ARTIGO ORIGINAL

How do medical students defend themselves against anxiety?

Ana Margareth Siqueira Bassols[a,b]

Guilherme Correa Guimarães[c]

Cíntya Kelly M Ogliari[c]

Sthefano Machado dos Santos[c]

Bruna Brasil Carneiro[c]

Vânia Naomi Hirakata[d]

Luis Augusto Rohde[a,b]

Cláudio Laks Eizirik[e]

[a] Department of Psychiatry, Universidade Federal do Rio Grande do Sul (UFRGS), Porto Alegre, RS, Brazil.

[b] Division of Child and Adolescent Psychiatry, Hospital de Clínicas de Porto Alegre (HCPA), UFRGS, Porto Alegre, RS, Brazil.

[c] UFRGS, Porto Alegre, RS, Brazil.

[d] Division of Biostatistics, HCPA, UFRGS, Porto Alegre, RS, Brazil.

[e] Division of Psychiatry, HCPA, UFRGS, Porto Alegre, RS, Brazil.

Resumo

Objetivo: A formação médica é geradora de ansiedade, tornando os estudantes de medicina vulneráveis a transtornos psiquiátricos, em particular os transtornos de ansiedade. Para lidar com a ansiedade o estudante de medicina lança mão de vários mecanismos de defesa. Objetivou-se avaliar a associação entre a presença

de sintomas de ansiedade e o estilo defensivo em alunos de uma escola médica pública federal. **Método:** Trata-se de um estudo observacional transversal, de uma amostra de estudantes de medicina, do primeiro e sexto ano, devidamente matriculados e frequentando regularmente as aulas. No presente estudo utilizou-se um questionário sócio-demográfico, o Inventário Beck de Ansiedade e o questionário de estilo defensivo (DSQ-40). **Resultados:** Responderam aos questionários 232 alunos, 110 do primeiro ano e 122 do sexto, representando 67,4% do total de alunos matriculados. Em relação aos mecanismos de defesa na amostra, as analises multivariadas mostraram que mecanismos de defesa neuróticos e imaturos estavam associados à presença de ansiedade (p < 0,001). **Conclusão:** Os dados encontrados no estudo apontam que alunos do curso médico que apresentaram sintomas de ansiedade utilizaram significativamente mais mecanismos de defesa neurótiocos e imaturos do que os que não tinham esses sintomas. Planos de prevenção, atenção e estratégias de apoio psicológico deveriam ser desenvolvidos para esse grupo, pois os mecanismos de defesa não parecem ser adaptativos em estudantes de medicina enfrentando ansiedade.

Palavras-chave: Estudantes de Medicina, mecanismos de defesa, ansiedade.

Abstract

Objective: Medical training is a generator of anxiety, making medical students vulnerable to psychiatric disorders. To deal with anxiety, medical students make use of several defense mechanisms. The aim was to assess the association between the presence of symptoms of anxiety and the defense style in students of a federal public medical school. **Method:** This is a cross-section observational study, of a sample of medical students, of the first and sixth years, duly enrolled and regularly attending classes. For the present study a socio-demographic questionnaire, the Beck Anxiety Inventory and the Defense Style Questionnaire (DSQ-40) were used. **Results:** The questionnaires were answered by 232 students, 110 from the first year and 122 of the sixth year, representing 67.4% of the total amount of students. In relation to the defense mechanisms in the sample, the multivariate analysis showed that neurotic and immature defense mechanisms were associated with the presence of anxiety (p<0.001). **Conclusion:** The data found in this study indicate that medical students who showed symptoms of anxiety, used more neurotic or immature defense mechanisms than students who did not present these symptoms. Prevention and attention plans, as well as psychological support strategies should be developed for this group, because defense mechanisms do not appear to be adaptive in medical students experiencing anxiety.

Keywords: Medical students, defense mechanisms, anxiety

Background

Medical students undergo a series of new experiences that trigger anxiety and conflicts during academic life. Changes in lifestyle, less time for social interaction, high demand of knowledge, intimate contact with

diseases and death, create an atmosphere with high levels of distress[1,2,3]. Studies show that this distress can manifest itself in different ways including high levels of stress, anxiety, and depression[4,5]. Medical students are known to exhibit a higher prevalence of anxiety symptoms when compared with the general population[6,7].

To deal with these situations, medical students use several defense mechanisms. Defense mechanisms are defined as the unconscious psychic operations employed by the Ego against the instinctive impulses of the Id and the effects associated with such impulses[8,9]. Pointed out, initially, as predominantly pathological by Freud, they have become considered essential and, integrate the normal development of the individual, even playing an important function of protection and adaptation[10]. Also, they serve as indicators of the personality structure of the individual and have been used for the understanding of mental processes, for the treatment of patients undergoing psychotherapy and, for research to study psychic aspects of individuals or groups[11,12].

Vaillant[13] grouped defense mechanisms hierarchically according to the degree of maturity of the defensive functioning, establishing, in this way, the mature (or adaptive) defenses, the neurotic and the immature (or maladaptive) ones. Mature defense mechanisms are associated with a better and healthier adaptive function. Immature defenses, on the other hand, are negatively related to the adult adaptive functioning. And neurotic defenses, although responsible for the rigidity of personality that can cause discomfort and suffering, are not typically associated with abnormal or disruptive behaviors[14,15].

Several studies, in the general population, showed an association of impairments in Ego defense mechanisms with psychiatric problems, such as anxiety and depression[16,17,18,19,20]. However, there is a scarcity of studies evaluating defense mechanisms in medical students and there is only one study assessing the relationship between defense mechanisms and anxiety[21]. Waqas[21] found a direct association between anxiety and neurotic and immature Ego defense mechanisms, and an indirect association with mature mechanisms. Also, female gender, idealization, reaction formation, autistic fantasy, displacement, splitting, and somatization were associated positively withy anxiety scores.

It is necessary to describe the psychiatric implications of impairments in Ego defense mechanisms, so strategies can be suggested to promote healthy psychological mechanisms and decrease the regressive ones. This could help medical students in acquiring greater insight by bringing their unconscious behavior to consciousness and assisting them to understand the cause of the behavior. In addition, it could eventually encourage adopting mature defense mechanisms, and hence, a better life quality[22].

Thus, the present study aimed to assess the association between the presence of anxiety and the defense mechanisms style used to cope with anxiety in pupils of a federal public medical school. The hypothesis was that the anxiety presented by the medical students was probably associated with higher averages of neurotic and immature defense mechanisms.

Methods

Sample:

This is a cross-section observational study that assessed students of both genders of the first and sixth year of the Medical course of the Universidade Federal do Rio Grande do Sul (UFRGS). The participants answered the questionnaires voluntarily and anonymously, after signing a Free and Clarified Term of Informed Consent (FCTIC). The study was approved by the Ethics Committee of the Hospital de Clínicas de Porto Alegre (Protocol No. 09-444).

Procedures:

The first year students of the Medical course, divided into those in the 1st and 2nd semesters, answered the instruments in their respective classrooms. The sixth year students, 11th and 12th semesters, had their data collected at different times within the hospital since at this stage there is no subject that brings together all students at the same time.

Instruments:

a) Demographic data and health questionnaire: includes information such as gender, family and personal income, if the students live with their parents or not, if the students practice leisure activities, use of alcohol or drugs, medication, the presence of some illness and degree of satisfaction with the course.

b) DSQ-40 (Defense Style Questionnaire); assesses defense mechanisms[23,24] and several findings have proved the validity of the instrument [24,25,26]. It is a self- applied questionnaire used in clinical and research scenarios, originally developed by Bond et al[25,26] and translated and validated for the Brazilian population by Blaya et al.[27]. It classifies 20 defense mechanisms and groups them into: a) Mature: anticipation, humor, sublimation, suppression, and rationalization; b) Neurotic: undoing, pseudo-altruism, idealization, and reactive formation and c) Immature: projection, passive aggression, acting out, isolation, devaluation, autistic fantasy, denial, displacement, dissociation, splitting and somatization. Its validity and internal consistency are adequate[27].

c) Beck's Anxiety Inventory (BAI)[28], validated in Brazil by Cunha[29], is composed of 21 questions that evaluate anxiety symptoms. The assessment is added up and classifies the symptoms according to the score obtained. The sum of the individual scores varies from 0-3, and in the global score of the instrument, between 0-63. The symptoms are classified from: 0-10, Minimum; 11-19, Slight; 20-30, Moderate; and from 31-63, Severe. The cutting point used was score 10.

Statistical Analysis

The first objective of the analysis was to verify if the association of anxiety levels and the use of defense mechanisms could suffer the effect of potential confounding variables. Those analyses were performed using the chi-square test for categorical variables and the *t* test for continuous variables. The variables, with an association for a $P < 0.10$ both with levels of anxiety as with defense mechanisms, were included in a MANCOVA that sought to assess the association between anxiety levels and the three groups of defense mechanisms. When a significant association was detected for any of the defense mechanism groups, a new MANCOVA was performed seeking to delimit the specific mechanisms within each group. All analysis was performed with the 18.0 of PASW Statistics for Windows.

Results

a) Demographic Results

The total amount of students enrolled in 2010 was 149 in the first year and 195 in the sixth year in 2010 and 2011, according to the list provided by the Graduation Committee (COMGRAD). The questionnaires were answered by 232 students, 110 of the first year (73.82 % of those enrolled) and 122 of the sixth year (62.56 % of those enrolled), representing 67.4% of the total amount of students enrolled.

b) Anxiety

The prevalence of anxiety in this sample of medical students was 19.5%. In relation to subgroups, anxiety appeared in 30.8% of first-year students and 9.4% sixth-year students, with a significant difference between both groups ($p<0.001$). These results were detailed in a previous author's paper [6].

c) Potential confounding factors for defense mechanisms (grouped)

The following factors showed to be associated with a $p < 0.10$, both with anxiety levels as with one or more groups of defense mechanisms: year of the course, use of alcohol and drugs, use of medication, physical illness, gender, and satisfaction with the course. Those variables, therefore, were included in the initial MANCOVA (see Table 1).

d) Anxiety and Defense Mechanism Groups

In the initial MANCOVA, the anxiety levels were significantly associated with immature and neurotic defense mechanisms ($p < 0.05$). There was no significant association between anxiety levels and mature mechanisms (see Table 1).

Table 1: Levels of anxiety and defense mechanism groups adjusted for the confounder

Variable	Mature Mean (EP)	Neurotic Mean (EP)	Immature Mean (EP)
Course Year	P = 0.022	P = 0.588	P = 0.388
1º year	5.09 (0.16)	4.13 (0.18)	3.80 (0.12)
6º year	4.71 (0.18)	4.03 (0.20)	3.69 (0.14)
Symptoms of Anxiety	P = 0.171	P = 0.006	P = 0.023
Absent	5.05 (0.16)	3.76 (0.17)	3.56 (0.12)
Present	4.76 (0.21)	4.40 (0.23)	3.93 (0.16)
Use of Alcohol or Drugs	P = 0.167	P = 0.162	P = 0.748
No	4.79 (0.17)	4.21 (0.19)	3.73 (0.13)
Yes	5.01 (0.17)	3.96 (0.18)	3.77 (0.13)
Use of Medication	P = 0.289	P = 0.577	P = 0.344
Uses	5.00 (0.18)	4.03 (0.19)	3.82 (0.13)
Does not use	4.80 (0.18)	4.14 (0.20)	3.68 (0.14)
Physical Illness	P = 0.309	P = 0.438	P = 0.113
Yes	4.81 (0.19)	4.16 (0.20)	3.86 (0.14)
No	5.00 (0.17)	4.00 (0.18)	3.63 (0.13)
Gender	P = 0.013	P = 0.383	P = 0.800
Female	4.68 (0.16)	4.17 (0.18)	3.76 (0.13)
Male	5.12 (0.18)	4.00 (0.20)	3.73 (0.14)
Satisfaction with the Course	P = 0.025	P = 0.591	P = 0.792
Unsatisfied	4.51 (0.38)	3.79 (0.42)	3.88 (0.29)
More or less satisfied	4.91 (0.18)	4.24 (0.20)	3.67 (0.14)
Satisfied	5.29 (0.11)	4.23 (0.12)	3.69 (0.08)

In relation to the defense mechanisms, grouped into mature, neurotic and immature, an association was observed among the following demographic variables and only the group with mature defenses: year of the course, gender and degree of satisfaction with the course. The variables: use of alcohol/drugs, use of medication and presence of physical illness proved uncorrelated with any group of defense mechanisms.

e) Specific Defense Mechanisms

Since significant associations were found between anxiety levels and scarcely among immature or neurotic defense mechanisms, we proceeded to an investigation of the association of specific defense mechanisms of these categories and anxiety levels.

In relation to neurotic defense mechanisms, an increase of anxiety symptoms was associated with a higher use of pseudo-altruism, reactive formation, and undoing (Table 2)

Table 2: Neurotic defense mechanisms and anxiety symptoms.

Neurotic Defense Mechanisms	Anxiety Symptoms		P
	Average		
	With Symptoms	Without symptoms	
Pseudo altruism	5.73 (SE 0.26)	4.52 (SE 0.13)	< 0.001
Idealization	3.76 (SE 0.31)	3.26 (SE 0.26)	0.150
Reactive formation	4.34 (SE 0.26)	3.74 (SE 0.13)	0.042
Undoing	4.72 (SE 0.29)	3.79 (SE 0.14)	0.005

Regarding immature mechanisms, an increase of anxiety symptoms was associated with a higher use of projection, acting out, autistic fantasy, displacement, splitting and somatization and lower dissociation averages (Table 3).

Table 3: Immature defense mechanisms and Anxiety symptoms

Immature defense mechanisms	Anxiety symptoms		p
	Average		
	With symptoms	Without symptoms	
Projection	3.24 (SE 0.23)	2.01 (SE 0.11)	< 0.001
Passive aggression	3.21 (SE 0.24)	2.76 (SE 0.12)	0.093
Acting out	4.76 (SE 0.30)	3.87 (SE 0.15)	0.008
Isolation	4.68 (SE 0.35)	4.02 (SE 0.17)	0.092
Devaluation	3.28 (SE 0.24)	3.18 (SE 0.12)	0.713
Autistic Fantasy	4.49 (SE 0.32)	3.00 (SE 0.16)	< 0.001
Denial	2.34 (SE 0.24)	2.70 (SE 0.12)	0.181
Displacement	4.73 (SE 0.28)	3.37 (SE 0.14)	< 0.001
Dissociation	3.29 (SE 0.24)	3.88 (SE 0.12)	0.031
Splitting	3.45 (SE 0.27)	2.82 (SE 0.13)	0.040
Somatization	5.01 (SE 0.33)	3.77 (SE 0.16)	0.001

Discussion

The prevalence of anxiety found in this sample of medical students (19.5%) stood bellow the results found in the literature. Other researches on medical students found prevalence rates of 35% in Brazilian students, 28.7% in Arab students and between 24.1% and 25.1% in Indian students[30,31,32]. One possible explanation for this result was that in the present study only first and sixth-year students were evaluated, and anxiety was less present among the students in the last year. However, the prevalence of anxiety found in this sample of medical students, was still higher than the average Brazilian population (12.5%)[6].

In the sample of the present study, it was observed that neurotic and immature defense mechanisms were more used by anxious individuals, which confirms our initial hypothesis. This finding is in agreement with Waqas[21] and to the logic that anxious individuals present more difficulty in dealing with stress factors. Interestingly, no relation between the presence or absence of anxiety and mature defense mechanisms were found. Waqas et al[21] encountered that these adaptive defense mechanisms were protection factors against the presence of anxiety of medical students in Pakistan.

This study found a higher prevalence of mature defense mechanisms in first-year students than in sixth-year students. These results occurred in a controlled analysis for confounders (anxiety, gender, satisfaction and alcohol/drugs use), and were different from other findings in the literature, where the results were not controlled for confounders[21,22]. There was a great variation of anxiety between first and sixth-year students, and in a simple analysis it could have influenced the types of defense mechanisms prevalent at the beginning and at the end of the course. Furthermore, male students used more mature defense mechanisms when compared to the opposite gender. In literature, female students showed a higher use of neurotic defense mechanisms[21,22]. This finding can be explained by the fact that female students usually internalize what they learn in class[33], which favors the higher use of a neurotic defense style, when compared with males. The present study also found a direct association with mature defense mechanisms and satisfaction with the course. This is in accordance with the notion that personal satisfaction requires the development of more functional and mature ways of facing reality and its stressful situations[34].

Among the neurotic and immature specific defense mechanisms, pseudo-altruism, reactive formation, undoing projection, acting out, autistic fantasy, displacement, splitting, and somatization were higher in students with anxiety, whereas dissociation was protective against anxiety. Waqas[21] found that reactive formation, idealization, autistic fantasy, displacement, splitting, and somatization were positively associated with anxiety scores, while denial, dissociation, and rationalization were negatively associated. It is important to note that translated and validated DSQ-40 for the Brazilian population by Blaya et al[27] considers rationalization a mature defense mechanism, and in this study the individualised mature defense mechanisms were not the focus.

In spite of immature defense mechanisms being more likely to be associated with psychiatric disorders, this study found that dissociation was negatively associated with symptoms of anxiety. This finding is in accordance with Waqas[21]. These results suggest that mild forms of dissociation may be an adaptive Ego defense

for a medical student who facing an acute state of stress, such as that of a patient's death and suffering in hospitals, being an interesting resource to maintain psychological health[35]**.** On the other hand, while defense mechanisms may improve the mental health of doctors, they may also increase their emotional rigidity and cause emotional detachment from their patients, so students have to be aware about their negative effects[21].

The higher use of maladaptive defense mechanisms – neurotic and immature – by anxious students, in comparison to mature mechanisms, is associated with relatively lower academic performance, and with higher anxiety and depression levels [21]. This evidences the need of developing effective care proposals for students.

Limitations

Being this a cross-sectional study, it is not possible to establish a temporal or causal relation between the levels of anxiety and the defense mechanisms of the Ego. Besides, the data were collected in only one Medical School, from the Universidade Federal do Rio Grande do Sul (UFRGS), and the generalization, for other medical students, should be done cautiously.

The participation rate in the survey was lower among sixth grade students compared to the first year ones. The data collection of the groups was performed in different environments due to the different activities of the students during the course's program. Due to logistic issues, it was not possible to neither collect the data simultaneously nor obtain data from the students that did not complete the instruments of the study. Added to these aspects, are the controversies about the ways to obtain a precise measurement of defense mechanisms, since they are unconscious processes and, therefore, would not be amenable to measurement through questionnaires. The fact that the DSQ-40 assesses self-perception, enables the individual to be able to report their typical behaviors used in response to stress25, even without having the knowledge about the defensive function related to this behavior[36]. Besides, the DSQ-40 has been used in several studies throughout time, and although it still remains under observation, it continues being a useful instrument to determine the general defensive functioning of the individual. There is a more recent version of the DSQ, the DSQ-60 37, which has not been translated, adapted or validated for the Portuguese language yet.

Conclusion

It becomes necessary to help the students with symptoms of anxiety to develop more mature and adaptive defense mechanisms. Consequently, plans for prevention, care and psychological support strategies for this group should be developed among us to help them on their path to professional life.

New studies are necessary to corroborate the findings of the present study, in order to design a psychologically healthier atmosphere for the students, reflecting in more maturity, less suffering and better life quality.

References

1. Eizirik, C. L., Monteiro, O. C., Zimmermann, A., Eizirick, D.L., Guimarães. J. R., Levy, R. Estudante de Medicina e seu primeiro contato com o paciente [Medical student and his first contact with the pacient]. AMRIGS. 1976; 20 (5) , 224-228.

2. Morrison, J., & Moffat, K. More on medical student stress. Medical Education. 2001; 35, 617 - 618.

3. Radcliffe, C., & Lester, H. Perceived stress during undergraduate medical training: a qualitative study. Medical Education. 2003; 37, 32–38.

4. Dyrbye L. N. Commentary: Medical Student Distress: A Call to Action. Academic Medicine. 2011; 86(7), 801-803.

5. Dyrbye L. N. Patterns of distress in US medical students. Med Teach. 2011; 33(10), 834-839.

6. Bassols, A. M. S., Okabayashi, L. S. , Silva, A. B. , Carneiro, B. B., Cortes, G. N., Rohde, L. A., Eizirik, C. L. First- and last-year medical students: is there a difference in the prevalence and intensity of anxiety and depressive symptoms? . Rev. Bras. Psiquiatr. 2014; 36, 233-240.

7. Dyrbye LN, Thomas MR, Shanafelt TD. Systematic review of depression, anxiety, and other indicators of psychological distress among U.S. and Canadian medical students. Acad Med. 2006; 81:354-73.

8. Escobar, J. R. Mecanismos de defesa [Mechanisms of Defense]. Rev Psiq RGS. 1988; 10 (2), 52-56.

9. Freud, A. The Ego and the Mechanisms of Defense. London: Hogarth Press and Institute of Psycho-Analysis; 1937.

10. Fenichel, O. (1966). Los mecanismos de defensa [The mechanisms of defense]. In: Fenichel, O. Teoria psicoanalítica de la neurosis. Buenos Aires: Paidós; 1966. p. 168-196.

11. Andrade, M. P. M. As defesas psíquicas dos estudantes de medicina [The psychological defenses of medical students] (Unpublished doctoral dissertation). São Paulo: UNIFESP; 2000.

12. Blaya, C., Kipper, L., Perez Filho, J. B., Manfro, G. G. Mecanismos de defesa: uso do Defense Style Questionnaire [Defense mechanisms: use of Defense Style Questionnaire]. Rev Bras Psicoter. 2003; 5 (1), 67-80.

13. Vaillant, G.E. Adaptation to Life. Boston, MS: Little Brown; 1977.

14. Vaillant, G. E., & Battista, J. R. Empirical test of Vaillant's hierarchy of ego functions. Am J Psychiatry. 1982; 139, 356-357.

15. Possa, M. A. Psicoterapia dinâmica das patologias leves de personalidade [Dynamic psychotherapy of personality disorders]. Trends Psychiatry Psychother. 2012; 34(1) , 44-45.

16. Carvalho AF, Hyphantis TN, Taunay TC, Macedo DS, Floros GD, Ottoni GL, Fountoulakis KN, Lara DR. The relationship between affective temperaments, defensive styles and depressive symptoms in a large sample. J Affect Disord. 2013; 146:58-65.

17. Bloch AL, Shear MK, Markowitz JC, Leon AC, Perry JC. An empirical study of defense mechanisms in disthymia. Am Psychiatry. 1993; 150:1194-98.

18. Sharma P, Sinha UK. Defense mechanisms in mania, bipolar depression and unipolar depression. Psychol Stud. 2010; 55:239-47.

19. Chávez-Léon E, Muñoz MCL, Ontiveros-Uribe MP. An empirical study of defense mechanisms in panic disorder. Salud Ment. 2006; 29:15-22.

20. Perry JC, Presniak MD, Olson TR. Defense mechanisms in schizotypal, boderline, antissocial, and narcissistic personality disorders. Psychiatry Interpers Biol Process. 2013; 76:32-52.

21. Waqas A, Rehman A, Malik A, Muhammad U, Khan S, Mahmood N. Association of Ego Defense Mechanisms with Academic Performance, Anxiety and Depression in Medical Students: A Mixed Methods Study. Cureus. 2015; 10.7759/cureus.337.

22. Parekh, M. A., Majeed, H., Khan, T. R., Khan, A. B., Khalid, S., Khwaja, N. M., Khalid, R., Khan, M. A., Rizqui, I. M., Jehan, I. Ego defense mechanisms in Pakistani medical students: a cross sectional analysis. BMC Psychiatry. 2010; 10.1186/1471-244X-10-12.

23. Andrews, G., Singh, M., & Bond, M. The defense style questionnaire. The Journal of Nervous and mental diseases. 1993; 181 (4), 246-56.

24. Vaillant, G.E. Ego mechanisms of defense: A Guide for Clinicians and Researchers. Washington, DC: American: Psychiatric Press; 1992.

25. Bond, M., Gardner, S. T., Christian, L., Sigal, J. J. Empirical study of self-rated defense styles. Arch Gen Psychiatry. 1983; 40, 333-338.

26. Bond, M. Manual for the defense style questionnaire. Sir Mortimer B. Davis-Jewish General Hospital, Department of Psychiatry. Montreal: Canada; 1991.

27. Blaya, C. Tradução, adaptação e validação do Defensive Style Questionnaire (DSQ-40) para o português brasileiro [Translation , adaptation and validation of the Defensive Style Questionnaire (DSQ-40) for Brazilian Portuguese] (Unpublished master's thesis). Porto Alegre: UFRGS; 2005.

28. Beck, A. T., & Steer, R. A. Beck anxiety inventory. San Antonio (TX) : Psychological Corporation; 1990.

29. Cunha, J. A. Manual da versão em português das Escalas Beck [Manual of the Portuguese version of the Beck Scale]. São Paulo: Casa do Psicólogo; 2001.

30. Tabalipa FO, Souza MF, Pfützenreuter, Lima, Traebert, Traebert. Prevalence of anxiety and Depression among Medical students. Revista Brasileira de Educação Médica. 2015; 39 (3): 388-394.

31. Ahmed I, Banu H, Al-Fageer R, Al-Suwaidi R. Cognitive emotions: depression and anxiety in medical students and staff. J Crit Care. 2009; 24(3):e1-7.

32. Velayudhan A, Gayatridevi S, Bhattacharjee RR. Efficacy of behavioral intervention in reducing anxiety and de- pression among medical students. Ind Psychiatry J. 2010; 19(1):41-6.

33. La Cour, P. Psychological Defenses of Danish Medical Students. J Nerv Ment Dis. 2002; 190, 22–26.

34. Abeni MS, Magni M, Conte M, Mangiacavalli S, Pochintesta L, Vicenzi G, Ferretti VV, Pompa A, Cocito F, Klersy C, Corso A. Psychological care of caregivers, nurses and physicians: a study of a new approach. Cancer Med. 2014; 3 (1): 101-110.

35. Bowins B. Psychological defense mechanisms: A new perspective. Am J Psychoanal. 2004; 64:1-26.

36. Plutchik, R., Kellerman, H., Conte, H. R. In: A structural theory of ego defense and emotions. In: Emotions in personality and psychopathology. New York, NY: Plenum PressIzard; 1979.

37. Thygesen, K., Drapeau, M., Trijsburg, R. W., Lecours, S., de Roten ,Y. B. Assessing defense styles: Factor structure and psychometric properties of the new Defense Style Questionnaire 60 (DSQ-60). International Journal of Psychology and Psychology Therapy. 2008; 8(2), 171-181.

Correspondência

Ana Margareth Siqueira Bassols

Rua Álvares Machado, 44/204

90630-010 Porto Alegre, RS, Brasil

ambassols@gmail.com