

Emotional intelligence among nursing students in the COVID-19 pandemic

Inteligência emocional entre estudantes de enfermagem na pandemia de COVID-19

Inteligencia emocional en estudiantes de enfermería durante la pandemia de COVID-19

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Abstract

Objective: To analyze emotional intelligence among nursing students during the COVID-19 pandemic and describe emotional attention, clarity and repair scores in managing emotions.

Methods: This is a quantitative, observational cross-sectional study, comprising 121 nursing students at the *Universidade Federal do Vale do São Francisco*. Data collection was performed using a self-administered form containing the Informed Consent Form, a sociodemographic questionnaire and the Trait Meta-Mood Scale-24, validated for use in Portuguese. Data were submitted to statistical treatment using the Statistical Package for the Social Sciences, version 20.0.

Results: There were no significant differences between gender, sociodemographic data, and graduation period with Trait Meta-Mood Scale-24 scores. However, fourth and eighth semester students had significantly lower averages on this scale ($p=0.015$).

Conclusion: The need to address emotional intelligence throughout the nursing graduation was evidenced, in addition to reinforcing the psychological support of students, based on services already provided by the university.

Resumo

Objetivo: Analisar a inteligência emocional entre estudantes de enfermagem na pandemia de COVID-19 e descrever os escores de atenção emocional, clareza e reparação na gestão das emoções.

Métodos: Trata-se de um estudo quantitativo, observacional de delineamento transversal, composto por 121 estudantes do Curso de Enfermagem da Universidade Federal do Vale do São Francisco. A coleta de dados foi realizada por meio de um formulário autoaplicável contendo Termo de Consentimento Livre e Esclarecido, questionário sociodemográfico e a escala Trait Meta-Mood Scale-24, validado para o uso em língua portuguesa. Os dados foram submetidos a tratamento estatístico utilizando-se o programa Statistical Package for the Social Sciences, versão 20.0.

Resultados: Não houve diferenças significativas entre sexo, dados sociodemográficos e período da graduação com a pontuação do Trait Meta-Mood Scale-24. Entretanto, os alunos do quarto e do oitavo semestre apresentaram significativamente menores médias desta escala ($p=0,015$).

Conclusão: Evidenciou-se a necessidade de abordar a inteligência emocional ao longo da graduação em enfermagem, além de reforçar o amparo psicológico dos estudantes, a partir de serviços já disponibilizados pela universidade.

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Conflict of interest: nothing to declare.

Resumen

Objetivo: Analizar la inteligencia emocional de estudiantes de enfermería durante la pandemia de COVID-19 y describir los puntajes de atención emocional, claridad y reparación en la gestión de las emociones.

Métodos: Se trata de un estudio cuantitativo, observacional de diseño transversal, compuesto por 121 estudiantes de la carrera de Enfermería de la Universidad Federal do Vale do São Francisco. La recopilación de datos se realizó a través de un formulario autoaplicado que contenía el Consentimiento Informado, un cuestionario sociodemográfico y la escala Trait Meta-Mood Scale-24, validada para uso en idioma portugués. Los datos pasaron por tratamiento estadístico utilizando el programa Statistical Package for the Social Sciences, versión 20.0.

Resultados: No hubo diferencias significativas entre sexo, datos sociodemográficos y semestre de la carrera con el puntaje de la Trait Meta-Mood Scale-24. Sin embargo, los alumnos del cuarto y del octavo semestre presentaron promedios considerablemente inferiores en esta escala ($p=0,015$).

Conclusión: Se evidenció la necesidad de tratar la inteligencia emocional a lo largo de la carrera de enfermería, además de reforzar la contención psicológica de los estudiantes, a partir de servicios que la universidad ya ofrece.

Introduction

The concept of intelligence has fostered discussions over the centuries in the face of the debate on multiple intelligences. The intersection between the concepts of intelligence and emotion gave rise to emotional intelligence (EI), a construct defined as an individual's ability to perceive and distinguish emotions in themselves and in others, in order to guide and facilitate their thinking and actions.⁽¹⁾ Thus, with the emotion management (EM) aptitude, the individual is able to perceive and discern emotions and use the information obtained in their analysis to guide behavior.

In the years that followed, EI grew exponentially. Currently, its framework is anchored in five components: self-awareness, self-management, self-motivation, empathy and relationship management.⁽²⁾ This perspective broadened the definition of EI by adding motivation, social functioning and personality dimensions to the concept, such as persistence, zeal and optimism, thus characterizing the mixed model.^(2,3) From the findings, scientific investigations have become increasingly frequent while the number of people interested in the topic has increased.

Considering the above, in the current turbulent context caused by the Coronavirus Disease 2019 (COVID-19) pandemic, the measures implemented to reduce the peak incidence of infections, such as social isolation actions, constant dissemination of the epidemiological scenario in the news and voluntary quarantine of the population, substantially interfere with the mental health and EI of people and communities, since stress, fear of death and of

losing a family member can generate negative repercussions.⁽⁴⁻⁶⁾

Still, with regard to the pandemic, more than a billion students have been away from schools and universities around the world. In Brazil, the number of students affected was over fifty million, of which 8.5 million are in higher education.⁽⁷⁾ Most universities around the world have replaced face-to-face teaching with emergency remote teaching (ERE) via online platforms.⁽⁸⁾

Several studies have been committed to knowing and analyzing the repercussions of the pandemic and ERE on undergraduate students' biopsychosocial health. Pioneering research in the area has shown that the main stressful situations for academics in the context of a pandemic have been financial limitations and remote teaching.⁽⁸⁾ In view of this, EI can contribute to managing personal or professional life demands and also events related to the crisis triggered by the new coronavirus (SARS-CoV-2).⁽⁵⁾

In this perspective, the EM skill is a determining factor in the individual coping mode, since EI has been associated with better academic performance,⁽⁹⁾ greater personal satisfaction, psychological and social well-being⁽¹⁰⁾ and better student skills to deal with emotional challenges, especially in health and, in particular, in nursing.⁽¹¹⁾

Research carried out with nursing students in countries such as Slovenia⁽¹²⁾ and Australia⁽¹³⁾ demonstrate that the level of EI tends to be higher among these students compared to those in other courses, as well as that it can be improved during the training process. Furthermore, studies with the same target audience developed in China,⁽¹⁴⁾

Israel,⁽¹⁵⁾ Turkey⁽¹⁶⁾ and the United Kingdom⁽¹⁷⁾ show that the best level of EI is positively related to the reduction of procrastination, increased self-efficacy, greater chance of academic and professional success, development of critical thinking, better well-being, problem-focused coping, and lower perceived stress.

Considering that the direct and indirect effects of the COVID-19 pandemic can interfere with the attention, clarity and emotional repair of nursing students, the following guiding question was constructed: How do nursing students manage emotions in the COVID-19 pandemic?

Thus, the study has the general objective of analyzing intelligence among nursing students in the COVID-19 pandemic and describing the scores of emotional attention, emotional clarity and emotional repair in EM.

Methods

This is a quantitative, observational cross-sectional study, using STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) as checklist to guide its performance.⁽¹⁸⁾

The population was composed for 121 nursing students at the *Universidade Federal do Vale do São Francisco* (Univasf). This institution is located in the northeastern semi-arid region. The nursing course adopts a flexible and interdisciplinary curriculum structure that prioritizes human and academic training oriented towards the Unified Health System (SUS - *Sistema Único de Saúde*) for the development of a critical and reflective professional conduct, in the different scenarios of action. Still, in order to offer psychological support to students in situations of intense mental suffering, the university has the Center for Practices and Studies in Psychology (CEPPSI) and support from the Care Center for Undergraduate students of the Semiarid Extension Project (Nuceu - *Núcleo de Cuidado ao Estudante Universitário do Semiárido*), which contribute to mental health care.

The Univasf has 179 nursing students. All were invited to participate in the study in the quantita-

tive stage. It should be mentioned that in this phase, the sample calculation was equivalent to 107 participants, considering a Confidence Index (CI) of 95% and a Sampling Error of 5%.

The research participants were nursing students at Univasf and regularly enrolled in the course. Students under 18 years of age at the time of data collection were excluded. It should be noted that having a previous diagnosis of mental/psychiatric disorder and using psychoactive drugs were not considered exclusion criteria for student participation.

For the development of this research, the full names and e-mails of all students regularly enrolled in a Nursing Course were acquired, an invitation to participate was sent and a link was sent to access the data collection form, which was hosted on Google Forms.

The data collection instrument consisted of self-applied form, divided into three sections: the first referring to the Informed Consent Form (ICF), with mandatory agreement for participation; the following corresponding to a sociodemographic questionnaire, through which the students' profile was obtained in relation to sex, sexual orientation, race/color, source of income, marital status and graduation semester; and the last section contained the Trait Meta-Mood Scale (TMMS-24), validated for use in Portuguese and composed of a series of twenty-four statements divided equally between three aspects inherent in managing emotions, such as attention, clarity and emotional repair.⁽¹⁹⁾

The data from the questionnaires were analyzed from the grouping of statements from 1 to 8 for the emotional attention factor, from 9 to 16 for the emotional clarity aspect and from 17 to 24 for emotional reparation, adding the score and analysis considering the validated parameters for male and female audiences.^(19,20)

On emotional attention, the average score range is 22 to 32 for men and 25 to 35 for women, which signals adequate emotional attention. Scores above 33 for men and 36 for women or values below 21 for men and 24 for women demonstrate that it needs to be improved. As for the emotional clarity dimension, scores above 36 for men and 35 for women correspond to excellent emotional clarity,

between 26 to 35 for men and 24 to 34 for women, as adequate clarity, and values lower than 25 for men and 23 for women, need for improvement. In the emotional repair dimension, scores above 36 for men and 35 for women also represent excellent emotional repair, between 24 to 35 for men and 24 to 34 for women is considered adequate emotional repair, and scores lower than 23 for men and women, there is the need for improvement.⁽²⁰⁾ In the questionnaire, subjects must rate each of their responses on a Likert-type scale ranging from 1 to 5 points to indicate their level of agreement. The total score is obtained by adding the answers of each subscale, whose score ranges from 8 to 40 points.^(19,20)

The information was converted to a Microsoft Excel 2019 spreadsheet. Then, the data were submitted to statistical treatment using the Statistical Package for the Social Sciences (SPSS), version 20.0.

The normality of the variables was verified using the Shapiro-Wilk test. Student's t test was used for continuous, independent and univariate variables and analysis of variance ANOVA. To compare more than two categorical and continuous variables, Levene's statistics were used to verify variance homogeneity. The significance level adopted were the values that presented $p\text{-value} \leq 0.05$.

The study was approved by the Research Ethics Committee, according to Opinion 4,823,109 and CAAE (*Certificado de Apresentação para Apreciação Ética* - Certificate of Presentation for Ethical Consideration) 46989021.9.0000.8052.

Results

A total of 121 nursing Univasf students participated in the study. The highest frequency was female 97 (80.2%). As for sexual orientation, 95 (78.5%) consider themselves heterosexual. There was a predominance of brown race/color students, with 67 (55.4%) and the predominant marital status was single, with 106 (87.6%). The sample's mean age was 23.98 ± 5.2 years. With regard to income, 67 (55.4%) depend on their parents to support themselves, and 110 (90.9%) reported not having children.

The study had the participation of students from the second, fourth, sixth and eighth periods. Among the participants, 32 (26.4%) were enrolled in the second semester, 26 (21.5%) in the fourth, 35 (23.2%) in the sixth and 28 (28.9%) were in the eighth semester. It should be mentioned that admission to the Nursing Course is annual, for this reason, there were only even semesters. The tenth semester was not contemplated, as these students could not attend the component, due to being a supervised internship, which was suspended due to security measures at the peak of the pandemic.

The overall mean score on the TMMS-24 was 84.17 ± 14.9 . Table 1 presents the frequency distribution of the 24 domains that make up the TMMS-24.

Table 2 shows the frequency distributions of the three factors that make up the TMMS-24, namely: attention, clarity and emotional reparation, stratified by gender. In emotional attention in both genders the highest frequency was adequate attention, 58 (59.8%) and 14 (58.3%); regarding the item emotional clarity, both females, 59 (60.8%), and males, 14 (58.3%) presented this element appropriately; and in emotional reparation, 55 (56.7%) and 11 (45.8%) of the sample jointly presented adequate reparation.

Regarding the association between the TMMS-24 average score with sociodemographic data, no statistically significant differences were found. However, regarding the graduation period, it was observed that students in the fourth and eighth semesters had significantly lower averages on the instrument, compared to students in the sixth period $p=0.015$ (Table 3).

Discussion

EI has been gaining notoriety as a skill that needs to be developed by nursing students. Emotional skills are required both to offer quality care to people and to manage conflicting situations in different work environments.⁽²¹⁾ Furthermore, during higher education, students may experience anxiety, stress and depression related to academic factors, whose prev-

Table 1. Distribution of Trait Emotional Meta-Mood Scale (TMMS-24) domain frequencies of Univasf nursing students (n=121)

TMMS-24 domains	Strongly disagree n(%)	Slightly agree n(%)	Strongly agree n(%)	Strongly agree n(%)	Totally agree n(%)
I pay a lot of attention to my feelings	0(0)	15(12.4)	25(20.7)	43(35.5)	38(31.4)
I am usually very conscious of what I feel	0(0)	10(8.3)	20(16.5)	37(30.6)	54(44.6)
I usually spend time thinking about my emotions	2(1.7)	21(17.4)	29(24.0)	40(33.1)	29(24.0)
I think my emotions and state of mind deserve to be paid attention to	2(1.7)	7(5.8)	15(12.4)	29(24.0)	68(56.2)
I allow my feelings to affect my thoughts	3(2.5)	8(6.6)	23(19.0)	46(38.0)	41(33.9)
I constantly think about my state of mind	5(4.1)	32(26.4)	35(28.9)	26(21.5)	23(19.0)
I often think about my feelings	3(2.5)	22(18.2)	31(25.6)	31(25.6)	34(28.1)
I pay a lot of attention to the way I feel	4(3.3)	19(15.7)	36(29.8)	35(28.9)	27(22.3)
My feelings are clear to me	14(11.6)	35(28.9)	30(24.8)	30(24.8)	12(9.9)
I can usually define my feelings	9(7.4)	31(25.6)	38(31.4)	27(22.3)	16(13.2)
I nearly always know how I feel	7(5.8)	22(18.2)	46(38.0)	28(23.1)	18(14.9)
I usually know how I feel about people	2(1.7)	12(9.9)	38(31.4)	41(33.9)	28(23.1)
I often become aware of my feelings in different situations	2(1.7)	9(7.4)	34(28.1)	45(37.2)	31(25.6)
I can always say how I feel	12(9.9)	36(29.8)	35(28.9)	26(21.5)	12(9.9)
I can sometimes say which emotions I am experiencing	1(0.8)	17(14.0)	34(28.1)	44(36.4)	25(20.7)
I can manage to understand my feelings	1(0.8)	11(9.1)	37(30.6)	48(39.7)	24(19.8)
I usually have an optimistic outlook, although I sometimes feel sad	14(11.6)	32(26.4)	27(22.3)	29(24.0)	19(15.7)
Even when I feel sad, I try to think about pleasant things	6(5.0)	35(28.9)	30(24.8)	28(23.1)	22(18.2)
When I am sad, I think about all life's pleasures	14(11.6)	40(33.1)	33(27.3)	17(14.0)	17(14.0)
I try to have positive thoughts even when I feel bad	7(5.8)	40(33.1)	26(21.5)	27(22.3)	21(17.4)
If I think about things too much and end up complicating them, I try to calm myself down	5(4.1)	14(11.6)	40(33.1)	35(28.9)	27(22.3)
I am concerned about having a good state of mind	10(8.3)	16(13.2)	29(24.0)	40(33.1)	26(21.5)
I have a lot of energy when I feel happy	0(0)	1(0.8)	7(5.8)	40(33.1)	73(60.3)
When I am angry, I try to change my state of mind	8(6.6)	17(14.0)	37(30.6)	44(36.4)	15(12.4)

Table 2. Distribution of Trait Emotional Meta-Mood Scale (TMMS-24) factor frequencies of Univasf nursing students (n=121)

TMMS-24 factors	Sex (female) n(%)	Sex (male) n(%)
Emotional attention		
Improve attention	18(18.5)	2(8.3)
Adequate attention	58(59.8)	14(58.3)
Pay too much attention	21(21.6)	8(33.3)
Emotional clarity		
Improve clarity	27(27.8)	7(29.2)
Clarity repair	59(60.8)	14(58.3)
Excellent clarity	11(11.3)	3(12.5)
Emotional repair		
Improve repair	32(33.0)	6(25.0)
Adequate repair	55(56.7)	11(45.8)
Excellent repair	10(10.6)	7(29.2)

alence is concentrated among health students.^(22,23) This reality reaffirms the importance of EI in the face of the need to ensure students' well-being and to prepare future nursing professionals.^(9-11,14-17,24)

A survey carried out with nursing students at the University of Veracruz, in Mexico, using the TMMS-24, obtained a population aged between 18 and 27 years and mostly female, with participation of 94.28%.⁽²⁵⁾ Such information is similar to the profile of students in this investigation, in

Table 3. Association between the general mean of the Trait Emotional Meta-Mood Scale (TMMS-24) with sociodemographic data and graduation period of Univasf students

Variables	TMMS-24 Mean ±SD	p-value
Sex		0.766*
Female	83.88±14.89	
Male	85.33±15.2	
Sexual orientation		0.631**
Homosexual	87.83±16.65	
Heterosexual	84.49±14.85	
Bisexual	78.58±14.56	
Race/color		0.375 [†]
Black	80.54±17.44	
Brown	84.64±13.93	
White	86.10±14.92	
Marital status		0.286 [†]
Married	90.43±14.07	
Single	83.23±14.41	
Stable union	89.86±21.52	
Income		0.339**
Own work	89.19±12.58	
Parents	83.63±15.00	
Others	99.00±25.45	
Scholarship and parents	82.11±15.16	
Semester		0.015 [†]
Second	84.03±15.33	
Fourth ^{ab}	80.15±13.26	
Sixth ^{ab}	90.51±14.37	
Eighth ^{ab}	80.11±14.54	

*p-value calculated by Student's t test; **p-value calculated by the Anova One-Away test; [†]values with different letters show statistical significance by the Bonferroni test

which there was a predominance of a young and female audience. Still on the profile of students, a study carried out at a public university in Ceará, with the aim of describing the socio-demographic profile of 276 undergraduate nursing students, it was found that 57.2% self-declared to be of brown race/color,⁽²⁶⁾ a number similar to that observed in this study.

A study carried out with nursing students in Israel, in the context of a pandemic, showed a prevalence of anxiety of 55.9% and the main associated problems were economic uncertainty, fear of infection in themselves and in family members, the need to provide care to family members and challenges to deal with distance education,⁽²⁷⁾ reaffirming the importance of investigating EI among nursing students. As for the TMMS-24, a study developed in Spain, sought to explore its psychometric properties in a sample of 530 nurses from 11 hospitals in the Valencian Community. With regard to EI in the participating nurses, the dimension related to feeling clarity had a higher score, while the dimensions related to emotional reparation and emotional attention had lower averages.⁽²⁸⁾ Comparing with the results, the attention, clarity and adequate emotional reparation dimensions obtained the highest scores in females.

An investigation carried out with undergraduate students in Argentina sought to examine the TMMS-24 psychometric properties. When assessing attention, clarity and emotional reparation dimensions and their relationship with sociodemographic variables, no significant differences were identified related to gender or age of participants.⁽²⁹⁾ A similar finding was evidenced, because in comparison with the results obtained with the nursing students, even though there were no significant differences between sex and the scale score.

Furthermore, the study implemented at the University of Veracruz, in Mexico, using the TMMS-24, showed that more than 50% of students had at least one affected EI skill.⁽²⁵⁾ This aspect is in line with the results in question, since the fourth and eighth semester students had significantly lower averages on the TMMS-24, corresponding to 50.4% of students in the sample.

Research carried out with the application of TMMS-24 with nutrition students from a public university in Chile identified that the levels of EI were uniform, with no relation of increase or decrease with the advancement in graduation as well as in the study in question.⁽³⁰⁾ This finding can be explained by the fact that the university samples are homogeneous, given that undergraduate students have a trajectory of educational overcoming to reach higher education, a process that can contribute to the development of EI.

Throughout graduation, nursing students experience situations that can be emotionally difficult to manage, such as caring for critically ill patients, dealing with the suffering of others and terminality. It is worth mentioning that the COVID-19 pandemic has aggravated this scenario. In this way, it is necessary to help them in the development of EI, so that they can be better prepared to face the challenges of professional life.

To this end, it is essential to create spaces that allow dialogue on the subject in graduation and the creation of alternatives involving professors and students, in favor of disseminating the importance of EI. In addition to providing opportunities for discussion, psychological support needs to be formally promoted by educational institutions, based on services established with this scope. Conducting workshops and developing extension projects focusing on EI can be interesting strategies to implement. It also lacks a transversal approach, from the first semester of graduation, in order to enhance the maturity of students to manage emotions.

The study seeks to advance scientific production, as it portrays the profile of nursing students in Brazilian northeastern dry lands and their relationship with EI in the pandemic. As for the limitations of this study, due to sample homogeneity, it was not possible to weave some significant statistical results, such as in relation to gender, with the purpose of investigating other factors that may influence the differences in the TMMS-24 scores in the undergraduate semesters. In this way, it becomes important to explore new variables and a qualitative investigation with students, to deepen the results obtained and contribute to the understanding of EI in nursing.

Conclusion

The study made it possible to analyze intelligence among nursing students in the COVID-19 pandemic based on the scale (TMMS-24). The findings point to the need to address EI throughout nursing graduation, in addition to reinforcing psychological support for students. It is recommended that further studies be carried out with a focus on the qualitative approach, with the aim of knowing the subjective dimension of the scores obtained, as well as investigating the challenges and strategies adopted by nursing students to manage their emotions.

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Collaborations

Lacerda MVM, Amestoy SC, Jacondino CB, Silva GTR, Santos IAR, Boaventura VR, Bandeira FJS and Tenório AKDC contributed to conception and design, data analysis and interpretation, article writing, relevant critical review of the intellectual content and final approval of the version to be published.

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