

Research article

Anxiety and violent behavior: predictor variables of self-esteem in university students from Cusco-Peru

Ansiedad y conducta violenta: variables predictoras de la autoestima en estudiantes universitarios del Cusco-Perú

Esmeralda Enciso-Sotomayor¹: Universidad César Vallejo, Perú.
eencisos085@ucvvirtual.edu.pe

Vanessa Rozas-Calderón: Universidad Andina del Cusco, Perú.
vrozas@uandina.edu.pe

Roberto Bellido-García: Universidad César Vallejo, Perú.
rsbellidog@ucvvirtual.edu.pe

Gerardo Rejas-Borjas: Universidad Nacional Mayor de San Marcos, Perú.
luis.rejas@unmsm.edu.pe

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Abstract

Introduction: In recent years, the predictive capacity of anxiety and violent behavior with respect to self-esteem has gained increasing attention in the academic literature. In this context, it is relevant to examine the influence of these two independent variables on self-esteem as a dependent variable. **Methodology:** The present study aims to establish the influence of anxiety and violent behavior on the self-esteem of university students at a Peruvian university, in addition to evaluating the predictive capacity of the dimensions of anxiety and violent

¹ Corresponding author: Esmeralda Enciso-Sotomayor. Universidad César Vallejo (Perú).

behavior on self-esteem. A sample of 360 students was used and three instruments were employed: the Inventory of Trait-State Anxiety (IDARE), the Buss-Perry Aggression Questionnaire and the Coopersmith Self-Esteem Inventory. **Results:** The results reveal that, overall, the model is highly significant, indicating that both anxiety and violent behavior have a negative impact on self-esteem. **Discussion:** The regression model based on trait anxiety shows higher explanatory power (34,9%) compared to the model based on state anxiety (23,7%). **Conclusions:** Anxiety and violent behavior exert a significant influence on self-esteem in the studied sample.

Keywords: aggression; causal analysis; regression analysis; self-esteem; group behavior; social behavior; higher education; violence.

Resumen

Introducción: En los últimos años, la capacidad predictiva de la ansiedad y la conducta violenta respecto a la autoestima ha cobrado una creciente atención en la literatura académica. En ese contexto, resulta relevante examinar la influencia de estas dos variables independientes sobre la autoestima como variable dependiente. **Metodología:** El presente estudio tiene como objetivo establecer la influencia de la ansiedad y la conducta violenta en la autoestima de estudiantes universitarios en una universidad peruana, además de evaluar la capacidad predictiva de las dimensiones de la ansiedad y la conducta violenta en la autoestima. Se utilizó una muestra de 360 estudiantes y se emplearon tres instrumentos: el Inventario de Ansiedad Rasgo-Estado (IDARE), el Cuestionario de Agresión de Buss-Perry y el Inventario de Autoestima de Coopersmith. **Resultados:** Los resultados revelan que, en términos generales, el modelo es altamente significativo, indicando que tanto la ansiedad como la conducta violenta tienen un impacto negativo en la autoestima. **Discusión:** El modelo de regresión basado en la ansiedad rasgo muestra un mayor poder explicativo (34,9%) en comparación con el modelo basado en la ansiedad estado (23,7%). **Conclusiones:** La ansiedad y la conducta violenta ejercen una influencia significativa en la autoestima de la muestra estudiada.

Palabras clave: agresión, análisis causal; análisis de regresión; autoestima; comportamiento de grupo; comportamiento social; enseñanza superior; violencia.

1. Introduction

1.1. Context and Significance of the Study

According to the World Health Organization (WHO), one in seven adolescents aged 10 to 19 suffers from some type of mental disorder, with this age group accounting for 13% of the global burden of disease related to mental health (WHO, 2021). Furthermore, this international organization has reported that approximately 176,000 homicides per year occur among young people aged 15 to 29, representing 37% of total global homicides, making it the third leading cause of death in this age range (WHO, 2023).

Recent studies have shown that university students were particularly affected by mandatory social isolation. Due to this situation, along with uncertainty regarding the health of their families and the negative academic impact on class attendance, students have exhibited symptoms associated with anxiety (Cayo-Rojas et al., 2021; Odriozola et al., 2020; Sahu, 2020; Zhai & Du, 2020). In the educational context, violence encompasses aggressive behaviors that generate negative consequences for the emotional well-being of victims, especially in personal and social dimensions. These behaviors are characterized by intentionality and persistence.

Likewise, academic performance is a growing concern, which is why increasing attention is being given to school coexistence and climate in educational institutions (Hunter et al., 2022; Rodríguez & Rodríguez-Barraza, 2021; Tapia et al., 2024). Among university students, self-esteem plays a crucial role in the interaction between internal cognition and emotional regulation, influencing not only sociocultural adaptation but also shaped by social support and educational inclusion (Awad et al., 2022; Garro-Aburto et al., 2024; Wu et al., 2024).

In Peru, according to the Ministry of Education (Minedu, 2019), 85% of educational institutions have reported mental health problems among students, with high levels of anxiety (82%), stress (79%), and violence (52%) as the most prevalent issues. The situation is aggravated by the lack of effective sanctions and support for victims, creating a context of impunity and vulnerability (Ilizalbe, 2022).

The topic addressed in this article aligns with the Sustainable Development Goals (SDGs) of the 2030 Agenda. Both anxiety and self-esteem are influential factors for mental health, impacting academic performance and quality of life (SDG 3: Good Health and Well-being). Additionally, analyzing violent behaviors in the educational system provides evidence to strengthen school coexistence and student well-being strategies (SDG 4: Quality Education). Moreover, exploring violent behaviors in university environments helps design and implement measures that ensure safe and healthy spaces, which are essential for sustainable human development (SDG 16: Peace, Justice, and Strong Institutions).

1.2. Theoretical Framework

1.2.1. Previous Studies

In recent years, the interaction between anxiety, violent behavior, and self-esteem has increasingly drawn the attention of researchers in higher education. In China, Cao and Liu (2024) provided evidence of the predictive role of self-esteem in the relationship between anxiety and academic self-efficacy. Similarly, in Brazil, Araujo et al. (2022) found a significant mediating role of depression (indirect effect = 0,24; 95% CI: 0,13–0,35) and anxiety (indirect effect = 0,11; 95% CI: 0,03–0,20) between perceived support and self-esteem, highlighting the importance of social support, especially during health crises.

Likewise, Yang et al. (2023) revealed that self-esteem functions as part of psychological defense mechanisms against environmental threats, suggesting that university students with low self-esteem are more vulnerable to adverse events. In Peru, Urbano (2021) found that emotional dependence and attitudes toward violence significantly affect self-esteem in higher education students (Nagelkerke $R^2 = 0,262$), including its dimensions: self ($R^2 = 0,368$), social self-esteem ($R^2 = 0,469$), and family self-esteem ($R^2 = 0,474$). In Argentina, Fernández and Caurcel (2019) reported that 33% of the variance in state anxiety was explained by self-esteem and sleep hours ($R^2 = 0,330$) during academic exams.

Although correlation does not imply causation, correlations offer a relevant preliminary indication of causal relationships. For example, in Mexico, Rojas and Fuentes (2023) identified high and significant correlations between various forms of cyberviolence and social aggression ($\rho = 0,70$; $p < 0,01$), as well as between depression and anxiety ($\rho = 0,793$; $p < 0,01$). In Spain, Tarrío et al. (2022) found significant differences based on gender in dating violence, with women scoring higher as victims of online harassment, control, and sexual violence, while men engaged more in psychological, physical, and sexual violence. All forms of dating violence, except stress-related, were significantly correlated with depression, anxiety, and stress.

Additionally, Estrada et al. (2021) in Peru identified moderate levels of self-esteem (44,7%) and aggression (48,2%), with a high negative correlation ($\rho = -0,762$), indicating that lower self-esteem is associated with higher aggression. Similarly, Enríquez (2021) found that, in schools in southern Lima, violent behavior among students was low (70,1%), while medium levels were recorded in self-esteem (38,1%) and anxiety (31,1%). However, Serna et al. (2023) found no significant relationship between self-esteem and academic performance levels ($p = 0,860 > 0,05$), which aligns with Gallegos et al. (2020), who found no significant association between psychological violence and self-esteem among women in Morelos, Mexico ($p = 0,292 > 0,05$).

Thus, studies published between 2019 and 2025 show a predominance of correlational findings among university student populations, reinforcing the need for more causal research using logistic regression to clarify the influence of anxiety and violent behavior on self-esteem in this group. Moreover, logistic regression offers a predictive model for understanding the variability of self-esteem under stressful or critical situations, quantifying the impact of anxiety and violent behavior during an essential stage of personality development.

1.2.2. *Revisión teórica*

The theory of state and trait anxiety was developed by Spielberger et al. (1970) within the framework of cognitive-behavioral psychology. As a state, anxiety refers to a temporary emotional reaction that arises in response to a situation perceived as threatening. It is usually associated with changes in attention and awareness, as well as the resulting physiological activation. Meanwhile, as a trait, it corresponds to a persistent disposition over time, emerging in various situations that trigger anxiety. A high level of trait anxiety predisposes individuals to more intense and frequent reactions when certain events are perceived as threatening (Spielberger et al., 1970). Furthermore, cognitive-behavioral therapy (CBT) has proven to be effective in addressing both state and trait anxiety. When appropriate, techniques such as cognitive restructuring, gradual exposure, and mindfulness practice provide valuable assistance in reducing anxious responses by modifying cognitive patterns that maintain an anxious disposition (Spielberger et al., 1970).

Violent or aggressive behavior reflects a more or less consistent predisposition to act in a particular way in a number of situations. It is also the result of biological, environmental, and cognitive factors. Buss and Perry (1992) identified various forms of aggression as key dimensions in their questionnaire:

- 1) Physical aggression, which involves behaviors that cause physical harm to others, such as hitting or pushing;
- 2) Verbal aggression, including hostile expressions such as insults or threats;
- 3) Anger, understood as the emotional component of aggression, characterized by high levels of frustration and a tendency to experience anger easily; and
- 4) Hostility, associated with negative beliefs and attitudes toward others, often emphasizing distrust and resentment (Buss & Perry, 1992; García et al., 2020).

The concept of self-esteem was addressed by Coopersmith (1967). Its theoretical foundation stems from humanistic psychology and the cognitive model of self-esteem, with influences from self-concept theory. Self-esteem is defined as an individual's self-evaluation, based on experiences of success or failure and the degree of social acceptance.

Another important influence in Coopersmith's work (1959) is Carl Rogers' theory of self-image, which refers to the congruence between the perceived self and the ideal self. According to this view, when there is a significant discrepancy between these two aspects, low self-esteem emerges, negatively affecting emotional well-being. In developing the concept of self-esteem, Coopersmith (1960) identified four key areas:

- a) the overall consideration of personal worth (general self-esteem),
- b) the relationship with family and the level of acceptance received (family self-esteem),
- c) the perception of acceptance in interactions with friends and peers (social self-esteem), and
- d) confidence in one's intellectual abilities and academic performance (academic self-esteem).

1.3. Research Problem, Objective, and Hypothesis

Considering the arguments presented so far, the research problem for this study is formulated as follows: To what extent do anxiety and violent behavior influence self-esteem among students at a university in Cusco, Peru?

Based on this problem, the general objective of the study is to determine the influence of anxiety and violent behavior on self-esteem among students at a university in Cusco, Peru.

Accordingly, the following hypothesis is proposed, grounded in scientific literature and closely related to the study's objective: Anxiety and violent behavior have a significant influence on the self-esteem of students at a university in Cusco, Peru, 2024.

2. Methodology

2.1. Participants

Since the researchers had full access to the target population, it was decided to include all its members, thus constituting a census-type population. Therefore, no specific sampling method was applied. After excluding some students who did not provide the required authorization to participate, the final population consisted of 360 students from seven academic programs (Business Administration, Accounting, Law, Nursing, Civil Engineering, Systems Engineering, and Psychology), aged between 17 and 20 years. Most participants were enrolled in the first, second, and third academic semesters.

2.2 Procedure

Initially, the co-authors conducted informative meetings with the invited students. During these sessions, the purpose and significance of the study were clearly and briefly explained, emphasizing that the collected information would be used solely for academic purposes. Once the participants' consent was obtained, informed consent forms were signed. During the administration of the instruments, the co-authors were distributed across the seven classrooms to guide and assist the students, providing necessary instructions and resolving any questions. Each session lasted approximately 20 minutes.

2.3 Measurement Instruments

The first instrument, used to assess anxiety, was the State-Trait Anxiety Inventory (IDARE), developed by Charles Spielberg and Rogelio Díaz-Guerrero (1975) and adapted by Rivera Martínez (2020). This questionnaire contains 40 items divided into two dimensions: Trait Anxiety and State Anxiety. Responses for Trait Anxiety range from (1) Almost never to (4) Almost always, while responses for State Anxiety range from (1) Not at all to (4) Very much. The validity of the instrument was confirmed through a KMO value of 0,833, and its reliability, measured using the Omega coefficient, was 0,863 for the total scale, 0,753 for State Anxiety, and 0,780 for Trait Anxiety.

The second instrument measures aggressive behavior through the Aggression Questionnaire by Buss and Perry (1992), adapted by Matalinaires et al. It includes 29 items distributed across four dimensions: physical aggression, verbal aggression, anger, and hostility. Responses range from (1) Completely false for me to (5) Completely true for me. Although validated through exploratory factor analysis, specific validation data were not reported. Reliability, assessed using Cronbach's Alpha, reached $\alpha = 0,836$, indicating high internal consistency.

Finally, the third instrument, the Coopersmith Self-Esteem Inventory, contains 58 items, including 8 control items (Lie Scale). Adapted by Brinkmann, Segure, and Solar (1989) and validated by Espinoza (2015) in Peru, it presents a Cronbach's Alpha of 0,799. Final scores are obtained by summing all items and multiplying by two, with the test considered invalid if the Lie Scale score exceeds four points.

2.4 Data Analysis

The analysis was conducted to determine the influence of anxiety and violent behavior on the self-esteem of 316 students at a university in Cusco. Data were processed using SPSS version 26 to meet the research objectives. First, a descriptive analysis of the variables and their dimensions was performed using frequencies and percentages. Scores were classified into three levels: low, medium, and high, allowing for a systematic and detailed examination of the results by dimension. Subsequently, to examine whether anxiety and violent behavior had a causal relationship with self-esteem, an ordinal logistic regression model was applied, which is suitable for analyzing ordinal variables.

3. Results

Table 1 shows that the global mean scores for state anxiety and trait anxiety are 43,70 and 44,03, respectively; the mean for violent behavior is 64,89. The mean scores for the dimensions of physical aggression, verbal aggression, hostility, and anger are 17,87, 10,82, 19,82, and 16,38, respectively. Moreover, the overall mean score for self-esteem is 57,77, while the means for the self-esteem dimensions—self, social, family, and academic self-esteem—are 15,22, 4,71, 4,05, and 4,90, respectively.

The standard deviations for state anxiety, trait anxiety, violent behavior, and self-esteem are 10,161, 8,558, 20,989, and 18,786, respectively, indicating a high dispersion of data around the mean (Creswell & Creswell, 2018). Notably, skewness and kurtosis values range from 0,008 to 0,928, which fall within the acceptable range of $\pm 1,5$, suggesting slight deviations from normality. Consequently, the data exhibit a symmetric distribution, making them suitable for the application of parametric tests in statistical analysis (Sarker & Al-Muaalemi, 2022).

Table 1.*Descriptive Statistics of the Variables and Their Dimensions*

	N	Mean	SD	Skewness	Kurtosis
State Anxiety	360	43,70	10,161	,008	-,496
Trait Anxiety	360	44,03	8,558	,103	-,111
Aggresive Behavior	360	64,89	20,989	,372	-,141
Physical Aggresion Dimension	360	17,87	6,734	,729	,289
Verbal Aggresion Dimension	360	10,82	4,189	,468	-,288
Hostility Dimension	360	19,82	7,088	,206	-,530
Anger Dimension	360	16,38	5,540	,330	-,245
Self-Esteem	360	57,77	18,786	-,141	-,800
Self-Esteem (Self) Dimension	360	15,22	5,593	-,134	-,928
Social Self-Esteem Dimension	360	4,71	1,662	-,216	-,371
Family-Home Self-Esteem Dimension	360	4,05	1,934	-,218	-,642
Academic Self-Esteem Dimension	360	4,90	1,849	-,149	-,718

Source: SD: Standard deviation, N: Number of cases.

Table 2 presents the results regarding the anxiety levels of university students from a private university in Cusco. It is observed that, for state anxiety, a high level predominated in 49,2% of students, followed by a medium level in 41,9%, and a low level in only 8,9%. Regarding trait anxiety, a high level was present in 50,6% of students, followed by a medium level in 45,6%, and a low level in 3,9%.

These results can be interpreted as a reflection of a system that does not prioritize individuals' emotional well-being. High anxiety levels may be associated with an environment that demands academic results without considering the impact on students' mental health, which highlights the need for significant changes in educational and public health policies.

Table 2.*Frequency and Levels of the Anxiety Variable*

Variable	Low		Medium		High		Total	
	f	%	f	%	f	%	f	%
State Anxiety	32	8,9%	151	41,9%	177	49,2%	360	100%
Trait Anxiety	14	3,9%	164	45,6%	182	50,6%	360	100%

Source: f: frequency, %: percentage.

Table 3 shows the results of violent behavior among students at a university in Cusco. It is observed that, regarding overall violent behavior, the medium level predominated at 51,9%. In the physical aggression dimension, 47,2% of students were at a medium level; in verbal aggression, 55,8%; in hostility, 50%; and in anger, 62,5%. These findings can be interpreted as a reflection of structural inequalities, social stress, and a lack of conflict resolution strategies among the student body.

A social environment characterized by high aggression may be linked to conditions of structural violence, economic precariousness, lack of dialogue spaces, and absence of emotional regulation programs. This situation suggests the need to understand the underlying causes that generate such behaviors and to promote social change strategies aimed at reducing aggression in its various forms.

Table 3.
Frequency and Levels of the Violent Behavior Variable and Its Dimensions

Variables	Low		Medium		High		Total	
	f	%	f	%	f	%	f	%
Total Aggression	86	23,9%	186	51,7%	88	24,4%	360	100%
Physical Aggression	73	20,3%	170	47,2%	117	32,5%	360	100%
Verbal Aggression	69	19,2%	201	55,8%	90	25,0%	360	100%
Hostility	90	25,0%	180	50,0%	90	25,0%	360	100%
Anger	71	19,7%	225	62,5%	64	17,8%	360	100%

Source: f: frequency, %: percentage.

Table 4 presents the results of self-esteem among university students from a private university in Cusco, 2024. It is observed that, for overall self-esteem, the medium level predominated at 53,6%. In the self-esteem (self) dimension, 51,7% were at a medium level; in social self-esteem, 62,8%; in family-home self-esteem, 51,7%; and in academic self-esteem, 51,4%. Self-esteem is not merely an individual trait but is profoundly influenced by social, educational, and family factors. The predominance of medium levels suggests that structural conditions support a moderate development of self-esteem, although certain barriers prevent its full strengthening. In particular, low social self-esteem may reflect fragile interpersonal relationships, difficulties with social integration, or environments that offer limited positive feedback.

Table 4.
Frequency and Levels of the Self-Esteem Variable and Its Dimensions

Variable	Low		Medium		High		Total	
	f	%	f	%	f	%	f	%
Self-Esteem (Self) Dimension	90	25,0%	186	51,7%	84	23,3%	360	100%
Social Self-Esteem Dimension	78	21,7%	226	62,8%	56	15,6%	360	100%
Family-Home Self-Esteem Dimension	79	21,9%	186	51,7%	95	26,4%	360	100%
Academic Self-Esteem Dimension	92	25,6%	185	51,4%	83	23,1%	360	100%
Overall Self-Esteem	87	24,2%	193	53,6%	80	22,2%	360	100%

Source: f: frequency, %: percentage

Table 5 presents the ANOVA and the model summary. Based on the data, it is observed that state anxiety and violent behavior explain approximately 23,7% of the variance in self-esteem, as indicated by the R-squared value of 0,237. The predicted factors were statistically significant ($F = 55,299$, $p = 0,000$) at the 0.05 level, as shown in Table 5. Therefore, it can be inferred from the data analysis that state anxiety and violent behavior exhibited by students may serve as indicators of their self-esteem levels.

Table 5(a).
Regression Model Summary: State Anxiety, Violent Behavior, and Self-Esteem

Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	,486 ^a	,237	,232	4,900

Source: a. Predictors: (Constant), Violent Behavior, State Anxiety.

Tabla 5(b).
Regression ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2655,743	2	1327,872	55,299
	Residuo	8572,479	357	24,013	
	Total	11228,222	359		

Source: a. Dependent variable: Self-Esteem (Self).

b. Predictors: (Constant), Violent Behavior, State Anxiety.

Table 6 presents the results of the linear regression coefficients. The findings suggest that state anxiety and violent behavior have an impact on self-esteem. For state anxiety ($B = -0,242$, $p < 0,001$), this indicates that a one-unit increase in state anxiety is associated with a decrease of 0,242 in self-esteem, holding violent behavior constant. The standardized coefficient ($Beta = -0,440$) shows that state anxiety has a strong negative effect on self-esteem. Regarding violent behavior ($B = -0,029$, $p = 0,024$), this means that a one-unit increase in violent behavior is associated with a decrease of 0,029 in self-esteem, while keeping state anxiety constant.

The standardized coefficient ($Beta = -0,110$) suggests that its impact is smaller compared to state anxiety. The intercept (Constant= 27,725) represents the average level of self-esteem when both state anxiety and violent behavior are zero. Both predictors have p-values less than 0,05, indicating that their effects on self-esteem are statistically significant. As state anxiety increases, self-esteem significantly decreases. Although violent behavior also reduces self-esteem, its effect is smaller compared to state anxiety. Therefore, state anxiety appears to be the most important predictor in the decline of self-esteem.

Tabla 6.
Regression Coefficients Results: State Anxiety, Violent Behavior, and Self-Esteem

Model	Unstandardized Coefficients		Standardized Coefficients		
	B	Desv. Error	Beta	t	Sig.
1	(Constant)	27,725	1,237	22,408	,000
	State Anxiety	-,242	,027	-,9,049	,000
		-,029	,013	-,110	-,2,268

Source: a. Dependent variable: Self-Esteem (Self).

Table 7 presents the ANOVA and model summary. Based on the data, it is observed that trait anxiety and violent behavior exhibited by students explain approximately 34.9% of the variance in self-esteem, as indicated by the R-squared value of 0.349. The predicted factors were statistically significant ($F = 95,586$, $p = 0,000$) at the 0.05 level, as shown in Table 8. Therefore, it can be inferred from the data analysis that trait anxiety and violent behavior among students can serve as indicators of their self-esteem levels.

Table 7(a).
Regression Model Summary: Trait Anxiety, Violent Behavior, and Self-Esteem

Modelo	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	,591 ^a	,349	,345	15,202

Source: a. Predictors: (Constant), Violent Behavior, Trait Anxiety.

Table 7(b).

Regression ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	44182,124	2	22091,062	95,586
	Residual	82507,199	357	231,113	
	Total	126689,322	359		

Source: a. Dependent variable: Self-Esteem.

b. Predictors: (Constant), Violent Behavior, Trait Anxiety.

Table 8 presents the results of the linear regression coefficients. For trait anxiety ($B = -1.276$, $p < 0.001$), this indicates that for every one-unit increase in trait anxiety, self-esteem decreases by 1.276 units, holding violent behavior constant. The standardized Beta coefficient ($\beta = -0.581$) shows that trait anxiety has a strong and negative effect on self-esteem. This result is highly significant ($p < 0.001$), confirming that the effect is not due to chance. Regarding violent behavior ($B = -0.019$, $p = 0.646$), it reflects a very small negative effect on self-esteem, but it is not statistically significant ($p = 0.646$). The standardized Beta coefficient ($\beta = -0.022$) indicates that its impact is almost null.

The intercept (Constant: $B = 115.19$, $p < 0.001$) represents the estimated value of self-esteem when trait anxiety and violent behavior are zero; it is statistically significant ($p < 0.001$), suggesting that other factors beyond those included in the model also influence self-esteem. Thus, in this model, violent behavior does not have a significant relationship with self-esteem.

Table 8.

Regression Coefficients Results: Trait Anxiety, Violent Behavior, and self-Esteem

Modelo	Unstandardized Coefficients		Standard Coefficients		
	B	Std. Error	Beta	t	Sig.
1	(Constant)	115,191	4,284		.000
	Trait Anxiety	-1,276	,103	-,581	,000
	Violent Behavior	-,019	,042	-,022	,646

Source: a. Dependent variable: Self-Esteem.

4. Discussion

The results obtained in this study regarding the influence of anxiety and violent behavior on the self-esteem of university students from Cusco largely coincide with previous findings reported in different cultural contexts. In line with previous research, this study shows that both anxiety and violent behavior have a significant negative influence on students' self-esteem.

Anxiety, in both its state and trait manifestations, emerges as a critical factor affecting students' self-esteem. This finding aligns with that of Cao and Liu (2024), who documented the predictive role of anxiety on self-esteem and academic self-efficacy. Their research in China observed that anxiety negatively impacts self-esteem, similar to the findings of this study, where a significant correlation was found between anxiety and students' low self-esteem. Trait anxiety, in particular, showed a stronger impact, highlighting the importance of addressing long-term anxiety through academic and psychological support programs for university students.

This conclusion is also supported by Fernández and Caurcel (2019), who found that state anxiety is partially explained by self-esteem and other variables such as hours of sleep, reflecting the complex interaction between these factors.

Regarding violent behavior, although its impact on self-esteem is negative, its effect is less pronounced compared to anxiety. These results are consistent with those of Estrada et al. (2021), who observed that aggressiveness in university students has a significant negative correlation with self-esteem. However, the impact of violent behavior appears to be mediated by other contextual and personal factors. This finding is also aligned with the work of Rojas and Fuentes (2023), who found strong and significant correlations between cyberviolence and depression/anxiety, suggesting that violent behaviors may exacerbate negative psychological effects.

The regression model based on trait anxiety showed a greater explanatory power (34.9%) than the model based on state anxiety (23.7%). This highlights the importance of chronic or long-term anxiety (trait anxiety) over temporary manifestations in affecting self-esteem, consistent with previous studies that point to the significant influence of chronic anxiety on the emotional well-being of university students. This is also aligned with the findings of Araujo et al. (2022), who observed a significant mediating role of anxiety in the relationship between perceived social support and self-esteem.

Regarding the instruments used, the State-Trait Anxiety Inventory (IDARE) is widely applied in research to measure anxiety levels in both temporary (state) and more stable (trait) forms. Buss and Perry (1992) developed the Buss-Perry Aggression Questionnaire, which evaluates different types of aggression, including physical and verbal aggression, hostility, and anger. This questionnaire has been used in previous studies to understand behavioral dimensions that may be associated with students' emotional well-being. Finally, the Coopersmith Self-Esteem Inventory measures self-esteem in various life domains (personal, social, family, and academic), offering a comprehensive view of how emotional and behavioral factors influence students' self-esteem.

5. Conclusions

This research contributes to deepening the understanding of the impact of anxiety and violent behavior on students at a university in Cusco. It also demonstrates that, within a sample of 360 students, anxiety and violent behavior have a significant negative effect on self-esteem. However, the impact of violent behavior is less pronounced compared to anxiety, especially when manifested as trait anxiety. Notably, the regression model based on trait anxiety has a higher explanatory power (34.9%) than the model based on state anxiety (23.7%).

Moreover, the results of this study offer practical insights for student counseling practices in higher education settings:

Anxiety management programs should be integrated into the curricular and extracurricular structure of the university system. These programs could include relaxation techniques and coping strategies, aiming for students to apply what they learn during high-stress moments such as final exams or thesis defenses.

Additionally, student well-being requires the promotion of a culture of respect, conflict resolution, and assertive communication skills within the university environment. Preventing violence and encouraging empathy could help reduce violent behaviors, thereby improving the atmosphere for teaching and learning processes.

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AUTHORS' CONTRIBUTIONS, FINANCING AND ACKNOWLEDGMENTS

Conceptualization: Enciso-Sotomayor, Esmeralda; Rozas-Calderón, Vanessa. **Formal Analysis:** Bellido-García, Roberto. **Writing - Original Draft Preparation:** Rejas-Borjas, Gerardo. **Writing - Review and Editing:** Bellido-García, Roberto; Rejas-Borjas, Gerardo. **Supervision:** Enciso-Sotomayor, Esmeralda. **All authors have read and approved the final published version of the manuscript:** Enciso-Sotomayor, Esmeralda; Rozas-Calderón, Vanessa; Bellido-García, Roberto; Rejas-Borjas, Gerardo.

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AUTHORS:

Esmeralda Enciso-Sotomayor

Universidad César Vallejo, Perú.

Psychologist and Bachelor of Psychology from Universidad Andina del Cusco since 2010, with a Master's degree in University Teaching obtained in 2020. She has served as a university professor since 2013 at Universidad Andina del Cusco and has experience in clinical and educational psychology. She has participated in national and international events on applied psychology. Currently, she is affiliated with Universidad Andina del Cusco and the research line in mental health and educational psychology, accumulating more than ten years of professional experience.

eencisososo85@ucvvirtual.edu.pe

Vanessa Rozas-Calderón

Universidad Andina del Cusco, Perú.

Psychologist and Bachelor of Psychology from Universidad Andina del Cusco (2010), with a Master's degree in Educational Psychology (2021). She has worked as a university professor since 2017 at Universidad Andina del Cusco and has experience in clinical, educational, and research psychology. She has participated in national and international events on applied psychology.

vrozas@uandina.edu.pe

Orcid ID: <https://orcid.org/0000-0002-4022-4071>

Roberto Bellido-García
Universidad César Vallejo, Perú.

Renacyt researcher, postgraduate lecturer, and specialist in intercultural competencies and formative assessment. He is a certified expert in qualitative data analysis and the author of research articles published in Scopus, Web of Science, and SciELO. Additionally, he has extensive experience in the pedagogical and administrative management of educational institutions. He is currently pursuing a doctoral degree in Educational Management at the National University of San Marcos, which is in its final phase.

rsbellidog@ucvvirtual.edu.pe

Orcid ID: <https://orcid.org/0000-0002-1417-3477>

Scopus ID: <https://www.scopus.com/authid/detail.uri?authorId=57218375231>

Google Scholar: <https://scholar.google.es/citations?user=KBJHmIsAAAAJ&hl=es&oi=ao>

Gerardo Rejas-Borjas
Universidad Nacional Mayor de San Marcos, Perú.

Renacyt researcher, specialist in academic writing, thesis advisor, and professor at the Graduate Unit of the Faculty of Social Sciences at the National University of San Marcos. His main research areas are formative assessment and interculturality. He is the author of research articles and a speaker on topics related to education and educational psychology.

luis.rejas@unmsm.edu.pe

Orcid ID: <https://orcid.org/0000-0002-7679-4973>

Scopus ID: <https://www.scopus.com/authid/detail.uri?authorId=57428301100>

Google Scholar: <https://scholar.google.es/citations?user=cFlfhK4AAAAJ&hl=es&oi=ao>