NURSING STUDENTS: ASSOCIATION BETWEEN STRESS, SOCIODEMOGRAPHIC AND ECONOMIC FACTORS AND COURSE TIME

ACADÊMICOS DE ENFERMAGEM: ASSOCIAÇÃO ENTRE ESTRESSE, FATORES SOCIODEMOGRÁFICOS, ECONÔMICOS E TEMPO DE CURSO

Nicásio Urinque Mendes [1], Natatcha Alexandrino Silva de Paiva , Letícia Pereira Felipe[3], Davide Carlos Joaquim[4], Rodolfo de Melo Nunes[5] , Ana Caroline Rocha de Melo Leite[6*]

[1]PhD student in the Postgraduate Program in Nursing at the Federal University of Santa Catarina (UFSC), Florianópolis (SC), Brazil; [2]Nurse graduated from the University of International Integration of Afro-Brazilian Lusophony (Unilab), Redenção (CE), Brazil; [3]Nurse graduated from University of International Integration of Afro-Brazilian Lusophony (Unilab) and resident in Neurology and High Complexity Neurosurgery at the School of Public Health (ESP), Fortaleza (CE), Brazil; [4]Nurse graduated from the University of International Integration of Afro-Brazilian Lusophony (Unilab) and post-doctorate student of the Postgraduate Program in Veterinary Sciences at the State University of Ceará (UECE), Fortaleza (CE), Brazil; [5]Pharmacist graduated from the Federal University of Ceará (UFC), PhD in Medical Sciences from UFC and Professor at the Fametro University Center (Unifametro), Fortaleza (CE), Brazil; [6]Dentist graduated from the Federal University of Ceará (UFC), PhD in Medical Sciences from UFC and professor and advisor of the Postgraduate Program in Nursing at University of International Integration of Afro-Brazilian Lusophony (Unilab, Redenção (CE), Brazil.

*Corresponding author: Ana Caroline Rocha de Melo Leite – Email: acarolmelo@unilab.edu.br.

ABSTRACT: Aim: To associate stress, sociodemographic and economic aspects and course time of nursing graduates of different nationalities at an international federal university. Methodology: This is an analytical and cross-sectional observational research with Brazilian and foreign academics at the beginning, middle, and end of the nursing course at a federal and international university in 2019. After consent, a questionnaire and tool on stress were applied. Results: Of the 103 participants from the first, fifth, and tenth semesters, 46.81%, 61.54%, and 47.06% had a high level of stress, respectively. Among students in the fifth semester, a significant association was observed between being a Brazilian student and exhibiting a high level of stress, as well as being female and exhibiting a high level of stress. Conclusions: Undergraduates from all semesters had a high level of stress. Its presence, level, and domain were associated with the student's nationality, gender, age, and current semester.

KEYWORDS: Nursing Students. Psychological Stress. Socioeconomic Factors. Universities.

RESUMO: Objetivo: Associar estresse, aspectos sociodemográficos e econômicos e tempo de curso de graduandos de enfermagem de diferentes nacionalidades de uma universidade federal de cunho internacional. Metodologia: Trata-se de uma pesquisa observacional analítica e transversal com acadêmicos brasileiros e estrangeiros do início, meio e fim do curso de enfermagem de uma universidade federal e internacional, no ano de 2019. Após consentimento, aplicaram-se questionário e instrumento sobre estresse. Resultados: Dos 103 participantes do primeiro, quinto e décimo semestres, 46,81%, 61,54% e 47,06% apresentaram alto nível de estresse, respectivamente. Dos estudantes do quinto semestre, observou-se associação significativa entre ser estudante brasileiro e exibir alto nível de estresse, bem como ser do sexo feminino e apresentar alto nível de estresse. Conclusões: Graduandos de todos os semestres apresentaram nível elevado de estresse. A presença desse, seu nível e domínio se associaram à nacionalidade, sexo, idade e semestre em curso dos estudantes.

PALAVRAS-CHAVE: Estresse Psicológico. Estudantes de Enfermagem. Fatores Socioeconômicos. Universidades.

INTRODUCTION

Resulting from personal, social, professional and academic pressures, stress is a condition characterized by the suffering of the individual, which can manifest itself in a physical and/or psychological way. Occurring especially in early adulthood, this phenomenon is striking when entering University,[1] a moment in which numerous changes are experienced. This situation can be aggravated with the completion of the course, as a consequence of the tension in entering the labor market.[1]

In the epidemiological context, research indicates that 75.0% and 12.0% of university students are affected by moderate and high stress, respectively.[2] Other studies also report prevalence of stress in 26.0% and 49.1% of medical students in the United States and Malaysia, respectively. For Thailand and Nigeria, the figures correspond to 61.4% and 94.2%, respectively.[3]

Regarding risk factors, stress among higher education students has been associated with personal, financial, and academic issues, as well as environmental and lifestyle changes. For undergraduate students in health courses, including the nursing course, these factors include clinical practice, direct contact with patients and psychological suffering, in addition to the constant supervision of instructors, fear of making mistakes and feelings of inadequacy.[1,4] These challenges are often compounded by a lack of knowledge and skills, as well as a lack of familiarity with the patient's history, diagnosis, and treatment.[5] For foreign students, the susceptibility to stress can be exacerbated by the circumstance in which they live, characterized by challenges with the language, economic difficulties, discrimination, culture shock and problems with interpersonal relationships.[6]

In particular, despite the relevance and vulnerability of nursing students to stress, the literature acknowledges the lack of studies that assess its prevalence in this population.[7] As a result, it may compromise the execution of research that investigates the level of stress and its risk factors among these students, including the factors represented by sociodemographic and economic aspects and the course time.

In view of the above, this study aimed to associate stress, sociodemographic and economic aspects and course time of nursing undergraduate students of different nationalities at an international federal university.

METHODOLOGY

This research is observational, analytical, cross-sectional and quantitative, conducted with Brazilian and foreign students from the University for International Integration of the Afro-Brazilian Lusophony (UNILAB). The study was carried out from January to December 2019, at the Auroras Campus and Palmares Academic Unit, located in the municipalities of Redenção and Acarape, respectively.

Brazilian and foreign students attending the beginning (1st semester), middle (5th semester) or end (10th semester) of the nursing course at UNILAB in the academic periods of 2019.1 and 2019.2 were included in the study. As an exclusion criterion, we established being a student younger than 18 years old.

After planning with the professors responsible for the classes of interest in the research, the project was presented to the students in their respective classrooms, and, once participation was accepted, they read and signed the Informed Consent Form (ICF). Soon after, they were asked to fill out a questionnaire, prepared by the project team, containing objective questions related to sociodemographic and economic aspects.

Subsequently, the students responded to the stress-related questionnaire (modified by Costa and Polak),[4] which included the following points: domain 1 – time management; domain 2 – environment; domain 3 – professional training; and domain 4 – theoretical activity. Each item in the domains scored from 0 to 3, corresponding to: 0 – absence of stress; 1 – low level of stress; 2 – moderate level of stress; and 3 – high level of stress.

It is noteworthy that, in this study, nationality, gender, age, marital status, and income (individual and family) were adopted as independent variables. The level of stress was considered as a dependent variable.

The data obtained were organized in Excel for Windows, version 2016, and analyzed using the Epi Info software, version 7.2.1.0. We carried out descriptive analysis, obtaining the relative and absolute frequencies of the categorical variables, as well as a measure of central tendency (arithmetic mean) and dispersion (standard deviation) for the quantitative variables. To evaluate the relationship between categorical variables, we applied the Chi-Square test or Fisher's Exact Test. A significance level of $P < 0.05$ was adopted.

The ethical principles of scientific research were observed, which expresses concern with the ethical dimension, ensuring confidentiality and absence of physical, financial or emotional harm to the researched and all the guarantees to the participant, recommended by the National Commission of Ethics and Research (CONEP, in Portuguese). The project was submitted to and approved by the Research Ethics Committee of UNILAB, according to report number 2.522.537.

RESULTS

A total of 103 nursing students in the 2019.1 and 2019.2 academic periods participated in the study. In the 2019.1 academic period, 44 students were part of the sample, of which 22 were in the 1st semester, 18 in the 5th semester, and 4 in the 10th semester. For the 2019.2 academic period, 59 students were included, of which 25 were in the 1st semester, 21 in the 5th semester, and 13 in the 10th semester. For the following results, the number of students per semester was calculated by adding the values achieved in each academic period, obtaining a total of 47 students in the 1st semester, 39 in the 5th semester, and 17 in the 10th semester.

Of the students in the first semester, whose mean age was 21.32 (± 4.37) years, 29 (61.70%) were Brazilian, 42 (89.36%) were female and 45 (95.74%) did not have a partner. When assessing the parents' education, 14 (29.79%) participants reported that their father had a high school degree and 14 (29.79%) reported that their mother had incomplete elementary school. Regarding the parents' profession, 8 (17.02%) students stated that their father was a farmer and 22 (46.81%) mentioned that their mother was a housewife. As for individual and family income, 29 (61.70%) and 25 (53.19%) students had individual and family income of up to 1 minimum wage, respectively.

Regarding the students in the fifth semester, whose mean age was 22.18 (± 2.98) years, 27 (69.23%) were Brazilian, 29 (74.36%) were female and 36 (92.31%) did not have a partner. When assessing the parents' education, 11 (28.21%) participants reported that their father had a high school degree and 15 (38.46%) reported that their mother had a high school degree. Concerning the parents' profession, 8 (20.51%) students stated that their father was a farmer and 12 (30.77%) mentioned that their mother was a housewife. As for individual and family income, 23 (58.97%) and 16 (41.03%) students had individual and family income of up to 1 minimum wage, respectively.

Concerning the tenth semester students, whose mean age was 25.94 (± 4.38) years, 11 (64.71%) were Brazilian, 12 (70.59%) were female and 14 (82.35%) did not have a partner. When assessing the parents' education level, 4 (23.53%) participants reported that their father had incomplete elementary school and 6 (35.29%) reported that their mother had a high school degree. Regarding the parents' profession, 2 (11.76%) students stated that their father was a farmer and 7 (41.18%) mentioned that their mother was a housewife. As for individual and family income, 9 (52.94%) and 7 (41.18%) students had individual and family income of up to 1 minimum wage and more than 1 and less than 2 minimum wages, respectively.

Regarding the overall stress level score of the first-semester students, 22 (46.81%) of them presented a high stress level. Concerning the level of stress by domain, 20 (42.55%) students exhibited a high stress level in domain 1. For domains 2, 3 and 4, 21 (44.68%), 17 (36.17%) and 20 (42.55%) participants manifested a medium stress level, respectively.

In relation to the overall stress level score of the fifth-semester students, 24 (61.54%) of them presented a high stress level. Regarding the level of stress by domain, 25 (64.10%), 18 (46.15) and 16 (41.03%) students exhibited a high stress level in domains 1, 3 and 4, respectively. For domain 2, 16 (41.03%) participants manifested a medium stress level.

As for the overall stress level score of the tenth-semester students, 8 (47.06%) of them presented a high stress level. Regarding the level of stress by domain, 10 (58.82%) and 7 (41.18%) students exhibited a high stress level in domains 1 and 3, respectively. For domains 2 and 4, 12 (70.59%) and 8 (47.06%) participants manifested low and medium stress levels, respectively.

When analyzing the relation between sociodemographic and economic aspects and the low level of stress of first-semester students, we observed a significant association between being a Brazilian student and not having a low level of stress ($p = 0.025$). For the other semesters, no statistical differences were found ($p > 0.05$) (Table 1).

Table 1 – Association between sociodemographic and economic aspects and low stress level of students in the first, fifth and tenth semesters. Acarape and Redenção – CE, Brazil, 2019

Variable	Low stress level		P value
	Yes N (%)	No N (%)	
1st semester			
Nationality (n = 47)			
Brazilian	0 (0.00)	29 (100.00)[*]	0.025
Foreign	3 (16.67)	15 (83.33)	
Gender (n = 47)			
Female	3 (7.14)	39 (92.86)	0.707
Male	0 (0.00)	5 (100.00)	
Age (n = 47)			
≤ 24 years	2 (5.00)	38 (95.00)	0.391
> 24 years	1 (14.29)	6 (85.71)	
Marital status (n = 47)			
Has a partner	0 (0.00)	2 (100.00)	0.875
Doesn't have a partner	3 (6.67)	42 (93.33)	
Individual income[a] (n = 47)			
≤ 1 minimum wage	2 (4.76)	40 (95.24)	0.243
> 1 minimum wage	1 (25.00)	3 (75.00)	

Variable	Low stress level		P value
	Yes N (%)	No N (%)	
Family income[a] (n = 47)			
≤ 1 minimum wage	2 (6.67)	28 (93.33)	0.706
> 1 minimum wage	1 (5.88)	16 (94.12)	
5th semester			
Nationality (n = 39)			
Brazilian	1 (3.70)	26 (96.30)	0.526
Foreign	1 (8.33)	11 (91.67)	
Gender (n = 39)			
Female	2 (6.90)	27 (93.10)	0.547
Male	0 (0.00)	10 (100.00)	
Age (n = 39)			
≤ 24 years	1 (3.03)	32 (96.97)	0.287
> 24 years	1 (16.67)	5 (83.33)	
Marital status (n = 39)			
Has a partner	0 (0.00)	3 (100.00)	0.850
Doesn't have a partner	2 (5.56)	34 (94.44)	
Individual income[a] (n = 39)			
≤ 1 minimum wage	1 (2.78)	35 (97.22)	0.149
> 1 minimum wage	1 (33.33)	2 (66.67)	
Family income[a] (n = 39)			
≤ 1 minimum wage	0 (0.00)	15 (100.00)	0.372
> 1 minimum wage	2 (8.33)	22 (91.67)	
10th semester			
Nationality (n = 17)			
Brazilian	1 (9,09)	10 (90,91)	0,595
Foreign	1 (16,67)	5 (83,33)	
Gender (n = 17)			
Female	0 (0.00)	12 (100.00)	0.073
Male	2 (40.00)	3 (60.00)	
Age (n = 17)			
≤ 24 years	0 (0.00)	9 (100.00)	0.205
> 24 years	2 (25.00)	6 (75.00)	
Marital status (n = 17)			
Has a partner	0 (0.00)	3 (100.00)	0.669
Doesn't have a partner	2 (14.29)	12 (87.71)	
Individual income[a] (n = 17)			
≤ 1 minimum wage	1 (7.69)	12 (92.31)	0.426
> 1 minimum wage	1 (25.00)	3 (75.00)	
Family income[a] (n = 17)			
≤ 1 minimum wage	0 (0.00)	4 (100.00)	0.573
> 1 minimum wage	2 (15.38)	11 (84.62)	

[a]Monthly income; *Fisher's exact test.

When analyzing the relation between sociodemographic and economic aspects and the high stress level of first-semester students, there was no significant association between these variables ($p > 0.05$). For fifth-semester students, we observed a significant association between being a Brazilian student and exhibiting a high stress level ($p = 0.001$), as well as being female and presenting a high stress level ($p = 0.032$). For tenth-semester students, we found a significant association between being a student aged 24 years or younger and having a high stress level ($p = 0.044$) (Table 2).

Table 2 – Association between sociodemographic and economic aspects and the high stress level of students in the first, fifth and tenth semesters. Acarape and Redenção – CE, Brazil, 2019.

| Variable | High stress level | | P value |
	Yes N (%)	No N (%)	
1st semester			
Nationality (n = 47)			
Brazilian	19 (65.52)	10 (34.48)	0.155
Foreign	8 (44.44)	10 (55.56)	
Gender (n = 47)			
Female	25 (59.52)	17 (40.48)	0.356
Male	2 (40.00)	3 (60.00)	
Age (n = 47)			
≤ 24 years	24 (60.00)	16 (40.00)	0.143
> 24 years	3 (42.86)	4 (57.14)	
Marital status (n = 47)			
Has a partner	2 (100.00)	0 (0.00)	0.324
Doesn't have a partner	25 (55.56)	20 (44.44)	
Individual income[a] (n = 47)			
≤ 1 minimum wage	23 (54.76)	19 (45.24)	0.410
> 1 minimum wage	3 (75.00)	1 (25.00)	
Family income[a] (n = 47)			
≤ 1 minimum wage	16 (53.33)	14 (46.67)	0.448
> 1 minimum wage	11 (64.71)	6 (35.29)	
5th semester			
Nationality (n = 39)			
Brazilian	25 (92.59)*	2 (7.41)	0.001
Foreign	5 (41.67)	7 (58.33)	
Gender (n = 39)			
Female	25 (86.21)*	4 (13.79)	0.032
Male	5 (50.00)	5 (50.00)	
Age (n = 39)			
≤ 24 years	27 (81.82)	6 (18.18)	0.122
> 24 years	3 (50.00)	3 (50.00)	
Marital status (n = 39)			
Has a partner	3 (100.00)	0 (0.00)	0.444
Doesn't have a partner	27 (75.00)	9 (25.00)	
Individual income[a] (n = 39)			
≤ 1 minimum wage	29 (80.56)	7 (19.44)	0.127
> 1 minimum wage	1 (33.33)	2 (66.67)	

Variable	High stress level		P value
	Yes N (%)	No N (%)	
Family income[a] (n = 39)			
≤ 1 minimum wage	10 (66.67)	5 (33.33)	0.207
> 1 minimum wage	20 (83.33)	4 (16.67)	
10th semester			
Nationality (n = 17)			
Brazilian	7 (63.64)	4 (36.36)	0.246
Foreign	2 (33.33)	4 (66.67)	
Gender[b] (n = 17)			
Female	3 (73.00)	1 (25.00)	-----
Male	4 (40.00)	6 (60.00)	
Age (n = 17)			
≤ 24 years	7 (77.78)*	2 (22.22)	0.044
> 24 years	2 (25.00)	6 (75.00)	
Marital status (n = 17)			
Has a partner	2 (66.67)	1 (33.33)	0.547
Doesn't have a partner	7 (50.00)	7 (50.00)	
Individual income[a] (n = 17)			
≤ 1 minimum wage	6 (46.15)	7 (53.85)	0.335
> 1 minimum wage	3 (75.00)	1 (25.00)	
Family income[a] (n = 17)			
≤ 1 minimum wage	2 (50.00)	2 (50.00)	0.664
> 1 minimum wage	7 (53.85)	6 (46.15)	

[a]Monthly income; *Fisher's exact test.

DISCUSSION

This study was the first to compare and associate sociodemographic and economic factors and the stress of Brazilian and foreign students at the beginning, middle or end of the nursing course at a Brazilian university of international nature. Based on the results obtained, actions aimed at helping students cope with the stress experienced by them can be better conducted, considering the current semester, which may interfere with the health, quality of life and academic and professional training of those involved.[5]

When analyzing the data of this research, specifically with regard to the average age of the university students, the value obtained in each of the semesters, in general, was not higher than the predominant age range of freshmen in the Federal Institutes of Higher Education (IFES, in Portuguese), which corresponded to the ages of 18 to 24 years, between 2013 and 2018.[8] This result may suggest an earlier entry of the participants into the University and/or a greater dedication to the course, since, even with the advancement of the undergraduate course, the average student age in the 10th semester approached that recorded by students who entered higher education in the 2013-2018 period.

Regarding the predominance of students of Brazilian nationality, regardless of the semester evaluated, this finding may result from the increase in the number of vacancies offered to these students for admission to UNILAB over the years. It is also possible that this predominance was due to the greater

number of Brazilian academics at UNILAB (3,463 Brazilians versus 1,156 foreigners),[9] associated with a probable greater interest in participating in research.

For the larger number of female participants in all the semesters surveyed, this phenomenon corroborates the dominance of women observed among undergraduate students in UNILAB[9] and higher education institutions in different countries[5]. This situation may be associated with the need for the insertion of the female public in the labor market, in addition to their predominance in the nursing course.[10]

As for the greater evidence of undergraduate students who did not have a partner, regardless of the semester analyzed, this result is consistent with the profile of university students presented by Bresolin et al.[11] This finding can be understood considering the tendency of university students to live with their parents or other family members until the conclusion of their studies. This circumstance may be related to these students' low purchasing power, as a result of not engaging in gainful occupation, which may make it impossible for them to be financially independent.[1]

When the parents' level of education is analyzed, the fact that the fathers of the participants in the tenth semester had a lower educational level in relation to the mothers may be a remnant of the historical role of "head of the family" assumed by the man, centralizing the provision of the home in the latter[12] and, probably, compromising their dedication to schooling. For the first semester, the higher level of education of fathers compared to mothers may be a remnant of the woman's attribution to dedicate herself to the home and to childcare and of her subordination to the man.[13] Regarding the fifth semester, equality in the education level of fathers and mothers can be a result of the transition between sexism and feminism experienced by society.

In general, the considerable number of parents who had only a basic level of education can be understood if we consider the difficulties of access to higher education experienced in developing countries and, above all, African countries.[14] In Brazil, the great educational evolution, represented by the expansion of higher education institutions and access to them, has only occurred in the last two decades,[15] which may not have affected the fathers and mothers of the participants.

In the case of the Portuguese-Speaking African Countries (PALOP, in Portuguese), this growth is incipient, which is the basis for the low education level exhibited by the students' parents. This phenomenon may have been the reason why their children turned to educational institutions in other countries, notably Portugal and Brazil, due to linguistic convergence.[16]

In this context, the low education level of fathers and mothers may have influenced the type of employment and, consequently, the individual and family income of the students. In fact, the literature suggests that parents with a higher education level tend to have a higher income.[17]

In particular, for the prominence of the farming profession for the students' fathers, regardless of the semester analyzed, this information may be related to UNILAB's location in the Baturité Massif, whose agricultural sector contributes with about 15.33% of the Gross Domestic Product (GDP).[18] For foreign students, this finding may be linked to the important role that the agricultural sector assumes in the economic scenario of African countries, especially the PALOP countries.[19] For the marked presence of mothers who were housewives, this result may be related to the role that was/is attributed to them of naturally taking care of the children.[13]

Regarding individual and family income, the value mentioned by the university students, which did not exceed 2 minimum wages, corroborates the data described in the V National Survey of Socioeconomic and Cultural Profile of IFES Undergraduates – 2018.[8] According to the survey, most students had a gross monthly family income of up to 2 minimum wages, both in the context of Brazil and the Northeast Region.

Analyzing the general stress level among the participants, the highest proportion of students who presented a high level, regardless of the semester, was similar to Urbanetto et al.[20] This finding can be explained if we consider that, for undergraduate students who are new to the course, stress may be linked to the sudden change in their routine to adapt to the university environment.[21] For students in the fifth and tenth semesters, this phenomenon may derive from the daily pressures to which they are exposed, as well as from the responsibility that the act of caring represents and from frequent contact with human suffering.[22]

When assessing the associations between nationality and stress, the fact that Brazilian students did not exhibit a low level of stress, even presenting a high level among the students of the fifth semester, was an unexpected finding if we consider the various circumstances to which foreign university students are subjected. In fact, foreign students experience different situations favorable to the development of stress, such as: change of reality; difficulty with the language that, in the present study, although less accentuated because it is the official language of the participants' countries, evidences some differences, such as the accent of some terms, associated with the fact that many only have contact with Portuguese in schools; the family distance that, despite being experienced by the Brazilian students of this research due to the policy of interiorization, is more intense among foreign academics.[23]

Another reason that may justify the above result is the greater preparation of the foreign undergraduates, represented by Africans, to face adversities, including stressors. This assumption can be based on African people's experience of civil conflicts, which led to the emergence of numerous barriers to education access, including the journey of great distances and the difficult access to means of transportation to schools, which can minimize situations that generate stress for these students.[24]

The results also showed a significant association between being a tenth-semester undergraduate aged less than or equal to 24 years and expressing a high stress level, a situation that reaffirms the relation between this health condition and the age group. For this finding, the immaturity of these participants can be proposed as a possible responsible factor, especially if we consider the insecurity they experience in their training process and the fear related to their imminent entry into the labor market.[25]

Regarding the association between being female and a fifth-semester student and exhibiting a high stress level, it emphasizes the fact that, in different situations, women are more sensitive to stress.[26] This profile of vulnerability draws attention to the need to implement public and educational policies aimed at reducing the prevalence of this condition in the female public.

When analyzing stress according to the domains, specifically for domain 1, which encompasses time management, the study found that a considerable number of participants, particularly those in the fifth and tenth semesters, had a high stress level. This occurrence can be explained by the fact that the nursing course at UNILAB, as well as in most Brazilian federal universities, is a full-time course, compromising the time dedicated to family members, social life, leisure and rest. Differently from what was observed here, the study by Urbanetto[20] showed that 60% of nursing students at a private university had a low stress level in domain 1.

In view of this reality, it is necessary to introduce time management strategies, as well as teach them in medical schools. This demand is especially important, since stress can be linked to psychological problems (such as emotional instability, depression, and lack of energy), high expression of negative feelings, poor quality of life, and suicide.[10]

Regarding the second domain, which encompasses the environment, notably the commute from the residence to the University and places of practice, the concentration of students who exhibited low and medium stress levels, among the different semesters, can be understood based on the policy of university interiorization. Often, this requires the academics, including Brazilians, to establish residence

in the municipalities close to the University, especially Redenção and Acarape, minimizing the need to use transportation to commute to the UNILAB campuses.

In addition, UNILAB offers intercampus transportation, optimizing the movement of students from their place of residence to the University and between university campuses. The aforementioned educational institution also provides transportation to the campuses for internships and practical classes.

Contrary to what was found here, the research by Dias[27] found that most nursing students reported stress related to the environment due to the difficulties experienced in transportation to the University and internship locations, as well as the distance they had to travel from their homes to the higher education institution.

As for domain 3, related to professional training, the emphasis on the high stress level among the participants in the fifth and tenth semesters suggests a concern with their professional future, which may result, in addition to the responsibility undertaken in health, from greater access to higher education and, consequently, an increase in the number of professionals in the labor market. This elevation triggers a greater demand on the graduated individual, requiring, in addition to the diploma, a diversity of skills and competencies.[28]

In particular, for the student who is more advanced in the course, it is possible to understand the presence of this type of stress due to experiencing a period of transition between academic life and the conclusion of graduation, marked by the search and insertion in the job market.[28]

Regarding the greater number of participants in the first semester who presented a lower stress level in their domain 3, when compared to the fifth and tenth semesters, this phenomenon may take place due to the fact that they were at the beginning of their undergraduate studies, a moment dedicated to adapting to higher education and discovering the course and professional activity. Therefore, the closer to the end of the course, the higher the number of students affected by stress.[29]

Concerning domain 4, which encompasses the assimilation and evaluation of the theoretical content, the considerable number of students in the fifth semester who presented a high level of stress may be associated with the fact that it is a semester of transition between the basic disciplines of the health courses and the specific disciplines of the nursing course, in addition to the extensive workload of these disciplines.[30]

For the medium stress level found in a relevant portion of students in the first and tenth semesters, this event may be due to a lower theoretical content addressed in the classroom, which, for university students in the last semester, is understandable due to their dedication to internships and residences.

It is also likely that this finding results from how the professors evaluate the contents discussed in these semesters, which, for those in the beginning of the course, can be characterized by the development of group work, avoiding the "theoretical tests", considered as one of the main triggers of stress among undergraduate students.[27] For those waiting for the end of the course, the theoretical test may be replaced by a practical grade assigned by the professor or the professional who oversees the student.

Regarding the limitations of the study, the greatest one evidenced was the small number of foreign students, which made it impossible to compare nationalities. The same can be said in relation to the university students in the last semester.

CONCLUSION

Based on the results obtained, we can conclude that, with regard to stress, the general evaluation showed a high level in all semesters studied. Regarding the domains, despite the high stress level in the domain related to time management among all participants, the tenth-semester undergraduates exhibited a lower state of stress in the domains related to the environment and theoretical activity. In addition, the students in the first semester presented a lower stress condition related to professional training than the other students.

Concerning the relation between sociodemographic and economic aspects and stress, Brazilian nationality was associated with stress among university students in the first and fifth semesters. For the latter, the female gender also interfered in the stress level and, for the tenth-semester undergraduates, the association involved being less than or equal to 24 years of age.

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