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Trait anxiety and coping in first year medical students

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Abstract

In the present study, we highlight the types of anxiety and the coping strategies employed by the students at the Medicine, Pharmacy and Nursing Faculties, at the same time comparing them with the general population. This research involved 333 first year students, 18–20 years of age. We used the Endler Multidimensional Anxiety Scales–Trait (EMAS-T) and Social Anxiety Scale–Trait (SAS-T) and two coping measuring instruments, Cognitive Emotion Regulation Questionnaire (CERQ) and Strategic Approach to Coping Scale (SACS). We obtained an overview on the hierarchy of the types of anxiogenic situations for the study participants, by gender and specialization. We analyzed and discussed the correlations between anxiety and coping and we discussed the results of the factor analysis. We noticed the students' predilection for maladaptive coping mechanisms and how anxiety relates to their professional choice.

Keywords: anxiety, coping, emotion regulation, self-disclosure, medical students.

Introduction

The preoccupation for the mental health as part of our future medical personnel is and has always been permanent within our Department, as we consider essential, as part of our students' formation process, to endow them with an adaptive tool set for managing suffering, both their own and of others', so that one of the most difficult professions in the world to be a source of wellness for the professionals as well, not just for their patients. To this end, the present study is part of an ampler research and contains partial results of a screening process aimed at identifying the types of anxiety experienced by students of our University, as well as the ways they cope with them.

Anxiety has long been discussed in the specialized literature, and its connections and effects it has on our lives, including in the medical academic field, have already been subject to a published article [1]. We mention that the present study is part of an ampler research, which has already resulted in publishing two original articles, thoroughly discussing the results obtained with two of the instruments employed here – the Cognitive Emotion Regulation Questionnaire (CERQ) and the Strategic Approach to Coping Scale (SACS) [2, 3].

Aim

In the present study, we highlight the types of anxiety and the coping strategies employed by the students at the Medicine, Pharmacy and Nursing Faculties, that have been identified by numerous scientific studies as presenting different characteristics from the general population.

Participants, Instruments and Methods

Participants

This research involved 333 first year students from the University of Medicine and Pharmacy of Craiova, Romania, belonging to the Medicine, Pharmacy and Nursing Faculties. The participants' ages varied between 18 and 20 years, with an average age of 19.4 years. Of these, 67 (20.12%) were males and 266 (79.88%) were females. From the Faculty of Medicine there were a number of 212 participants, of which 48 (22.64%) males and 164 (77.36%) females. From the Faculty of Pharmacy there were a number of 56 participants – 10 (21.73%) males and 46 (78.27%) females –, while from the Faculty of Nursing there were a number of 64 participants – nine (13.84%) males and 56 (86.16%) females.

Instruments

We applied the EMAS-T scale, as an integral part of Endler Multidimensional Anxiety Scales (EMAS), consisting in a set of three scales, which measure different types of anxiety. The EMAS-T scale aims at analyzing the trait anxiety, namely the predisposition to feel anxiety in four types of situations relevant for a wide range of experiences – Social Evaluation (EMAS-T-SE), Physical Danger (EMAS-T-PD), Ambiguous Situations (EMAS-T-AM) and Daily Routines (EMAS-T-DR).

This is a self-evaluation questionnaire, which contains 60 items, 15 for each scale: Physical Danger, Ambiguous Situations, Social Evaluation, and Daily Routines. The

item evaluation is made by means of a scale from 1 (not at all) to 5 (very much) [4].

Along with EMAS-T, we also applied the Social Anxiety Scale–Trait (SAS-T) scale, which is an extension of it and measures the social anxiety as a trait, while containing three other sub-scales: SAS-T-SA (Separation), SAS-T-SDFA (Self-Disclosure to Family Members), and SAS-T-SDFR (Self-Disclosure to Friends). Completing and scoring of this scale are made identically as for the EMAS-T scale.

SACS is a tool elaborated by Stevan E. Hobfoll, Carla L. Dunahoo, Jeanine Monnier, Michael R. Hulsizer and Robert Johnson, in 1993, and it aims to evaluate the behavioral dimension of coping, while also considering the social aspects of the mechanisms and strategies employed by a person to face stress-inducing situations [5]. SACS is an instrument that can be applied both on the normal population and on the adult clinical one, and it contains nine sub-scales, comprising a total of 52 items, evaluated by means of 5-point Likert scale, where 1 means "not at all what I would do", while 5 signifies "categorically what I would do" [5]. The test's nine sub-scales, according to the test Manual, are: Assertive Action, Social Joining, Seeking Social Support, Cautious Action, Instinctive Action, Avoidance, Indirect Action, Antisocial Action, Aggressive Action [5].

The CERQ is presented as a multi-dimensional self-evaluation questionnaire, aimed at revealing those coping strategies one would employ as result of prior negative events or situations [6]. It consists of 36 easily manageable items and it measures nine coping strategies, which correspond to nine scales and refer exclusively to the thoughts a person has subsequent to overcoming a situation perceived as negative [6]. The nine scales are: Self-Blame, Acceptance, Rumination, Positive Refocusing, Refocus on Planning, Positive Reappraisal, Putting into Perspective, Catastrophizing and Blaming Others; the items are answered by evaluating, by means of 5-point scale – "(almost) never", "sometimes", "usually", "often", "(almost) always" – how frequent the thought/strategy occurs [6].

Method

The students were verbally informed before applying the questionnaire about the goal of the research, the conditions to participate in the study, the data confidentiality, the lack of any personal material gain or of any other kind resulted from completing the questionnaires, but also about the ways they can have access to personalized results, should they choose to. Afterwards, they signed a research participation agreement and completed the described instruments by means of pencil and paper, without a time limit and under the researcher's surveillance. This study was approved by the Ethics Committee of the University of Medicine and Pharmacy of Craiova.

Hypotheses

(*1*) Women have significantly higher scores on all levels of social anxiety than men.

(*2*) There is no correlation between the anxiety felt in self-disclosure situations and the person's capacity to positively re-evaluate stressful situations.

(*3*) All forms of anxiety will strongly and positively correlate with maladaptive cognitive-emotional coping mechanisms, rumination and acceptance.

Results

After interpreting the results, it has been ascertained (as shown in Figure 1) that a large majority of the students (39.34%) recorded high scores on the Physical Danger scale.

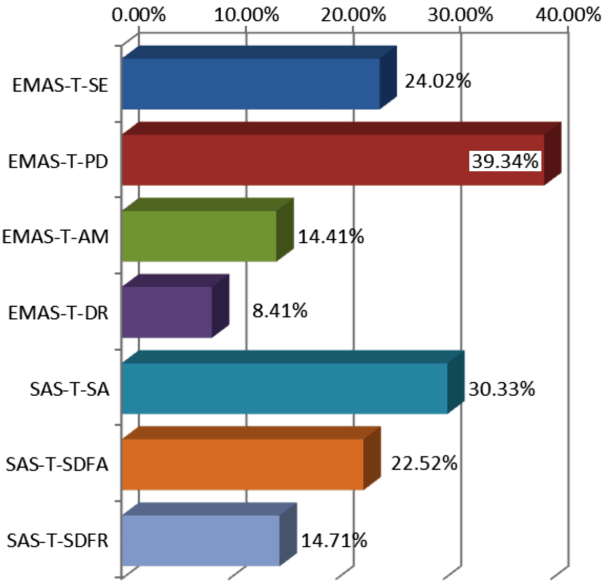

Figure 1 – ***Chart of high anxiety percentage levels for all EMAS and SAS scales. EMAS: Endler Multi-dimensional Anxiety Scales; T: Trait; SE: Social Evaluation; PD: Physical Danger; AM: Ambiguous Situations; DR: Daily Routines; SAS: Social Anxiety Scale; SA: Separation; SDFA: Self-Disclosure to Family Members; SDFR: Self-Disclosure to Friends.***

Moreover, a large percentage (30.33%) experience high levels of anxiety, namely social anxiety in separation situations – separation anxiety. A considerable percentage of 24.02% have revealed themselves as extremely anxious in situations of social evaluation. In order of recorded scores, the students from different medical specialties are very anxious in cases of social anxiety situations, the segment corresponding to the Self-Disclosure to Family Members (22.52%), followed by the Self-Disclosure to Friends (14.71%) and, very close in terms of percentage (14.41%), the new, ambiguous situations. The fewest cases recording high anxiety levels are coming from the Daily Routines direction (8.41%), as only 28 students declared they feel extremely anxious even during usual daily situations.

The only difference, this time of a highly significant statistical value, was recorded between the male and female subjects, when it comes to low recorded scores. That means men record lower scores on the Physical Danger scale in a much higher percentage than women. In other words, the former feel safer about their physical integrity that their female colleagues [χ^2 (*chi*-square) test p=0.007 <0.05, highly significant] (Figure 2).

A statistically significant difference was recorded between men and women for the anxiety trait in case of self-disclosure to family members. It seems women feel more anxious when they are in such situations than men

do (Student's *t*-test p=0.003 <0.05, significant) (Figure 3). These results partially confirm the first hypothesis.

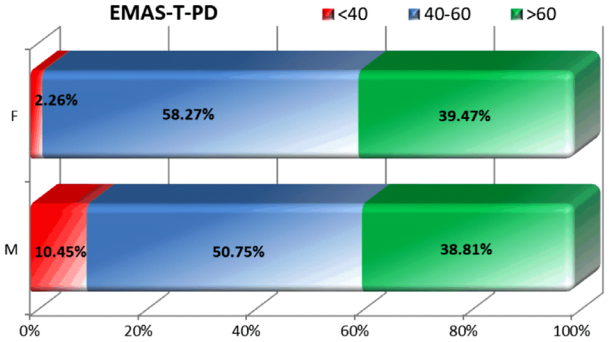

Figure 2 – ***Chart of gender differentiation for low score percentage levels recorded on the PD scale. EMAS: Endler Multidimensional Anxiety Scales; T: Trait; PD: Physical Danger; F: Females; M: Males.***

A significant difference has been found as far as anxiety in case of self-disclosure to family members is concerned. That means men are less anxious in such circumstances than women are (Student's *t*-test p=0.03 <0.05, significant).

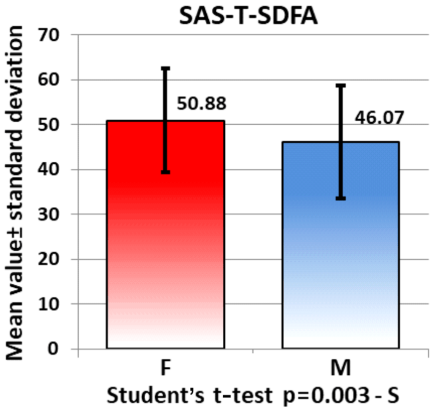

Figure 3 – ***SDFA scale by gender. SAS: Social Anxiety Scale; T: Trait; SDFA: Self-Disclosure to Family Members; F: Females; M: Males.***

With a p=0.06 (Student's *t*-test), close to the statistically significant threshold, there is also the emotional difference between the female and male students from the Faculty of Medicine, as the higher scores are again in favor of the former (Figure 4).

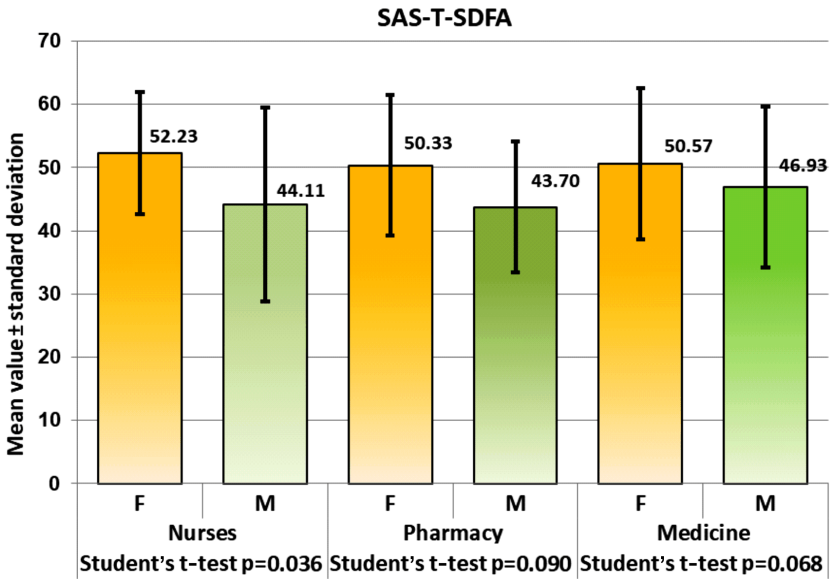

Figure 4 – ***Chart of SDFA scale by gender and faculty. SAS: Social Anxiety Scale; T: Trait; SDFA: Self-Disclosure to Family Members; F: Females; M: Males.***

We have found a statistically significant difference between men and women when it comes to anxiety triggered by Self-Disclosure to Close Friends. The results practically indicate that the women within our study are more anxious when they are in such situations (Student's *t*-test p=0.003 <0.05, significant) (Figure 5). This result partially confirms the first hypothesis.

A significant difference has been ascertained between the female and male subject pools from the Nursing Faculty, namely that women experience higher anxiety levels in Self-Disclosure to Close Friends situations than their male counterparts (Student's *t*-test p=0.017 <0.05, significant). Also, as far as the students from the Faculty of Medicine are concerned, the same phenomenon has been observed: men experience significantly less fear in the Self-Disclosure to Close Friends situations (Student's *t*-test p=0.019 <0.05, significant). The result obtained in the group of Pharmacy students is also close to the statistical significance threshold and, yet again, it reveals the same statistical trend (Figure 6).

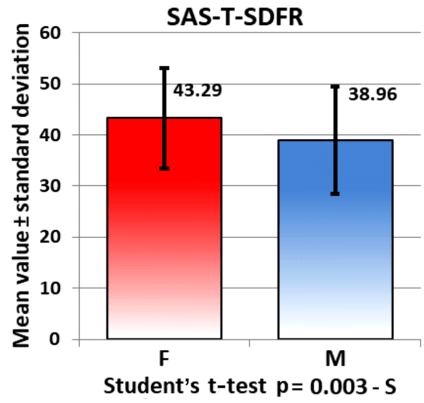

Figure 5 – ***Chart of results by genders, SDFR scale. SAS: Social Anxiety Scale; T: Trait; SDFR: Self-Disclosure to Friends; F: Females; M: Males.***

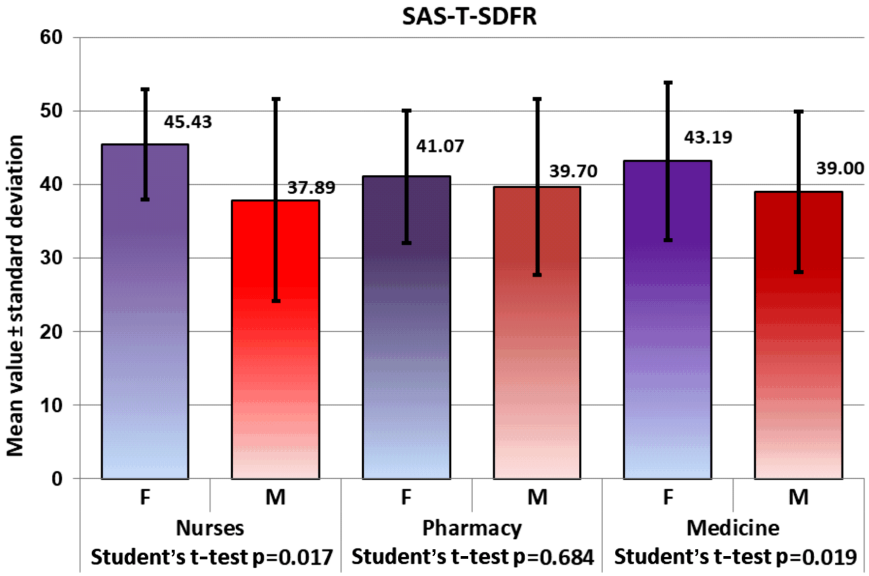

Figure 6 – ***Chart of SDFR scale by gender and faculty. SAS: Social Anxiety Scale; T: Trait; SDFR: Self-Disclosure to Friends; F: Females; M: Males.***

As the interpretation of the results recorded at the CERQ questionnaire was not made by means of numerical values, this instrument will not be considered when determining correlations. In this respect, the calculated correlations will be between EMAS-T, SAS and SACS.

We do not consider it opportune to present correlations between the scales of the same test, as by studying the tests' Manuals, one can notice they are characterized by internal consistency, validity and high fidelity, but we will limit ourselves to presenting those highly significant correlations recorded between various scales of those two instruments.

Thus, as shown by Tables 1 and 2, there we found strong direct correlations between: the Physical Danger scale and the separation anxiety; between the Self-Disclosure to Family Members and each of the Social Evaluation, Physical Danger and Ambiguous Situations scales; between the Self-Disclosure to Close Friends and Ambiguous Situations scales and between the Avoidance Scale and the Daily Routines one. High indirect correlations have been found between the Assertive Action scale and each of the Social Evaluation, Ambiguous Situations, Daily Routines and Self-Disclosure to Close Friends scales.

Table 1 – ***Correlations, part I***

Variables	EMAS-T-SE	EMAS-T-PD	EMAS-T-AM	EMAS-T-DR	SAS-T-SA	SAS-T-SDFA	SAS-T-SDFR
EMAS-T-SE		**0.274**	**0.395**	**0.112**	**0.159**	**0.289**	**0.128**
EMAS-T-PD	**0.274**		**0.223**	-0.068	**0.290**	**0.337**	**0.181**
EMAS-T-AM	**0.395**	**0.223**		**0.231**	**0.179**	**0.273**	**0.280**
EMAS-T-DR	**0.112**	-0.068	**0.231**		-0.018	0.080	**0.201**
SAS-T-SA	**0.159**	**0.290**	**0.179**	-0.018		**0.350**	**0.211**
SAS-T-SDFA	**0.289**	**0.337**	**0.273**	0.080	**0.350**		**0.514**
SAS-T-SDFR	**0.128**	**0.181**	**0.280**	**0.201**	**0.211**	**0.514**	
SACS Assertive Action	**-0.239**	-0.082	**-0.281**	**-0.273**	**-0.157**	**-0.153**	**-0.204**
SACS Social Joining	0.025	0.025	0.027	-0.082	-0.007	0.030	-0.104
SACS Seeking Social Support	0.078	**0.198**	**0.123**	-0.015	0.096	-0.009	**-0.129**
SACS Cautious Action	-0.020	-0.023	-0.070	-0.049	-0.104	**-0.136**	**-0.108**
SACS Instinctive Action	-0.042	0.071	-0.096	0.094	**-0.137**	-0.007	-0.032
SACS Avoidance	**0.151**	0.033	**0.163**	**0.221**	0.001	-0.005	0.048
SACS Indirect Action	0.067	**0.169**	0.010	0.047	0.085	0.044	0.070
SACS Antisocial Action	-0.077	0.040	-0.077	0.085	0.076	0.009	0.083
SACS Aggressive Action	**-0.153**	-0.017	**-0.148**	-0.006	-0.038	-0.024	-0.054

EMAS: Endler Multidimensional Anxiety Scales; T: Trait; SE: Social Evaluation; PD: Physical Danger; AM: Ambiguous Situations; DR: Daily Routines; SAS: Social Anxiety Scale; SA: Separation; SDFA: Self-Disclosure to Family Members; SDFR: Self-Disclosure to Friends; SACS: Strategic Approach to Coping Scale.

Table 2 – *Correlations, part II*

Variables	SACS Assertive Action	SACS Social Joining	SACS Seeking Social Support	SACS Cautious Action	SACS Instinctive Action	SACS Avoidance	SACS Indirect Action	SACS Antisocial Action	SACS Aggressive Action
EMAS-T-SE	**-0.239**	0.025	0.078	-0.020	-0.042	**0.151**	0.067	-0.077	**-0.153**
EMAS-T-PD	-0.082	0.025	**0.198**	-0.023	0.071	0.033	**0.169**	0.040	-0.017
EMAS-T-AM	**-0.281**	0.027	**0.123**	-0.070	-0.096	**0.163**	0.010	-0.077	**-0.148**
EMAS-T-DR	**-0.273**	-0.082	-0.015	-0.049	0.094	**0.221**	0.047	0.085	-0.006
SAS-T-SA	**-0.157**	-0.007	0.096	-0.104	**-0.137**	0.001	0.085	0.076	-0.038
SAS-T-SDFA	**-0.153**	0.030	-0.009	**-0.136**	-0.007	-0.005	0.044	0.009	-0.024
SAS-T-SDFR	**-0.204**	-0.104	**-0.129**	**-0.108**	-0.032	0.048	0.070	0.083	-0.054
SACS Assertive Action		0.012	**-0.172**	**0.223**	**0.194**	**-0.533**	0.100	0.086	**0.309**
SACS Social Joining	0.012		**0.461**	**0.306**	0.072	**0.193**	-0.004	**-0.186**	-0.041
SACS Seeking Social Support	**-0.172**	**0.461**		**0.233**	-0.049	**0.270**	-0.007	-0.076	**-0.111**
SACS Cautious Action	**0.223**	**0.306**	**0.233**		0.066	0.096	**0.119**	0.019	0.062
SACS Instinctive Action	**0.194**	0.072	-0.049	0.066		0.100	**0.359**	**0.393**	**0.584**
SACS Avoidance	**-0.533**	**0.193**	**0.270**	0.096	0.100		0.101	0.063	-0.033
SACS Indirect Action	0.100	-0.004	-0.007	**0.119**	**0.359**	0.101		**0.588**	**0.418**
SACS Antisocial Action	0.086	**-0.186**	-0.076	0.019	**0.393**	0.063	**0.588**		**0.648**
SACS Aggressive Action	**0.309**	-0.041	**-0.111**	0.062	**0.584**	-0.033	**0.418**	**0.648**	

SACS: Strategic Approach to Coping Scale; EMAS: Endler Multidimensional Anxiety Scales; T: Trait; SE: Social Evaluation; PD: Physical Danger; AM: Ambiguous Situations; DR: Daily Routines; SAS: Social Anxiety Scale; SA: Separation; SDFA: Self-Disclosure to Family Members; SDFR: Self-Disclosure to Friends.

In Figures 7 and 8, which represent the results of the factor analysis, the horizontal axis measures the relations of the initial variables to the first identified factor, while the vertical axis measures the relation to the second factor. Positive values represent direct correlations, while negative values represent inverse correlations. The closer the projection on one of the axes is to the value 1, the higher the correlation with the factor represented by that axis is. Hypothesis 2 is rejected on factor D2, and hypothesis 3 is rejected on factor D4.

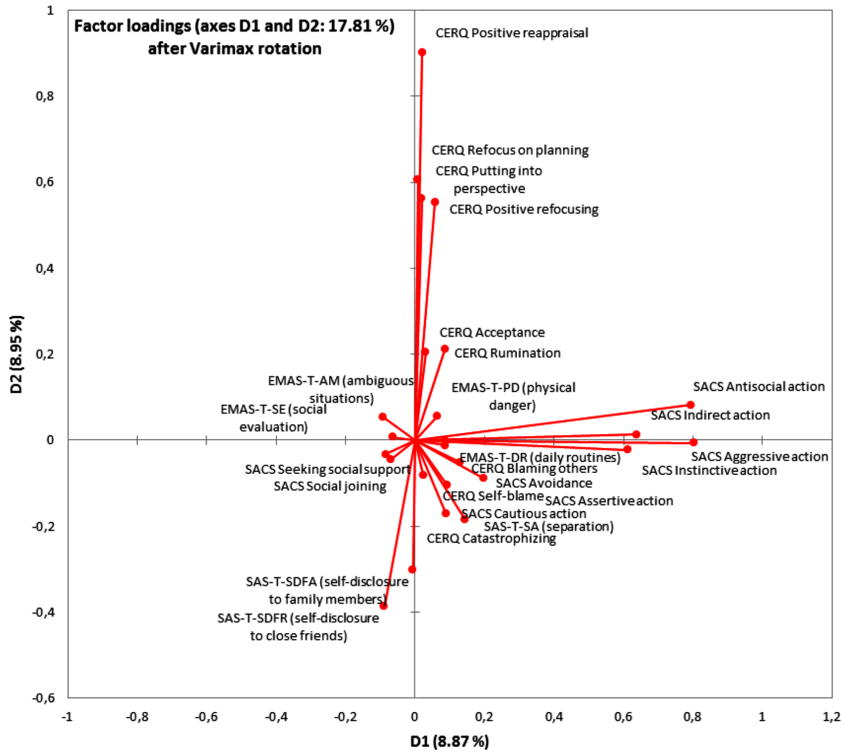

Figure 7 – ***Representation of variable grouping based on the first two identified factors. CERQ: Cognitive Emotion Regulation Questionnaire; EMAS: Endler Multidimensional Anxiety Scales; T: Trait; SE: Social Evaluation; PD: Physical Danger; AM: Ambiguous Situations; DR: Daily Routines; SAS: Social Anxiety Scale; SA: Separation; SDFA: Self-Disclosure to Family Members; SDFR: Self-Disclosure to Friends; SACS: Strategic Approach to Coping Scale.***

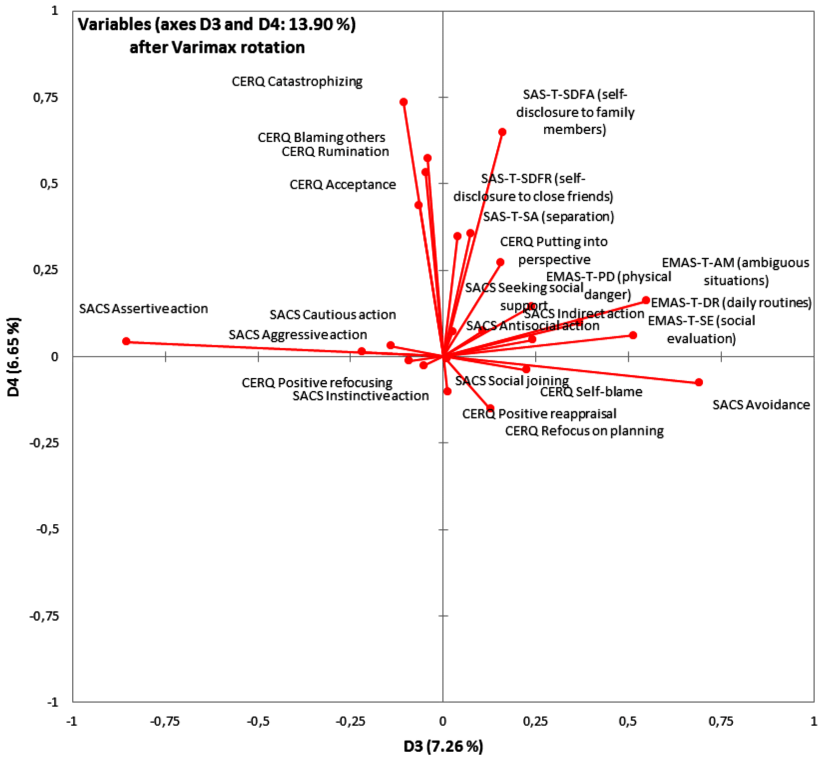

Figure 8 – ***Representation of the initial variables grouping based on factors 3 and 4. CERQ: Cognitive Emotion Regulation Questionnaire; EMAS: Endler Multidimensional Anxiety Scales; T: Trait; SE: Social Evaluation; PD: Physical Danger; AM: Ambiguous Situations; DR: Daily Routines; SAS: Social Anxiety Scale; SA: Separation; SDFA: Self-Disclosure to Family Members; SDFR: Self-Disclosure to Friends; SACS: Strategic Approach to Coping Scale.***

Discussions

For the EMAS-T and SAS-T questionnaires, following the results' interpretation, we noticed that the largest part of our students (39.34%) recorded high scores on the Physical Danger scale. Moreover, a considerable percentage (30.33%) experience high anxiety levels as far as the social anxiety is concerned in a separation situation – Separation Anxiety. A notable percentage of 24.02% revealed themselves to be extremely anxious under Social Evaluation conditions. Furthermore, the students from the various medical specialties become anxious in social anxiety situations, the Self-Disclosure to Family Members segment (22.52%), followed by the one related to the Self-Disclosure to Close Friends (14.71%) and, with an approximately similar value (14.41%), the new, strange and ambiguous situations. The fewest cases of high anxiety levels were recorded in relation to the Daily Routines (8.41%), where only 28 students confessed to feeling extremely anxious even during usual daily situations. Regarding the Physical Danger scale, even the test Manual [4] showed that it is the most loaded scale. Both the participants in the USA, consisting in students and adults, and the teenagers, students and adults from Canada, both men and women, revealed this – the fear for one's own physical integrity – as being the first and foremost fear. In other words, the students from the faculties who participated in the research align themselves, from the anxiety levels point of view, to all the other participant pools, including the Romanian ones, which have shown similar results [7], meaning that the Physical Danger scale provided the highest scores. It has also been observed that within the Romanian population for their age group, the subjects who answered to SAS recorded the highest scores as far as the separation anxiety is concerned [7], a value identical to the one recorded by our students. Another aspect we noticed was that in both studies [4, 7], and similar to the participants we examined, the results from the Daily Routines scale indicated the daily routine situations generate the least anxiety.

Although between the men and women within our pool, related to Physical Danger, no significant differences were recorded, there is one particular difference which was found, this time highly significant from a statistical point of view, between men and women, in terms of the percentage of low recorded scores. That is to say, the male gender records low scores on the Physical Danger scale on a much higher percentage than their female counterparts. In other words, the male students feel safer related to their physical integrity than their female colleagues, as these tend to score rather medium and high in most situations of this type (*chi*-square test p=0.007 <0.05, highly significant). In general, women recorded significantly higher scores than men on the Physical Danger scale in all groups studied abroad (adults, students, teenagers, psychiatric patients) [4], but also in the Romanian ones [7]; nevertheless, it is not the case for our research. As EMAS-based research data are scarce, we cannot account for this difference. We can only say that, for our participants, the significant differences between men and women, otherwise visible in all the other research performed on this scale, are reflected here only in the difference of low-recorded scores. Still, we cannot speculate on the reason for the appearance of such a phenomenon.

No differences of statistical significance were found between the two genders in relation to anxiety in physical danger, ambiguous or social evaluation situations.

A difference that is highly statistically significant was recorded between men and women as far as anxiety trait in Self-Disclosure to Family situations is concerned. It seems women experience more anxiety when they find themselves in such situations than their male counterparts (Student's *t*-test p=0.003 <0.05, significant). Our results coincide with those obtained and pooled for the Romanian population [8], but are also congruent with the data the test Manual presents about the student segment, when the scales were build and standardized [4]. An older research [9] supports the idea that self-disclosure depends both on the event which is to be disclosed, on the anxiety trait level the person has, and on the psychological distress level (anxiety, depression, anger) the subject is experiencing. That is, the higher the distress, the easier the self-disclosure would be. Other studies [10, 11] discuss the role the social anxiety generally plays in self-disclosure, but also the quality of the relation between the one disclosing and the one receiving the information, and even the role the personality plays in self-disclosure situations. However, none of these studies manages to explain the reason for which women experience higher anxiety when they are on the point of disclosing something to family members, although research data [12] show women self-disclose more easily. In one study [13], we have encountered the assumption that it is more probable that the person would self-disclose first to the partner, second to a friend, third to the family and finally to an acquaintance or a stranger, which could explain the increased level of anxiety when it comes to disclosing to the family, as this situation is only ranked the third in terms of preferences. However, the available research cannot account for the fact this constantly happens more to women than to men. However, there are some studies [14, 15] which show that in women the prevalence of generalized anxiety is higher, thus including higher social anxiety levels, which, in turn, could provide an explanation in this respect.

For the Nursing Faculty, there was found a statistically significant difference between the male and female genders, in terms of anxiety experienced in Self-Disclosure to Family situations. That is, men are less anxious in such situations than women are (Student's *t*-test p=0.03 <0.05, significant). Moreover, closer to the statistical significance threshold, Student's *t*-test p=0.068 >0.05, and following the same trend, there is the difference between the genders as far as the students from the Faculty of Medicine are concerned. Practically, these results can be a breakdown, a detailed presentation of those discussed in the paragraph above, thus showing us where this difference comes from. Although we find it interesting that only the Nursing and Medicine students recorded differences to such an extent, while not the same for the Pharmacy students, we also find this discovery hard to explain, as we have yet to find studies that consider people's jobs in relation to the self-disclosure process. As there are still high (insignificant) differences for the Pharmacy students, indicative of the same trend, we can conclude that profession is not a variable that influences the higher anxiety experienced by women in self-disclosure situations. However, lacking research data in this respect, we abstain from such conclusions.

An older meta-analysis [16] shows that women self-disclose significantly more than men do and, more importantly, it also shows there are no notable differences between the types of self-disclosure to the three aforementioned recipients and the one consisting in strangers. Nevertheless, our research measures anxiety in self-disclosure situations and not the self-disclosure process itself, so that this meta-analysis does not directly account for the reason why the women experience higher anxiety levels in self-disclosure situations.

Another way we can explain the higher anxiety levels the women experience in self-disclosure situations is that, by revealing aspects about oneself, one automatically becomes subject to feedback from others, which may not necessarily be positive, thus placing oneself in situations of higher vulnerability [17]. Thus, considering women are those who self-disclose more, it also means they will automatically experience more anxiety regarding vulnerability.

With a p=0.01 <0.05 (*chi*-square test), one can observe statistically significant differences on several segments. A very low percentage of students from the Nursing Faculty (6.15%) report low anxiety levels in Self-Disclosure to Family situations, compared to the 15.57% students from the Faculty of Medicine, who also report the same low anxiety level. While 26.42% of those who study at the Medicine experience high anxiety levels in Self-Disclosure to Family situations, there are only 10.71% of those from the Pharmacy Faculty who feel so. As there are no research data regarding the existing differences between the practitioners of various professions and the anxiety levels in self-disclosure situations, we cannot issue an opinion as to the cause of such a phenomenon.

Still, it has been ascertained that there are cultural differences regarding the self-disclosure ways [18, 19]. As we only carried out the research on participants of Romanian citizenship and background, we cannot consider this aspect when accounting for the results.

We found a statistically significant difference between men and women when measuring the anxiety trait in Self-Disclosure to Close Friends situations. The results practically show that the women in our study are more anxious when they are in such situations (Student's *t*-test p=0.003 <0.05, significant). The phenomenon we highlighted is almost identical to the one identified for the Self-Disclosure to Family Members in the above paragraphs. For this reason, we do not go too far in additionally explaining what we noticed in this case. We consider the discussion to be identical.

We can also notice how, further on, just as in the case of Self-Disclosure to Family Members, we find a breakdown of sources of this difference, with the exact same level of specificity – that is, the Nursing and Medicine Faculties present statistical differences, but not Pharmacy Faculty. As a result, the significant difference was found between the female and male subjects for the Nursing Faculty, namely that women experience higher anxiety

levels in Self-Disclosure to Close Friends than men do (Student's *t*-test p=0.017, significant). Also, for the Medicine students, we could notice the same phenomenon: men are significantly less fearful in situations which involve Self-Disclosure to Close Friends (Student's *t*-test p=0.019, significant). Similarly, close to the statistical significance threshold, there is the result obtained for the Pharmacy students, and indicating the same trend.

On the SAS, statistically important differences are found in favor of women only in two of the four scales, namely on the Self-Disclosure to Close Friends scale and on the Self-Disclosure to Family Members one.

We found strong direct correlations on EMAS-T scales between the Physical Danger (EMAS-T-PD) scale and Separation (SAS-T-SA) scales, as well as between the Self-Disclosure to Family Members (SAS-T-SDFA) scale and each of the scales measuring Social Evaluation (EMAS-T-SE), Physical Danger (EMAS-T-PD) and Ambiguous Situations (EMAS-T-AM). In a way, it seems explicable that humans, when they find themselves in situations when they are separated from the loved ones, feel the danger more acutely. And then, the higher the fear of separation is, the more the fear of physical danger increases [20]. The result is also found is the research on the Romanian population, both in clinical pool of participants, and in the non-clinical one, as both correlation quotients are very high [6]. Without exception, all studies show there is a correlation between the fear experienced in ambiguous situations and the fear one experiences when is faced with a physically dangerous situation [4, 21], while the relation between ambiguity, physical danger and social evaluation is a close one as well, with a high correlation quotient [4]. The anxiety in self-disclosure situations, no matter whether it is made towards family or friends, correlates in other research with the one experienced in Physical Danger, Social Evaluation or Ambiguous Situations [4, 7, 20, 21]. On the other hand, it is explicable that, if the subjects come from families with a history of violence – although we have not investigated this aspect, it seems to be a rather widespread cultural factor – there is a natural tendency that fear of physical danger or physical integrity should appear in any of these situations, Ambiguous Situations, Social Evaluation or Self-Disclosure [22].

We noticed in our study some strong inverse correlations between the Assertive Action Scale of the strategic coping and the anxiety in cases of Social Evaluation, Daily Routines, Ambiguous Situations or in Self-Disclosure to Close Friends situations (EMAS-T-SE, EMAS-T-DR EMAS-T-AM, and SAS-T-SDFA, respectively). In the research performed using SACS on the Romanian population, the Assertiveness scale and, thus, the Assertiveness itself, were found to have an inversely proportional relation (they have an inverse correlation) with social phobia and somatization disorders, both, as one can see, components of anxiety [23]. Also, one can notice in research, that, generally, there is inverse relation between assertiveness and anxiety [24–27]. From the test Manual [4], one can ascertain that the anxiety experienced in Social Evaluation situations strongly correlates with the anxiety the people experience in Ambiguous Situations, in almost all the studied groups, something that does not apply to the scores for the Daily Routines scale. On the other hand, the high score recorded on the Social Evaluation scale correlates with the one recorded on Self-Disclosure scales. In light of these results, we can understand why three of the four scales inversely correlate by a strong degree and together with score for the Assertive Action scale. Nevertheless, we cannot account for the presence of the Daily Routines scale in this group. Just maybe using this general aspect mentioned above, in which we see that assertiveness inversely correlates with anxiety.

Another strong correlation appeared between the SACS Avoidance scale and the Daily Routines scale of EMAS-T. Avoidance is the general and very well known mechanism of anxiety. In the SACS research on the Romanian population, it has been found that avoidance, as a coping mechanism, strongly correlates with: the obsessive-compulsive disorder, panic disorder, agoraphobia, social phobia, generalized anxiety, somatization disorder or hypochondria – all anxiety manifestation forms [23]. It appears as obvious that a person suffering from a high level of anxiety even in daily routine activities should employ avoiding strategies in order to solve stressing situations.

As result of the factorial analysis, on the D5 factor we find a strong presence of the prosocial and active area of the strategic coping, which correlates with nothing else. On the column of the D4 factor, there are found reunited the tendencies of the social anxiety scales to gravitate together (best represented of which is the Self-Disclosure to Family), which seem to correlate directly with the least healthy and the most maladaptive coping and cognitive strategies, such as Rumination and Catastrophizing. On the third factor, D3, we notice the grouping of anxiety trait variables, with an emphasis on the anxiety experienced in novel and ambiguous situations, which inversely and strongly correlate with assertiveness as an active coping mechanism, while directly correlating with the avoidance mechanism. D2 factor reveals that a positive reappraisal and a refocus on planning and action, which are actually very healthy cognitive-emotional mechanisms, strongly correlated in a negative way with social anxiety, especially in self-disclosure situations. Meanwhile, D1 factor is rather related to the coping's anti-social and active aspect, but does not strongly relate to any aspect of this research.

Regarding D5 factor, where we notice the reunification of the scales reflecting the coping's pro-social and active side, we can add that this indicates, with a major percentage (of 52.85%), the type of action coping strategy our students employ. Although the research using SACS suggests the active prosocial coping correlates with lower anxiety levels, this was not confirmed by our study [5, 28].

By studying D4 factor, we notice that social anxiety, namely its components Separation and Self-Disclosure, positively correlates with the cognitive-emotional coping mechanism of Rumination, but also with the Catastrophizing one, in short, with the coping mechanisms that are preponderantly maladaptive. As a result, of all seven sides of anxiety investigated in our study, only three

positively correlate with the maladaptive mechanisms of emotional and cognitive coping Rumination and Acceptance. The research performed by using CERQ already shows that the personality trait named Neuroticism (according to the NEO model) – which involves anxiety feelings – very strongly correlates in a positive way with the Rumination, Catastrophizing and Blaming Others mechanisms. The same research shows that the Anxiety scale from the SCL-90 scale strongly correlates (p<0.001) with all maladaptive coping scales from D4 factor, namely Rumination, Catastrophizing and Blaming Others [6, 29]. The research on Romanian population [30] has provided similar results, which contributes to the observation that there are correlations between the maladaptive coping and the personality trait referring to emotional stability, but also between the Depression, Anxiety and Stress Scale – 21 Items (DASS-21) and all the emotional-cognitive coping strategies, which are less adaptive. The factor analysis allows us to generalize that social anxiety, that is, self-disclosure, positively correlates with the maladaptive coping mechanisms. Still, we cannot explain why, of all the aspects of anxiety, it is the social anxiety that positively correlates with the emotional-cognitive maladaptive coping, an issue that remains open to further research. Since maladaptative coping is also responsible for poor stress management in the academic environment [31], studying this phenomenon will provide answers to several questions we have about this professional and academic context.

On the D3 factor, we observe that the anxiety trait, the aspects referring to Social Evaluation, Ambiguous Situations and Daily Routines, negatively correlates with the coping mechanism based on Assertive Action (the action which is direct, firm, honest and does not hurt the others), but directly correlates with the coping mechanism based on Avoidance (withdrawing from action and engaging in less stressful activities). That anxiety leads to avoidance, or better said, that has as internal response – which can become a coping mechanism – avoidance, is already a known fact, also confirmed by various studies [32–34], while stress involves and induces anxiety [35, 36], which makes it more natural for a defense mechanism to stress, such as avoidance, to correlate with anxiety. Furthermore, in the test Manual [5], we find that avoidance, as a mechanism, belongs to the dimension of passive strategies meant to manage stress. At the same time, assertiveness is found exactly at the middle of the passive–aggressive axis, being an active coping strategy. Thus, we find on the D3 factor that anxiety, along with avoidance, as its internal response, negatively correlate with assertiveness, which is to be expected and was explained above.

When we look at the data obtained on the D2 factor, it seems the cognitive coping mechanisms that have a rather protective role [6, 29] – Positive Refocusing, Refocus on Planning, Positive Reappraisal and Putting into Perspective – negatively correlate with the social anxiety phenomenon and especially with that of Self-Disclosure. By researching the test's psychometric properties, the authors already noticed that for these four scales there are recorded high inter-correlations [6, 29]. Thus, we can generalize that the entire positivism and planning within the cognitive coping mechanisms negatively correlate with the anxiety experienced in Self-Disclosure situations, a perfectly coherent aspect, as the research on the Romanian population [30] shows that these four "positive" scales, as we call them, none correlates with DASS-21 scales, namely anxiety, stress, depression. We cannot find answers in the research as to the reason that forms the basis for this inverse correlation between the fear of Self-Disclosure and Positive Refocusing – the positive significance for personal growth attributed to a negative event. We can only speculate that, indeed, by relying on existing data, such a well established life philosophy, according to which each defeat is an opportunity to grow, can determine a low level of social anxiety, as for such people, unpleasant and stressful situations are simply opportunities to gain and develop. In any case, within our pool of participants, Positive Refocusing was not one of the most often employed mechanisms, neither was the Self-Disclosure to Close Friends the most anxiogenic. Nevertheless, our discovery remains valid and intriguing.

On the D1 factor, we can notice a tendency to gravitate reunited the strategic approach scales referring to Instinctive Action, Indirect Action, Antisocial Action and Aggressive Action, representing as a whole the coping's active, aggressive and antisocial pole. Our students obtained the lowest scores on these scales, and the aggressive action, as a stress management strategy and also as a descriptive concept factor of the said factor, has, of all, the lowest score, thus showing that the medical students employ this strategy the least frequently. Explanations for this may vary from the profoundly pro-social role perceived (especially by women) by them as characteristic to the profession they have chosen [37] to the fact that the participant pool is constituted in a 80% proportion of women and they, as the study claims, employ preponderantly prosocial coping strategies [38–40, 23], thus shifting the group score in the prosocial direction. We can also see from the D1 factor that no other significant relations can be found among the variables.

Limitations

One of the limits of the study was represented by the fact that the results cannot be considered representative for the entire student population from the Romanian medical universities, as the study did not include participants from the country's major university centers. A second limit refers to the fact that measurements using these instruments, directed at these target groups are almost inexistent, as far as our research has shown, and we do not have data to compare the obtained results. Moreover, we mention that only 70% of the first year students participated to this study, which leads us to consider the fact that the percentage values might be slightly different in the case of a larger study group.

Conclusions

We align ourselves with research that claims that there are differences between the genders in terms of anxiety, especially the one experienced in situations of physical

danger and self-disclosure, but these differences are not related to the profession they aspire to do. Moreover, the situations in which there is physical danger type anxiety are closely related to the separation type anxiety. In situations of social anxiety, especially in the ones of separation and self-disclosure, our participants mostly use avoidance, rumination and catastrophizing, and least positive reappraisal and refocus on planning and action, while assertiveness is incompatible with ordinary situations or with a high degree of ambiguity. We conclude that there is a specific and unique structure of the psyche in the Romanians attracted by a career in the medical field, revealing some characteristics that have not been sufficiently explored by the research community and we can notice a prevalence of prosocial behavioral coping mechanisms, as well as the fact that all students in this research are equally anxious in all aspects, despite the results provided by studies from other countries.

Conflict of interests

None to declare.

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