RESEARCH

RELATIONSHIPS BETWEEN DEPRESSION, PERCEIVED STRESS AND ANXIETY AND QUALITY OF LIFE AND CHARACTERISTICS OF NURSING STUDENTS

RELAÇÕES ENTRE DEPRESSÃO, ESTRESSE PERCEBIDO E ANSIEDADE E A QUALIDADE DE VIDA E CARACTERÍSTICAS DOS ESTUDANTES DE ENFERMAGEM

RELACIONES ENTRE DEPRESIÓN, ESTRÉS PERCIBIDO Y ANSIEDAD Y CALIDAD DE VIDA Y CARACTERÍSTICAS DE LOS ESTUDIANTES DE ENFERMERÍA

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ABSTRACT

Objective: to evaluate the relationships of anxiety, perceived stress and depression symptoms with quality of life and with sociodemographic, academic and clinical characteristics of Nursing students. ***Methods:*** this is a correlational cross-sectional study conducted with 173 undergraduate Nursing students enrolled in 2017 at the Federal University of São Paulo, Brazil. Anxiety, depression symptoms, stress and quality of life were evaluated by means of the Beck Anxiety Inventory, the Beck Depression Inventory, the Perceived Stress Scale and the Short-Form Health Survey, respectively. ***Results:*** 24.6%, 24.0% and 11.1% of the students presented mild, moderate and severe anxiety, respectively. Most of those diagnosed with depression had severe symptoms (47.4%), while most of those not diagnosed with depression presented no symptoms (67.1%). The mean stress level was 14.1 out of the maximum score of 40. The quality of life domain with the lowest score was vitality, while the one with the highest score was physical functioning. ***Conclusion:*** depression, anxiety and stress were related to different sociodemographic, academic and clinical characteristics, as well as to some quality of life domains, which should be targets of interventions.

Keywords: Depression; Stress, Psychological; Anxiety; Quality of Life; Students, Nursing.

RESUMO

Objetivo: avaliar a relação entre ansiedade, estresse percebido e sintomas de depressão com qualidade de vida e as características sociodemográficas, acadêmicas e clínicas dos estudantes de Enfermagem. ***Métodos:*** este é um estudo transversal correlacional realizado com 173 estudantes de Enfermagem matriculados em 2017 na Universidade Federal de São Paulo, Brasil. Ansiedade, sintomas de depressão, estresse e qualidade de vida foram avaliados, respectivamente, pelo *Beck Anxiety Inventory*, o *Beck Depression Inventory*, a *Perceived Stress Scale* e o *Short-Form Health Survey.* ***Resultados:*** 24,6% dos estudantes tinham ansiedade leve, 24,0% tinham ansiedade moderada e 11,1% tinham ansiedade severa. A maioria dos diagnosticados com depressão apresentava sintomas graves (47,4%) da doença. A maioria dos que não foram diagnosticados com depressão não apresentava sintomas (67,1%). O nível médio de estresse foi de 20,9 da pontuação máxima de 40. O domínio da qualidade de vida com a pontuação mais baixa foi a vitalidade, enquanto o domínio com a pontuação mais alta foi a capacidade funcional. ***Conclusão:*** depressão, ansiedade e estresse estavam relacionados a diferentes características sociodemográficas, acadêmicas e clínicas, assim como apresentaram relação com alguns domínios da qualidade de vida, os quais deveriam ser objeto das intervenções.

Palavras-chave: Depressão; Estresse Psicológico; Ansiedade; Qualidade de Vida; Estudantes de Enfermagem.

RESUMEN

Objetivo: evaluar la relación entre los síntomas de ansiedad, estrés percibido y depresión con la calidad de vida y las características sociodemográficas, académicas y clínicas de los estudiantes de Enfermería. ***Métodos:*** se trata de un estudio correlacional transversal realizado con 173 estudiantes de Enfermería matriculados en 2017 en la Universidad Federal de São Paulo, Brasil. La ansiedad, los síntomas de depresión, el estrés y la calidad de vida se evaluaron, respectivamente, mediante el Inventario de Ansiedad de Beck, el Inventario de Depresión de Beck, la Escala de Estrés Percibido y la Encuesta de Salud de Forma Corta. ***Resultados:*** el 24,6 % de los estudiantes tenía ansiedad leve, el 24,0 % tenía ansiedad moderada y el 11,1 % tenía ansiedad grave. La mayoría de los diagnosticados de depresión tenía síntomas graves (47,4 %). La mayoría de los que no fueron diagnosticados de depresión no tenía síntomas (67,1 %). El nivel medio de estrés fue de 20.9 sobre la puntuación máxima de 40. El ámbito de la calidad de vida con la puntuación más baja fue la vitalidad, mientras que el ámbito con la puntuación más alta fue la capacidad funcional. ***Conclusión:*** la depresión, la ansiedad y el estrés se relacionaron con diferentes características sociodemográficas, académicas y clínicas, además de presentar una relación con algunos dominios de la calidad de vida, que deberían ser objeto de intervenciones.

Palabras clave: Depresión; Estrés Psicológico; Ansiedad; Calidad de Vida; Estudiantes de Enfermería.

INTRODUCTION

Mental disorders cause neurochemical, neuroendocrine and/or neuroanatomical alterations that increase blood pressure and heart rate, contributing to the onset of heart disease.[1] They are major causes of absence from work in Brazil and worldwide. Nevertheless, in low-income countries, approximately 76% to 85% of the individuals with these disorders are not treated.[2] Depression, anxiety and stress are important mental disorders affecting social, professional and other areas of an individual's functioning.[3]

People with a recurrent depressive disorder experience depressed mood, loss of interest and pleasure, and reduced energy.[3] Anxiety is characterized by excessive worry, fear, irritability, restlessness and sleep disturbance, with a prevalence estimated at 2.9% in adults in the United States.[3] Stress is a disorder in which the individual develops typical symptoms after exposure to a traumatic event. Prevalence of stress varies according to the type of situation to which the person was exposed, but can range from 20% to 50% in the non-North American population.[3]

Researchers have frequently found these disorders in university students. A study showed that 24.3% of Nursing students had moderate to extremely severe depression levels, 39.9% had anxiety, and 20% had stress symptoms.[4]

These disorders can affect the students' Quality of Life (QoL).[5-7] A study observed that 26.7% of the students had already undergone some treatment for depression, while 68.7% reported stress. The QoL domain that had the lowest mean score was "environment", followed by the psychological domain.[5] Anxiety, depression and stress may not only compromise students' well-being but also their academic performance, communication with patients and the quality of the healthcare provided, which can compromise patient safety.[7]

A few studies have identified the factors associated with stress, depression and anxiety in university students. In this context, these factors should be identified to support the implementation of actions to prevent school dropout and contribute to better QoL for these students. The objective of this study was to evaluate the relationship between anxiety, stress, depressive symptoms, QoL and sociodemographic, academic and clinical characteristics of Nursing students.

We hypothesized that there are factors related to stress, anxiety and depression and that high levels of these disorders are associated with poorer QoL.

METHODS

This is a cross-sectional and correlational study conducted at *Escola Paulista de Enfermagem, Universidade Federal de São Paulo,* Brazil. Before data collection, the research project was approved by the Course Committee of *Escola Paulista de Enfermagem* and by the Research Ethics Committee at *Universidade Federal de São Paulo,* CAAE 71264617.7.0000.5505, Protocol No. 2,520,168.

We included all Nursing undergraduates regularly enrolled in 2017 (n=316), who were approached to explain the research objectives; and those who agreed to participate signed informed consent forms. Students under 18 years of age were excluded. The sample consisted of 173 subjects attending all four years of the course: 104 freshmen, 71 sophomores, 85 juniors and 56 seniors. Of the 316 students, 143 chose not to participate.

The anxiety symptoms were evaluated using the Beck Anxiety Inventory (BAI). This inventory was created to differentiate behavioral, emotional and physiological symptoms in individuals with anxiety and depression, consisting of 21 questions, each one describing an anxiety symptom. The respondent marks the answer of how much a given symptom has bothered him/her in the last week on a four-point scale ranging from zero (Not at all) to three (Severely). The total inventory score varies from 0 to 63 points, classified as minimum anxiety (0 – 10 points), mild anxiety (11 – 19 points), moderate anxiety (20 – 30 points) and severe anxiety (31 – 63 points). This inventory was translated and validated for Brazil by Cunha in 2001 and its internal consistency varies from 0.71 to 0.92.[8]

The depressive symptoms were evaluated by means of the Beck Depression Inventory (BDI). BDI was proposed in 1961 to evaluate depression symptoms through 21 categories, with answers ranging from intensity zero to 3. The instrument describes cognitive, affective and somatic behavioral manifestations and its final score varies from 0 to 63 points. Categorization of the depressive symptoms depends on a previous medical diagnosis of depression.

For patients who already have this diagnosis, the symptoms are categorized as follows: no signs of depression (0 – 9 points), mild depression (10 – 18 points), moderate depression (19 – 29 points) and severe depression (30 – 63 points). Patients without prior diagnoses of depression are categorized as follows: no symptoms of depression (0 – 14 points), symptoms of dysphoria (15 – 19 points), and symptoms of depression (20 or more points). The Brazilian version of the questionnaire was developed in 1996 by Gorestein and Andrade and its internal consistency was 0.81 in the sample of students and 0.88 in the sample of depressed patients.[9]

The stress symptoms were evaluated using the Perceived Stress Scale (PSS-10). PSS-10 was proposed in 1983 to measure the intensity of events in an individual's life that can be evaluated as stress. The answers are marked in a five-point Likert scale (0 – never, 1 – almost never, 2 – sometimes 3 – fairly often, and 4 – very often) and the total result ranges from 0 to 40 points, considering that the higher the score, the greater the stress. Translation and adaptation for Brazil occurred in 2007, with internal consistency of 0.83.[10]

The sociodemographic, academic and clinical variables evaluated were the following: current undergraduate year, age, gender, ethnicity, number of children, religion, marital status, other diseases, distance from the house to the university, household income, income provider, number of people living in the house, people living with the student, medical leaves required during the course, medication use, housing condition, professional occupation, failing classes during the course, participation in university sports events, professional activity, participation in parties and unpaid activities or those unrelated to the university. These variables were collected using an instrument previously prepared by the researchers.

Quality of life was evaluated using the Short-Form Health Survey (SF-36), a generic QoL questionnaire that consists of 36 items covering eight domains (physical functioning, physical role functioning, role limitations due to emotional role functioning, vitality, mental health, social functioning, bodily pain, and general health perceptions) that assess perception of the disease from the individual's own point of view. The data are transformed according to each answer, resulting in a worse or better general health status (from 0 to 100). SF-36 is calculated by turning the questions into domains, considering that for each domain there is a different calculation ranging from 0 to 100, the result of which is called "Raw Scale". The higher the score, the better the individual's QoL. The questionnaire was translated and adapted into its Brazilian version by Ciconelli et al. in 1999.[11]

Data analysis was performed in the R software, version 4.1.1, R studio version 1.4.1106. The qualitative variables were summarized through absolute (n) and relative (%) frequencies. The quantitative variables were summarized through mean or median and minimum and maximum or standard deviation values. These questionnaires were self-administered and filled out in the classroom by the students. Spearman's Correlation Coefficient was used to compare the scores obtained in the BAI, BDI and PSS-10 instruments with the continuous variables. To compare the scores of the instruments with the categorical variables, the Mann-Whitney (two categories) or Kruskal-Wallis (three or more categories) tests were used. The significance level considered was 5%.

RESULTS

A total of 173 students were evaluated, most of them freshmen (28.9%), women (88.4%), and with a mean age of 22.46 (4.02) years old. Table 1 shows their sociodemographic characteristics.

Table 1 - Sociodemographic, academic and clinical characterization of the Nursing students (n=173). *São Paulo*, Brazil, 2017

Variables	Total
Sociodemographic	
Year of the undergraduate course n (%)	
First	50 (28.9)
Second	44 (25.4)
Third	43 (24.9)
Fourth	36 (20.8)
Age, Mean (SD)	22.46 (4.02)
Women, n (%)	153 (88.4)
Ethnicity, n (%)	
Caucasian	131 (75.7)
Mixed (Caucasian and African-American)	32 (18.5)
African-American	5 (2.9)
Asian	5 (2.9)
Has children, n (%)	8 (4.6)
Religion, n (%)	
Catholic	61 (35.3)
Evangelical	35 (20.2)
Buddhist	1 (0.6)
Spiritism	27 (15.6)
Others	49 (28.3)
Marital status, n (%)	
Single	164 (94.8)
Married	8 (4.6)
Divorced	1 (0.6)

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Table 1 - Sociodemographic, academic and clinical characterization of the Nursing students (n=173). *São Paulo*, Brazil, 2017

Variables	Total
Sociodemographic	
Distance from the house to the university (Km), median (min-max)	18.6 (0.02-100)
Household income, n (%)	
<1 minimum wage	4 (2.3)
1-3 minimum wages	37 (21.4)
3-5 minimum wages	68 (39.3)
5-7 minimum wages	38 (22)
7-9 minimum wages	13 (7.5)
>9 minimum wages	13 (7.5)
Income provider, n (%)	
Student	5 (2.9)
Others	163 (94.2)
Student and others	5 (2.9)
Number of people living in the house, median (min-max)	3 (0-25)
People living with the student, n (%)	
None	4 (2.3)
Family members	145 (83.8)
Non-family members	24 (13.9)
Type of housing, n (%)	
Owns a house	115 (66.5)
Rented house	45 (26)
Ceded house	13 (7.5)
Performs paid activity, n (%)	20 (11.6)
Academic	
Failed an undergraduate class, n (%)	38 (22)
Participates in sports competition, n (%)	26 (15)
Participates in extracurricular activity, n (%)	148 (85.5)
Participates in parties, n (%)	72 (41.6)
Participates in other extracurricular activities, n (%)	52 (30.1)
Clinical	
Diagnosed diseases, n (%)	35 (20.3)
Medical leaves during the course, n (%)	59 (34.1)
Medication use, n (%)	71 (41)
Number of hours of sleep, median (min-max)	6 (2-8)

Source: Research data, 2017.

Table 2 shows the scores corresponding to anxiety, stress and depressive symptoms, as well as the students' QoL. Most of the students had mild anxiety, followed by moderate anxiety (minimum = 0, maximum = 57). Most students diagnosed with depression had severe symptoms. Most of the students without a medical diagnosis of depression had no symptoms. The lowest QoL scores were identified on the vitality and emotional role functioning domains.

Table 2 - Levels of anxiety, stress, depression symptoms, and quality of life in the Nursing students (n=173). *São Paulo*, Brazil, 2017

Variables	n (%)	Mean (Standard deviation)
Anxiety		16.4 (11.7)
Minimum	71 (40.3)	
Mild	42 (24.6)	
Moderate	41 (24.0)	
Severe	19 (11.1)	
Depression		14.1 (10.6)
Students with a prior diagnosis		
Mild symptoms	4 (21%)	
Moderate symptoms	7 (31.6%)	
Severe symptoms	10 (47.4%)	
Students without a prior diagnosis		
No symptoms	102 (67.1%)	
Symptoms of dysphoria	26 (17.1%)	
Symptoms of depression	24 (15.8%)	
Stress		20.8 (10.6)
Quality of life		
Physical functioning		84.2 (17.8)
Physical role functioning		65.9 (38.2)
Social role functioning		65.6 (65.5)
Bodily pain		58.2 (22.8)
Mental health		54.4 (22.1)
General health perceptions		49.1 (17.5)
Emotional role functioning		42.8 (42.2)
Vitality		36.6 (19.0)

Source: Research data, 2017.

Tables 3 and 4 show the relationship between the sociodemographic, academic and clinical variables, the QoL dimensions and the levels of anxiety, stress and depressive symptoms of the participants.

DISCUSSION

This study identified that most students had mild/moderate anxiety; that most of those diagnosed with depression had severe symptoms, and that those without a medical diagnosis of depression had no symptoms; the mean of perceived stress was 20.8. Similar results can be found in previous studies.[12-17]

In Lima, Peru, moderate, severe and extremely severe anxiety were identified in 36.3%, 12.1% and 5.4% of undergraduate Nursing students[14], whereas a Brazilian study found a mean anxiety score of 13.2.[15]

Table 3 - Relationship between sociodemographic, academic and continuous clinical variables and levels of anxiety, stress and depressive symptoms in the Nursing students (n=173)

Variable	PSS-10[a] Score Mean (SD)	p[β]	BDI[b] Score Mean (SD)	p[β]	BAI[c] Score Mean (SD)	p[β]
Women	21.2 (5.7)	0.14	14.4 (10.7)	0.21	17 (11.8)	0.06
Ethnicity		0.71		0.95		0.43
Caucasian	20.7 (5.6)		14 (10.4)		16.9 (11.9)	
African-American	21.6 (6.7)		14.4 (11.4)		15.4 (11.5)	
Has Children	20.4 (3.7)	0.76	14.4 (12.4)	0.91	12.4 (12.2)	0.19
Religion		0.61		0.42		0.01∞
Catholic	21.5 (4.6)		13.4 (10.7)		12.9 (9.3)	
Evangelical	20.8 (6.7)		12.7 (10.5)		16.6 (13.2)	
Buddhist/ Spiritism	19.5 (5.7)		15 (11.1)		19.9 (13.8)	
Others	21 (6.7)		15.5 (10.5)		19.1 (11.2)	
Marital status		0.03		0.05		0.01
Without a partner	21.1 (5.9)		14.4 (10.7)		17 (11.8)	
With a partner	17.5 (3.4)		7.5 (5.9)		7.4 (6.1)	
Diagnosed diseases		0.21		0.16		0.02
Yes	21.7 (6.3)		15.9 (10.6)		20.5 (12.3)	
No	20.7 (5.7)		13.6 (10.6)		15.5 (11.4)	
Household income		0.02*		0.07		0.18
<3 minimum wages	22 (4.6)		15.2 (9.6)		15.7 (11.9)	
3-5 minimum wages	21.2 (6.1)		15.1 (12)		18.3 (12.7)	
5-7 minimum wages	20.8 (7.1)		14.3 (10.1)		16.9 (11.1)	
>7 minimum wages	18.5 (4.6)		9.4 (8)		12.6 (9.2)	
Income provider		0.09		0.11		0.02
Student/Student+Others	19 (2.6)		8.6 (5.8)		9.2 (8.4)	
Others	21 (5.0)		14.4 (10.8)		17.0 (11.8)	
People living with the student		0.71		0.54		0.16
None	19 (3.9)		8.7 (6.2)		8 (9.5)	
Family members	20.9 (6)		13.8 (10)		16.8 (11.4)	
Non-family members	21.3 (5.2)		16.7 (14)		16.3 (14.1)	
Medical certificates needed during the course		<0.001		<0.001		<0.0001
Yes	23 (6.2)		18.3 (12)		21.6 (12.5)	
No	19.8 (5.4)		11.9 (9.2)		13.9 (10.5)	
Medication use		0.03		0.01		0.01
Yes	22 (6.7)		16.8 (11.4)		20.0 (12.2)	
No	20.1 (5.1)		12.2 (9.7)		14.1 (10.8)	
Type of housing		0.02£		0.03Ω		0.35
Owns a house	20.5 (5.3)		12.7 (9.3)		16.1 (10.9)	
Rented house	20.5 (6.3)		15.9 (13.1)		16.1 (12.5)	
Ceded house	26.1 (6.9)		20.1 (9.9)		22.1 (15.5)	
Performs paid activity		0.33		0.02		0.03
Yes	20.1 (4.4)		8.7 (6.5)		12.1 (11.2)	
No	21 (6)		14.8 (10.9)		17.1 (11.7)	
Failed classes		0.52		0.41		0.48
Yes	21.8 (6.5)		13.5 (11.9)		19.2 (15.5)	
No	20.6 (5.7)		14.2 (10.3)		15.8 (10.4)	
Participates in sports events		0.57		0.31		0.06
Yes	20.4 (5.6)		11.6 (8.3)		12.1 (7.9)	
No	21 (5.9)		14.5 (11)		17.3 (12.2)	

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Table 3 - Relationship between sociodemographic, academic and continuous clinical variables and levels of anxiety, stress and depressive symptoms in the Nursing students (n=173)

Variable	PSS-10[a] Score		BDI[b] Score		BAI[c] Score	
	Mean (SD)	p[β]	Mean (SD)	p[β]	Mean (SD)	p[β]
Participates in university-related extracurricular activities		0.06		0.02		0.12
Yes	20.6 (6)		13.2 (10.1)		16.0 (11.5)	
No	22.8 (4.6)		19.5 (11.9)		20.0 (13.0)	
Participates in parties		0.29		0.13		0.37
Yes	20.8 (6.7)		15.6 (11.2)		17.7 (12.7)	
No	20.9 (5.2)		13 (10.1)			
Participates in other extracurricular activities		0.24		0.31		0.35
Yes	20.2 (5)		13.1 (10.6)		15.4 (11.7)	
No	21.2 (6.2)		14.5 (10.7)		17 (11.8)	

Source: Research data, 2017.

PPS-10[a]: Perceived Stress Scale-10; BDI[b]: Beck Depression Inventory; BAI[c]: Beck Anxiety Inventory; [β]Mann-Whitney test (2 categories) or Kruskal-Wallis test (3 or more categories); [α]Catholic religion versus Buddhist/ Spiritism and Catholic vs Others; [*]<3 vs >7 minimum wages; [£]Owns a house vs Ceded house and Rented house vs Ceded house; [Ω]Owns a house vs Ceded house.

Table 4 - Relationship between sociodemographic, academic and continuous clinical variables, Quality of Life domains, and levels of anxiety, stress and depressive symptoms in the Nursing students (n=173). *São Paulo*, SP, Brazil, 2017

Variable	PSS-10[a] Score	BDI[b] Score	BAI[c] Score
Age (years old), R (p-value)	-0.04 (0.5633)	-0.03 (0.6497)	-0.23 (0.0024)
Distance from the house to the university (Km) R (p-value)	0.17 (0.0216)	0.21 (0.0064)	0.22 (0.0030)
Number of people living in the house			
R (p-value)	0.12 (0.1261)	0.10 (0.1885)	0.15 (0.0455)
Number of hours of sleep			
R (p-value)	-0.14 (0.0572)	-0.09 (0.2172)	-0.10 (0.1874)
Functional capacity			
R (p-value)	-0.24 (0.0016)	-0.33 (<0.0001)	-0.44 (<0.0001)
Limitation due to physical aspects			
R (p-value)	-0.23 (0.0025)	-0.28 (0.0002)	-0.37 (<0.0001)
Pain			
R (p-value)	-0.29 (0.0001)	-0.37 (<0.0001)	-0.50 (<0.0001)
General health status			
R (p-value)	-0.29 (0.0001)	-0.44 (<0.0001)	-0.48 (<0.0001)
Vitality			
R (p-value)	-0.46 (<0.0001)	-0.49 (<0.0001)	-0.48 (<0.0001)
Social aspects			
R (p-value)	-0.40 (<0.0001)	-0.63 (<0.0001)	-0.55 (<0.0001)
Limitation due to social aspects			
R (p-value)	-0.29 (0.0001)	-0.50 (<0.0001)	-0.44 (<0.0001)
Mental health			
R (p-value)	-0.44 (<0.0001)	-0.51 (<0.0001)	-0.49 (<0.0001)

Source: Research data, 2017.

PPS-10[a]: Perceived Stress Scale-10; BDI[b]: Beck Depression Inventory; BAI[c]: Beck Anxiety Inventory

A number of studies have found prevalence of moderate depressive symptoms in 14.8% to 19.7% of undergraduate students, whereas 4.4% to 4.9% presented severe depressive symptoms.[4,14] A systematic review that analyzed 27 studies and 8,918 Nursing students showed that 34.0% had depression.[16] Moderate to high stress levels were identified in this population.[13,17]

These disorders can be attributed to the students' immaturity and insecurity regarding the labor market, an assessment that is in line with the young age of the population.[18]

Researchers have shown that students in the health field have higher stress, anxiety and depression levels when compared to university students from other disciplines.[12,19] Excessive workload in health courses and the fact that the students are treating or caring for individuals and that errors can compromise their health can trigger these mental disorders.[20] Stress, anxiety and depression among undergraduate students have been attributed to the students' characteristics[13,20] and can pose a higher risk for a variety of physical and mental ailments for these students.[21]

Our study showed that anxiety was related to younger age, longer distance from the house to the university, Buddhist/ Spiritism religions, not having a partner, not being the income provider, not performing any paid activity, having diagnosed diseases, medication use, and presenting medical certificates during the course. Stress was related to longer distance from the house to the university, not having a partner, household income below three minimum wages, subsidized housing, presenting medical certificates during the course and medication use; and depression was related to longer distance from the house to the university, subsidized housing, not performing any paid activity, not participating in extracurricular activities, medication use and need for medical appointments during the course. These results are similar to those evidenced in other studies.

A study found that (younger) age, self-perceived physical health and lifestyle factors such as diet, sleep and exercise were significantly correlated with anxiety.[4] Younger adults tend to be more anxious due to immaturity and increased responsibilities and challenges. Mental disorders such as anxiety and depression are more prevalent in early adulthood, when most students enter university.[22]

Another factor that can exert an impact on the students' exhaustion and generate stress, anxiety and depression is the time spent commuting from the house to the university. Spending more than 90 minutes to attend academic activities was associated with higher depression levels.[4] This factor can be related to the fact that commuting interferes with time administration for university and leisure activities, which can generate many unpleasant feelings.[23]

Regarding absence of a partner, a systematic literature review showed that one of the protective factors against anxiety is social support.[24] Another study also found that having a steady partner was related to lower propensity to chronic stress.[25] Having a partner can reduce anxiety and stress due to the possibility of sharing anguish and daily activities that can trigger these feelings.

Other situations commonly related to mental disorders are financial conditions and having comorbidities. A study showed that stress symptoms were associated with year of study, financial difficulties, academic failures and lack of sleep, exercise or entertainment, whereas hobbies, quiet time and depression were associated to year of graduation, financial difficulties, family problems and factors involving lifestyle habits.[5] A stress assessment in Brazilian students found a direct relationship between income and stress, showing that the lower the income, the higher the stress level.[26]

An integrative review showed that having school age children, not having a partner, financial difficulties and health aspects were indicated as risks for psychological distress.[27] For many students, financial challenges further add to the academic difficulties and can increase the chance of mental disorders. Low socioeconomic level can also compromise self-care skills and the ability to cope with the stressful situation.[13]

Regarding the relationship of these disorders with other diseases, medication use and medical leaves, a number of studies show that individuals with mental disorders have an increased prevalence of smoking, physical inactivity and excessive alcohol consumption, which can trigger other diseases.[28]

An unexpected result we found was the relationship between anxiety and the Buddhist or Spiritism religion, as a literature review pointed out that spirituality is a protective factor against psychological distress. Therefore, we believe that our results may have been spurious and should be confirmed in other samples.[27]

These mental disorders were also related to the individuals' QoL. Another study that investigated the relationship between QoL and stress found that the higher the QoL, the lower the stress level.[17] A study including 149 medical students at a public university in Malaysia showed that those with depressive symptoms were associated with lower physical, psychological and environmental scores in the QoL domains ($p<0.05$) and that the individuals with anxiety obtained lower psychological, social and environmental scores ($p<0.05$).[29] A number of researchers that analyzed 479 students from Saudi Arabia showed that the QoL domains were negatively correlated with the perceived stress scores, with correlations ranging from - 0.27 to - 0.58 ($p<0.0001$), which shows that better QoL was associated with low stress levels.[30]

Another study evidenced that students attending Health Sciences courses had mean scores around 50 in all SF-36 domains, with the worst score in the emotional role domain and the best score in the physical functioning domain, with anxiety and depression having a negative correlation with QoL.[31]

The domain with the best QoL score was physical functioning, and vitality was the one with the worst score. A prospective longitudinal study conducted with Nursing students showed that the domains with the best and worst scores were functional capacity and vitality, respectively.[15] Physical functioning is an individual's ability to perform physical activities of daily living, and vitality corresponds to a person's energy status, i.e., the well-being or fatigue state.[11] These results may have been identified because the sample consisted of young adults. On the other hand, the low score in the vitality domain translates the feeling of constant tiredness, which can be a reflection of daily activities and the demands of a higher education course in the health area with such an extensive workload, development of practical skills, and involvement with patients' stories.[11] One of the possible explanations for this result is due to the sociodemographic characteristics and the levels of anxiety, stress and depression symptoms in this sample.

This study may contribute for institutional policies to be planned. Early identification of depression, anxiety and stress symptoms aligned with psychological support policies in universities can contribute to improving QoL in Nursing professionals, as well as to reducing sick leaves due to mental illness. Monitoring the evolution of students with these disorders may prevent prolonged medication use and, consequently, drug dependence.

The study is limited by a punctual assessment of anxiety and depression symptoms, without monitoring the possible variations throughout the course. In addition, the research focused on a single undergraduate Nursing course. Another limitation was that, although most undergraduate students were approached, the sample consisted of only 54.74% of them, which can be a limiting factor for the characteristics recorded in the current study. The difficulty accessing senior students also contributed to this factor. Most of them were performing internship activities, thus hindering access to data collection.

CONCLUSION

Most of the students had mild anxiety, followed by moderate anxiety. In those diagnosed with depression, the majority presented severe symptoms. In students without a medical diagnosis of depression, most showed no symptoms. The lowest QoL scores were identified on the vitality and emotional role functioning domains.

Higher stress levels were related to sociodemographic (longer distance from the house to the university, not having a partner, household income below three minimum wages, subsidized housing) and clinical (having medical leaves during the course and medication use) characteristics, as well as to lower scores in the QoL domains (physical functioning, physical role functioning, emotional role functioning, vitality, mental health, social role functioning, bodily pain, and general health perceptions).

Higher anxiety levels were related to sociodemographic (younger age, longer distance from the house to the university, Buddhist/ Spiritism religions and others when compared to Catholic, not having a partner, not being the income provider, and not performing paid activity) and clinical (having diseases, medication use, and having medical leaves during the course) characteristics, as well as to lower scores in the QoL domains (physical role functioning, physical functioning, bodily pain, general health perceptions, vitality, social role functioning, emotional role functioning, and mental health).

Higher depression levels were related to sociodemographic (longer distance from the house to the university, subsidized housing, and not performing any paid activity), academic (not participating in extracurricular activity) and clinical (using medications and medical appointments needed during the course) characteristics, as well as to lower scores in the QoL domains (physical functioning, physical role functioning, bodily pain, general health perceptions, vitality, social role functioning, emotional role functioning and mental health).

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