Depression symptoms and quality of life in medicines students in Ribeirão Preto-SP

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ABSTRACT

Depression is a major public health problem, characterized by discouragement, loss of interest in daily activities, changes in sleep, mood swings, among other symptoms. On the other hand, quality of life is defined for some as the understanding that an individual has in relation to the environment in which he is inserted, his goals, expectations, concerns, values. Depression among medical students is increasingly evident due to the major changes experienced in their lives when entering higher education, a fact that directly affects the student's quality of life. In this scenario, the present study aims to evaluate the prevalence of depressive symptoms and quality of life among medical students in the city of Ribeirão Preto-SP. For the present study, the Sociodemographic Characterization tests, the Satisfaction With Life Scale (SWLS) and the Beck Depression Inventory-

II (BDI-II) were used. Through prediction of sample data, 319 university students, of both sexes, participated in the study. The participants answered virtually the questionnaires that characterize and stratify the sample, evaluated the concept of satisfaction with life and the components associated with depression. Descriptive statistics were presented as means and standard deviation for continuous variables and as absolute and relative frequency for categorical variables. Spearman's correlation and Person's chi-square tests were performed. There was an inversely proportional correlation between quality of life and depression. 54.8% of participants had some degree of depression. Findings in the literature show that about 50% of the university medical population may have some type of mental disorder, however, there was no statistically significant difference between the university cycles and the classification of depression. A study using the BDI-II shows a higher prevalence of severe symptoms of depression in pre-university students of the medical course when compared to students who taught other courses. Another factor cited by the authors as a trigger for mood swings is the development of medical activities and also separation from the family, having difficulty maintaining interpersonal relationships and socializing. Thus, it is concluded that the quality of life is closely linked with depression. In addition, students are already entering the university with some degree of depression and this depression persists throughout the course. It is necessary to develop strategies that favor a more welcoming environment for students who face problems of this nature.

Keywords: Depressive symptoms, Quality of life, Medicine student.

1 INTRODUCTION

Considered a major public health problem, depression is characterized by discouragement, loss of interest in daily activities, changes in sleep, mood swings, among other symptoms. Globally, 4.4% of the population suffers from depression, which is one of the biggest causes of disability. Its multifactorial origin can generate problems for the individual, with profound personal and professional impact, including low academic performance (DYRBYE, *et al.,* 2011; VOS *et al.,* 2016).

Depression among medical students is increasingly in evidence and has become a concern for health and education systems around the world (OLUM; NAKWAGALA; ODOKONYERO, 2020; ROTENSTEIN, *et al.,* 2016).

The changes that occur in the lives of students entering higher education are drastic. They undergo various stressors, in addition to being a period that coincides with important biopsychosocial changes (CERCHIARI; CAETANO; FACCENDA, 2005). Numerous challenges can be observed in this new phase, such as leaving the parents' home and deprivation of family life, overload of academic and extracurricular activities, few hours for leisure, greater exposure to alcohol and drugs and sleep alteration (PAIXÃO *et al*., 2021).

Students in the health area experience beyond the situations described above situations of constant stress, because they are intensely evaluated in practice, are afraid of making mistakes during the care provided, suffer a constant exposure to cases of anguish and death causing feelings of vulnerability or negative perception of reality (BAMPI *et al*., 2013; CONCEIÇÃO, *et al.,* 2019). Therefore, psychological and physical exhaustion have an impact on the quality of life of students, triggering depression and anxiety (CUNHA, *et al.,* 2017).

In studies conducted around the world, a higher prevalence of depression was denoted among future physicians, than in the general population and in peers of the same age group (ROTENSTEIN, *et al*., 2016; DYRBYE; THOMAS; SHANAFELT, 2006; INAM, 2007).

Ward and Outram (2016), evidence that the medical culture triggers a chronic stress in the exercise of the profession by demanding excellence in practices and an adoption of infallible knowledge. As a result, physicians and medical students have higher rates of psychological distress, *burnout*, diagnosed mental illness, suicidal ideation, and suicide attempts when compared to the general population.

The health assessment parameter is no longer centered on symptoms or morbidity and mortality, but on the well-being of people in various areas of life. Within this perspective, the construct "quality of life" emerges as an object of study in several areas of human knowledge (DOWARD; MKENNA, 1997).

Quality of life is defined for some as the understanding that an individual has in relation to the environment in which he is inserted, to his goals, expectations, concerns, values, that is, all the habits learned and adopted during life, which are related to his family reality, whether they have access to food, basic sanitation, housing, work, health, leisure and social. Each society establishes a standard of living based on its culture, directing the satisfaction levels of its individuals. This perception interferes with what is or is not a good quality of life. This all reflects on personal well-being, health care and social relationships (ALMEIDA; GUTIERREZ; MARQUES, 2012).

Medical students according to the graduation phase present different results regarding quality of life and depression. Students who are in the basic cycle, first and second year of graduation, are frustrated with the curricular structure, due to the little contact with medical practice and the course of the basic disciplines, generating a break in expectations of freshmen (ARDISSON, *et al*., 2021).

During the clinical cycle, between the second and fourth year of graduation, there is a greater practical clinical activity, initiating the first contact with patients, which can make students surrender to feelings of anxiety and insecurity, especially due to their initial inexperience, in the face of new demands (ARDISSON, *et al.,* 2021).

In the internship phase, between the fifth and sixth year of graduation, there is an accumulation of knowledge which is necessary to put into practice. The beginning of the charges by patients and teachers in relation to the previously acquired fundamentals, the confrontation of human pain and suffering and the conflicting relationships arising from the differences in ethical behaviors generate anxiety and can negatively interfere in the student's self-esteem (ARDISSON, *et al*., 2021).

At the same time that medical students turn their gaze to others, they usually do not recognize their fragilities and their illness in the psychic sphere. Not looking for professional help to solve problems (MACHADO *et al.*, 2015). There is also concern about cognitive, academic and functional

impairments regarding the mental health of these students, due to the low performance in the course and the mental condition of this population (COSTA *et al*., 2020). In this scenario, the present study sought to evaluate the impact that the medical course currently has on duality: quality of life and depression among students of Medical Schools in the city of Ribeirão Preto.

2 MATERIAL AND METHODS

2.1 PARTICIPANTS

Participants were university students, of both sexes, who were enrolled in medical courses in the city of Ribeirão Preto - SP. The following inclusion criteria were used: being enrolled in a medical course in the city of Ribeirão Preto and of Brazilian nationality. The following requirements were used as exclusion criteria: not answering one or more questionnaires and having other activities, other than the exclusive dedication to the course. The sample size calculation to determine the number of students who participated in the study was obtained by the Qualtrics $^{XM\ software}$ with a confidence level of 95%.

2.2 MATERIALS

Sociodemographic characterization questionnaire: It was developed by the researchers themselves for further characterization and stratification of the sample. Data such as age, ethnicity, educational level, socioeconomic status, university, course, period of graduation (APPENDIX A) will be requested.

Satisfaction with Life Scale (SWLS): The Life Satisfaction Scale (DIENER et al., 1985) is composed of five items that assess the concept of life satisfaction by measuring the overall judgment of individuals about their lives. It is a well-known and well-used measure of subjective well-being. The items are scored along a Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). The final score corresponds to the sum of the items, with higher scores indicating high satisfaction. The sum of the scores of all items gives a maximum number of 35. In Brazil, the instrument was adapted by Gouveia *et al*. (2009), maintaining the characteristics of the original version (ANNEX A).

Beck Depression Inventory-II (BDI-II): The Beck Depression Inventory-II (BECK; STEER; BROWN, 1996) is composed of 21 items that assess the behaviors associated with depression in the Brazilian population. Items are scored on a 4-point Likert-like scale (0, 1, 2, and 3). The sum of the scores of all items provides a maximum number of 63, which is a measure of the intensity of depressive symptoms. Variations in this scale can be classified as minimal, mild, moderate or severe depression. To the score between 0 and 13: no depression; Score from 14 to 19: mild depression; Score from 20 to 28: moderate depression; Score from 29 to 63: severe depression. This scale was adapted for Brazil by Gomes-Oliveira *et al.* (2012) (ANNEX B).

2.3 PROCEDURES

The project was accepted by the Research Ethics Committee (CAAE: 70621517.0.0000.5581) and the study participants were recruited through personalized invitation, by e-mail (direct mail) and social networks. In this invitation, the objectives and importance of the research were presented; identification, institution, address and contact of the researchers; instructions and address (URL) to access the form. After sending the invitation, it was waited two weeks and then it was sent for another time.

The participant who accessed the form through the link provided was directed to the data collection platform, in which the Term of Free and Informed Consent (ICF) (ANNEX B) was presented. After the participant accepted the term, he was directed to the Sociodemographic questionnaire. If the participant answered yes to any alternative related to the exclusion criteria, he was redirected to the thank you page and his participation in the research was terminated. Participants who clicked no, for all alternatives related to the exclusion criteria were directed to the next questionnaires. The order of presentation of the instruments was: Sociodemographic Characterization Questionnaire, Beck Depression Inventory-II and Satisfaction with Life Scale.

2.4 DATA ANALYSIS

The scores of the participants in the tests were evaluated according to the recommendations of each technique, explained earlier in the item "materials" of this project.

2.4.1 Statistical Analysis

Descriptive statistics were presented as means and standard deviation for continuous variables and as absolute and relative frequency for categorical variables for the total sample.

Spermman correlation tests were performed following the type of sample distribution and chi-square person hypothesis test.

All analyses were performed with the aid of SPSS version 23.0, establishing the alpha criterion for significance greater than or equal to 0.05.

3 FINDINGS

In total, 322 individuals participated in the research, but the data of three participants were excluded because they did not fit the established inclusion criteria. The total sample consisted of 319 individuals between 17 and 60 years of age. The sociodemographic characterization data are presented in Table 1.

The mean age of the participants was 24.8 years (*SD* = 6.77) and the mean scores for the scale that assessed life satisfaction was 23.57 (SD=7.14) and for the questionnaire that assessed depression

was 17.53 (SD=12.88). Regarding categorical variables, it was observed that 48.6% of individuals were attending the basic cycle, 39.8% the clinical cycle and 11.6% the internship.

Regarding socioeconomic classification, it was observed that 32.6% of the people belonged to class A, followed by 30.7% of class B, 21.0% of class C, 10.3% of class D and 5.3% of class E. The most reported etiology in the sample was white (82.4%), followed by brown (11.0%), yellow (4.1%) and black (2.5%). Single individuals represented 79.9% of the total sample, followed by 10.0% married, 8.5% cohabiting and 1.6% divorced. Among the total participants of the research, 45.14% studied at University 1, 16.3% at University 2, 23.82% at University 3 and 14.73% at University 4.

Table 1- Distribution of the absolute and relative frequency of the Socioeconomic Classification, Ethnicity, Marital Status and University and mean, standard deviation, minimum and maximum for age and for the scores of the Life Satisfaction Scale and the Beck Depression Inventory-II, in the sample of Medical Students (n=319) from the city of Ribeirão Preto, obtained through the application of questionnaires. Ribeirão Preto, 2022.

	Average	***DP***	**Minimum**	**Maximum**
Age	24,8	6,77	17	60
Life Satisfaction	23,57	7,14	5	35
Depression	17,53	12,88	0	55
Cycle	**Absolute Frequency (n)**		**Relative frequency (%)**	
Basic	155		48,6	
Clinical	127		39,8	
Interned	37		11,6	
Socioeconomic Classification				
A	104		32,6	
B	98		30,7	
C	67		21,0	
D	33		10,3	
And	17		5,3	
Ethnic group				
White	263		82,4	
Black	8		2,5	
Brown	35		11,0	
Yellow	13		4,1	
Marital status				
Single	255		79,9	
Married	32		10	
Divorced	5		1,6	
Kneaded	27		8,5	
University				
1	144		45,14	
2	52		16,3	
3	76		23,82	
4	47		14,74	
Second Graduation				
Has	63		19,75	
Does not have	256		80,25	

Source: Own Author.

Analyzing the data described in Table 2, an inversely proportional association of the data is observed. The higher the depression, the lower the satisfaction with life, because correlation coefficients equal to or less than 1 indicate negative perfect correlations.

Table 2- Correlations between quality of life scores and depression in the sample of medical students (n=319) from the city of Ribeirão Preto, obtained through the application of questionnaires. Ribeirão Preto, 2022.

Variable	Life Satisfaction	Depression
Life Satisfaction	-	-0,49**
Depression	-0,49**	-

** p <0.001. Spearman correlation.
Source: Own author.

Regarding the classification of depression, 54.8% of the participants had some degree of depression, 21.6% had severe depression and 45.1% had no symptoms. The data are described in Table 3.

Table 3- Distribution of the absolute and relative frequency of the Depression Classification in the sample of Medical Students (n=319) from the city of Ribeirão Preto, obtained through the application of questionnaires. Ribeirão Preto, 2022.

Classification	Absolute Frequency (n)	Relative frequency (%)
No Symptoms	144	45,1
Mild Depression	51	16
Moderate Depression	55	17,2
Severe Depression	69	21,6

Source: Own author.

Through the chi-square test of *Person* $\chi 2$ (6) = 7.75, (p = 0.26) it was verified that there is no statistically significant association between the crossings of the cycles and the classification of depression, as illustrated in Table 4.

Table 4- Chi-square test of the cross-relationship between cycles and degrees of depression of the sample of medical students (n=319) from the city of Ribeirão Preto, obtained through the application of questionnaires. Ribeirão Preto, 2022.

	Value	Gl	Significance	Phi
Person's chi-square	7,75	6	0,26	0.16 (small effect)

Source: Own Author.

4 DISCUSSION

The present study was composed of 319 medical students from the city of Ribeirão Preto, who answered the socioeconomic characterization questionnaire, the Life Satisfaction Scale (SWLS) and the Beck Depression Inventory-II (BDI – II) in order to understand the impact of the medical course on the quality of life and depression of these university students.

When the presence of symptoms of depression was evaluated, it was possible to observe that about 54.8% of the participants had some degree of depression. The high prevalence of depressive symptoms in medical students in different countries has been pointed out by several authors as alarming and worrisome (TORRES, *et al.,* 2012; BALDASSIN, 2010; STOLEN; FALCONE; Clark, 2003; BRUCH; RAM; JOURNEY, 2009; KUNWAR; RISAL, 2016; MOUTINHO, *et al.,* 2017). Findings in the literature show that about 50% of the medical university population may present some type of mental disorder (GOEBERT *et al.,* 2009; REIMER; TRINKAUS, 2005).

Although some authors have found a relationship between the advancement of the medical course and the development of mental illness, signs of anxiety and depression, the present study did not identify a statistically significant association between depression and the cycles of the course. Authors such as Givens (2002) and Furtado, Falcone, Clark, (2003), refer that excessive academic activities in the initial period of the course are important triggers of the symptomatology found in the research.

The present study demonstrated that the students of the basic cycle presented some symptom of depression. For some authors, the drastic change in routine, with high workloads, increased volume of information and content and methods different from those that students were accustomed to before entering the undergraduate program are triggers for the development of depressive symptoms (MILLAN; ROSSI; DE MARCO, 1995; MILLAN; BARBEDO, 2020).

Regarding the course, 63 individuals (19.75%) reported having attended another college before entering the medical course. The decision to start medical school as a second degree requires great determination and resignations. Cavalcanti and Melo (2022) identified that the choice of the first and second graduation refers to self-realization and personal achievement, but the second graduation was determined with fewer external influences. In addition, frustrations with the first course, difficulty in getting a job in the chosen area and low salary remuneration were cited as decisive factors for this choice (CAVALCANTI; MELO, 2022).

Corrêa *et al.* (2016), conducted a study with students of the Medical School of the Federal University of Minas Gerais (UFMG) who had finished an undergraduate course at a higher level. The authors demonstrate that for these students, maturity was a positive point in relation to the development of social relations, better use, reasoning and learning capacity of the contents. On the other hand, the individuals reported greater concerns and financial insecurities, difficulties in reconciling the course workload with work and the extensive curriculum to be fulfilled. In addition to this fact, students with previous training report greater difficulty in dealing with the setback to dependence on third parties to finance the university, losing the autonomy gained with the first graduation.

The study data obtained from the Beck Depression Inventory – II (BDI-II) and the Life Satisfaction Scale (SWLS) indicate an inversely proportional relationship between depression and life satisfaction, that is, the higher the satisfaction with life, the lower the depressive symptoms, mutually.

Graduation with the previous presence of some mental disorder has been increasingly common. The study by Melo *et al.* (2021) using the BDI-II evidences the higher prevalence of severe symptoms of depression in pre-university students of the medical course when compared to the students who provided the other courses. In addition, the authors report that the greater competition for the course and the longer pre-vestibular period are decisive factors for these students to enter the university with more mood disorders.

The studies of Schonhofen *et al.* (2020) and Terra *et al*. (2013) reinforce the findings regarding the greater number of students with some type of previous mental disorder, resulting from stressful factors such as greater pressure from pre-vestibular courses, greater competition and charging for the medical course.

The students who composed the basic cycle in the present study were, for the most part, up to 22 years old. This is an important factor, since authors point out the entry of adolescents into university during the phase of great psychosocial changes, because at that moment they will have greater autonomy and decision-making power over their choices, building a new identity (DO CARMO RIBEIRO et *al*., 2018).

Authors show that most medical students need to change cities and even states to be able to attend graduation. This change generates a greater distance from family and friends, generating insecurity. In addition, family separation increases responsibility in personal attributions such as hygiene, domestic services, such as household organization and cooking one's own meals, financial organization, among others (DE MELO *et al.*, 2021).

The researchers cite that the responsibilities acquired during this process can cause anxiety and fear of performing procedures and clinical examinations in the wrong way. Another factor cited by authors as a trigger of mood changes is the development of medical activities, since the young person will experience experiences of suffering, loss and anguish related to death. Everyday situations that can increase the vulnerability of medical students to the manifestation of suffering (DE MELO *et al.*, 2021).

Studies show (AQUINO; CARDOSO; PINE, 2019; MOUTINHO, *et al.,* 2017), that not only the large volume of content, exhaustive workloads and charges are mitigating factors of depressive symptoms in medical school students. The difficulty in maintaining interpersonal relationships and socialization often occur in this population, since exacerbated self-criticism and negative thoughts cause greater insecurity in creating bonds and relationships. Rapport *et al.* (2009), in his study, described that the students reported great difficulties in maintaining a healthy social life, in addition to adversity in dealing with family members and children.

Most participants in the present study started the course or were already pursuing medical school during the COVID-19 pandemic. During the pandemic period, activities were carried out through distance learning (EAD), in a digital way. Foly and Bellemo (2023) and Sun *et al*. (2021) found in their study that about 67% of the students who took part in the course through distance education reported a lack of concentration and almost 40% reported not being able to learn the subject correctly. In addition, the authors found a negative influence of the COVID-19 pandemic on the emotional state of these college students. Among the influencing aspects were the fear of

contamination and, subsequently, of readaptation to the college routine, the difficulty of learning in distance learning and the deficits related to this teaching modality.

Thus, the pandemic period stands out as a strong stress factor and trigger of mental disorders in medical school students. These data indicate that this may be an important reason for the high rates of depressive symptoms in students of all periods who participated in the present study.

5 CONCLUSION

It is concluded that the fact that a student has some level of moderate or severe depression and attends a medical university, in which there is a whole history of external pressure, can aggravate the symptoms. Thus, it is important to evaluate the framework in which this student is entering college and develop interventions that favor a more welcoming environment for students who face problems of this nature.

REFERENCES

ALMEIDA, M. A. B. de; GUTIERREZ, G; L.; MARQUES, R. F; R. Qualidade de vida: definição, conceitos e interfaces com outras áreas de pesquisa. São Paulo: EACH/USP.2012. Disponível em: http://www5.each.usp.br/wp-content/uploads/2019/01/qualidade_vida.pdf. Acesso em: 14 set. 2022.

AQUINO, D. R. de; CARDOSO, R. A.; PINHO, L. de. Sintomas de depressão em universitários de medicina. Boletim-Academia Paulista de Psicologia, v. 39, n. 96, p. 81-95, 2019.

ARDISSON, G. M. C. *et al.* Saúde mental e qualidade de vida dos estudantes de faculdades de medicina brasileiras: uma revisão integrativa. Revista Eletrônica Acervo Saúde, 2021, 13.6: e6953-e6953.

BALDASSIN, S.. Ansiedade e depressão no estudante de medicina: revisão de estudos brasileiros. Cadernos ABEM, v. 6, n. 6, p. 19-26, 2010.

BAMPI, L. N. da S. *et al.* Qualidade de vida de estudantes de Medicina da Universidade de Brasília. Revista Brasileira de Educação Médica, 2013, 37: 217-225.

BECK, A. T.; STEER, R. A.; BROWN, G. K. Beck Depression Inventory Manual. The Psychological Corporation. San Antonio, TX, p. 785-791, 1996.

BRUCH, T. P.;; CARNEIRO, E. A.; JORNADA, L. K. Presença de sintomas psiquiátricos em estudantes de medicina de Universidade do sul do Brasil. Arquivos Catarinenses de Medicina, v. 38, n. 4, p. 61-5, 2009.

CAVALCANTI, K. R. G.; MELO, M. C. B. D. Aspectos psicológicos da escolha por uma segunda graduação. 2022.

CERCHIARI, E. A. N.; CAETANO, D.; FACCENDA Prevalência de transtornos mentais menores em estudantes universitários. Estudos de psicologia (Natal), v. 10, p. 413-420, 2005.

CONCEIÇÃO, L. D. S.; BATISTA, C. B.; DÂMASO, J. G. B.; PEREIRA, B. S.; CARNIELE, R. C.; PEREIRA, G. D. S. Saúde mental dos estudantes de medicina brasileiros: uma revisão sistemática da literatura. *Avaliação:* Revista da Avaliação da Educação Superior (Campinas), v. 24, p. 785-802, 2019.

CORRÊA, R. D.; GONÇALVES, R. C. B.; OLIVEIRA, L. S. D., SILVA, V. C. M.; RIBEIRO, M. M. F. Medicina como nova graduação: motivações, dificuldades e expectativas. Revista Brasileira de Educação Médica, v. 40, p. 226-233, 2016.

COSTA, D. S. *et al*. Sintomas de depressão, ansiedade e estresse em estudantes de Medicina e estratégias institucionais de enfrentamento. Revista Brasileira de Educação Médica, v. 44. 2020.

DE MELO, C. M. I.; MARTINS, R. M. B.; BOMFIM, F. N. G.; DE MATTOS, R. M. P. R.; PIMENTEL, D. M. M. Depressão e sofrimento psíquico em estudantes pré-vestibulandos Depression and psychological distress in students candidates for the college entrance exam. Brazilian Journal of Development, v. 7, n. 6, p. 55575-55592, 2021.

DIENER, E. D.; EMMONS, R. A.; LARSEN, R. J.; GRIFFIN, S. The satisfaction with life scale. Journal of Personality Assessment, v. 49, n. 1, p. 71-75, 1985.

DO CARMO RIBEIRO, R.; REINALDO, A. R. G.; DE OLIVEIRA, D. P. A.L.; REZENDE, A. C. C.; ESTRELA, Y. D. C. A.; RODRIGUES, V. R.; DE SOUSA, M. N. A. Relação da qualidade de vida

com problemas de saúde mental em universitários de medicina. Revista Brasileira de Qualidade de Vida, v. 10, n. 1, 2018.

DOWARD L.C.; MCKENNA S.P. Evolution of quality-of-life assessment. IN: RAJAGOPALAN, R.; SHERERTZ, E. F.; ANDERSON, R. T. Care management of skin diseases: life quality and economic impact. Marcel Dekker, 1998.

DYRBYE, L. N. *et al.* Patterns of distress in US medical students. Medical teacher, v. 33, n. 10, p. 834-839, 2011.

DYRBYE, L. N.; THOMAS, M. R.; SHANAFELT, T. D. Systematic review of depression, anxiety, and other indicators of psychological distress among US and Canadian medical students. Academic medicine, v. 81, n. 4, p. 354-373, 2006.

FOLY, R. B. M.; BELLEMO, A. I. S. Sofrimento psíquico em alunos de graduação da área da saúde pós pandemia. Revista Eletrônica Acervo Saúde, v. 23, n. 3, p. e11503-e11503, 2023.

FURTADO, E.; DE OLIVEIRA FALCONE, E. M.; CLARK,C.. Avaliação do estresse e das habilidades sociais na experiência acadêmica de estudantes de medicina de uma universidade do Rio de Janeiro. Interação em Psicologia, v. 7, n. 2, 2003.

GIVENS, J. L.; TJIA, J.. Depressed medical students' use of mental health services and barriers to use. Academic medicine, v. 77, n. 9, p. 918-921, 2002.

GOEBERT, D.; THOMPSON, D.; TAKESHITA, J.; BEACH, C.; BRYSON, P.; EPHGRAVE, K.; TATE, J. Depressive symptoms in medical students and residents: a multischool study. Academic medicine, v. 84, n. 2, p. 236-241, 2009.

GOMES-OLIVEIRA, M. H.; GORENSTEIN, C.; LOTUFO NETO, F; ANDRADE, L. H.; WANG, Y. P. Validation of the Brazilian Portuguese version of the Beck Depression Inventory-II in a community sample. Brazilian Journal of Psychiatry, v. 34, n. 4, p. 389-394, 2012.

GOUVEIA, V. V.; MILFONT, T. L.; DA FONSECA, P. N.; DE MIRANDA COELHO, J. A. P. Life satisfaction in Brazil: Testing the psychometric properties of the satisfaction with life scale (SWLS) in five Brazilian samples. Social Indicators Research, v. 90, n. 2, p. 267, 2009.

INAM, S. B. Anxiety and depression among students of a medical college in Saudi Arabia. International journal of health sciences, v. 1, n. 2, p. 295, 2007.

KUNWAR, D.; RISAL, A.; K., S. Study of depression, anxiety and stress among the medical students in two medical colleges of Nepal. Kathmandu Univ Med J, v. 14, n. 53, p. 22-26, 2016.

MACHADO, C. de S. *et al*. Estudantes de Medicina e as Drogas: Evidências de um Grave Problema. Revista brasileira de educação médica, Rio de Janeiro, v. 39, n. 1, p. 159-167, 2015.

MELO, C. M. I.; MARTINS, R. M. B.; BOMFIM, F. N. G.; DE MATTOS, R. M. P. R.; PIMENTEL, D. M. M Depressão e sofrimento psíquico em estudantes pré-vestibulandos Depression and psychological distress in students candidates for the college entrance exam. Brazilian Journal of Development, v. 7, n. 6, p. 55575-55592, 2021.

MILLAN, L. R.; BARBEDO, M. F. Assistência psicológica ao aluno de medicina: o início de uma experiência. Revista Brasileira de Educação Médica, v. 12, p. 21-23, 2020.

MILLAN, L. R.; ROSSI, E.; DE MARCO, O. L. N. A procura espontânea de assistência psicológica pelo estudante de medicina. Rev. ABP-APAL, p. 11-6, 1995.

MOUTINHO, I. L. D.; MADDALENA, N. D. C. P.; ROLAND, R. K.; LUCCHETTI, A. L. G.; TIBIRIÇÁ, S. H. C.; EZEQUIEL, O. D. S.; LUCCHETTI, G. Depression, stress and anxiety in medical students: A cross-sectional comparison between students from different semesters. Revista da Associação Médica Brasileira, v. 63, p. 21-28, 2017.

OLUM, R.; NAKWAGALA, F. N.; ODOKONYERO, R. Prevalence and factors associated with depression among medical students at makerere University, Uganda. Advances in Medical Education and Practice, v. 11, p. 853, 2020.

PAIXÃO, J. T. D. S. *et al.* Prevalência de sintomas ansiosos e depressivos em universitários da área da saúde. Enfermagem em foco (Brasília*)*, p. 780-786, 2021.

RAPPORT, F.; JONES, G. F.; FAVELL, S.; BAILEY, J.; GRAY, L.; MANNING, A.; WILLIAMS, R. What influences student experience of graduate entry medicine? Qualitative findings from Swansea School of Medicine. Medical teacher, v. 31, n. 12, p. e580-e585, 2009.

REIMER, C.; TRINKAUS, S.; JURKAT, H. B. Suicidal tendencies of physicians--an overview. Psychiatrische Praxis, v. 32, n. 8, p. 381-385, 2005.

ROTENSTEIN, L. S. *et al*. Prevalence of depression, depressive symptoms, and suicidal ideation among medical students: a systematic review and meta-analysis. Jama, v. 316, n. 21, p. 2214-2236, 2016.

SCHÖNHOFEN, F. D. L.; NEIVA-SILVA, L.; ALMEIDA, R. B. D.; VIEIRA, M. E. C. D.; DEMENECH, L. M. Transtorno de ansiedade generalizada entre estudantes de cursos de pré-vestibular. Jornal Brasileiro de Psiquiatria, v. 69, p. 179-186, 2020.

SUN, M., WANG, D.; JING, L.; ZHOU, L. Changes in psychotic-like experiences and related influential factors in technical secondary school and college students during COVID-19. Schizophrenia Research, v. 231, p. 3-9, 2021.

TERRA, D. H. P.; VIEIRA, G. A.; COSTA, A. M. D. D.; TERRA, F. D. S.; FREIRE, G. E. R. Ansiedade e depressão em vestibulandos. Odontologia Clínico-Científica (Online), v. 12, n. 4, p. 273-276, 2013.

TORRES A. R., OLIVEIRA A. M., AZEVEDO A. P., FLORESI A. C. F., WEST A. C. A., KLEINMANK, A. Compêndio de Clínica Psiquiátrica. São Paulo: Manole; 2012. p. 296-314.

VOS, T. *et al.* Global, regional, and national incidence, prevalence, and years lived with disability for 310 diseases and injuries, 1990–2015: a systematic analysis for the Global Burden of Disease Study 2015. The lancet, v. 388, n. 10053, p. 1545-1602, 2016.

WARD, S.; OUTRAM, S. Medicine: in need of culture change. Internal medicine journal, v. 46, n. 1, p. 112-116, 2016.

ANNEX A – Sociodemographic Characterization Questionnaire

1. Age (years): _____
2. Are you currently attending higher education (undergraduate)?

( ) No

( ) Yes, graduation in: _____

3. What semester of graduation are you in? _____
4. What is the name of the university you study at? _____
5. Do you already have a degree in another course? _____
6. You declare yourself:

( ) White

( ) Black

( ) Yellow

( ) Pardo (a)

( ) Indigenous

7. What is your marital status?

( ) Single

( ) Living together

( ) Married

( ) Divorced

( ) Widower

8. What is your socioeconomic level (consider the current minimum wage of R$1045.00):

( ) Class A (average gross family income above 20 minimum wages per month)

( ) Class B (average gross family income between 10 and 20 minimum wages per month)

( ) Class C (average gross family income between 4 and 10 minimum wages per month)

( ) Class D (average gross family income between 2 and 4 minimum wages per month)

( ) Class E (average gross family income in the month up to 2 minimum wages per month)

ANNEX B - Term of Free and Informed Consent

TERM OF FREE AND INFORMED CONSENT

You are being invited, as a volunteer, to participate in the survey: "Symptoms of Depression and Quality of Life in Medical Students' Courses of Ribeirão Preto-SP", this being the scientific initiation project of Maria Carolina F. da Cunha, Leticia R. Martinez, Marcela T. O. B. de Paiva, Larissa N. de Siqueira, Gabriel B. Carvalho and Marília de P Ferreira, students of the medical course of the University Center Estácio de Ribeirão Preto/IDOMED, under the guidance of Prof. Dr. Carla Duque Lopes.

The objective of this study is to investigate the prevalence of depressive symptoms and quality of life in medical students from the city of Ribeirão Preto.

The collection procedure will be as follows: you will answer questionnaires that investigate depressive symptoms and quality of life, and also a questionnaire with questions about your age, ethnicity and family income. You'll be able to take the surveys from anywhere, and filling out the questionnaires can take about 15 minutes.

There is no prediction of risks in the participation of the study as to its physical integrity, defamation, slander or any moral damage. You may refuse or withdraw from participation at any time, without this entailing any penalty or damage, or reprisals of any kind. Because it is an epidemiological research, which uses instruments that are not capable of making diagnoses, researchers will not be able to offer any form of psychological assistance, but may indicate health services, with no guarantee of care.

No direct or immediate benefit will be generated, however, your participation in the study will contribute to help understand psychological aspects in medical students.

We inform you that your privacy will be respected, that is, your name or any data or element that can, in any way, identify you will be kept confidential. We, the researchers, take responsibility for the custody and confidentiality of the data. Any and all clarification of doubts about the research may be clarified by the Researcher in charge: Prof. Dr. Carla Duque Lopes, by Phone (16) 3523-4202 or (16) 3523-4196.

Free access to all additional information and clarifications about the study and its consequences is ensured, everything you want to know before, during and after your participation. At the end of this research, you will receive a copy of this term in pdf format to the e-mail you leave registered. If you are aware of all the terms, agree to participate in the survey and want to get started, click "Yes". If you do not wish to continue and do not want to participate, click "No" and the survey will be automatically terminated, with no record of any damage or injury to you.

Possible clarifications on ethical aspects of the research can be answered by the Research Ethics Committee of the Estácio de Ribeirão Preto University Center located at Avenida Maurilio Biagi, 2103. Ribeirânia neighborhood. Ribeirão Preto, SP. Brazil. Zip Code: 14096-170. Opening hours: Mondays to Fridays from 14h00 to 18h00. Phone: (16) 3523-4187. Email: cep.ribeirao@estacio.br

APPENDIX A – Life Satisfaction Scale

Below you'll find five statements you may or may not agree with. Using the following response scale, which ranges from 1 to 7, indicate how much you agree or disagree with each. Please be as candid as possible in your responses.

	I totally disagree	Disagree	I slightly disagree	Neither agree nor disagree	I slightly agree	Agree	I totally agree
1- In most respects, my life is close to my ideal.							
2 – The conditions of my life are excellent.							
3 - I am satisfied with my life.							
4 – As much as possible, I have achieved the important things I want out of life.							
5 – If I could live a second time, I would change almost nothing in my life.							

APPENDIX B - Beck Depression Inventory-II

Instruções:

Este questionário consiste em 21 grupos de afirmações. Por favor, leia cada uma delas cuidadosamente. Depois, escolha uma frase de cada grupo, a que melhor descreva o modo como você tem se sentido nas **duas últimas semanas, incluindo o dia de hoje**. Faça um círculo em volta do número (0,1,2,ou 3), correspondente à afirmação escolhida em cada grupo. Se mais de uma afirmação em um grupo lhe parecer igualmente apropriada, escolha a de número mais alto neste grupo. Verifique se não marcou mais de uma afirmação por grupo, incluindo o item 16 (Alterações no padrão de sono) e o item 18 (Alterações de apetite).

1. Tristeza
- 0 Não me sinto triste.
- 1 Eu me sinto triste grande parte do tempo.
- 2 Estou triste o tempo todo.
- 3 Estou tão triste ou tão infeliz que não consigo suportar.

2. Pessimismo
- 0 Não estou desanimado(a) a respeito do meu futuro.
- 1 Eu me sinto mais desanimado(a) a respeito do meu futuro do que de costume.
- 2 Não espero que as coisas dêem certo para mim.
- 3 Sinto que não há esperança quanto ao meu futuro. Acho que só vai piorar.

3. Fracasso passado
- 0 Não me sinto um(a) fracassado(a).
- 1 Tenho fracassado mais do que deveria.
- 2 Quando penso no passado vejo muitos fracassos.
- 3 Sinto que como pessoa sou um fracasso total.

4. Perda de prazer
- 0 Continuo sentindo o mesmo prazer que sentia com as coisas de que eu gosto.
- 1 Não sinto tanto prazer com as coisas como costumava sentir.
- 2 Tenho muito pouco prazer nas coisas que eu costumava gostar.
- 3 Não tenho mais nenhum prazer nas coisas que costumava gostar.

5. Sentimentos de culpa
- 0 Não me sinto particularmente culpado(a).
- 1 Eu me sinto culpado(a) a respeito de várias coisas que fiz e/ou que deveria ter feito.
- 2 Eu me sinto culpado(a) a maior parte do tempo.
- 3 Eu me sinto culpado(a) o tempo todo.

6. Sentimentos de punição
- 0 Não sinto que estou sendo punido(a).
- 1 Sinto que posso ser punido(a).
- 2 Eu acho que serei punido(a).
- 3 Sinto que estou sendo punido(a).

7. Auto-estima
- 0 Eu me sinto como sempre me senti em relação a mim mesmo(a).
- 1 Perdi a confiança em mim mesmo(a).
- 2 Estou desapontado(a) comigo mesmo(a).
- 3 Não gosto de mim.

8. Autocrítica
- 0 Não me critico nem me culpo mais do que o habitual.
- 1 Estou sendo mais crítico(a) comigo mesmo(a) do que costumava ser.
- 2 Eu me critico por todos os meus erros.
- 3 Eu me culpo por tudo de ruim que acontece.

9. Pensamentos ou desejos suicidas
- 0 Não tenho nenhum pensamento de me matar.
- 1 Tenho pensamentos de me matar, mas não levaria isso adiante.
- 2 Gostaria de me matar.
- 3 Eu me mataria se tivesse oportunidade.

10. Choro
- 0 Não choro mais do que chorava antes.
- 1 Choro mais agora do que costumava chorar.
- 2 Choro por qualquer coisinha.
- 3 Sinto vontade de chorar, mas não consigo.

_____ Subtotal página 1 CONTINUA NO VERSO

11. Agitação

0 Não me sinto mais inquieto(a) ou agitado(a) do que me sentia antes.
1 Eu me sinto mais inquieto(a) ou agitado(a) do que me sentia antes.
2 Eu me sinto tão inquieto(a) ou agitado(a) que é difícil ficar parado(a).
3 Estou tão inquieto(a) ou agitado(a) que tenho que estar sempre me mexendo ou fazendo alguma coisa.

12. Perda de interesse

0 Não perdi o interesse por outras pessoas ou por minhas atividades.
1 Estou menos interessado pelas outras pessoas ou coisas do que costumava estar.
2 Perdi quase todo o interesse por outras pessoas ou coisas.
3 É difícil me interessar por alguma coisa.

13. Indecisão

0 Tomo minhas decisões tão bem quanto antes.
1 Acho mais difícil tomar decisões agora do que antes.
2 Tenho muito mais dificuldade em tomar decisões agora do que antes.
3 Tenho dificuldade para tomar qualquer decisão.

14. Desvalorização

0 Não me sinto sem valor.
1 Não me considero hoje tão útil ou não me valorizo como antes.
2 Eu me sinto com menos valor quando me comparo com outras pessoas.
3 Eu me sinto completamente sem valor.

15. Falta de energia

0 Tenho tanta energia hoje como sempre tive.
1 Tenho menos energia do que costumava ter.
2 Não tenho energia suficiente para fazer muita coisa.
3 Não tenho energia suficiente para nada.

16. Alterações no padrão de sono

0 Não percebi nenhuma mudança no meu sono.
1a Durmo um pouco mais do que o habitual.
1b Durmo um pouco menos do que o habitual.
2a Durmo muito mais do que o habitual.
2b Durmo muito menos do que o habitual.
3a Durmo a maior parte do dia.
3b Acordo 1 ou 2 horas mais cedo e não consigo voltar a dormir.

17. Irritabilidade

0 Não estou mais irritado(a) do que o habitual.
1 Estou mais irritado(a) do que o habitual.
2 Estou muito mais irritado(a) do que o habitual
3 Fico irritado(a) o tempo todo.

18. Alterações de apetite

0 Não percebi nenhuma mudança no meu apetite.
1a Meu apetite está um pouco menor do que o habitual.
1b Meu apetite está um pouco maior do que o habitual.
2a Meu apetite está muito menor do que antes.
2b Meu apetite está muito maior do que antes.
3a Não tenho nenhum apetite.
3b Quero comer o tempo todo.

19. Dificuldade de concentração

0 Posso me concentrar tão bem quanto antes.
1 Não posso me concentrar tão bem como habitualmente.
2 É muito difícil para mim manter a concentração em alguma coisa por muito tempo.
3 Eu acho que não consigo me concentrar em nada.

20. Cansaço ou fadiga

0 Não estou mais cansado(a) ou fadigado(a) do que o habitual.
1 Fico cansado(a) ou fadigado(a) mais facilmente do que o habitual.
2 Eu me sinto muito cansado(a) ou fadigado(a) para fazer muitas das coisas que costumava fazer.
3 Eu me sinto muito cansado(a) ou fadigado(a) para fazer a maioria das coisas que costumava fazer.

21. Perda de interesse por sexo

0 Não notei qualquer mudança recente no meu interesse por sexo.
1 Estou menos interessado(a) em sexo do que costumava estar.
2 Estou muito menos interessado(a) em sexo agora.
3 Perdi completamente o interesse por sexo.

_____ Subtotal página 2
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