominantly use (over the average of the population) prosocial coping strategies and that the students are anxious on all dimensions studied.

In the seventh chapter – **Research Directions** – we approached some of the new areas that deserve further attention, stemming from the unsatisfied scientific knowledge needs and the lack of data that we could report in our study. For example, the problem of the specificity of the mental, cultural and social construction of medicine students may be an area of interest for further exploration if we want to provide appropriate education services, tailored to the type of student accessing them.

The last chapter, number eight – **Purpose and Usefulness of the Research** – just as the name calls it, intended to capture the applicability of new data to the facts. We succeeded in providing some solutions for reversing anxiety into more tolerable spheres, both through a vertical, top-down (student-to-student) approach, as well as horizontally through "student-student" or horizontal at a "high level" (modifying and educating the attitudes of teachers). We have also been able to propose an intervention plan – unfinished yet – about how we could intervene on less functional coping mechanisms.

Keywords: anxiety; coping mechanisms; coping strategies; behavioral coping; cognitive-emotional coping; medicine students, pharmacy, nursing.