Survey of depressive and anxious symptoms among medical students at a brazilian university

Levantamento de sintomas depressivos e ansiosos entre estudantes de medicina de uma universidade brasileira

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RESUMO: O curso de medicina tem sido apontado como fator de risco para o desenvolvimento de sintomas depressivos e ansiosos nos estudantes. O objetivo foi estimar a prevalência de sintomas depressivos e ansiosos em acadêmicos de medicina em uma universidade pública. Trata-se de um estudo descritivo, realizado com estudantes de uma universidade pública. Foram utilizados questionário sociodemográfico, Inventário de Depressão de Beck e Inventário de Ansiedade de Beck. Participaram 33 estudantes com idade entre 20 e 25 anos de idade, maioria do sexo feminino, solteiros e que não moram com a família. A maioria participa de alguma atividade de lazer. A prevalência de sintomas depressivos foi de 27,3% e de ansiedade foi de 54,48%. Encontramos maior relação de sintomas de depressão e ansiedade no sexo feminino, nos que moram longe da família e usam a internet/redes sociais. Tocar instrumentos musicais, praticar atividade física, leitura extracurricular, ir ao cinema foram apontados como fatores de proteção. Esse estudo mostrou que sintomas de depressão e ansiedade são comuns nos estudantes de medicina e os fatores de proteção e de risco precisam ser considerados durante a graduação.

Palavras-chave: Depressão; Ansiedade; Estudantes de medicina; Fatores de proteção; Fatores de risco.

ABSTRACT: The Medical School has been identified as a risk factor for the development of depressive and anxious symptoms in students. The aim of this study was to estimate the prevalence of depressive and anxious symptoms in medical students in a public university. This is a descriptive study, carried out at the federal university with undergraduate students of Medical School. The sociodemographic questionnaire, the Beck Depression Inventory and the Beck Anxiety Inventory were used. The study included 33 students aged between 20 and 25 years old, most of them female, single and living distant from their families. Most participate in some leisure activity. The prevalence of depressive symptoms was 27.3% and anxiety was 54.48. We found a greater relationship of depression and anxiety in female, living distant from family and use of internet/social media. Playing musical instruments, practicing physical activity, non-mandatory reading and watching movies were identified as protective factors. This study showed symptoms of depression and anxiety are common among undergraduate medical students and protective and risk factors need to be considered during graduation.

Keywords: Depression; Anxiety; Students, medical; Protective factors; Risk factors.

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INTRODUCTION

It is of scientific knowledge that being a medical student is a risk factor for the development of depressive symptoms and of anxiety[1-4]. Depression and anxiety are psychological disorders of multifactorial cause that are among the most prevalent public health problems in the last decades, significantly affecting the quality of life of the population and generating expenses for the health systems[5]. Among the main factors responsible for such fact is the excessive workload of the Course Curriculum, since medical school possesses the greatest workload in the country when compared to other graduation courses[6-8].

Besides the workload, it is the course with most ingression attempts in the majority of Brazilian universities, generating high competitiveness among students before admission in the university. However, this competitiveness persists after insertion in academic life, making the university environment unfavorable for a good state of mental health[2,9,10]. Contributing to this is the fact that many students end up emigrating from their home cities to study the course without the company of their relatives, becoming responsible for domestic duties, often for the first time[8,11-13].

Although depression in medical students is a recurrent problem in Brazil, research from the whole world revealed this is a global problem[2,14-16]. Studies have demonstrated a prevalence of depression of 28%, 27,2% and 29,5%, respectively, among medical students in the whole world, suggesting that this is a high risk population for the development of depression[2,16,17]. Studies about anxiety in medical students also are recurrent suggesting higher probability of development of anxiety symptoms when compared to students from other graduation courses[6,18].

Studies made with medical students from Recife and in the interior of the southeastern region of Brazil evaluated the level of symptoms of depression and anxiety in students who were in the clinical period, since they consider that to be the period in which the student has contact with the patient and, because of this, exhibits a higher chance of living stressing situations like the exposure to hospital routine and, consequently, to life and death dilemmas[4,19]. However, studies made in Rio Grande do Norte, in Rio Grande do Sul and in Norway have verified that first year students experienced a sum of factors that could influence the appearance of depressive and anxiety symptoms, such as: competition from the admission exam itself, their own expectations as well as their relatives', the necessity of adaptation to the academic world[6,20,21]. One of these studies found a higher prevalence of symptoms in the first year classes (30,8%) when compared to the sixth year classes (9,4%)[20].

Faced with this scenario, scholars of the area have sought to identify the protective factors and the risk factors in this population. Living with the parents is a protective factor[4,22-24] as well as having sleep quality and practicing physical activity[23,25], involvement with leisure activities[20] and having good interpersonal relationship with the family, friends and love bond[23,26]. As risk factors, the fact of being of the female sex, coursing the first year of medicine[20,23], the use of illicit drugs[4], living alone[27,28] were highlighted.

Recognizing that the medical school is a preponderant factor for the development of symptoms of anxiety and depression, it is important that managers of higher education institutions create strategies to trace the profile of students with higher risk of developing psychic disorders since the first year of the graduation course. In the possession of these data one must think about strategies of premature intervention in order to preserve and/or protect the mental health of these students[29].

OBJECTIVE

This study had the objective of estimating the prevalence of depressive and anxiety symptoms in medical students in a public university, seeking to identify risk and protective factors for the development of these disorders.

METHODS

It is a transversal, descriptive study made in the Federal University of Jataí between the days of January 22nd and January 30th of 2018. Every student, of both sexes, who entered in the second semester of 2017, participated.

The gathering of data was made through self-administered questionnaires (sociodemographic questionnaire, Beck Depression Inventory and Beck Anxiety Inventory) delivered to the participants by the researcher during the Medical Psychology class. The time given by the responsible professor during her class was sufficient for the delivery of the questionnaires to the participants, as well as for them to answer, guaranteeing the totality of respondents.

The sociodemographic questionnaire contained questions to characterize the profile of the participants with sex, age, marital status, income, who they live with, leisure activities. To assess the level of depression, the Beck Depression Inventory[30] was used translated and validated in Brazil[31]. It contains 21 questions with four alternatives about how the person felt in the last week. Each alternative receives a score that ranges from 0 to 3, zero being the absence of depressive symptoms and three the presence of more intense symptoms. The cut-off score varies according to the kind of sample and the objective of the study[30]. When the sample is not diagnosed, the recommended score is: above 15 to identify dysphoria and above 20 to detect depression[30].

The Beck Anxiety Inventory was utilized to evaluate the level of anxiety[32]. It contains 21 questions about how much the anxiety symptoms bothered the person in the last

week, it possesses 4 alternatives varying from 0 (absolutely no symptom) to 3 (symptoms that they can hardly stand). The total score varies from 0 to 63, the level of anxiety being classified as minimum level (between 0 and 10), mild level (between 11 and 19), moderate level (between 20 and 30), and severe level (between 31 and 63)[33].

In the data analysis, the following variables were used: sex (male, female), age (less than 20 years, between 20 and 25 years, between 26 and 31 years, between 32 and 37 years, more than 38 years), marital status (single, married, other), lives with (parents, friends/colleagues, spouse, alone, other), how often is with the family (every week, every fortnight, every month, every two months, other), leisure activities (non-obligatory reading, going to the movie theater, practicing sports, watching TV shows, listening to music, playing musical instrument, going out with friends, internet and social networks, going out to bars and parties, other, none).

The statistic investigation was accomplished with the software EPI-InfoTM version 7.2 for Windows and the Microsoft Excel (2019). Descriptive analysis were made from the average and frequency of the gathered data presented in tables and distribution graphics.

RESULTS

33 students participated in the study, with an average age of 21,5 and standard deviation of 5,4, in which the minimal age was of 18 years and the maximum age of 41 years. The majority is of the female sex, possesses between 20 and 25 years of age, is single and lives alone. As for the leisure activity, the majority is involved with some activity, be it going out with friends, staying on the internet/social networks or listening to music, only one respondent does not practice any leisure activity (Table 1).

Table 1: Sociodemographic profile of the students from the VII class, 2018

Variable	Frequency	Percentage
Sex		
Male	15	45,5
Female	18	54,5
Age		
Less than 20 years	14	42,42
Between 20 and 25 years	16	48,48
Between 26 and 31 years	02	6,06
Between 32 and 37 years	00	00
More than 38 years	01	3,03
Marital status		
Single	31	93,93
Married	2	6,06
Other	0	0
Lives with		
Parents	6	18,2
Friends/colleagues	7	21,2
Spouse	1	3,03
Alone	19	57,57
Other	0	0
How often is with the family		
Every week	8	24,2
Every fortnight	4	12,1
Every month	8	24,2
Every two months	8	24,2
Other	5	15,3
Leisure activities		
Non-obligatory reading	14	42,42
Going to the movie theater	11	33,33
Practicing sports	12	36,36
Watching TV shows	05	15,15
Listening to music	20	60,60
Playing musical instrument	05	15,15
Going out with friends	23	69,69
Internet and social networks	20	60,60
Going out to bars and parties	09	27,27
Other (cooking, dating, virtual games)	03	9,09
None	1	3,03

Source: data from the research.

The distribution of symptoms of depression is organized in Table 2. In relation to sex, our results found a higher prevalence of dysphoria in the female sex (9,1%) and severe depression in the male sex (9,1%).

The distribution of symptoms of anxiety is organized in Table 3. The predominance of symptoms of moderate anxiety was found in the female sex.

Table 2. Distribution of depressive symptoms according to sex

	Female	**Male**	**Total**
Depression	2 (6.1%)	3 (9.1%)	5 (15.2%)
Dysphoria	3 (9.1%)	1 (3%)	4 (12.1%)
Normal	10 (30.3%)	14 (42.4%)	24 (72.7%)

Source: data from the research.

Table 3. Distribution of symptoms of anxiety according to sex

	Female	Male	Total
Severe anxiety	1 (3%)	1 (3%)	2 (6.1%)
Moderate anxiety	5 (15.2%)2	2 (6.1%)	7 (21.2%)
Mild anxiety	5 (15.2%)	4 (12.1%)	9 (27.3%)
Minimum anxiety	4 (12.1%)	11 (33.3%)	15 (45.5%)

Source: data from the research.

The frequency of depression, dysphoria and anxiety, respectively, was lower among individuals who played musical instruments, followed by practice of physical activity; non-obligatory reading, going to the movie theater and going to bar/party; playing musical instrument. In contrast, those who go out with friends, use the internet/social networks exhibited higher levels of depression, dysphoria and anxiety (Figure 1).
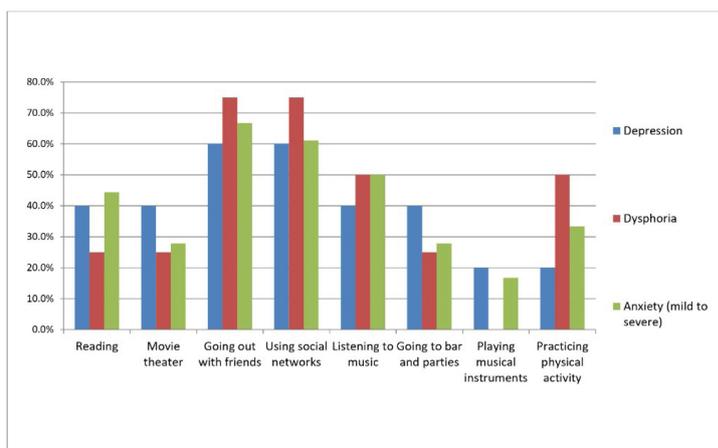
Source: data from the research.

Figure 1. Distribution of symptoms of depression and anxiety according to leisure activities.

DISCUSSION

In the present work, 27.3% of the students had some level of depressive symptom, being 15.2% with signs of severe depression and 12.1% with symptoms of dysphoria. In relation to anxiety, 54.48% of our students presented some level of symptomatology, 21.2% with moderate anxiety and 6,1% with severe anxiety.

Similar results were found in students of the Federal University of Rio Grande do Norte in which 28% possessed depressive symptoms, of which 12.8% presented signs of severe depression and 35,9% moderate symptoms[6]. In the study made with the students of the Federal University of Amapá, 45.7% presented some level of depression (21.2% with mild to moderate depression, 17.8% with moderate to severe depression, 6,6% with severe depression)[4]. The prevalence of depressive symptoms in this public was also found in the work made in the Integrated Faculties of Patos in Rio Grande do Norte, finding a prevalence of 52.8% of students from the medical school with some level of depression, being 39.1% with mild depression, 12.3% with moderate depression and 1.4% with severe depression[7]. According to a meta-analysis, there is 28% of global prevalence of depressive symptoms among medical students[17].

According to data from literature, in a general way, people of the female sex have almost twice as much probability of developing major depressive disorder throughout life in relation to those of the male sex[14,34-38].

In the Federal University of Rio Grande do Norte, 10.8% of the students exhibited signs of moderate anxiety and 1% with signs of severe anxiety[6]. The students of the medical school from the Pernambucan Health Faculty presented depressive symptoms (24.9%) and anxiety symptoms (34.3%)[4] and in the Brazilian Northeast the students presented a prevalence of depression and anxiety in 25.9%[23].

As with depression, among the total of students who presented signs of moderate anxiety (21.2%) or severe (6.1%), the majority is of the female sex[14,17,39,40]. Being of the female sex increases in 50% the chance of presenting anxiety when compared to the male sex[41,42]. It is known that the development of the brain and establishment of the neural pathways happen under the influence of factors that are characteristic of each biological sex determined, for example, by sex hormones, genetic aspects and social questions related to sex, such as discrimination and work overload. However, more studies are needed for greater understanding of the differences of the response of each sex to factors that lead to the development of affective disorders[6,41]. It is worth noting that women are more conscious of their feelings and, as such, express more than men[10,34,40] possibly justifying the results of prevalence of emotional disorders in the female sex.

In Brazil it is common for students to leave their homes in order to proceed with their studies[42,43]. The present study identified that 80% of the students who present depression and 25% of those with dysphoria live alone, suggesting that living alone can be a factor that propitiates the development of these disorders, studies have confirmed this finding[8,42,44,45,46]. Other studies indicated the fact of living with friends as a high susceptibility factor for the development of mood disorders[47,48]. On the other hand, the students who did not leave their family's home had lower levels of anxiety, and the students who lived with other colleagues showed greater levels of depression, anxiety and stress[39].

According to a cross-sectional study with medical students the development of anxiety can also be related to the fact of living away from the family[49], which is in line with our findings in that 60% of the students with moderate to severe anxiety lived alone. A work made with medical students in China also found relations between residing alone and the presence of psychological symptoms such as anxiety and depression[46].

The student who lives far from their parents needs, necessarily, to manage their own time (leisure, study, rest). Those who live alone still need to do the domestic activities (preparing meals, washing and ironing clothes, cleaning and organizing the house, going to the supermarket), besides having to administer the paying of water, electricity and internet bills. Living near the parents eases the life of the student because the majority of these tasks are part of their parents' routine[24,42,44]. Having the parents around also means having people of trust with whom the student will be able to find shelter in the moments of hardships[50-53].

This new adaptation without social support increases, significantly, the alcohol, cigars and drugs consumption[42,53]. Since the social encounters between students facilitate the access to these products[53,54]. This information can justify the reason for which going out with friends was considered, in our study, as a risk factor for the development of mental disorder.

Many studies have elucidated the importance of leisure activity and of physical activity in the reduction of anxiety and depression, in addition to the control of arterial hypertension, duodenal ulcers, coronary disease[7,43] which confirms our findings.

It is known that, through studies of the exercise physiology, physical activities lead to an increase of the body temperature, oxygenation of the cerebral cortex, increased release of substances responsible for the wellbeing and other physiological mechanisms that corroborate with the prevention and reduction of stress, depressive symptoms and anxiety. Because of that, physical exercises are indicated concomitantly with the pharmacological treatment of psychological disorders in certain cases[5,23].

The students who know the benefits of physical activity and its impact in the physical and mental health

have pointed out the difficulty in conciliating that practice with the academical tasks[25]. Some enjoy to listen to music as a strategy to deal with stress. Others assumed that, when they are tired and overloaded, they recognize the risky behavior in the search for leisure activities, looking for the ingestion of alcoholic beverages and the use of illicit drugs as a relief valve. That data can justify our findings on the students who go out with friends showing higher levels of depression, dysphoria and anxiety[8].

We found a positive relation between the use of internet/social networks and the development of symptoms of depression and anxiety. The use of internet and of social networks can cause social distancing and, consequently, aggravate the aspects of mental health[54,55].

The facilitated access to internet through the smartphone contributes to people, in general, getting connected at any time and, in the case of the students, it became a preference of usage for studying. Besides having access to sites with relevant and scientific information, the student also has access to social networks which can be negative and toxic[54,55].

The use of social networks has awoken the worry of scholars with their assiduous consumers who believe in the glamorous posts of influential personalities. At times, those who frequent these networks share moments of life in the way they want, manipulating the images with the objective of seducing who is on the other side of the screen. Another factor related to the use of social networks is connected to the time spent and the social distancing of presential human relations. Faced with this, the individuality, the search for the beauty standard or the consumption in the social networks, at times, can lead people to feel anxiety[54,55].

This study has limitations such as the number of participants being restricted to a certain class leading to a reduced sample and for being a descriptive study it was not possible to do a cause and effect relationship between the variables and the depressive and anxiety symptoms.

CONCLUSION

The results of this study confirm findings of the literature in relation to the prevalence of depressive and anxiety symptoms in medical students. We can mention that, being a student of the medical graduation course is a risk factor for the development or aggravation of mental health. Besides, being of the female sex, living alone or with friends and the use of internet/social networks also configure as risk factors. In contrast, listening to music, having non-academic reading and practicing physical activity were observed as protective factors.

We suggest the making of a cross-sectional study with the same class of students, from their admission in the university to the end of the graduation course in order to follow the development or aggravation of levels of anxiety and depression correlated to the variables (previous mental health, graduation period, drug treatment, non-drug treatment).

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