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MENTAL HEALTH OF MEDICAL STUDENTS AT THE FEDERAL UNIVERSITY OF AMAPÁ (UNIFAP): AN APPROACH TO STRESS, SLEEP AND QUALITY OF LIFE

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Abstract: The mental health of medical students, due to the high student demands, is an important field, especially in terms of the variables of psychological distress. The aim of this study was to analyze the profile of medical students at UNIFAP, using two stages of instruments: socioeconomic, *Self-Reporting Questionnaire (SQR-20*); Perceived Stress Scale (PSS), *Pittsburgh* Sleep Quality Index (PSQI) and Quality of Life abbreviated version (WHOQOL-bref). Fifteen students were interviewed. The majority, 73.3%, were aged 19-24, 66.7% were female and 53.3% self-declared white; 53.4% had no religion, 93.3% were single and 87.7% lived with their families. Family income was advantageous, with 33.3% earning between 5-10 minimum wages; 46.7% came from private secondary schools; 80% of the students had never worked. Quality of life was found to be regular on the WHOQOL-bref. The PSS ranged from 0-56 points. It is inferred that the higher the value, the more suggestive the level of stress. The PSS applied resulted in an average of 31.73 and 28.93 in the 1st and 2nd stages, respectively. The sleep quality of 60% of the students was poor, and this was maintained in both stages. As for the SQR-20, in both applications, 80% of the participants in the 1st stage and 73.33% in the 2nd stage scored ≥7, indicating the presence of mental distress. This study, therefore, shows the need for understanding and welcoming spaces for this aspect of current academic suffering.
Keywords: Mental health; Sleep quality; Quality of life; Medical education.

INTRODUCTION

Universities can be considered one of the main cogs in human development due to their contributions throughout history. It is responsible for the formation of the medical student's professional identity, a process that involves, in addition to the study of medical theory and practice, the complex development of psycho-affective maturity, competencies, linked skills and ethical dilemmas. However, there are aspects that negatively affect this process, including an excessive workload and high levels of stress, competitiveness and sleep deprivation (DEMENECH *et al.,* 2021; MORCERF *et al.*, 2021). This period, marked by this transition from early adulthood, causes students to deal with various transformations. Included in this scenario is the pressure to succeed in the exam, family interference and competition; physical and psychological changes in the student, demands in relation to the professional choice, contribute to the manifestation of stress symptoms (AMORIM *et al.*, 2018; CRUZ *et al.*, 2021; WHO, 2022).

In addition, sleep complaints and disorders are common with difficulties in concentration, irritability and impatience that interfere with the individual's overall functioning (AMORIM *et al.*, 2018; PEROTTA *et al.*, 2021). There are many reasons for the high prevalence of sleep problems in medical students, including long hours of classes and studies, clinical placements that include night work, emotional stress, lifestyle choices; sleep deprivation has negative effects on emotional intelligence, including the ability to show empathy (PEROTTA *et al.,* 2021). Therefore, it is possible to understand and relate what is defined as Quality of Life (QOL), which is an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns; mental well-being, physical functioning and holistic

health status (KARAGÖL, 2021; WHO, 2021).

In this sense, the mental health of medical students has been studied in Brazil since the 1950s due to the high prevalence of mental disorders during medical training (MORCERF *et al.,* 2021; PACHECO *et al.*, 2017). The aggravating factors for becoming ill arise from the singularities of medical training, and other students, as well as teachers and course coordinators, are not prepared to welcome these students now as patients, by encouraging the stigmatization of suffering, especially within classroom relationships. In addition, these complex interpersonal and hierarchical relationships, associated with the strong demand for perfection and the impossibility of mistakes, are some of the components that produce illness, which reinforces the exclusion of what is evidenced as a mental disorder; and the support centers within the medical school, when functioning, are not accessed by students due to factors such as fear, misunderstanding or lack of reference and follow-up throughout the course. This is alarming, since knowing that the majority of students do not seek psychiatric assistance due to lack of time, stigma regarding the use of mental health services and even fear of the consequences on their curriculum, is indeed worrying (AMORIM *et al.*, 2018; DÂMASO *et al.*, 2019; MORCERF *et al.*, 2021; PACHECO *et al.*, 2017; PEROTTA *et al.*, 2021).

That said, the use of art is a therapeutic tool that seeks to rescue the whole being through practices of transformation and self-knowledge. It is a process of reconstruction, a mechanism for social emancipation and expanding the possibilities of expression (AMARANTE, 2007; COQUEIRO *et al.*, 2010). It breaks away from attending to the disease, abstracting from the person who has it; which, in a way, based on principles such as universality of care, integrality and equity, which the Unified Health System (SUS) cherishes, becomes the basic device for the Psychiatric Reform to advance efficiently (MACIEL, 2012; OLIVEIRA *et al.,* 2019).

Art therapy is conceived primarily as a means of strengthening the ego, developing a sense of identity and maturing in general. Its basic function is seen in the power of art to contribute to the development of a psychic organization capable of functioning under pressure without fragmenting or resorting to harmful defensive measures. Jung points out that, in addition to its creative potential present in the person, art therapy has therapeutic purposes; the symbolization of the individual and collective unconscious is manifested in art. Jung also deals with the concept of "individuation": what the individual is capable of expressing or communicating is a manifestation of their unconscious/conscious, and is what individualizes them (JUNG, 1998; MATANA *et al.,* 2022).

Bearing in mind that the current medical student will soon become the medical professional responsible for health care and promotion, this study highlights the importance of understanding the health of this future doctor during the training process, aiming at measures that can mitigate the psychological suffering of this student.

The aim of this study, therefore, was to investigate the impact of art therapy through artistic and cultural interventions and conversation circles as a support mechanism for the mental health of volunteer and scholarship medical students in the extension project "ArtisticaMENTE: o viéso artístico como instrumento de manutenção da saúde mental" (ArtisticaMENTE: the artistic bias as an instrument for maintaining mental health), carried out at UNIFAP.

RESULTS AND DISCUSSION

The results obtained in this study describe the profile of UNIFAP medical students by systematizing it.

Among the 15 participating students, 73.3% (n=11) were aged between 19-24 years, 66.7% (n=10) were female; compatible with that found in the study proposed by VERAS *et al*., 2020, where 50.7% (n=193) were female and the average age was 23 years; in the study proposed by SOUZA *et al*, 2020, 68.4% (n=451) of the students were between 21 and 25 years old, 51% (n=335) of whom were female; like AMORIM *et al*., 2018, where 66.6% (n=166) were women and 68.2% (n=170) were between 20 and 25; the present study revealed 53.3% (n=8) self-declared white, a parameter in line with the study by SOUZA *et al*., 2020, where 69.9% were white.

Among these aspects, it is worth noting that the predominance of females brings up the fact that in Brazil there is a marked process of females in the medical profession, since women were already the majority among younger doctors in the 30 to 34 age group in 2017 (REGO *et al.,* 2018). In addition, according to VERAS *et al*., 2020, this is due to the feminization of the university, where he mentions that in 2009 there were more new registrations of women than men in the regional councils, which corroborates the results found, bringing the idea that colleges are currently training more women professionals.

Another aspect that cannot go unnoticed is the fact that more than half of the people in this study were white. This fact directs the discussion to the fact that, according to FREDRICH *et al*., 2022, medicine was for many years among the so-called "imperial professions", due to the strong character of social selection, in terms of income and color of the students; this study also mentions that in 2019 only 28% of entrants to medical courses were black, as opposed to the 56% of black people in the Brazilian composition, according to the IBGE (Brazilian Institute of Geography and Statistics) (FREDRICH *et al.*, 2022). There is no way not to relate this profile to Brazil's colonialist heritage and, of course, the repercussions of racism, which is related to mental disorders, which is also reflected in the stereotype of intellectual inferiority ratified by the lack of representation in the academic environment (FREDRICH *et al*., 2022). In addition, institutional racism cannot go unmentioned in this scenario, as it manifests itself in the non-recognition of black students as belonging to the medical course and also in the poorer care provided to black patients (FREDRICH *et al*., 2022).

This study also found that 53.4% of students considered themselves to have no religion, although 20% declared themselves to be evangelical/Protestant; this context may raise the idea that in academia, according to BONFIM *et al*., 2021, rationalization can lead to obstruction of the flow of affective spiritual experience, and may be a defense mechanism for the individual to explain, even superficially, their own existence. However, other studies emphasize the relevance of religiosity/spirituality in terms of providing an increased sense of purpose in life, resilience and in the process of humanizing the student themselves. In addition to helping to understand issues related to finitude and the transcendent; and concluding that the medical-scientific paradigm generates gaps, as it does not have all the answers (BONFIM et al., 2021; COSTA et al., 2019; FERREIRA et al., 2018).

In addition, 93.3% are single, in agreement with the study by AMORIM *et al*., 2018, where the percentage is equal to 95.9% (n=239) single, according to FREDRICH *et al*., 2022 the majority of doctors who graduated in Brazil between 2014 and 2015 are single, white and without children, who depended financially on their parents, which according to SOUZA *et al*, 2020, since the majority of students do

not work or have their own formal income, this shows that the medical course requires a financial investment that many families are unable to make, legitimizing exclusion by socioeconomic criteria; in addition, this study resulted in individuals without children, with a majority of 86.7% living with their families, and only two (13.3%) living alone.

Family income proved to be advantageous in a significant percentage of 33.3% reporting that it was between 5-10 minimum wages (MW), in line with the study by VERAS *et al.*, 2020, which showed income between 10 and 30 MW, representing 31.2% (n=119). Similarly to the study by AMORIM *et al.*, 2018, in which the income of 4-10 MW was 39.3% (n=98) and more than 10 MW 45.3% (n=113). In the research proposed by REGO *et al.,* 2018, the presence of the less favored social classes was striking, with an income of 1 to 3 MW 30.9% (n=47), income between 5 and 9 MW 16.4% (n=25) and more than 9 MW 23% (n=35).

In this research, it was found that 80% reported never having worked, and in the study by VERAS *et al.,* 2020, the result was 81.6% (n=311), while the study by SOUZA *et al.,* 2020, revealed that 90.1% (n=617), demonstrating the agreement between the studies.

The majority of medical students come from secondary schools, 46.7% from private schools and 40% from public schools. These young students who will complete their degrees by 2025 account for 60%. The study proposed by SOUZA *et al.,* 2020, reports that the type of high school students attended was 35.1% public (n=288) and 60.5% private (n=411) and in the study proposed by VERAS *et al.*, 2020, 44.4% (n=169) and 55.6% (n=212) in public and private schools, respectively. Although a study by REGO *et al.,* 2018, points out that, although the medical course at the Federal University of Pará has allocated 50% of its places to students from public schools since 2005, it cites a survey carried out in 2012 with internship students, in which 80.2% of them came from private schools. This further confirms the accessibility and prevalence of wealthier classes when it comes to entering the medical course.

In this way, it is worth considering all of these aforementioned variables because socioeconomic conditions bring different expectations and insertions in relation to the course, which contribute to psychological illness (CONCEIÇÃO *et al.*, 2019).

When analyzing quality of life, the WHOQOL-Bref instrument was duly converted into a scale from 0 to 100 and interpreted using the averages for each of the four domains (physical, psychological, social relations, environment) and overall quality of life (overall QoL - perceived quality of life and satisfaction with health), comparing them in the two applications. The lowest values for the physical domain were 46.8 and 48.6 in the 1st and 2nd applications, respectively, and 54.4 for the psychological domain in both applications. The questions (Q) with the lowest scores (ranging from a minimum of 1 to a maximum of 5) in the 1st application were in the physical domain (Q10= sleep and rest, with a score of 3.00) and psychological domain (Q7= self-esteem, with a score of 3.13; Q26= spirituality/ religion/ personal beliefs, with a score of 2.73). In the 2nd application, Q26= 2.73 and Q10=3.00 were the ones with the highest values, in the 1st and 2nd applications respectively, in the same domains - physical (Q3= 4.20, referring to pain and discomfort; Q15=4.47, referring to mobility) and environment, reported only in the 1st application (Q13= 4.13 referring to how available information is on a daily basis; Q23= 4.27 referring to how satisfied the individual is with the conditions of the place where they live).

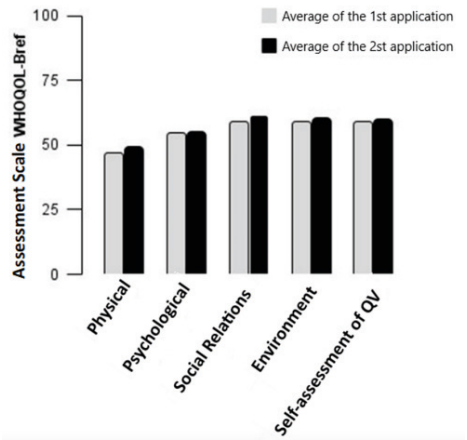
VARIABLES	N	%
Age group (years)		
19-24	11	73,30%
25-29	4	26,70%
Gender		
Female	10	66,70%
Male	5	33,30%
Color		
White	8	53,30%
Brown	6	40%
Black	1	6,70%
Religion		
Catholic	2	13,30%
Spiritist	2	13,30%
Protestant/Evangelical	3	20%
No religion	8	53,40%
Marital status		
Married / lives with a partner	1	6,70%
Single	14	93,30%
Housing		
Family	13	86,70%
Alone	2	13,30%
Children		
No Children	15	100%
People in the house(number)		
Lives alone	2	13,30%
Two	2	13,30%
Three	2	13,30%
Four	5	33,40%
Five	3	20%
More than six	1	6,70%
Who you live with		
Father and/or mother, other relatives, friends or colleagues	7	46,60%
Father and/or mother	3	20%
Spouse / partner	1	6,70%
Other relatives, friends or colleagues	1	6,70%
Alone	2	13,30%
Family income (minimum wages)		
No income	1	6,70%
1-2	2	13,30%
2-5	4	26,70%
5-10	5	33,30%
> 10	3	20%
Education		
Type of school (medium)		
Public	6	40%
Private	7	46,70%
Most in private schools	2	13,30%
Mode (medium)		

Technical/professional	2	13,30%
Regular	13	86,70%
Graduation (completion)		
2021-2025	9	60%
After 2025	6	40%
Employment situation		
Self-employed	1	6,70%
Never worked	12	80%
Unemployed	2	13,30%

Table 01 - Socio-economic profile.

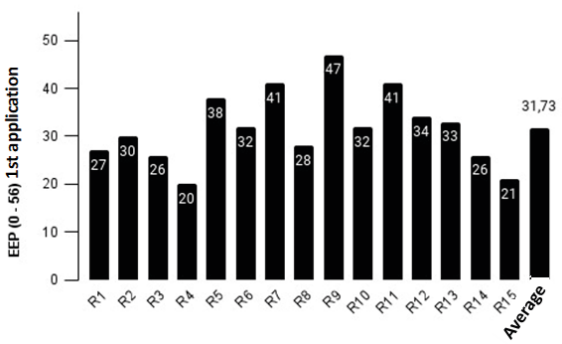
Source: own elaboration (2022).

It was therefore concluded that with the average overall QoL of 3.66 and 3.70, in the 1st and 2nd applications respectively, the Quality of Life of medical students is regular, as in AMORIM *et al*., 2018, although it is substantially affected in the physical, psychological and environmental domains as shown in the aforementioned results. Convergent with the studies by CONCEIÇÃO *et al*., 2019, with emphasis on the low psychological score; AMORIM *et al*., 2018 already shows a low score for the physical domain; in both it is seen in the meta-analysis by SOLIS; LOTUFO-NETO, 2019. According to ERINALDO LEITE PEREIRA *et al*., 2017, medical students suffer psychological distress during the course, and symptoms in the physical and psychological domains can impair learning, as well as hinder the exercise of care, in addition to concentration difficulties and somatic symptoms (CONCEIÇÃO *et al*., 2019).



Source: own elaboration (2023).

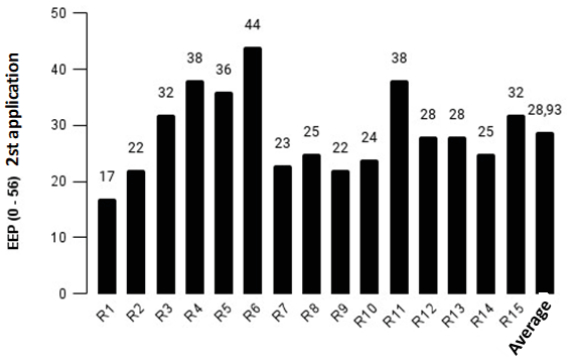
As far as stress is concerned, the scale ranges from 0-56 points and it is interpreted that the higher the value, the more suggestive the individual's level of stress. Analysis of the average results of the scale resulted in an average of 31.73, with a minimum score of 20 and a maximum of 47 in the first stage. The most frequently asked questions (P) were: P3 - feeling nervous and stressed, "almost always"; P5 - coping well with life's changes, "sometimes"; P6 - feeling confident in their ability to solve problems, "sometimes"; P9 - being able to control irritation in life, "sometimes". P10 - things under control, feels that "almost never" P13 - controlling the way time is spent, "almost never"; P7 - things aren't happening as you want them to, "sometimes".



Source: own elaboration (2023).

In the 2nd stage, the stress scale showed an average of 28.93, with a maximum score of 44 and a minimum of 17. The most frequently asked questions were: P2= Have you felt unable to control the important things in

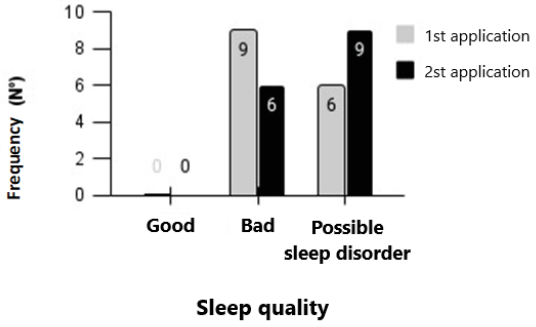
your life?, in P2 with the highest scores being "sometimes"; P3= Have you felt nervous and "stressed"?, "almost always"; P6= Have you felt confident in your ability to solve personal problems? "sometimes"; P7= Have you felt that things are happening according to your will?,"sometimes"; P8= Have you felt that you couldn't cope with all the things you have to do?,"almost always"; P11= Have you been irritated because things that happen are out of your control?,"sometimes"; P14= Have you felt that difficulties accumulate to the point where you believe you can't overcome them?,"sometimes".



Source: own elaboration (2023).

P7 remains remarkably the same as in the first and second applications of the scale, with scores of 25% and 20% respectively, albeit with a reduction of 5%.2.5% reduction in P3 and P6. There was a reduction from the first to the second application in the maximum value of 3 points and the minimum value of 3 points, as well as a reduction in the average score of 2.8. In the study by MURAKAMI *et al.,* 2019, stress was present in 64% of medical students, with an important correlation in studies, where females always show a high proportion of stress (AMORIM *et al.*, 2018; MACHADO *et al.*, 2020; MURAKAMI *et al.,* Since stress, according to MOREIRA *et al.* 2015, makes it difficult to reconcile academic activities and personal life, an overload of content and the course that shows psychological disorders.

With regard to sleep quality, in the first application 60% (9 students) had poor sleep quality, while in the second application this percentage was maintained, however, configuring a possible sleep disorder and no longer just poor quality. Good sleep quality remained at zero at both times of the survey. According to CONCEIÇÃO *et al.*, 2019, sleep quality is an important factor in QoL, and with fewer hours of sleep, there is more exhaustion, generating high levels of burnout and psychological distress. While the low quality of sleep was 51.5%, reported in a meta-analysis by PACHECO *et al.*, 2017; 72% as poor quality in AMORIM *et al.*, 2018. Making a correlation with stress, according to MACHADO *et al.*, 2020, physiologically, it is known that sleep and stress are closely linked to the hypothalamic-pituitary-adrenal (HPA) axis, which may explain the close relationship between these two factors. Acute stress is accompanied by a decrease in slow wave and rapid eye movement (REM), and sleep deprivation, as a stressor, has pronounced effects on sleep architecture and circadian rhythms.



Source: own elaboration (2023).

The Self-Report Questionnaire-20 (SQR-20) showed minimum values of 4 and 1 in the 1st and 2nd stages, respectively, and maximum values of 15 and 16 in the 1st and 2nd stages, respectively. With 80% of participants in the 1st stage scoring ≥7 and in the 2nd stage 73.33% scoring ≥7, this cut-off value indicates

	Answers (No.) 1st application	Answers (No.) 2nd application
Factor I: Depressive-anxious mood		
Do you feel nervous, tense or worried?	13	13
Do you get scared easily?	8	5
Feeling sad lately?	12	9
Do you cry more than usual?	4	3
Factor II: Somatic symptoms		
Do you often get headaches?	7	9
Do you sleep badly?	9	8
Do you feel stomach discomfort?	8	6
Do you have poor digestion?	7	7
Do you lack appetite?	3	5
Do your hands shake?	5	3
Factor III: Decrease in vital energy		
Do you get tired easily?	9	10
Do you have trouble making decisions?	6	10
Do you find it difficult to get satisfaction from your tasks?	11	7
Does your work cause you suffering?	9	6
Do you feel tired all the time?	10	9
Do you have trouble thinking clearly?	6	8
Factor IV: Depressive thoughts		
Do you feel unable to play a useful role in your life?	2	3
Have you lost interest in things?	10	5
Have you been thinking about ending your life?	1	1
Do you feel useless in your life?	5	1

Table 02 - Self-Report Questionnaire-20.

Source: own elaboration (2023).

the presence of mental suffering, according to the scale. According to CONCEIÇÃO *et al*., 2019, the risk of mental distress was higher, at 31.7% in the last semesters of the course. The study by AMORIM *et al.*, 2018, highlights the concern, since the percentage found in the study was 66.9%, with a score greater than or equal to 8 and BELLINATI; CAMPOS, 2020, according to this same cut-off point mentioned, 54.2% of the academics obtained a score and in the study by ROCHA *et al*. 2020, the SQR-20 scored 82.95% of the interviewees, such studies that denote suspicion and alertness of mental suffering.

CONCLUSION

We conclude that medical schools are increasingly including young women professionals in their profile, although access to the school is still occupied by the wealthier social classes and predominantly white, coming from a successful support base that provides full-time study. On the other hand, the demands, exhaustion and excessive workloads make it difficult to reconcile quality of life and sleep and perpetuate the stress experienced, making graduation a time of diverse possibilities for psychological suffering. It is therefore worth emphasizing the importance of studies such as this one, aimed at developing strategies and welcoming spaces within undergraduate medical courses.

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