

ORIGINAL ARTICLE

Self-compassion and positive and negative affects on medical students during the COVID-19 pandemic

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Abstract

Introduction: studies demonstrate a higher rate of anxiety, depression and stress symptoms among Medical students when compared to the general population. The context of the coronavirus pandemic (SARS-CoV-2) generated additional stress to these students.

Objective: the present study aimed to evaluate the emotional health of medical students at a Community University.

Methods: there were 437 participants, that answered a sociodemographic questionnaire, the Positive and Negative Affect Schedule (PANAS) and the Scale of Self-compassion – Brazil.

Results: most (69%) are female, 63% live with their family, 35% have student loans, 59% practice some religion, 45% reported a diagnosis of psychological disorder, 27% use psychiatric medication and 9% use of psychoactive substances. More than 72% of women and 58% of men, presented scores of positive affects (PA), negative affects (NA), and self-compassion (SC) that were below the population mean. The report of psychological disorders and use of psychiatric drugs were also found to be significantly associated to lower rates of PA (respectively, $p < 0,0001$ and $p = 0,030$) and SC ($p < 0,001$ in both) and higher rates of NA ($p < 0,001$ in both).

Conclusion: the results point to greater vulnerability of the psychological health of medical students during the pandemic and indicate the importance of adopting measures aimed at emotional well-being at the institutional level.

Keywords: COVID-19, medical students, mental health, compassion.

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Authors summary

Why was this study done?

Characteristics of medical training generate a strong stress load that can contribute to student's physical and psychological illness, which is aggravated by the context of the Covid-19 pandemic. Considering that future professionals will soon be caring for the population, knowledge about the emotional health of medical students can support training institutions in implementing projects to mitigate such problems.

What did the researchers do and find?

A descriptive and exploratory study was carried out among 437 medical students from a community institution with the application of a sociodemographic questionnaire, Positive and Negative Affect Schedule (PANAS) and Self-Compassion Scale - Brazil. Students showed scores of positive affect (PA), negative affect (NA), and self-compassion (SC) lower than the population average, indicating difficulties to face situations that generate stress and less resilience. An association was also observed between the analyzed indexes and the report of psychological disorders and the use of psychiatric medications by the students.

What do these findings mean?

PA, NA, and SC scores lower than the population mean point to greater vulnerability of medical students' psychological health during the pandemic and indicate the importance of adopting measures aimed at emotional well-being at the institutional level.

INTRODUCTION

The Medicine course is one of the hardest to get in, and also one of the most demanding. Besides the high academic workload, the training requires full-time dedication considering the study days, internships, and extracurricular activities. These factors, added to the growing awareness of the problems existing in the medical profession, a competitive environment among colleagues, financial concerns, and all the routines involved, generate a strong stress load that can contribute to the physical and psychological illness of students^{1,2}.

Studies indicate a higher rate of anxiety and depression symptoms among medical students when compared to the general population²⁻⁵. Furthermore, research in Brazil and the USA indicate that the peculiarities of medical courses favor the development of burnout syndrome^{6,7}. An aggravating factor for this situation is the use of psychoactive substances, which is higher among medical students when compared to students in other health courses and the general population⁸⁻¹⁰.

These aspects added to the current context of the new Coronavirus pandemic (SARS-CoV-2) generate an additional burden of anxiety and stress. The still incipient scientific knowledge about the virus and the ways to fight it is one of the greatest challenges worldwide today.

The need for isolation or social distancing and adherence to quarantine practices has generated economic, social, and psychological impacts. The numerous risk factors related to infection by the virus range from morbidities to social and family issues¹¹. The uncertainty about the future and the mourning for the losses involved, either by facing the death of loved ones or even the loss of freedom, are generating emotional impacts on a large scale. Studies already point to increased reports of feelings like anger, fear, frustration, boredom, and confusion¹².

In this context, medical students in the early stages of the course must deal with long hours in virtual classes, little contact, and interaction with classmates and professors. Students in the pre-clinical phase were early involved in attending the population in telephone triage/triage centers, and those in the internship phase went on to see patients, following an entire biosafety protocol.

The concern for students' emotional well-being becomes more relevant in this scenario. One way to

measure the emotional dimension of subjective well-being is through positive affect and negative affect. Positive affects (PA) consist of states of pleasant involvement and reflect how excited, active, and alert a person feels. Their low level would indicate states of sadness and lethargy¹³. Negative affects (NA), reflect a state of distress and unpleasant involvement, including a variety of aversive mood states such as anger, fear, and nervousness. A low level of AN would be indicative of tranquility and serenity¹³.

These constructs of subjective well-being are also related to self-compassion (SC)¹⁴. Studies point out that SC is positively related to positive affect and negatively related to negative affect¹⁴⁻¹⁷ and is associated with psychological health and emotional well-being¹⁸.

Self-compassion can be defined in various ways. Neff¹⁹ defines self-compassion based on three elements: 1) self-kindness, which involves experiencing feelings of caring and kindness for oneself in a compassionate way and with an impartial attitude toward one's inadequacies and shortcomings; 2) shared humanity, in which we recognize that individual experiences are part of experiences common to all human beings; and 3) mindfulness, which involves being open and engaging with one's suffering in a clear and balanced way.

Compassion at its core involves a motivation to care, the ability to tolerate unpleasant emotions, and the capacity for empathic understanding without judging or condemning²⁰.

Self-compassion is especially important in challenging and unpleasant situations, as it is associated with resilience and stress regulation²¹. More self-compassionate individuals respond better to unpleasant emotions by adopting a kind and open attitude, as well as understanding that imperfections and difficult experiences are part of life¹⁴.

Considering the context of the pandemic by COVID-19 and the characteristics of the medical course, it was verified, the importance of evaluating the emotional reaction of medical students to this scenario, as well as how they deal with their emotional needs in stressful situations.

METHODS

This is a descriptive and exploratory study, carried out at a community college in Santa Catarina.

The participants in the study comprised medical students from the 1st to the 12th semester, who regularly enrolled in the course, totaling 580 students, 63.6% of whom were female. The exclusion criteria included students under 18 years of age, those who did not wish to participate, or those who were absent in class on the day of data collection.

The research was conducted through a structured self-completion questionnaire applied collectively in a virtual classroom environment via GoogleForms. The collection instrument was composed of two parts: a sociodemographic questionnaire (semester of the course, gender, age, residence with family members, student financing, practice of religion, diagnosis of psychological disorder, use of psychiatric medications, and use of psychoactive substances), followed by the psychological scales, the Positive and Negative Affect Schedule and the Self-Compassion Scale.

The Positive and Negative Affect Schedule (PANAS) in its version adapted for Brazil²² is a self-report scale that evaluates the frequency and intensity with which people experience these affects. It is composed of 10 items that assess PA and 10 items that assess NA. The items are made up of adjectives that represent the evaluated affects along with a five-point Likert scale, ranging from “not at all” to “extremely”. Respondents are asked to mark the number that indicates how strongly they feel the affects described by the adjectives²². PANAS has demonstrated stable results, reliability, and validity considering an 8-week interval¹³.

The Self-Compassion Scale (SCS), developed by Neff²³, is a self-report scale composed of 26 items that represent the construct Self-Compassion. For each of its 26 phrases or items, the respondent should mark how he/she feels about what he/she reads, indicating his/her preference based on a five-point Likert scale, ranging from “rarely” to “almost always”. The scale aims to assess six elements: self-worth, mindfulness, shared humanity, self-criticism, isolation, and over-identification²⁴.

To preserve anonymity, the questionnaires were identified only with the students’ enrollment numbers, without their names. Such identification was necessary to allow later feedback to the students and to make possible an eventual intervention at the individual level in special situations identified by the research psychologists. All students present in class on the day the questionnaire was applied were invited to answer it. The applications took place from May 11 to 19, 2020, per class, and lasted approximately 20 minutes each. After the agreement of the teachers, a schedule of times was made for each class during the classes. At this time, classes had only been taking place virtually for two months due to the COVID-19 pandemic. By clicking on the survey link, the participant was taken to the ICF page. The inclusion criterion for the study was that the individual was regularly enrolled in the course and wished to participate in the survey, in which case he/she should click on “Yes, I am over 18 and agree to participate in the survey. If the respondent selected the option “I am

under 18” or “I do not wish to participate in the survey”, he was automatically taken to the acknowledgment message, ending the form.

Regarding ethical aspects, the study was approved by the university’s Research Ethics Committee (CAAE 24711019.2.0000.5366), the course coordinator signed the Consent Form, and the study participants accepted the Informed Consent Form (ICF) on the homepage of the GoogleForms online form.

Data analysis was performed with the aid of the Microsoft Excel 2013 program. First, simple descriptive statistics were generated. The chi-square test was used to compare participants concerning gender. Next, Pearson correlations were obtained between PA, NA, and SC measures. The third step of the analysis involved f-test calculations to verify the similarity of variances, followed by t-tests for comparisons of groups according to sociodemographic and psychological characteristics (gender, living with family, student financing, religious practice, diagnosis of psychological disorder, use of psychiatric medication, and use of psychoactive substances). Three phases in medical school were considered, basic, pre-clinical, and internship, each comprising 4 semesters sequentially. The levels of PA, NA, and SC were classified as below average (0-39 percentile), average (40-60 percentile), and above-average (61-100 percentile). The significance level adopted was 0.05. Effect size via Cohen’s *d* was calculated for group comparisons. Values greater than or equal to 0.8 represent a large effect size; between 0.8 and 0.2 are considered medium and less than 0.2 small. According to the Publication Manual of the American Psychological Association²⁵, it is recommended to measure effect size next to *p*-value results, since these do not indicate the significance of a difference between groups, but only test data against the null hypothesis. Effect size gives significance to statistical tests and measures the strength of the evidence against the null hypothesis, thus reducing the risk of misinterpretation. Finally, a single-factor analysis of variance (ANOVA) was performed for positive affect (PA), negative affect (NA), and self-compassion (SC) to compare course phases.

RESULTS

Of the 580 students in the course, 135 were absent in class on the day of data collection or did not access the form. Among those present, 4 were excluded from the survey because they were minors, and 4 did not want to participate in the survey, which totaled 437 respondents (75% of the course students). The age range varied from 18 to 42 years, with a mean of 22.92 (SD = 3.78). Of the respondents 69% (n=300) were female and 31% (n=137) were male. The proportion of participants in the survey was higher among females (81%) than males (65%) with a significant difference ($p < 0.0001$).

Considering the socio-demographic data, it was found that: 275 (63%) live with their families; 151 (35%) have student loans; 256 (59%) practice some religion; 196 (45%) reported having a diagnosis of a psychological disorder, 80 (18%) with more than one disorder; 117 (27%) use psychiatric medication, and 40 (9%) use psychoactive substances, and 19 (4%) chose not to answer the question.

The distribution of students by percentile of PA can be seen in figure 1. The results show that 75% of the students are in percentiles considered medium-low or

very low for PA by the normative table of the Brazilian population²², with these high percentages already present since the first semesters of the course.

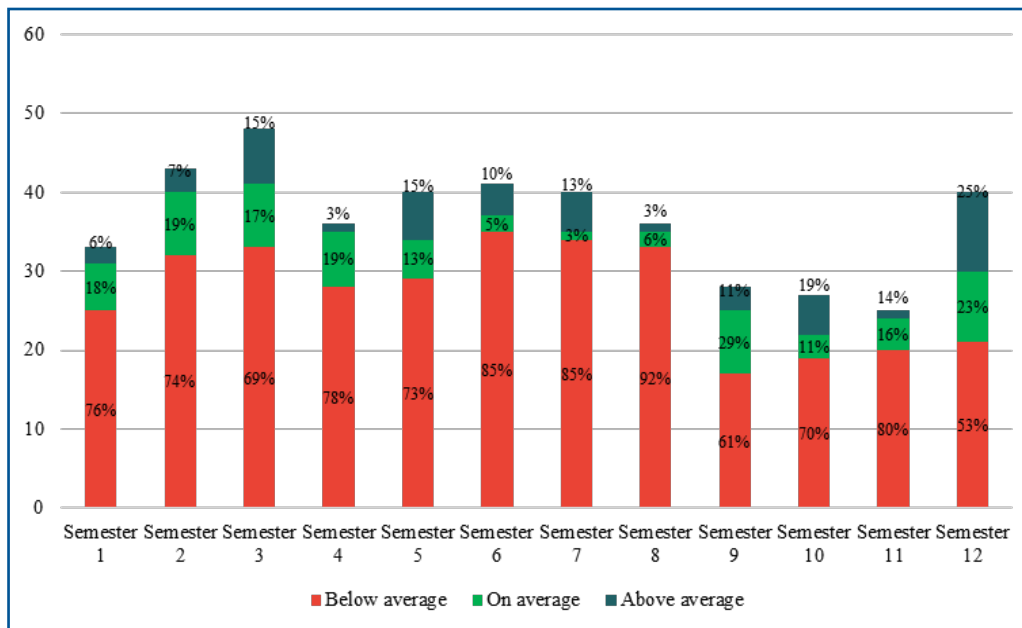


Figure 1: Distribution of students by percentile about positive affect (PA)

Source: Primary (2020).

ANOVA group comparisons concerning course phases show oscillations in mean PAs for the three phases, basic education (2.70), preclinical (2.66), and internship (2.98), indicating that after entering the course there is a drop in PAs followed by an increase in them during clinical practice. In women, mean PA scores were higher in the preclinical phase ($p=0.006$). Among men, there was no such difference ($p=0.070$). Comparisons for negative affect and

self-compassion in the three phases of the course showed no statistically significant differences in both genders.

Considering the average of students classified in the percentiles considered medium-high or high for NA when compared to the general population, it was observed that 53% presented NA above the population normative²², with some oscillations, not significant, in each semester for females ($p=0.089$) and male ($p=0.745$) sexes (figure 2).

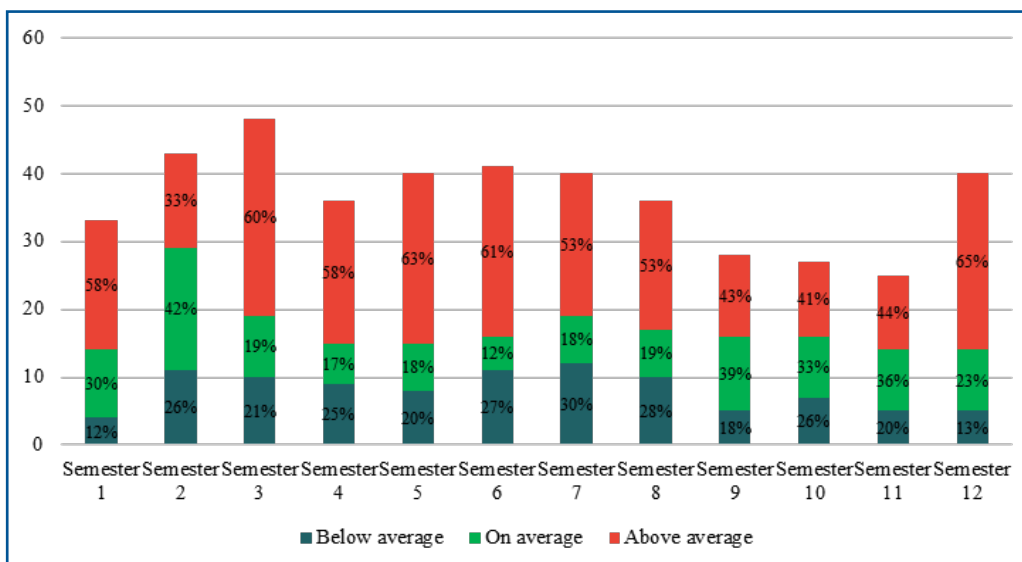


Figure 2: Distribution of students by percentile about negative affect (NA)

Source: Primary (2020).

For self-compassion, 39% of the students are in the very low or medium-low percentiles, 29% in the medium, and 32% in the medium-high and high percentiles, according to the population normative²⁴ (figure 3). The fluctuations seen across semesters is not significant for female ($p=0.293$) and male ($p=0.082$).

The correlations found between the scales applied for the female population were: PA with NA at $r = -0.45$ with self-compassion at $r = 0.47$; and negative affects with self-compassion at $r = -0.60$. For the male population, the correlations found were: positive affects with negative affects at $r = -0.46$ and with self-compassion at $r = 0.49$; and negative affects with self-compassion at $r = -0.63$.

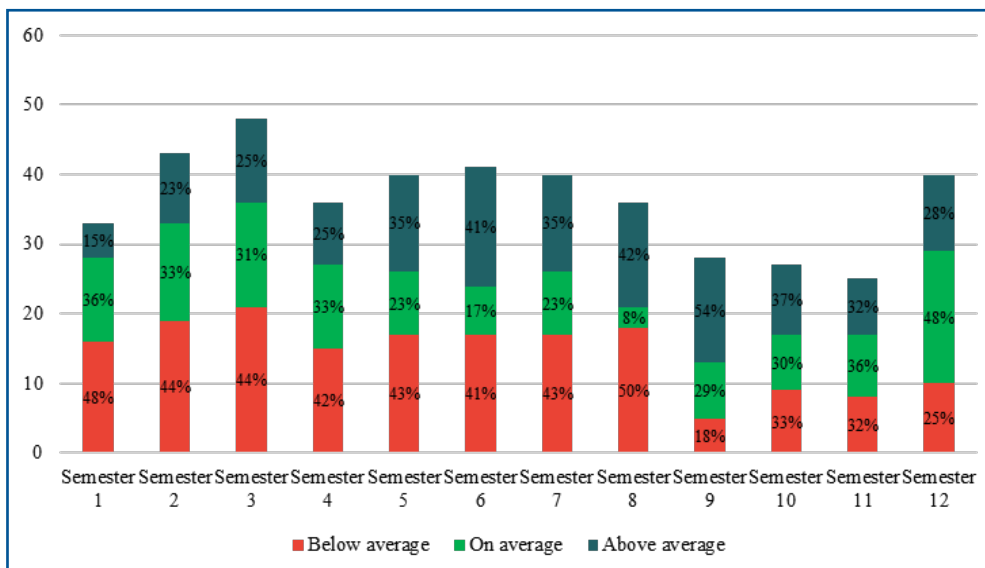


Figure 3: Distribution of students by percentile about self-compassion (SC)

Source: Primary (2020).

According to Cohen²⁶, these are moderate ($0.30 \geq r \leq 0.49$) and strong ($r \geq 0.50$) correlations.

Group comparisons were conducted regarding the means of PA, NA, and SC. The comparison regarding

gender showed significant differences in the means of PA ($p=0.022$) and SC ($p=0.007$) which were higher among men and those of NA ($p<0.001$) among women (table 1).

Table 1: Mean comparisons for positive affect, negative affect, and self-compassion by gender

		n	M	DP	T	p	d
Positive affects	Male	137	2.96	0.82	-2.30	0.022	0.24
	Female	300	2.78	0.77			
Negative affects	Male	137	2.44	0.85	4.38	<0.001	0.45
	Female	300	2.81	0.79			
Self-compassion	Male	137	3.15	0.66	-2.70	0.007	0.28
	Female	300	2.95	0.75			

M = mean; SD = standard deviation; t = t-test; $p < 0.05$, d = Cohen's d.

Source: Primary (2020).

Mean comparisons for PA, NA, and SC for males about social characteristics show an association between the report of psychological disorder and use of psychiatric medication with NA (respectively $p<0.001$ and $p=0.006$).

No association between these factors was identified between PA and SC. In this group, we also observed a significant association between the practice of religion and PA ($p=0.002$) (table 2).

Table 2: Comparisons of means for PA, NA, and SC for males regarding social and psychological characteristics

			n	M	DP	t	p	d
Positive Affect	Residence with family	Yes	89	2.98	0.83	0.29	0.769	0.05
		No	48	2.93	0.79			
	Student financing	Yes	44	3.05	0.71	0.83	0.408	0.15
		No	93	2.92	0.86			
	Prática de religião	Yes	69	3.18	0.70	3.19	0.002	0.55
		No	68	2.74	0.87			
	Report of psychological disorder	Yes	41	2.89	0.85	-0.71	0.478	0.13
		No	96	2.99	0.80			
	Use of psychiatric medication	Yes	20	2.87	0.78	-0.54	0.590	0.13
		No	117	2.98	0.82			

Continuation - Table 2: Comparisons of means for PA, NA, and SC for males regarding social and psychological characteristics

				M	DP	t	p	d
Negative Affect	Use of psychoactive substances	Yes	13	3.16	0.72	0.92	0.361	0.27
		No	119	2.95	0.81			
	Residence with family	Yes	89	2.41	0.88	-0.49	0.624	0.09
		No	48	2.49	0.79			
	Student financing	Yes	44	2.40	0.87	-0.39	0.700	0.07
		No	93	2.46	0.84			
	Prática de religião	Yes	69	2.43	0.81	-0.20	0.838	0.03
		No	68	2.46	0.89			
	Report of psychological disorder	Yes	41	2.84	0.88	3.76	<0.001	0.70
		No	96	2.27	0.78			
Self-Compassion	Use of psychiatric medication	Yes	20	3.08	1.06	3.01	0.006	0.92
		No	117	2.33	0.76			
	Use of psychoactive substances	Yes	13	2.72	0.67	1.22	0.226	0.36
		No	119	2.41	0.86			
	Residence with family	Yes	89	3.13	0.65	-0.47	0.641	0.08
		No	48	3.18	0.69			
	Student financing	Yes	44	3.19	0.69	0.52	0.602	0.10
		No	93	3.13	0.65			
	Prática de religião	Yes	69	3.17	0.68	0.36	0.722	0.06
		No	68	3.13	0.65			
Report of psychological disorder	Yes	41	3.04	0.62	-1.26	0.209	0.24	
	No	96	3.19	0.68				
Use of psychiatric medication	Yes	20	2.97	0.68	-1.30	0.196	0.31	
	No	117	3.18	0.66				
	Não	13	2.99	0.75	-0.90	0.372	0.26	
		Não	119	3.16	0.63			

M = mean; SD = standard deviation; t = t-test; p < 0.05, d = Cohen's d.
Source: Primary (2020).

For females, we observed a significant association between the no report of psychological disorder and no use of psychiatric drugs with the PA (respectively, p<0.001 and p=0.030) and the SC (p<0.001 in both). An association

was also identified between the report of psychological disorder and the use of psychiatric medications with the NAs (p<0.001 in both), according to table 3.

Table 3: Comparisons of means for PA, NA, and SC for females regarding social and psychological characteristics

	Residence with family		n	M	DP	t	p	d
Positive Affect	Yes		186	2.73	0.75	-1.26	0.209	0.15
	Student financing	No	114	2.85	0.79			

Continuation - Table 3: Comparisons of means for PA, NA, and SC for females regarding social and psychological characteristics

Residence with family		n	M	DP	t	p	d	
Negative Affect	Yes	107	2.77	0.70	-0.12	0.905	0.01	
	No	193	2.78	0.80				
	Prática de religião	Yes	187	2.80	0.77	0.66	0.511	0.09
	No	113	2.73	0.77				
	Report of psychological disorder	Yes	155	2.63	0.73	-3.35	0.001	0.39
	No	144	2.93	0.78				
	Use of psychiatric medication	Yes	97	2.64	0.79	-2.19	0.030	0.27
	No	203	2.84	0.75				
	Use of psychoactive substances	Yes	27	2.64	0.84	-0.98	0.327	0.20
	No	259	2.80	0.76				
	Residence with family	Yes	186	2.78	0.79	-0.74	0.461	0.09
	No	114	2.85	0.78				
	Student financing	Yes	107	2.80	0.77	-0.04	0.967	<0.01
	No	193	2.81	0.80				
	Prática de religião	Yes	187	2.77	0.78	-0.89	0.373	0.11
	No	113	2.86	0.80				
	Report of psychological disorder	Yes	155	3.02	0.75	5.17	<0.001	0.60
	No	144	2.57	0.77				
	Use of psychiatric medication	Yes	97	3.04	0.78	3.63	<0.001	0.45
	No	203	2.69	0.77				
Use of psychoactive substances	Yes	27	2.97	0.72	1.20	0.230	0.24	
No	259	2.78	0.79					
Residence with family	Yes	186	2.95	0.75	0.15	0.883	0.02	
No	114	2.94	0.74					
Student financing	Yes	107	2.92	0.67	-0.49	0.622	0.06	
No	193	2.96	0.79					
Prática de religião	Yes	187	2.97	0.75	0.66	0.511	0.08	
No	113	2.91	0.74					
Report of psychological disorder	Yes	155	2.69	0.71	-6.63	<0.001	0.77	
No	144	3.22	0.69					
Use of psychiatric medication	Yes	97	2.61	0.73	-5.63	<0.001	0.69	
No	203	3.11	0.70					
Use of psychoactive substances	Yes	27	2.89	0.89	-0.49	0.624	0.10	
No	259	2.97	0.73					

M = mean; SD = standard deviation; t = t-test; p < 0.05, d = Cohen's d.
Source: Primary (2020).

DISCUSSION

The comparison between enrolled academics and survey participants showed a higher proportion of females and a lower proportion of males. Studies using virtual interviews among university students show higher female participation²⁷, with one of the explanations for this being that women are socialized more about connecting with others, which would lead them to be more emotionally connected, while men are socialized in terms of separation and have a more individualistic profile²⁸.

The fact that most students reside with their families and practice some religion is positive since these are factors considered protective for good mental health. Having a religious belief can lead to a more adaptive posture when dealing with stressful events, reducing their negative impact. Additionally, religion can provide a sense of control, comfort, connection to other people, and closeness to a higher power²⁹.

The high percentage of students with a reported diagnosis of psychological disorder (45%) indicates that the emotional health of these students is impaired when compared to the general population. In Brazil, anxiety disorder is present in 9.3% of the general population³⁰ and the lifetime prevalence of depression is around 15.5% in the country³¹.

Many studies conducted on medical students in Brazil and other countries have reported high rates of psychological disorders²⁻⁷, use of medications^{8,10,32} and of psychoactive substances^{8-10,33}, which added to the characteristics of the course that requires great dedication and commitment from the students produces a stressful environment capable of aggravating their mental health^{1,2}.

This situation is not alleviated after graduation, since the exercise of the medical profession is stressful due to long working hours, sleep deprivation, unhealthy environments, and dealing with disease, suffering, and death, besides involving great visibility and social responsibility³⁴. As a result, rates of psychiatric disorders and suicide are higher than those of the general population³⁵.

The finding that 75% of the students are in percentiles considered medium-low or very low for PA when compared to the general population by the normative table of the PANAS scale²² is indicative of an impairment in the capacity for pleasant involvement. When we separate them by semesters, we observe that students start the course with low PA scores, worsening in the intermediate semesters and improving in the final semesters (figure 1). These findings are in agreement with other studies^{4,5} that demonstrate higher levels of depression in students in the intermediate years of the medical course.

Some authors²⁹ also point out that during the medical course, there is an increase in the use of tranquilizers, tobacco, and others³⁶, with the same trend for the consumption of alcoholic beverages. The authors suggest that these findings may be related to the fact that the practical activities that start in the fifth year of the course are anxiety-producing³³. This final period is considered the most difficult, since it forces the student to fully dedicate himself to training, besides generating expectations about the duties and responsibilities that accompany the medical degree³³. The worse PA results in the pre-clinical phase

are worrisome since these students have not yet started their internship and are already more vulnerable from a psychological health point of view.

When analyzing the NAs, it is observed that 53% of students demonstrated a state of distress and unpleasant involvement above the population normative²². These PA and NA results are of concern, as they show a greater fragility of the emotional health of future health professionals, and may even cause psychological imbalance, which would be detrimental to the performance of their work³⁷.

The levels of self-compassion follow the same trend as the PA, with better results in the last semesters. This finding indicates that these students are more engaged in self-care and the ability to tolerate unpleasant emotions²⁰, aspects that would facilitate the transition to professional practice from the standpoint of emotional health.

The correlations found between the three scales applied to the female and male populations indicate that improving pleasant states of involvement, by increasing PA, would reflect on aversive mood states, reduce NA, and impact self-compassion to the extent that it is associated with psychological health and emotional well-being¹⁸.

The differences between genders found in our research regarding the means of PA, NA, and SC, showing higher levels of PA and SC among men and higher levels of NA among women, reflect gender issues already pointed out in other studies^{38,39}.

In this sense, the social roles of the genders and the social norms of masculinity and femininity act by defining pre-established behaviors, in which the man seeks to fulfill a social expectation about the role he plays, demonstrating strength and security. Women, on the other hand, may express their suffering and vulnerability. Thus, characteristics commonly linked to women include sensitivity, emotionalism, and self-sacrifice, while those linked to men include strength, pragmatism, and independence⁴⁰. A study by Nevid and Rathus indicates that women who adopt a more feminine role tend to experience stressful situations in a more aversive way and show reduced capacity for overcoming, which would lead them to states of greater distress and unpleasant engagements⁴⁰.

Crawford and Henry³⁹ indicate that low levels of PA are linked to depressive states and high levels of NA are related both to depressive states and anxiety. The findings of our study found among medical students of both genders mean scores of PA were below the general population mean and NA above the population mean, showing a situation of greater psychological vulnerability for the development of psychological disorders^{1,2}.

The gender issue also permeated the results regarding psychological disorders and the use of psychiatric drugs. In our research, we found an association between these 2 factors NA in male students and PA and SC in female students.

This relationship between PA and NA with psychological disorders was identified in the study by Hofmann, Sawyer, Fang, & Asnaani⁴¹. According to the authors, a high level of NA and a low level of PA were associated with mood disorders such as depression and anxiety disorders. Additionally, Barnard and Curry⁴² indicate that the literature is consistent in stating that

SC is inversely related to psychopathologies, with the development of SC reducing depression and anxiety disorders⁴³. SC promotes PA, improving mental health and reducing depression, anxiety, and stress⁴⁴.

Considering that depressive and anxious conditions and chronic stress lead to alterations in the hypothalamic-pituitary-adrenal axis⁴⁵, the physiological consequences may cause damage to cognition. Authors^{46,47} point out that fatigue, difficulty in attention, concentration, and memory lead to a drop in productivity, irritability, aggressiveness, apathy, isolation, and a drop in self-esteem, among others, in such a way that these students may present a functional impairment, which, in turn, may result in learning difficulties.

When we add this drop in performance to factors that are parts of medical training, such as competitiveness, constant pressure, and high study/workloads, this feeds back into a vicious cycle increasing vulnerability to mood disorders^{2,48} and leads them to use inappropriate compensation mechanisms, such as avoidance or seeking relief through a substance or medication use⁸⁻¹⁰.

The semesters in which a worsening of emotional health is observed deserve special attention from the pedagogical point of view. One must evaluate what may be triggering this type of situation, if it is the lack of time or leisure time if it is the relationship with the teachers if it is the actual load of activities and tasks, among others.

Among men, we also observed a significant association between the practice of religion and PA (table 2), which supports the idea that religion can generate and/or sustain positive emotional states and maybe a protective factor for mental health. Although no significant differences were detected between men practicing or not practicing religion for the NA and SC, nor for women practicing or not practicing religion for the three constructs, the effect size between the groups was weak, which may indicate that the results are inconclusive.

A study by Lavrič and Flere⁴⁹ points out cultural differences in the association between religiosity and PA and NA and concludes that there is no pattern of relationship between them. Thus, it is recommended that further studies be conducted to evaluate the relationship between religiosity, PA, NA, and SC in the Brazilian population.

The comparisons between PA, NA, and SC for variables considered protective of psychological health, such as living with the family, having student loans, and using psychoactive substances, did not identify any association in our research, which deserves further investigation to elucidate whether the socio-economic profile of students may have interfered with the results.

This study is unprecedented for investigating the emotional health of medical students during the pandemic of COVID-19 and encompassing both individuals in isolation with distance learning classes and those who were working on the front lines in hospitals and health care

facilities. Even with a high adherence of medical students (75%), a limitation of the study is the low percentage of male participants. Another limitation refers to the use of self-report scales that consider the individual perception of each respondent and, therefore, are not as accurate as a clinical evaluation.

CONCLUSION

This study evaluated the levels of positive affect (PA) and negative affect (NA), as well as the level of self-compassion (SC) of medical students at a community college. It can be concluded that regardless of the stage of the course, students had lower emotional health indices and a higher prevalence of mood disorders when compared to the general population.

It can also be observed that students with higher self-compassion scores also had healthier PA and NA scores, which would be indicative of having a greater ability to tolerate unpleasant emotions, tend to be more resilient, and having better emotional balance.

It was observed that students arrive in the first semester with high levels of NA and low levels of PA and that throughout the 12 semesters of the course there is no worsening of these levels, but rather oscillations between semesters. This finding, without a clear pattern, allows us to conclude that the course does not seem to be contributing to the deterioration of the students' mental health. However, it is worth noting the need to repeat the evaluations on the students over the years to have a longitudinal follow-up that would allow more robust statements to be made. The fact that it was conducted in the early phase of the pandemic by COVID-19 may have been an external factor that may have affected the results found.

Professors and course coordinators are advised to be cautious when addressing this topic with students, especially given the stigma surrounding psychological illnesses. Self-perception of feelings of depression or anxiety is associated with weakness and shame, which in turn exacerbate the experience of NA.

The educational institution and the coordination of the medical course should be aware and prepared to offer support and help with stress management, reduction of anxiety and depression symptoms, and development of skills and competencies necessary for the development of greater resilience. It is suggested to focus on actions that seek humanization in the institutional environment and in the health services where students work, with an acceptance of the needs and a more attentive look at the students.

Open communication about mental health, as well as practices aimed at self-care, prevention of mental disorders, and listening to students, are important for early identification of symptoms of chronic stress, anxiety, or depression.

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Resumo

Introdução: estudos apontam maior índice de sintomas de ansiedade, depressão e estresse entre estudantes de Medicina quando comparados à população geral. O contexto da pandemia pelo novo coronavírus (SARS-CoV-2) gerou uma carga adicional de estresse a estes estudantes.

Objetivo: o presente artigo objetivou avaliar a saúde emocional de estudantes de medicina durante a pandemia.

Método: participaram 437 estudantes, aos quais foi administrado um questionário sociodemográfico, a Escala de Afetos Positivos e Afetos Negativos (PANAS) e a Escala de Autocompaixão – Brasil.

Resultados: a maioria (69%) é do sexo feminino, 63% reside com a família, 35% possui financiamento estudantil, 59% pratica alguma religião, 45% relatou diagnóstico de transtorno psicológico, 27% faz uso de medicamento psiquiátrico e 9% faz uso de substâncias psicoativas. Mais de 72% das mulheres e 58% dos homens apresentaram escores de afetos positivos (AP), afetos negativos (AN) e autocompaixão (AC) abaixo da média populacional. O relato de transtorno psicológico e uso de medicamentos psiquiátricos demonstrou-se significativamente associado a menores índices de AP (respectivamente, $p < 0,0001$ e $p = 0,030$) e AC ($p < 0,001$ em ambos) e maiores índices de AN ($p < 0,001$ em ambos).

Conclusão: os resultados apontam maior vulnerabilidade da saúde psicológica dos estudantes de Medicina durante a pandemia e indicam a importância da adoção de medidas que visem o bem-estar emocional no âmbito institucional.

Palavras-chave: COVID-19, estudantes de medicina, saúde mental, compaixão

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