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INFLUENCE OF STRESS ON ACADEMIC PERFORMANCE IN UNIVERSITY STUDENTS

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Abstract: Introduction: During their academic training, university students are concerned about their academic performance in each subject, which allows them to gain an understanding of the reality of education. However, worrying about obtaining the highest possible grades can lead to various problems, one of which is stress. Therefore, the objective is to determine whether there is a relationship between the degree of academic stress and academic performance. Methodology: The sample was a convenience sample of 130 students enrolled in a nursing degree program. The instrument used was the Academic Stress Inventory (INVEA), which consists of 50 items designed to assess susceptibility to stress and academic performance. Results: The instrument used shows a Crombach's Alpha of .821. The average age is 19±1.6, with 71% women and 29% men. A correlation was identified between susceptibility to stress and academic performance, and the academic context and stress could intervene depending on the academic level. Discussion: Considering the scientific evidence, one would expect to find that the higher the degree of academic stress, the lower the school performance. Studies reveal that academic demands and overload influence the development of stress, which directly affects the performance of school activities. Conclusion: There is a positive correlation between susceptibility to stress and the academic context.
Keywords: Stress, Student, Education, School performance

INTRODUCTION

Throughout their academic careers, students experience constant stress due to the various academic activities they undertake, depending on the year, subject, or degree program they are pursuing. Selye (1973) explains that stress can be a reaction of the neural system through the endocrine system, where the immunology and behavior of different organisms in response to any situation that occurs in our environment generates interference that can jeopardize balance in various circumstances.

In this regard (Nsengimana et al; 2023) mention that young people studying for a university degree in the health field suffer from some degree of stress as part of their academic training, which affects their quality of life, particularly in terms of sleep and rest. They also believe that sleep and rest are essential for performing daily activities and fundamental to academic life, in addition to eating and going to the bathroom, influencing the mental health of university students.

Furthermore, Pittman and Richmond (2008) explain various theories that can trigger stress. The first mentions that life can be stressful for everyone, the second that changing from one academic level to another can be significant, and the third that university can present more important factors than other levels, such as being more independent from the family.

McKerrow et al. (2020) mention that stress in students pursuing a degree in the health field directly affects academic performance, as well as diet and sleep.

(O'Toole, 2020) states that nursing is considered a career with high rates of stress, anxiety, and depression among young people due to the academic requirements for course accreditation and clinical practice. (Deli and Rajastan, 2020) show that nursing students in India suffer from moderate stress, with 77% and 82% of the population studied reporting stress.

Thus (Márquez, Gutiérrez, Granados, & Aguilera, 2020) explain that psychological well-being is essential for nursing students, as they are responsible for supporting people in their recovery and care, as well as reducing errors or complications in nursing care.

It is important to mention that (Snyder, Young, and Hanking, 2019) state that stress can lead to some degree of anxiety, depression, suicide, or some other anxiety-related problem that will lead to mental health issues.

(Turce, et al 2020) stated that the presence of a psychological condition, such as anxiety, depression, or emotional exhaustion, can be factors related to academic performance in students, particularly those pursuing a career in the health field.

(Maes, Neleman Dannel 2019) state that some types of mental health disorders can be concerning, as they could be associated with various negative occupational and academic outcomes, increasing the risk of dropping out of school.

In contrast, Ko and Chang (2019) state that people who adapt to stressful situations tend to develop greater satisfaction upon completing their university studies, favoring more effective work by being active in the development of academic work.

METHODOLOGY

A descriptive, analytical, cross-sectional study was conducted. The sample was obtained at convenience from 130 students enrolled in the first, second, and third years of the nursing program at the Zaragoza UNAM Faculty of Higher Studies during the period of January-February 2024.

The Helsinki Declaration was taken into account, as this study does not present any risk in terms of confidentiality, maintaining the protection and confidentiality of each participant at all times.

The inclusion criteria were students enrolled in the first, second, and third years of the nursing degree program. The exclusion criteria were students with irregular attendance, those who requested temporary leave during the study, or those who were repeating the school year.

INSTRUMENT:

The INVEA questionnaire (Academic Stress Inventory), designed by (Mazo, Londoño, Gutiérrez, 2009), was used to collect the data and was requested from the author electronically. The original version of the instrument is in Spanish and consists of 50 questions with a five-point Likert scale (1 to 5, where 1 is strongly disagree and 5 is strongly agree). The first 25 questions measure susceptibility to stress and the remaining questions measure susceptibility to the academic context. According to the author, the average score obtained on both scales was taken as the degree of academic stress.

The instrument was administered in printed form, after reading the informed consent form, preserving the anonymity of each participant and explaining the instructions for completing it.

A content validity and confidence level of Alpha de Crombach.821, which was considered acceptable for this research.

Descriptive measures, measures of central tendency, and measures of dispersion were used to analyze the data, which was coded using the SPSS statistical package, version 21.

RESULTS

The study population consisted of 130 nursing students, with women accounting for the majority of respondents, as shown in Table 1.

Variable	Fo%
Age	19±1.6
Age group	
17-23	128 (98%)
24-29	2 (2%)
Gender	
Female	92 (71%)
Male	38 (29%)
Year of study	
1st year	70 (54%)
2nd year	37 (28%)
3rd year	23 (18%)
High school of origin	
Public	122 (94%)
Private	8 (6%)

Table 1 Sociodemographic variables

*Average ± SD

To identify the correlation between the distribution of data for the variables susceptibility to stress, academic context, and degree of stress, the Kolmogorov-Smirnov test was used, identifying a normal distribution in the three variables P>0.05. Table 2.

		Susceptibility to stress	Academic context	Degree of academic stress
N		130	130	130
Parameters Average		76.61	77.83	154.4
Normal Deviation Standard		9.012	10.100	16,626
Most extreme differences	Absolute	0.56	0.80	.053
	Positive	0.56	0.80	.053
	Negative	-0.35	-0.50	-.044
Kolmogorov-Smirnov Z		.633	.908	.690
Sig. asymptotic (bilateral)		.817	.382	.852

Table 2 Data distribution

*Kormogorov-Smirnov test Pearson correlation

To identify internal consistency, Pearson's r statistic was used. The results showed that the items in the stress susceptibility and academic context dimensions correlate positively, identifying a P value equal to .512 with a confidence level of p< 0.05, indicating significant relevance between these two variables. Table 3.

		Susceptibility to stress	School context
Susceptibility to stress	Pearson correlation Pearson	1	.512
	Sig (bilateral)		.000
	N		130
School context	Correlation Pearson	.512	1
	Sig (two-tailed)	.000	
	N	130	

Table 3. Relationship between school context scores and susceptibility to stress.

For the variables degree of stress and academic context, Pearson's correlation was also found to be .885 with a significance level of P<0.05, indicating a significant relationship between the variables. Table 4.

		Degree of stress Academic	Academic context
Degree of academic stress	Pearson correlation Pearson	1	.885
	Sig (bilateral)		.000
	N		130
Academic context	Correlation Pearson	.885	1
	Sig (bilateral)	,000	
	N	130	

Table 4. Relationship between stress and academic context

When analyzing the variable "year of study," differences were found in the academic context in the second year. (F=3.512 ; gl=2 P<0.05) Table 5.

Variable	1st year	Second year	Third year
Susceptibility to stress	76±9	77±10	77±7
Academic academic	77±9	81±10	75±11
Academic	153±16	158±18	152±16

Table 5 Average year of study in relation to stress

One-way ANOVA with Dunnett post hoc test

* p<0.05

DISCUSSION

Stress can be harmful to students as it affects the time they devote to studying, leading them to develop habits that can have negative consequences and influence school dropout rates (Aafreen, Priya, and Gayathri, 2018).

(Parita, Rynjah, Joplin, and Kharjana 2014) believe that high levels of stress in this population can be a factor in decreased academic achievement. In this regard, Luque (2018) stated that academic performance can be influenced by stress levels, as in our results regarding the degree of stress and academic context.

On the contrary, Guerrero and Domínguez (2015) identified that stress does not significantly affect school performance, as it can only interfere with certain school activities, such as handing in assignments, taking exams, and giving oral presentations, among others.

Furthermore (Guerrero and Domínguez 2015), they state that academic stress can reach very high levels among higher education students and can be characterized by the increase in responsibilities that students must assume, individual and team work, midterm or modular evaluations, and final projects, which must be of excellence and quality. The factors mentioned above could be considered reasons why students might consider dropping out of school.

(Maajida, Vishnu, Gaythi 2018) indicate that low stress may not necessarily result in good performance regardless of the circumstances; some students may perceive the task at hand as unchallenging and consider it uncreative for their learning.

With regard to age, students younger than the average (22 years old) experience low stress 45% of the time, followed by medium and high stress, because the responsibilities of some may be influenced by the fact that they have to work or care for a family member (father, mother, sibling, grandparents, etc.).

Espinoza, Rodríguez, and Bermúdez (2020) show that as students get older, they take on or feel more responsible for new commitments assigned to them (studies, work, caring for a family member, etc.). Unlike our study, age did not influence stress levels.

On the other hand, Oketch-Obtoth and Odiemo (2018) highlight that older students seem to manage stress and academic performance better, minimizing the effects of stress on their academic achievement.

(Gutierrez, Garzón, and Segura 2021) state that males have lower academic performance than females. In contrast to our study, no relationship was found with regard to gender. On the other hand, (Morales, Quinchalef, Vera, Muñoz, and Contreras 2020) point out that women with high levels of anxiety may also be factors unrelated to the academic context.

(Ortiz-Lozona, Rua-Vieites, Bilbao-Calabuig, and Casadesús-Fa 2020) mention that academic performance can be measured in the early stages of university education by keeping a record for each year of study in order to prevent students from dropping out.

(Gómez-Vahos, Aguilar-Barreto, Espinoza--Castro 2018) state that it is important to consider variables that can influence academic performance, such as income, rather than the academic program or academic schedule.

(Liu, Li, and Ren, Zhou 2019) recommend that we take into account that there are various associations, and that rest, sleep, and mental health are fundamental to improving academic performance.

(Erazo 2013) adds that students who live with large families may be more likely to have low academic performance.

On the other hand, (Wenjuan and Xinquiao 2020) analyzed that women experience greater stress in the first year of school compared to men.

Almeida and Lasluisa (2020) state that academic stress occurs at moderate levels, associated with academic performance, and is a predictor of low academic performance. Licht-Ardila, Soto Gualdrón, and Ángulo-Rincón (2021) also analyzed the relationship between stress and academic performance, finding it to be very low and stating that the greater the stress, the lower the academic performance of students.

CONCLUSIONS

A positive correlation was identified between the degree of stress and the academic context, meaning that stress will influence the student's academic context.

It is important to consider other variables such as family income and family structure, as these would be independent of whether the learning programs are the best if these variables are not controlled.

According to the literature, stress has various repercussions in terms of illness and imbalance, variables that would also be important to measure in order to identify other ways in which stress can influence students.

Considering students' expectations about their career and future upon graduation, as well as the complexity of the subjects, could be considered predictors of some degree of stress.

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