

Association between level of academic stress and resilience in health students

Associação entre nível de estresse acadêmico e resiliência em estudantes da área de saúde

Asociación entre nivel de estrés académico y resiliencia en estudiantes de salud

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RESUMO

Objetivo: Analisar a associação entre nível de estresse acadêmico e resiliência em estudantes da área de saúde. **Método:** Trata-se de um quantitativo, transversal realizado com 34 discentes da área de saúde de uma faculdade privada de Goiás, via google forms, de novembro a dezembro de 2021 por meio de Formulário para caracterização sociodemográfica e acadêmica e; Instrumento para Avaliação do Estresse em Estudantes de Enfermagem e Escala de Resiliência de Wagnild & Young. A análise ocorreu no Statistical Package for Social Sciences (SPSS), versão 20.0. **Resultados:** Verificou-se predomínio de discentes com alto nível de estresse geral (52,9%) e moderada resiliência (41,2%). Predominaram estudantes com baixo nível de estresse na realização de Atividades Práticas (64,7%), na comunicação profissional (58,8%), no gerenciamento do tempo (76,5%), relacionado ao ambiente (82,4%), na formação profissional (64,7%) e nas atividades teórica (58,8%). Observou-se relação significativa entre o nível de estresse relacionado à formação profissional e o nível de resiliência. **Conclusão:** confirma-se a relação entre resiliência e estresse acadêmico, sendo que a resiliência atua positivamente sobre o estresse sendo um fator protetor à saúde uma vez que pode fortalecer a capacidade de adaptação do discente às adversidades da vida e do contexto acadêmico.

Descritores: Estresse Psicológico; Estudantes; Qualidade de Vida.

ABSTRACT

Objective: To analyze the association between level of academic stress and resilience in health students. **Method:** This is a quantitative, cross-sectional study with 34 students from the health area of a private college in Goiás, via google forms, from November to December 2021 through a Form for sociodemographic and academic characterization and; Instrument for Stress Assessment in Nursing Students and Wagnild & Young Resilience Scale. The analysis took place in the Statistical Package for Social Sciences (SPSS), version 20.0. **Results:** There was a predominance of students with a high level of general stress (52.9%) and moderate resilience (41.2%). Students with low stress level in performing Practical Activities (64.7%), professional communication (58.8%), time management (76.5%), related to the environment (82.4%), professional training (64.7%) and theoretical activities (58.8%) predominated. A significant relationship was observed between the level of stress related to professional training and the level of resilience. **Conclusion:** the relationship between resilience and academic stress is confirmed, and resilience acts positively on stress and is a protective factor to health, since it can strengthen the student's ability to adapt to the adversities of life and the academic context.

Descriptors: Psychological Stress; Students; Quality of Life.

RESUMEN

Objetivo: Analizar la asociación entre nivel de estrés académico y resiliencia en estudiantes de salud. **Método:** Se trata de un estudio cuantitativo, transversal, con 34 estudiantes del área de salud de una universidad privada en Goiás, a través de formularios de google, de noviembre a diciembre de 2021 a través de un Formulario de caracterización sociodemográfica y académica y; Instrumento para la Evaluación del Estrés en Estudiantes de Enfermería y Escala de Resiliencia de Wagnild y Young. El análisis se realizó en el Statistical Package for Social Sciences (SPSS), versión 20.0. **Resultados:** Predominaron los estudiantes con alto nivel de estrés general (52,9%) y resiliencia moderada (41,2%). Predominaron los estudiantes con bajo nivel de estrés en la realización de Actividades Prácticas (64,7%), comunicación profesional (58,8%), gestión del tiempo (76,5%), relacionadas con el entorno (82,4%), formación profesional (64,7%) y actividades teóricas (58,8%). Se observó una relación significativa entre el nivel de estrés relacionado con la formación profesional y el nivel de resiliencia. **Conclusión:** se confirma la relación entre resiliencia y estrés académico, y la resiliencia actúa positivamente sobre el estrés y es un factor protector para la salud, ya que puede fortalecer la capacidad del estudiante para adaptarse a las adversidades de la vida y al contexto académico.

Descriptores: Estrés Psicológico; Estudiantes; Calidad de vida.

ORIGINAL

Introduction

Academics in the health area are often subjected to stressful situations, which may be related to the need for physiological and psychological adaptation within the university environment, clinical experiences and excessive tasks, demands related to academic activities, as well as assessments, routines and decision-making.¹ Coping with unique situations in this training area can also overload students' adaptive resources, leading them to academic stress.²

Stress, according to the interactionist model, is defined as any stimulus that demands from the external or internal environment and that taxes or exceeds the sources of adaptation of an individual or social system.³ In a survey of 34 health students from a private university in the state of Goiás, it was identified that 52.9% have a high level of stress, 23.5% have a high stress in theoretical activities, 20.6% have a high stress in professional training and 20% have a medium level of stress related to carrying out practical activities.⁴

In this sense, scientific studies with the theme "stress in university students" have gained more space, because when not identified and untreated, it can affect academic performance, resulting in physical or psychological illness and withdrawal from academic training.²⁻⁵

On the other hand, to deal with the effects related to stress, there is resilience. It is understood as the ability to face problems and pressures according to the social sciences. It can also be understood as an emotional, environmental, sociocultural and cognitive process that facilitates the individual's adaptation to new situations. In addition, it can be recognized as a way of dealing with stressful experiences with fewer negative outcomes.⁶

Considering that Resilience comprises a process of experiencing recognition and frustration, currently, scientific studies on it have been highlighted based on its importance for health and human development.⁶ This is because it has been identified as an individual skill capable of to promote health by minimizing stress, anxiety, anger and depression. As an example, in a study carried out with 138 students in the health area of a college located in the surroundings of Brasília - DF, points out that 21.7% of these students have high resilience and 71.7% have a moderate level of resilience. Resilient students have lower levels of stress and depression, which directly influences their quality of life.⁷

However, despite the growing interest in studies on academic stress and resilience, few studies analyze the association between these phenomena in detail, especially involving students from different courses in the field of health. As an example, a research with 56 nursing students from Rio de Janeiro identified that 39.3% had high resilience, 37.5% moderate resilience and 23.2% low resilience.⁸ However, this study⁸ did not assess stress and its association with resilience in the academic field, which would allow expanding the findings considering the specifics of each course.

In this sense, the objective of this study was to analyze the association between academic stress level and resilience in health students.

Method

This is a quantitative, transversal and descriptive study carried out with 34 students in the health area of a private college in the state of Goiás. Students regularly enrolled in all stages of undergraduate courses belonging to the health area (nursing, pharmacy and physiotherapy courses) from all institutions and over 18 years old were included. Those who participated in the research as data collection assistants were excluded; and that, during the data collection period, they were in exchange.

Data were collected from November to December 2021, via google forms, using the following instruments: Form for sociodemographic and academic characterization; Instrument for Assessment of Stress in Nursing Students (AEEE) and Wagnild & Young Resilience Scale. After obtaining the email addresses of the students enrolled in the courses in the health area from the 1st to the 8th semesters, the ICF was sent and the students were invited to participate in the research. After the acceptance and online signature of the TCLE, an email was sent with the link to access the data collection protocol, with a period of ten days to complete it.

The characterization form included the following sociodemographic variables: date of birth, sex, children, marital status, who lives with, performing leisure activities, practicing sports, sources of income, financial dependent, sufficient monthly income for maintenance, use of a drug or substance (tea, coffee, energy drinks, etc.) to inhibit sleep and to achieve sleep; smoking and alcohol consumption; and academic: time taken to get to the HEI, means of transport, workload in the current semester, carrying out extracurricular activities, work activity, professional experience in the health area, satisfaction with the course and interest in dropping out of the course.

The Instrument for Assessing Stress in Nursing Students (AEEE) was proposed by Costa and Polak in 2009⁽⁹⁾ and consists of 30 items grouped into six domains: Carrying out practical activities (Items 4,5,7,9,12 and 21); Professional communication (Items 6,8,16 and 20); Time management (Items 3,18,23, 26 and 30); Environment (Items 11,22,24 and 29); Professional training (Items 1,15,17,19,25 and 27); Theoretical activity (Items 2,10,13,14 and 28). The items are presented on a four-point Likert scale in which: zero - "I do not experience the situation"; one- "I don't feel stressed about the situation"; two - "I feel little stressed about the situation"; and three- "I feel very stressed about the situation."⁹ To identify the intensity of stress by factor of the AEEE, risk quartiles defined by the authors of the instrument were used.⁹

The resilience scale, developed by Wagnild & Young with adult women¹⁰, was adapted and translated into the Brazilian reality with public school students in 2005⁽¹⁰⁾. This instrument measures levels of positive psychosocial adaptation in the face of important life events. It has 25 items on a Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree), distributed into 3 factors, namely: Actions and Values Resolutions (Items 1,2,6,8,10,12, 14,16,18,19,21,23,24 and 25), Independence and determination (Items 5,7,9,11,13 and 22) and Self-confidence and ability to adapt to situations (Items 3,4,15, 17 and 20)⁽¹¹⁻¹²⁾. These factors correspond to attributes that support coping with life's problems, including competence in social relationships, the ability to solve problems, the achievement of autonomy and the meaning or purpose for life and the future⁽¹¹⁻¹²⁾. The scale

scores range from 25 to 175 points, and the higher the score, the higher the subject's resilience. A result below 121 is considered by the authors of the instrument as "low resilience"; between 121 and 145, as "moderate resilience"; and above 145, "high resilience"⁽¹⁰⁾.

For data organization and analysis, a database was created in Excel (Office 2010) and the Statistical Package for Social Sciences (SPSS, version 20.0) program was used. Qualitative variables will be presented in absolute values (n) and percentages (n%). The quantitative variables will be exposed in descriptive measures: minimum and maximum values, mean and standard deviation. Cronbach's alpha will be applied to analyze the reliability of the applied instruments. All quantitative variables were evaluated by the Kolmogorov-Smirnov test to verify their adequacy to the normal distribution. To verify the relationship between general and domain stress variables with resilience levels, Pearson's correlation tests were used for parametric data or Spearman's correlation test for variables with non-normal distribution. Values of $p < 0.05$ were considered statistically significant.

In compliance with the Regulatory Guidelines and Norms for Research Involving Human Beings (Resolution CNS 466/12), this project was submitted to the Research Ethics Committee (CEP) of the private higher education institution in the state of Goiás, and was approved in July 13, 2020 under opinion number 4,151,512.

Results

The initial population of the study consisted of 215 students from courses in the health area (Nursing, Pharmacy and Physiotherapy), and 34 students agreed to participate in the research and formed the access population for this research. In table 1, sociodemographic and academic data (Categorical variables) of students in the health area are presented.

Table 1- Sociodemographic and academic data (Categorical variables) of students in the health area (n=34). Goiás, 2022

Variable	Category	n	%
Sex	Feminine	27	79,4
	Masculine	7	20,6
Marital Status	Married	11	32,4
	Divorced	2	5,9
	Separate	3	8,8
	Single	18	52,9
Sons	No	18	52,9
	Yes	16	47,1
Sports Practice	No	24	70,6
	Yes	10	29,4
Leisure Practice	No	13	38,2
	Yes	21	61,8
Sufficient Monthly Income	No	20	58,8
	Yes	14	41,2
Uses drugs to inhibit sleep?	No	27	79,4
	Yes	7	20,6
Use sleeping pills?	No	31	91,2
	Yes	3	8,8
Do you have a smoking habit?	No, I never smoked	32	94,1
	Yes, I smoke.	2	5,9
Do you drink alcohol?	No, I never drank.	17	50

	I did not stop.	1	2,9
	Yes, I drink	16	47,1
Job	No	23	67,6
	Yes	11	32,4
Variable	Min-Max.	Average	Standart-Deviation
Idade	17-47	29,1	8,26

Above, there is a predominance of female students (79.4%), single (52.9%), without children (52.9%) and 58.8% say that their monthly income is not enough to maintenance. Furthermore, 70.6% do not practice sports and 61.8% do leisure activities, 79.4% use medication to inhibit sleep, 47.1% have the habit of drinking alcohol and 5.9% have the habit of smoking. Table 2 shows the distribution of students according to levels of resilience, general stress and by domain.

Table 2- Distribution of students according to levels of resilience, general stress and by domain. Goiás, 2022.

Variable	Level	n	%
General Stress	High	18	52,9
	Low	16	47,1
Resilience	Reduced	9	26,5
	Moderate	14	41,2
	High	11	32,4
Carrying out practical activities	Low	22	64,7
	Medium	7	20,6
	High	3	8,8
	Very High	2	5,9
Professional Communication	Low	20	58,8
	Medium	5	14,7
	High	4	11,8
	Very High	5	14,7
Time management	Low	26	76,5
	Medium	4	11,8
	High	3	8,8
	Very High	1	2,9
Environment	Low	28	82,4
	Medium	4	11,8
	High	0	0
	Very High	2	5,9
Professional qualification	Low	22	64,7
	Medium	1	2,9
	High	4	11,8
	Very High	7	20,6
Theoretical Activity	Low	20	58,8
	Medium	5	14,7
	High	8	23,5
	Very High	1	2,9

We can see, in the table above, that there was a predominance of students with a high level of general stress (52.9%), low level of stress in all domains of the AEEE: Carrying out Practical Activities (64.7%), Professional Communication (58.8%), Time Management (76.5%), Environment (82.4%), Professional Training (64.7%) and Theoretical Activity (58.8%). Furthermore, the level of resilience

among students was moderate (n=41.2%). Table 3 presents the analysis of association between general level of stress and resilience

Table 3- Analysis of association between stress level (General and by domain) and resilience among students in the health area. Goiás, 2022.

	Class	Resilience				P value
		n/%	Reduced	Moderate	High	
Carrying out practical activities	Low	n	4	10	8	0,58
		%	11,80%	29,40%	23,50%	
	Medium	n	3	2	2	
		%	8,80%	5,90%	5,90%	
	High	n	1	2	0	
		%	2,90%	5,90%	0,00%	
Professional Communication	Low	n	4	10	6	0,8
		%	11,80%	29,40%	17,60%	
	Medium	n	1	2	2	
		%	2,90%	5,90%	5,90%	
	High	n	2	1	1	
		%	5,90%	2,90%	2,90%	
Time management	Low	n	7	10	9	0,72
		%	20,60%	29,40%	26,50%	
	Medium	n	1	1	2	
		%	2,90%	2,90%	5,90%	
	High	n	1	2	0	
		%	2,90%	5,90%	0,00%	
Environment	Low	n	5	13	10	0,11
		%	14,70%	38,20%	29,40%	
	Medium	n	3,00	0,00	1,00	
		%	8,80%	0,00%	2,90%	
	High	n	0	0	0	
		%	0,00%	0,00%	0,00%	
Professional qualification	Low	n	4	11	7	0,02*
		%	11,80%	32,40%	20,60%	
	Medium	n	0	0	1	
		%	0,00%	0,00%	2,90%	
	High	n	4	0	0	
		%	11,80%	0,00%	0,00%	
Theoretical Activity	Low	n	5	8	7	0,28
		%	14,70%	23,50%	20,60%	
	Medium	n	3	0	2	
		%	8,80%	0,00%	5,90%	
	High	n	1	5	2	
		%	2,90%	14,70%	5,90%	
General Stress	Low	n	0	1	0	0,11
		%	0,00%	2,90%	0,00%	

		%	21,20%	15,20%	12,10%
	High	n	2	8	7
		%	6,10%	24,20%	21,20%

* Statistically significant value.

It can be seen above that the level of stress related to professional training was significantly related to the level of resilience, so that students with a moderate level of resilience have a lower level of stress than the others. ($p=0,02$).

Discussion

The study carried out with 34 students in the health area (nursing, physiotherapy and pharmacy), where there is a predominance of female students (79.4%), despite the increasing number of male professionals in the health area⁷. There is a predominance of single individuals (52.9%), when it comes to the marital status of students, 52.9% do not have children. A study carried out in 2019 with 138 students in the health area (nursing and physiotherapy) at a college in the state of Goiás portrayed the predominance of female students (75.4%), single (73.2%) and without children (68.1%). Not having a partner and children are factors that facilitate entry into academic life, as in this situation the individual is more available to study and carry out academic commitments⁷.

Regarding monthly income, 58.8% say they do not have enough monthly income for maintenance. In a survey carried out in 2019 at a private higher education institution in the surroundings of Brasília - DF, it was found that 58.7% of the students had a monthly income between 1 and 2 minimum wages and 52.2% had expenses between 1 and 2 minimum wages, 64.5% consider that the monthly income is not enough. Upon entering the university, students expect financial independence, especially those whose family cannot afford to pay. In this case, some costs of the university's daily life can make training even more difficult, such as transport to the university, where the individual lives, food, reprographic copies, literature, etc., leading to frustration when they are unable to sustain the necessary costs⁷.

In relation to habits/lifestyle, it is noted that 70.6% of the students do not practice sports, in a survey carried out at the State University of Paraíba with 254 students from seven different courses in the health area (psychology, physiotherapy, dentistry, pharmacy, nursing, physical education and biology) it was observed that 55.7% of the students have difficulty in the practice of physical activities.¹³ The absence of this practice results in changes in the students' quality of life, highlighting the importance of health promotion in this area. scope⁽¹³⁾. On the other hand, 61.8% practice leisure activities, which is considered important for emotional balance, mood and well-being.⁷.

Of the students interviewed, 47.1% reported drinking alcohol frequently and 5.9% smoked. In a research carried out in a university center in Cuiabá with students from 11 courses in the health area, it is pointed out that entering college did not influence the pattern of alcohol use, generally consumption occurs at times of socializing, festive events and for a feeling of relaxation and pleasure.¹⁴ However, the use of alcohol can also be linked to coping with stress and concern, since the use of alcohol tends to minimize the feeling of stress and bring a feeling of well-being, but its use can bring problems related to potentiation of symptoms

of stress, depression and anxiety and dependence.¹⁵ On the other hand, a study carried out with 111 students from a Health School in Porto Alegre indicates that 58.7% of students use tobacco without taking into account the possibility of dependency. This may be associated with the intention to reduce symptoms of depression, stress and anxiety caused by academic life and living with individuals who use tobacco.¹⁵ In this case, it can be thought that the use of licit drugs is directly linked to stress, caused by the routine of undergraduates. It is also observed that the higher the levels of stress and its symptoms, the greater the use of these substances, which, in general, aims to reduce the effects of stress, bringing a feeling of relaxation and relief. However, with the prolonged use of substances, the tendency is that they no longer bring the effect that causes the feeling of well-being, but dependence, which poses risks to the mental health of individuals who use them.¹⁵

When it comes to the quality of sleep, 79.4% of students say they use medication to inhibit sleep. In a survey carried out with 34 students in the health area of a private college in the state of Goiás, it is pointed out that 79.4% of the students have poor sleep quality. There are authors who highlight the relevance of changes in sleep quality and pattern due to varied study schedules and the overload to adapt to university life along with personal life. This can result in difficulty concentrating, directly affecting students' academic development and quality of life. However, it is noted that the overload and commitment to tasks can compromise the quality of the sleep pattern, causing daytime sleepiness and increasing the stress level.⁴

In the comparisons between levels of stress in this study, the high level of general stress and low level of stress in carrying out practical activities (64.7%), professional communication (58.8%), time management (76.5%) predominated.), environment (82.4%), professional training (64.7%) and theoretical activity (58.8%). In a survey carried out with 34 students from a private institution located in the state of Goiás, it was observed that 52.9% suffer from a high level of general stress, while 47.1% say they suffer from low levels of general stress. The high level of stress stands out when referring to theoretical activities (23.5%) and professional training (20.6%), while 20% of students have a medium level of stress regarding practical activities. Students in the health area are faced with a high load of activities in disciplines and supervised internships, which leads to excess activities and may be associated with the development of a high level of stress.⁴

On the other hand, the moderate level stands out when it comes to resilience among students in the health areas (41.2%), where they have a lower level of stress compared to the others. Resilience is seen as an important factor for health, as it can help control stress symptoms and increase sleep quality. Interpersonal relationships, the overload of studies and changes in habits when entering university can bring risks to mental health (depression, anxiety, hostility and psychoses). However, researchers claim that resilience can minimize the negative effects of potential stressors of the academic environment on students' mental health, becoming an important element in improving academic performance and health conditions.¹⁶

Conclusion

There was a predominance of students with a high level of general stress (52.9%). According to the AEEE domains, it was observed that most students have a low level of stress in carrying out Practical Activities (64.7%), in professional communication (58.8%), in time management (76, 5%), related to the environment (82.4%), in professional training (64.7%) and in theoretical activities (58.8%). Furthermore, the level of resilience among students was moderate (41.2%).

It was observed that there is a significant relationship between the level of stress related to professional training and the level of resilience, so that academics who have a moderate level of resilience have a lower level of stress when compared to the others.

In this sense, the relationship between resilience and academic stress is confirmed, and resilience acts positively on stress, being a protective factor for health since it can strengthen the student's ability to adapt to the adversities of life and the academic context.

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