

ORIGINAL

Coping strategies and academic stress in students at a pre-university academy in Cajamarca, March 2025

Estrategias de afrontamiento y estrés académico en estudiantes de una academia preuniversitaria en Cajamarca, marzo 2025

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ABSTRACT

Objectives: to determine the relationship between coping strategies and academic stress at a pre-university center in Cajamarca, March 2025.

Method: basic research with a quantitative, non-experimental, cross-sectional and correlational approach. The sample consisted of 197 pre-university students. The SISCO (Cronbach's alpha of 0,920) and A-CEA (Cronbach's alpha of 0,847) questionnaires were used to measure stress and coping strategies respectively. The information was processed using Excel and SPSS 27.

Results: a significant relationship was found using the Chi-square test ($X^2 = 79,506$; $p = <0,005$) and a moderate negative correlation ($Rho = -0,503$; $p = ,000$) between the variables studied. The positive reappraisal strategy being the one that presents the highest level of coping (17 %). It was found that 51,8 % experienced severe stress. It was also shown that stress is related to age ($X^2 = 109,732$; $p = < 0,001$) and the degree program the student is applying for ($X^2 = 40,335$; $p = < 0,001$).

Conclusion: there is an inverse and significant relationship between the two variables, with positive re-evaluation being the strategy that presents the highest level of coping. The majority of the population experiences severe stress, which is influenced by two factors: age and the degree program they are applying for.

Keywords: Coping Strategies; Academic Stress; Pre-University Students.

RESUMEN

Objetivos: determinar la relación entre las estrategias de afrontamiento y el estrés académico en un centro preuniversitario de Cajamarca, marzo 2025.

Método: investigación básica con enfoque cuantitativo, no experimental, transversal y correlacional. La muestra estuvo constituida por 197 estudiantes preuniversitarios. Se utilizaron los cuestionarios SISCO (Alfa de Cronbach de 0,920) y A-CEA (Alfa de Cronbach de 0,847) para medir el estrés y las estrategias de afrontamiento respectivamente. Se procesó la información mediante Excel y SPSS 27.

Resultados: se encontró una relación significativa usando la prueba de Chi-cuadrado ($X^2 = 79,506$; $p = <0,005$) y correlación negativa moderada ($Rho = -0,503$; $p = ,000$) entre las variables estudiadas. Siendo la estrategia de reevaluación positiva la que presenta un mayor nivel de afrontamiento (17 %). Se evidenció que el 51,8 % tuvo un estrés severo. Asimismo, se mostró que el estrés se relaciona con la edad ($X^2 = 109,732$; $p = < 0,001$) y carrera a la que postula el estudiante ($X^2 = 40,335$; $p = < 0,001$).

Conclusión: existe una relación inversa y significativa entre las dos variables; siendo la reevaluación positiva la estrategia que presenta mayor nivel de afrontamiento. La mayor población presenta estrés severo, en el cual influyen 2 factores: edad y carrera a la que postulan.

Palabras clave: Estrategias de Afrontamiento; Estrés Académico; Estudiantes Preuniversitarios.

INTRODUCTION

Currently, the stress epidemic in the world has been on the rise.⁽¹⁾ This has even impacted the academic sphere, giving rise to the term “academic stress.” This type of stress emerges when academic demands exceed the student’s adaptability.⁽²⁾ A study conducted in Mexico found that more than 83 % of students experience moderate stress.⁽³⁾ In comparison, nationally the figure was more than 69 %.⁽⁴⁾ In Peru, there is a link between high school and university, known as pre-university preparation, a process that students undergo before taking an entrance exam.⁽⁵⁾ In the pre-university sphere, research was conducted at an academy in Lima⁽⁶⁾, one of the few national studies on the subject, as no local studies have been found.

Coping strategies were applied to address this problem. These are tools aimed at transforming certain aspects of the student, their environment, or the interaction between the two, which they identify as disruptive.⁽⁷⁾ It is also essential to know that when coping skills are lower, impulsivity tends to be higher, affecting motor and cognitive aspects.⁽⁸⁾ This variable was analyzed through positive reappraisal, support seeking, and planning, as applied in studies in Ecuador⁽⁸⁾ and Peru⁽⁹⁾.

It is essential to understand how both variables are associated in the educational setting, as this allows for early interventions to adequately manage stress and thus avoid fatal consequences such as suicidal ideation.⁽¹⁰⁾ Studies conducted among university students in Mexico⁽¹¹⁾ and Peru, such as those in Cajamarca⁽¹²⁾ and Tacna⁽⁹⁾, have identified a significant relationship between the variables analyzed.

The present study was based on the need to provide validated evidence on the situation in Cajamarca in relation to the variables investigated at the pre-university level. This is because, in this region, there is only information on the university population, such as that collected in 2023, which found a 71,70 % incidence of high stress among university students.⁽¹²⁾ Similarly, it is justified in that it allows for increased knowledge about the variables to avoid the adverse effects of stress on applicants, such as decreased academic performance,⁽¹³⁾ a tendency to argue, lack of motivation, isolation, sleep disturbances, and changes in appetite.⁽¹⁴⁾ Given this, it is necessary to use strategies to cope with it, favoring habits that promote both physical and mental well-being, which has a positive impact on quality of life.⁽¹⁵⁾ Therefore, this research is needed to fill an information gap, thus serving as a basis for future research that, based on the results, could take a practical approach, implementing the coping strategy already identified as most effective, seeking to reduce stress levels and thus improving students’ confidence when taking the entrance exam to achieve their desired place.

Therefore, the following question was formulated: How do coping strategies relate to academic stress in a pre-university center in Cajamarca during March 2025? To this end, the hypothesis was that the variables are significantly related. The primary objective was to investigate the relationship between the two variables in the study. In addition, the specific objectives were: a) To identify which strategy presents a higher level of coping with stress. b) To record the level of stress in the population studied. c) To find other factors that influence academic stress.

METHOD

This research employed a basic approach, seeking to incorporate knowledge without immediate practical application. A quantitative route was adopted, as the work was carried out objectively using numerical data, which was processed statistically. Furthermore, it was non-experimental, as no intervention was made to the variable “coping strategies”; cross-sectional, as the information was collected at a single point in time; and correlational, as the relationship between the variables was determined.⁽¹⁶⁾

The population consisted of 400 students from a pre-university academy. The inclusion criteria required that participants be enrolled in the institution and voluntarily respond to the questionnaire. The exclusion criteria included minors and incomplete surveys. The total sample size was determined using Epi Info, with a confidence interval of 95 %, an expected proportion of 50 %, and a margin of error of 5 %, resulting in a sample size of 197. Cluster probability sampling was used to select a representative sample of participants from a population of 400 students, distributed across four classrooms belonging to different academic areas: Health Sciences (classrooms 1 and 2), Social Sciences (classroom 3), and Engineering (classroom 4). First, the proportion of students in each classroom was calculated in relation to the total population by dividing the number of students per classroom by 400. In the case of classrooms 1 and 2 in Health Sciences, the proportions were 0,3125 and 0,31, respectively. In classroom three, the value was 0,208, and in classroom 4, it was 0,17.

Based on these proportions, each value was multiplied by the total sample size ($n = 197$), which allowed us to obtain the exact number of students to be selected from each classroom: 62 and 61 for classrooms 1 and 2, respectively; 41 for classroom 3, and 33 for classroom 4. Finally, the selection within each cluster was made randomly using Excel v16.92, which ensured that all students had the same probability of being included, in accordance with the principles of probabilistic sampling.

In the data collection, the survey was employed as a research procedure, and the “SISCO Academic Stress Inventory” was used as the primary tool, yielding a Cronbach’s alpha of 0,920 in Peru⁽⁹⁾. This instrument consisted of 22 items, rated on a Likert scale. The first part included questions on the dimension of stressors, which refer to the causes of stress such as lack of academic resources, distance from home, excessive academic workload, competition among peers, and possible health problems, comprising items 1 to 7. To evaluate this dimension, the following categories were considered: mild (7-16), moderate (17-26), and severe (27-35). The symptom dimension is understood as students’ responses to stress, which are divided into three types: physical symptoms such as head tension, physical exhaustion, and high blood pressure; psychological symptoms including nervousness, discouragement, excessive anger, and negative thoughts about life, among others; and behavioral symptoms including a constant urge to smoke, frequent forgetfulness, and conflicts when faced with situations that arise. This dimension was represented by items 8 to 22 and was analyzed using the following levels: mild (15-34), moderate (35-54), and severe (55-75). Scores ranged from 1 (never) to 5 (always). Scales were also established to categorize levels of academic stress: mild (22-51), moderate (52-81), and severe (82-110).

To measure the levels of use of stress coping strategies, the A-CEA questionnaire was used, with a Cronbach’s alpha of 0,847 in Peru. This instrument consisted of 23 questions, rated on a Likert scale, and was divided into three dimensions. The first dimension was “Positive Reappraisal,” understood as a person’s ability to value the positive aspects of a stressful situation. This dimension was assessed in questions 1, 4, 7, 10, 13, 16, 20, and 22. To evaluate the levels, the following categories were considered: low (9-20), medium (21-32), and high (33-45). The second dimension was “Support Seeking,” which involves interacting with others with the intention of better understanding the situation and contributing to its solution. This dimension was reflected in questions 2, 5, 8, 11, 14, 17, and 21; it was studied through the following levels: low (7-16), medium (17-26), and high (27-35). The third part dealt with “Planning,” which involves organizing an individual’s time, tasks, and personal activities by prioritizing each one, in this case, preparing for an admission exam. This dimension was assessed in questions 3, 6, 9, 12, 15, 19, and 23. To analyze the level at which they are found, the following categories were used: low (7-16), medium (17-26), and high (27-35). Each question had a score ranging from 1 (never) to 5 (always). In addition, scales were established to classify the levels of coping strategies: low (23-53), medium (54-84), and high (85-115).⁽⁹⁾

Excel version 16,92 was used to process the information collected in the questionnaire, thereby providing a codable database. Descriptive statistics were used to analyze the sociodemographic factors of the participants, which were organized into frequency distribution tables to present them in a clear and orderly manner. Similarly, the students’ stress levels and coping strategies were recorded. In addition, cross-tabulation tables were used to identify significant relationships between the variables as mentioned above, using inferential statistical techniques with SPSS v27 software. For this, it was necessary to obtain a Chi-square of $p < 0,05$.

Meanwhile, Spearman’s Rho coefficient was used to determine the relationship between the two variables, where a bilateral significance of less than 0,05 was required for statistical significance. The relationship coefficient can be either positive or negative, depending on whether the variables are inversely or directly related, respectively. On the other hand, to investigate the relationship between the dimensions of the strategies and the sociodemographic data categories, as well as academic stress, descriptive and inferential statistics were employed, yielding a Chi-square value.

In this research, fundamental ethical principles were used to ensure the well-being and integrity of the participants. Likewise, respect for autonomy was guaranteed, as each individual was informed about the purpose and procedure of the study and was able to give their informed and free consent. Similarly, authorization was obtained from the institution where the research was conducted. Additionally, it was ensured that the benefits outweighed any potential harm and that the research was scientifically relevant. Finally, the principle of justice was applied, promoting an equitable selection of participants without distinction of gender, race, religion, or socioeconomic status.⁽¹⁷⁾

RESULTS

Table 1 shows a predominance of males (52,8 %), with most participants aged 18 (39,6 %) and 86,3 % devoted exclusively to their studies. In addition, most applicants aspire to enter the Health Sciences program (62,4 %).

Table 2 shows that 51,8 % of the students present a severe level of academic stress, representing the majority. In the dimension of stressors, the majority (51,8 %) report a moderate level, and regarding stress-induced symptoms, 55,8 % manifest a severe level.

Table 1. Distribution of sociodemographic factors in an academy in Cajamarca, 2025			
Variable		f	%
Gender	Female	93	47,2
	Male	104	52,8
	Total	197	100
Age	18	78	39,6
	19	49	24,9
	20	49	24,9
	≥21	21	10,7
	Total	197	100
Occupation	Study only	170	86,3
	Study and work	27	13,7
	Total	197	100
Program you are applying for	Health sciences	123	62,4
	Engineering	41	20,8
	Social Sciences	33	16,8
	Total	197	100

Table 2. Distribution of the variable academic stress and its dimensions in an academy in Cajamarca, 2025						
Level	Academic stress		Stressors		Symptoms	
	f	%	f	%	f	%
Mild	23	11,70	16	8,10	32	16,20
Moderate	72	36,50	102	51,80	55	27,90
Severo	102	51,80	79	40,10	110	55,80
Total	197	100,00	197	100,00	197	100

Table 3. Distribution of the variable coping strategies and its dimensions in an academy in Cajamarca, 2025								
Level	Coping strategies		Positive reappraisal		Seeking support		Planning	
	f	%	f	%	f	%	f	%
Low	88	44,7	76	38,6	93	47,2	90	45,7
Average	85	43,1	87	44,2	77	39,1	89	45,2
High	24	12,2	34	17,3	27	13,7	18	9,1
Total	197	100	197	100	197	100	197	100

Table 3 shows that low use of coping strategies predominates, at 44,7 %. The least used strategy is seeking support, at 47,2 %, while the most used strateg

Table 4. Relationship between coping strategies and academic stress at an academy in Cajamarca, 2025											
Coping strategies			Academic stress							Rho Sperman	Chi-square
			Mild		Moderate		Severe		Total		
	f	%	f	%	f	%	f	%			
Low	1	1,10	22	25,00	65	73,90	88	100	r = -0,503** p = 0,000	value = 79,507 p = <0,001	
Mean	8	9,40	42	49,40	35	41,20	85	100			
High	14	58,30	8	33,30	2	8,30	24	100			
Total	23	11,70	72	36,50	102	51,80	197	100			
Note: **. The correlation is significant at the 0,01 level (bilateral)											

Note: **. The correlation is significant at the 0,01 level (bilateral)

According to the data in table 5, there is a significant relationship between the variables (Chi-square value = 79,506; p= 0,000). Similarly, an inverse correlation is detected between them, because the Rho coefficient is -0,503 (less than 0).

Table 5. Relationship between the dimensions of coping strategies and academic stress at an academy in Cajamarca, 2025

Coping strategies		Academic Stress								Chi-square
		Mild		Moderate		Severe		Total		
		f	%	f	%	f	%	f	%	
P o s i t i v e Revaluation	Low	1	1,30	15	19,70	60	78,90	76	38,60	value= 62,229 p=<0,001*
	Average	8	9,20	40	0,46	39	44,80	87	44,20	
	High	14	41,20	17	50,00	3	8,80	34	17,30	
	Total	23	11,70	72	36,50	102	51,80	197	100	
Search for Support	Low	2	2,20	27	29,00	64	68,80	93	47,20	value= 49,230 p=<0,001*
	Average	9	11,70	33	42,90	35	45,50	77	39,10	
	Tall	12	44,4	12	44,40	3	11,10	27	13,70	
	Total	23	11,70	72	36,50	102	51,80	197	100	
Planning	Low	1	1,10	25	27,80	64	71,10	90	45,70	value= 57,890 p=<0,001*
	Average	12	13,50	40	44,90	37	41,60	89	45,20	
	Tall	10	55,60	7	38,90	1	5,60	18	9,10	
	Total	23	11,70	72	36,50	102	51,80	197	100	

According to the results in table 4, among students with severe stress, 78,9 % exhibit a low level of positive reappraisal, 68,8 % display a low level of support seeking, and 71,1 % demonstrate a low level of planning. In contrast, among those with mild stress, 41,2 % use positive reappraisal to a high degree, 44,4 % seek support, and 55,6 % actively plan. All dimensions of coping strategies: positive reappraisal (Chi-square value = 62,229; $p = < 0,001$), support seeking (Chi-square value = 49,230; $p = < 0,001$), and planning (Chi-square value = 57,890; $p = < 0,001$) have a significant relationship with academic stress.

Table 6. Relationship between academic stress and sociodemographic factors at an academy in Cajamarca, 2025

Sociodemographic Data				Academic stress						
Variable	Items	Mild		Moderate		Severe		Total		Chi-square
		f	%	f	%	f	%	f	%	
Gender	Female	13	6,6	28	14,21	52	26,4	93	47,21	value= 3,382 p = 0,184
	Male	10	5,08	44	22,34	50	25,38	104	52,79	
	Total	23	11,68	72	36,55	102	51,78	197	100	
Age	18	23	11,68	39	19,8	16	8,12	78	39,59	value = 109,732 p = <0,001*
	19	0	0	30	15,23	19	9,64	49	24,87	
	20	0	0	3	1,52	46	23,35	49	24,87	
	≥21	0	0	0	0	21	10,66	21	10,66	
	Total	23	11,68	72	36,55	102	51,78	197	100	
Occupation	Student only	21	10,66	61	30,96	88	44,67	170	86,29	value = 0,639 p= 0,727
	Study and work	2	1,02	11	5,58	14	7,11	27	13,71	
	Total	23	11,68	72	36,55	102	51,78	197	100	
Program you are applying for	Health Sciences	8	4,06	33	16,75	82	41,62	123	62,44	value = 40,335 p = <0,001*
	Engineering	4	2,03	22	11,17	15	7,61	41	20,81	
	Social Sciences	11	5,58	17	8,63	5	2,54	33	16,75	
	Total	23	11,68	72	36,55	102	51,78	197	100	

Table 6 shows that there is a significant relationship between two factors evaluated: age (Chi-square value = 109,732; $p = < 0,001$) and the degree program to which the student is applying (Chi-square value = 40,335; $p = < 0,001$).

DISCUSSION

Throughout the academic year, students face stressful situations that require strategies to manage and mitigate this reality.⁽¹⁸⁾ This situation is commonly observed in pre-university students, primarily due to the numerous subjects they must study and the constant pressure exerted by their families to gain admission to university.⁽¹⁹⁾ This causes headaches, insomnia, fatigue, anxiety, and emotional instability in students.⁽²⁰⁾

The results obtained indicate a significant relationship between coping strategies and academic stress, as observed in a study conducted in Arequipa⁽²¹⁾. Meanwhile, other research conducted on a different population, university students in Tacna⁽²²⁾ and Lima⁽²³⁾, also demonstrates the relevant interaction between the variables.

According to the results of this research, the correlation is inverse, indicating that as the application of coping strategies decreases, the level of academic stress increases, and vice versa. Similarly, studies conducted on the university population have shown a considerable negative correlation between strategy and the increase or decrease in stress, as observed in Lima⁽²⁴⁾.

Additionally, it was found that a considerable proportion of respondents employed low-level coping strategies, which is consistent with the findings of a study conducted at a technical higher education institution.⁽²⁵⁾ The plan that presents the highest level of coping is positive reevaluation, while a survey conducted among Chilean nursing students revealed that the predominant dimension is support seeking. This is explained by the fact that the population studied consists of university students, whose emotional state is generally more stable.⁽²⁶⁾ Additionally, students who experience severe levels of stress tend to use these strategies to a lesser extent, indicating a lower capacity or willingness to cope effectively with academic demands. In contrast, those with mild stress report greater use of these strategies, suggesting that their ability to reinterpret situations, seek help positively, and plan may be acting as a protective factor against stress. Additionally, it has been demonstrated that each of the evaluated dimensions has a statistically significant relationship with academic stress.

In contrast, another study with a small population of 22 students shows a significant relationship only with positive reappraisal,⁽²⁷⁾ which limits the generalization of its findings compared to those of this study, which consists of 197 participants, thus providing greater robustness and breadth. On the other hand, studies conducted in 2018⁽²⁸⁾ and 2019⁽²⁹⁾ identify a greater relationship between stress and behavioral and wishful thinking strategies, respectively. It should be noted that these studies employ different instruments than those used in the present study, and one of these instruments has a lower Cronbach's alpha coefficient, which compromises the reliability of its conclusions to some extent.

The findings from this study reveal that a large proportion of participants experience severe academic stress. Similarly, a survey conducted in Paraguay⁽³⁰⁾ shows similar results. In contrast, other previous studies, such as those in Ica⁽³¹⁾ and Lima⁽³²⁾, indicate that mild and moderate stress are predominant. These differences can be explained by the type of population evaluated, as the studies with lower levels of stress focused on university students, who, unlike pre-university students, have already overcome the stage of significant uncertainty, external pressure, and emotional burden associated with the admission process. Similarly, the analysis of stressors and symptoms reveals that 51,8 % of students have a moderate stress index, while 55,8 % have a severe symptom index. These percentages exceed those reported in other studies, where only 14,13 % show average stress indicators and 36,95 % show a low level of symptoms.⁽³³⁾ These findings reveal inefficient management of stressful situations, highlighting problems related to competition among applicants and the complexity of the courses. Based on this, the need to establish preventive measures and support programs within the pre-university educational environment is highlighted.

Regarding the interaction between sociodemographic factors and academic stress, there is evidence of a significant interaction with the age and degree program to which the student is applying. Similarly, similar research shows a similar relationship with respect to the age of the participant at a public⁽³⁴⁾ and private⁽³⁵⁾ university. In contrast, research conducted in Cajamarca found no significant relationship with age;⁽³⁶⁾ this difference can be explained by the particular context of the study, which was carried out during the COVID-19 pandemic, potentially altering the relationship by allowing external and contextual factors to influence the results. Based on the above regarding age, the results of this study can be explained in part by the profile of the population studied, in which there are complexes among applicants regarding preparation time, as students who have been preparing for longer express feelings of frustration and fear of failure due to several unsuccessful attempts to gain admission to a university. On the other hand, the pressure they perceive depends on their desired career, as can be seen in the data found, where the largest population experiencing severe stress are applicants to health science careers. Likewise, there is no significant interdependence between stress and the factors of gender and occupation. Similarly, studies conducted in Lima⁽³⁵⁾ and Cajamarca⁽³⁶⁾ found no statistically significant relationship among university students. These results contradict other studies, which do show a significant relationship between gender, both nationally⁽³⁴⁾ and internationally.⁽³⁷⁾ These differences may be attributed to the varying contexts in which they are observed. Meanwhile, a study conducted in Cajamarca⁽³⁶⁾ regarding the occupation factor shows that there is no relationship between stress and the f applicants who “only study” or “work and study,” results that coincide with the findings of the present study.

In conclusion, a significant relationship exists between the two research variables, suggesting that the effective use of strategies will impact stress levels. Likewise, the plan that presents the highest level of coping is positive reevaluation, and most of these present severe stress. Regarding sociodemographic categories, it was found that only age and the degree program to which they are applying have a significant relationship with stress. This information can be expanded upon in further research that takes into account the number of years they have been preparing.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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