

# Cognitive - Emotional Coping Strategies in First Year Romanian Medical Students

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**ABSTRACT.** We have studied the cognitive-emotional coping strategies to a number of 333 students in the first year of the Medicine and Pharmacy University of Craiova, from the Medicine, Pharmacy and Medical Nursing specializations, by using the CERQ (Cognitive Emotion Regulation Questionnaire). The result revealed that the medical students employ these strategies relatively different from the general population, while differences were recorded between this study and the previous research. It has been ascertained that, generally, the students from the different medical specializations use strategies belonging more to the dysfunctional range, such as: rumination, self-blame, catastrophizing.

**KEYWORDS:** coping strategies; medical students; emotion regulation; nursing; pharmacy; medicine.

## Introduction

Seeing as it has already been proved by numerous research that the students from the medical academic education system are affected by anxiety, depression, burnout and other associated mental health problems [1,2], we consider useful to know the ways the cognitive and emotional coping strategies are employed by those who study in these institutions. As thoughts and emotions are the sources of our mental health, it is important to know whether these strategies are functional or dysfunctional and, therefore, by employing either some of them or the others, „the symptomatology is promoted”, or they have a rather “protective role”.

The specialized literature abounds in research studying the stress and the ways the medical students cope with it, but there are just a few studies concentrating on cognitive-emotional coping, and even fewer that have used this instrument, that have taken place in Romania or that have involved students, comparatively, from three medical specializations.

## Aim of Study

On the occasion of this research, we aimed to ascertain which are the cognitive and emotional coping strategies employed by the first year medicine, pharmacy and medical nursing students, from the Medicine and Pharmacy University of Craiova.

In the same way, we were interested in the differences that may occur between faculties,

regarding the ways the cognitive-emotional coping strategies the students use, but also the possible differences which may be recorded between the two genders.

We aimed at ascertaining if the medical students present particularities related to the functioning of the cognitive and emotional coping mechanisms, compared to the general population, whose standard we hold.

Last, but not least, we wanted to find out if there is a way we can outline a possible profile of the medical student’s cognitive-emotional coping strategies, by analyzing for which of the them a higher number of students recorded high and above average scores, this meaning that these are the ones they employ the most often.

## Material and Method

### Subjects

This research involved 333 first year students from Medicine and Pharmacy University of Craiova, aged between 18 and 20, with an average age: 19.4. Of these 67 (20.12%) were male and 266 (79.88%) were female, split as follows: from the General Medicine 212 subjects (m=48-22.64%, f=164-77.36%), from the Pharmacy 56 (m=10-21.73%, f=46-78.27%) and from Medical Nursing 64 (m=9-13.84%, f=56-86.16%).

### Procedure

This study is part of an ampler research. On this occasion, the students also filled in the CERQ (Cognitive Emotion Regulation Questionnaire). All the participants signed a

consent paper after a prior verbal briefing was performed, regarding the aims of the study they were going to participate to, but also its methodology and procedures, the further processing of the results, as well as its implications and outcome. Before starting the project, the Commission for Academic and Scientific Ethics and Deontology of the Medicine and Pharmacy University of Craiova granted their approval.

**Method**

CERQ aims at exclusively evaluating the cognitive and emotional coping mechanisms, so that it captures the difference between what a person does and what he or she feels or thinks as result of a stressing event [3]. It consists of 36 items, evaluated on a scale of 1 to 5, where 1 is “(almost) never” and 5 is “(almost) always”, and grouped on nine scales which, similar to the items, refer exclusively to what the subject feels and thinks, and not to what he or she does. The nine scales found in the questionnaire are: Self-blame, Blaming others, Acceptance, Refocus on planning, Positive refocusing, Rumination, Positive reappraisal, Putting into perspective and Catastrophizing, to each corresponding 4 items. The internal consistency quotients of the Romanian variant vary between 0.71 and 0.83, except for the Self-blame scale, which recorded an alpha Cronbach quotient  $\alpha=0.69$  [3]. For interpreting the results, the questionnaire uses 7 categories of scores: very high, high, above average, average, below average, low, very low.

**Results**

In order to compare the gender differences regarding the employed coping ways in an above average or below average proportion, we used the Chi square test, used to test the dependence between two nominal type factors-in this case-each of the CERQ scales, on the one hand, and the subject gender, on the other-Table 1. The same test was also used to verify the differences between the subjects coming from different faculties-Medical Nursing, Pharmacy or Medicine for each of the CERQ scales-Fig.1.

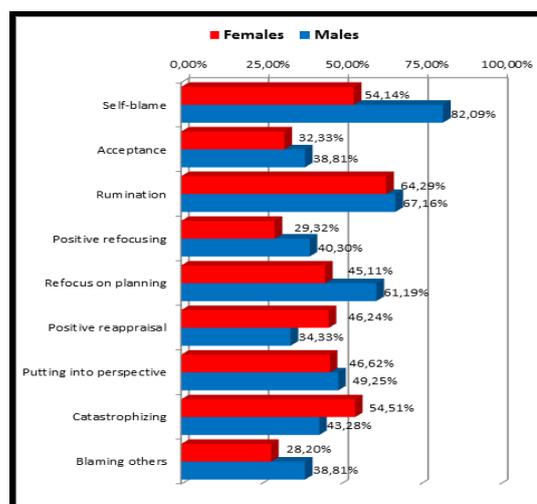
By comparing the two genders, we have identified a significant difference between men and women only regarding the Self-blame scale ( $p$  Chi square=0.000045<0.001-highly significant), meaning that men employ self-blame more than women.

In the same way, the difference on the Refocus on planning scale ( $p=0.062>0.05$ -statistically insignificant) is very close to the

statistical significance threshold, as the male gender was again the one that recorded higher scores.

**Table 1. Chi square results on scales and genders**

Item	Females	Males	p Chi square
Self-blame	54.14%	82.09%	0.000045
Acceptance	32.33%	38.81%	0.432
Rumination	64.29%	67.16%	0.630
Positive refocusing	29.32%	40.30%	0.103
Refocus on plann.	45.11%	61.19%	0.062
Positive reapp.	46.24%	34.33%	0.199
Putting into per.	46.62%	49.25%	0.903
Catastrophizing	54.51%	43.28%	0.176
Blaming others	28.20%	38.81%	0.170



**Fig.1. Results obtained for each male and female scale**

By analyzing separately on scale, but also on faculties, the resulted data, we have not identified significant differences between the students of the three faculties, but the Positive refocusing ( $p=0.075>0.05$ -statistically insignificant) and Catastrophizing ( $p=0.89>0.05$  statistically insignificant). These results can be found in the Table 2 and Fig.2.

**Table 2. Chi square for scale and faculties**

Scale	Nursing	Pharmacy	Medicine	p Chi square
Self-blame	52.31%	60.71%	61.79%	0.752
Acceptance	32.31%	35.71%	33.49%	0.934
Rumination	63.08%	66.07%	65.09%	0.913
Positive refocusing	40.00%	35.71%	27.83%	0.075
Refocus on plan.	43.08%	46.43%	50.47%	0.459
Positive reapp.	50.77%	48.21%	40.57%	0.610
Putting into per.	50.77%	55.36%	43.87%	0.412
Catastrophizing	66.15%	42.86%	50.47%	0.089
Blaming others	32.31%	19.64%	32.55%	0.325

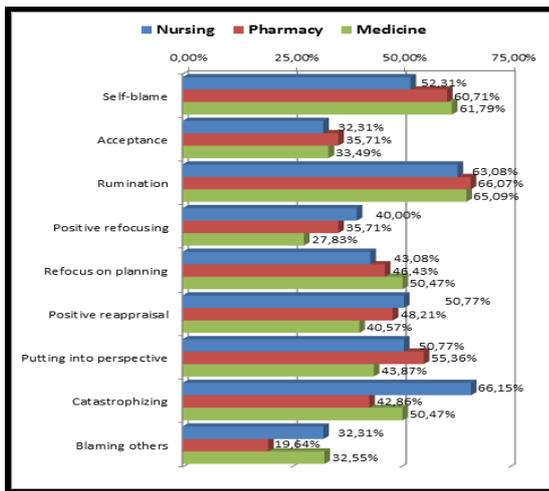


Fig.2. Results obtained for each scale, by faculty

We have also tried to evaluate which of the coping strategies investigated by means of CERQ is used in a higher proportion by the participants to this study. The results we obtained reveal that more than half of the subjects use above average the Blaming of others, the Positive refocus and the Acceptance. The obtained results are expressed in Table 3, and the graphic representation can be found in Fig.3.

Table 3. Coping strategies per student total

Scale	No.	Percentage
Self-blame	216	64.86%
Acceptance	199	59.76%
Rumination	174	52.25%
Positive refocusing	161	48.35%
Refocus on plann.	157	47.15%
Positive reapp.	146	43.84%
Putting into per.	112	33.63%
Catastrophizing	105	31.53%
Blaming others	101	30.33%

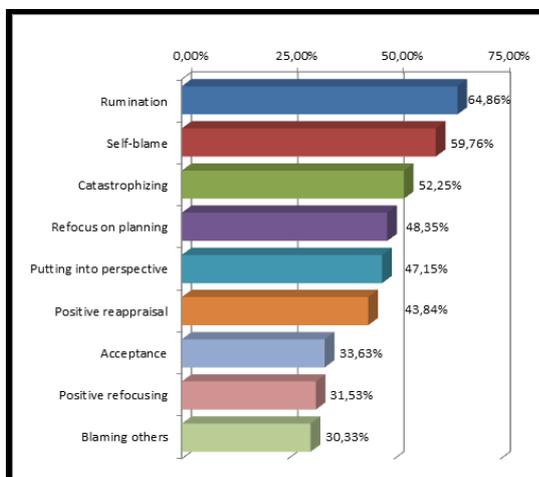


Fig.3. Coping strategy percentages per student total

## Discussion

By comparing the two genders the obtained results, we can notice that the only highly significant difference from a statistical point of view ( $p$  Chi square=0.000045<0.0001) was on the Self-blame scale, where we can see that men blame themselves more than women. This result (regarding men using self-blame more than women) is congruent with the data obtained from the preliminary research and presented in the test's manual [3], but, on the other hand is different (contradicts) the results of the research performed on the Romanian population [4], study which was also included in the Romanian version of the test's manual. Over 80% of the male gender students and approximately 55% of the female students use in a proportion over the population average the self-blame as a way of coping. The self-blame is a cognitive coping strategy through which the individual assumes all guilt and responsibility for an unpleasant situation, along with a series of thoughts and preoccupations related to the possible mistake made by him or her [3]. The frequent use of this strategy is associated with psychopathology [5] and directly with depression [6]. The results are hard to explain, as research shows that, generally, medical women record higher anxiety and depression scores [7] than men, which would lead to higher self-blame levels than those of their male colleagues. The causes for this phenomenon remain to be further studied by future research, and also whether this is specific to the medical faculty students or it is a particularity of the present group. In any case, the high percentage on the Self-blame scale comparatively with the population average-54.14% and 82.09%-were something to be expected as medical faculty students generally present, in comparison with the others, higher incidence and prevalence of depressive and anxious symptoms [1,2,8].

It is worth mentioning that on the Refocus scale, the men's scores were higher, but not in a statistically significant way ( $p=0.062<0.05$ ), meaning that they use this strategy more often than women. The CERQ and Big Five Research highlighted that the refocus on planning is an adaptive coping strategy which correlates with the emotional stability trait [4]. In the same time, the female medical students are more emotionally unstable than their male colleagues [9], as it was to be expected that men, more emotionally stable, to use this coping way more. The Refocus on planning refers to the thoughts about the steps to be followed (the mental

outlining of a plan) in order to solve a difficult situation. It is a functional strategy [10], on the condition that the person would act, otherwise a pattern of planning without action can suggest the presence of certain emotional problems [3].

By further discussing Fig.1, one can notice that, of all the cognitive-emotional coping strategies employed by the medical student group, the women recorded higher values (in an insignificant proportion) only for Positive reappraisal and Catastrophizing. Again, the result differs from anterior studies, as, according to these [3,4] women generally use all the strategies more than men, mainly Self-blame, Acceptance, Rumination and Putting into perspective. We attribute this discovery to the specific nature-still unproved yet-of the group or of the students from medical specializations. The high score at the positive reappraisal recorded by female students can, however, be an explanation for the men's lower scores at self-blame. Also, there is a research from 2002 [11] which confirms that women employ catastrophizing more than men. Positive refocus refers to the positive significance which we attribute to the stressing event in order to develop and grow, while catastrophizing expresses recurrent thoughts regarding to how grave (or the gravest) the stressing event we have overcome was.

From the same Fig.1, one can notice, again as an original and particular note of this study, that the results are very close between women and men (a little higher to men), meaning that they employ these strategies equally, on the Rumination and Putting into perspective scales, although the general tendency from other research [3,4,11], which is not found in this case, is that women to record higher scores. The Rumination is the excessive and continuous thinking about the feelings associated to a negative event, while Putting into perspective refers to those thoughts through which we compare the stressing situation with another, while thinking that it could have been worse [3].

If we are to compare by genders the most used coping strategies, we can notice the most commonly used methods to handle stress for women are, in order, Rumination, Catastrophizing and Self-blame, result which was confirmed by other research [3,4]. For men, these are, in order, Self-blame, Rumination and Refocus on planning. As a result, one can notice that as far as both women and men are concerned, the employed strategies are rather dysfunctional ones, and this can explain practically the incidence and prevalence of the symptoms belonging to the anxiety-depression range found by other research

at the medical specialization students [1,8]. We will also include the Refocus on planning found in men in the "maladaptive" category, as based on the profile we have outline so far, we are talking about the "thoughts without action" phenomenon [3], which can be associated with emotional problems.

When we analyzed separately by faculties, we found only statistically insignificant differences. Still, we can mention the fact that very close to the statistical significance threshold ( $p=0.075>0.05$ ) there were the results on the Positive refocusing scale for the medical nursing and medicine students, where one can notice that the nursing students use the strategy more frequently than their future doctor colleagues. The positive refocusing refers to bringing in the foreground of thought of more pleasant things than the stressing event we are currently facing. A study from 2012 [12] found that the most common coping strategies at the medical nursing students are problem solving and optimistic attitude, which would somehow explain their high score on the Positive refocusing scale. We do not have comparative data regarding this aspect for the medicine and medical nursing students.

The score for the Catastrophizing scale was also close to the limit of statistical significance ( $p=0.089>0.05$ ). The same students from Medical nursing use this coping method more frequently in a proportion of 66.15% than the average, compared to only 42.86%, recorded by the pharmacy students.

It is interesting to note-detail which we can notice by studying Fig.2-that regardless of the faculty they study to, the subjects adopt strategies like rumination and acceptance in almost the same proportions, as the percentages recorded indicating their use above the average are roughly the same-round 65% for rumination and 33% for acceptance. The acceptance is synonymous with resignation in relation to the situation which occurred, as the subject realizes it is not possible to change it and that life goes on. It is a beneficial process in itself, but an extremely high score associated with a feeling of being incapable of changing things can be in relation with symptoms from the psychopathological range.

Aiming to have an overview, for both genders and all faculties, of which of the cognitive emotional coping strategies is more frequently used than the population average, we noticed that the medical student tends to use more often the dysfunctional strategies-in order: rumination, self-blame and catastrophizing-and in a lower percentage blaming others, positive refocusing and acceptance. By correlating this result with a prior research which studied the connection between anxiety, depression, stress and coping

[4,13], we notice that the maladaptive strategies are a sure recipe for the three categories of negative emotions. Other studies [2,14,15] show that, anyway, for the medical students, the stress, anxiety and depression are current and serious problems.

There are several limits to this research, one of them related to the fact that it cannot be considered representative for all the student population of the different medical specializations from the Romanian medical education, as other universities from Romania did not participate to this study. Moreover, according to our searches, studies performed by means of this instrument and on a similar population are extremely limited-if not inexistent, which, in turn, limit our capacity to compare our research with similar ones. We mention in this section that, for different reasons, the study involved just 70% of the total of the Romanian students from the first year of the three faculties, which lead us to think that there is slight possibility that a higher percentage of participation could have influenced, not in a too high proportion though, the results we obtained.

## Conclusions

In conclusion, this research, offers some original perspectives regarding the functioning of the cognitive-emotional coping strategies, one the one hand, on the subjects participating to it-first year medical students at different Romanian medical specializations, and, on the other, on the results obtained, meaning that they are rather incongruent with those obtained by the other studies performed by means of the same instrument.

One can notice that the medical students tend to use emotional coping strategies from the less functional range and, moreover, that the differences between genders-regarding the way these strategies are used-disappear, and we are sometimes faced with situations when strategies more often employed by women are encountered preponderantly at men and vice versa.

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