



















Perception of Academic Impact in Latin American University Students based on the Fear of the Outbreak of a Large-scale War: Cross-sectional Survey

Percepción de repercusión académica según el miedo al inicio de una gran guerra en estudiantes universitarios de Latinoamérica: encuesta transversal

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Abstract

Introduction. The military conflict between Ukraine and Russia is causing great concern, as it could potentially escalate into a larger scale war. This has once again put students' academic activities at risk.

Objective. To determine the perceived academic impact based on the fear of a large-scale war among university students in Latin America.

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Method. A cross-sectional, analytical, and multicenter study was conducted in seven Latin American countries, surveying 1,455 university students. Perceived academic impact was assessed through a categorized questionnaire and analyzed in relation to socio-educational variables, anxiety, depression, and stress, measured using the validated DASS-21 scale.

Results. Multivariate analysis revealed that the perception of significant academic impact was higher among those fearing a large-scale war (adjusted prevalence ratio [aPR]: 1.35; 95% CI: 1.25–1.46; $P < .001$) and among students with severe or very severe anxiety (aPR: 1.25; 95% CI: 1.12–1.40; $P < .001$). Conversely, male students (aPR: 0.81; 95% CI: 0.74–0.89; $P < .001$) and those residing in Paraguay, Peru, Bolivia, Ecuador, and Mexico reported a lower perception of impact.

Conclusion. There was a greater perception of academic impact among those who perceived the potential for a global conflict, as well as among those with anxiety, women, and according to the country of residence.

Keywords

Perception; war; Latin America; academic impact; students.

Resumen

Introducción. El conflicto militar entre Ucrania y Rusia está generando gran preocupación, ya que podría escalar potencialmente a una guerra a mayor escala. Esto ha vuelto a poner en riesgo las actividades académicas de los estudiantes.

Objetivo. Determinar el impacto académico percibido, basado en el miedo a una guerra a gran escala, entre los estudiantes universitarios de América Latina.

Método. Se realizó un estudio transversal, analítico y multicéntrico en siete países de América Latina, encuestando a 1,455 estudiantes universitarios. El impacto académico percibido se evaluó mediante un cuestionario categorizado y se analizó en relación con variables socioeducativas, ansiedad, depresión y estrés, medidos con la escala validada DASS-21.

Resultados. El análisis multivariado mostró que la percepción de un impacto académico significativo fue mayor entre quienes temían una guerra a gran escala (razón de prevalencia ajustada [RPa]: 1.35; IC 95%: 1.25–1.46; $P < .001$) y entre estudiantes con ansiedad severa o muy severa (RPa: 1.25; IC 95%: 1.12–1.40; $P < .001$). En contraste, los hombres (RPa: 0.81; IC 95%: 0.74–0.89; $P < .001$) y quienes residían en Paraguay, Perú, Bolivia, Ecuador y México presentaron una percepción menor de impacto.

Conclusión. Hubo una mayor percepción de impacto académico entre aquellos que percibían el potencial de un conflicto global, así como entre aquellos con ansiedad, mujeres, y de acuerdo al país de residencia.

Palabras clave

Percepción; guerra; Latinoamérica; repercusión académica; estudiantes.

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Introduction

The Ukraine and Russia War is causing great concern worldwide, due to a possible global repercussion [1,2]. Especially, given the fact that we were just emerging from the COVID-19 pandemic and already faced a new threat of possible repercussions on the economy, freedom to move, as well as the socio-political problems that it would generate, and other aspects that we had just experienced [3,4]. Therefore, once again the world began to see on television, social networks, press, and other networks that a serious problem could arise, destabilizing their family economy and that of their country [5,6]. In this context, multiple social groups had an increased fear that it would impact their daily life [7]; one of them being the student population, since they had been greatly affected by the Coronavirus in the previous years [8,9]. Remembering that many of them delayed their studies, they had to take virtual classes, set aside practices in some courses/careers, had to adapt to a new way of studying and even saw their economy or the possibility of continuing their career affected, among many other things [10–12].

However, despite having the recent precedent of the pandemic, it is unknown how the repercussions could be at the onset of a third world war, at least specifically in the academic activities of students. The consequences, for what is known, would be greater in those territories that directly support the countries in conflict [13,14]. In our region, there are several countries that are allies to the bloc led by the United States of America, but there are also others that support Russia [15,16].

Collective emotional orientation, particularly fear and insecurity, plays a crucial role in shaping social and psychological responses to threatening contexts [17,18]. Collective fear not only predominates over other emotions, but also acts as a modulatory factor that heightens the perception of risk and vulnerability, significantly impacting the mental health of individuals within a social group. This emotional dynamic can contribute to the development of anxiety and chronic stress, profoundly affecting psychological well-being and individuals' adaptive capacities. In scenarios of uncertainty, such as the potential for armed conflict, collective fear can intensify, negatively influencing quality of life and academic performance.

Furthermore, it is well known that fear, as a basic emotion, triggers neurophysiological responses that directly affect cognitive processes related to learning and memory. Recent studies in contexts of armed conflict have demonstrated a significant correlation between chronic fear and reduced academic performance, exacerbated by disorders such as anxiety and depression [19]. According to Goto et al. [20], students exposed to prolonged conflicts reported severe disruptions to their educational plans and higher dropout rates. Additionally, the sociological theory of fear suggests that social perceptions amplify negative impacts, particularly in already vulnerable communities.

Latin America has experienced numerous armed conflicts which, although localized, have significantly shaped the population's risk perceptions. For instance, studies on the War of the Triple Alliance and the Chaco War have demonstrated how the narrative surrounding armed conflicts influences social risk perception and its implications for education and social well-being [21,22]. More recently, research on the impact of violence in Colombia during its internal armed conflict highlights significant effects on access to education, academic performance, and

students' mental health [23]. These historical contexts underscore how war scenarios, even those geographically distant, can evoke fear and uncertainty, ultimately influencing social and academic dynamics.

In recent years, research has shown that armed conflict in low- and middle-income countries (LMICs) has a significant impact on various aspects of social and academic life. For example, a study conducted in Syria and Afghanistan revealed how exposure to war negatively affects the academic performance and mental health of university students. In addition, the choice of Latin American university students as the study population is justified by their vulnerability and the relevance of their perceptions in understanding the social effects of global conflicts. The perceptions of these students can provide valuable insights into how large-scale conflicts influence their academic and social lives, which can guide future interventions to mitigate these impacts [19,20,24,25]. For these reasons, it is important to know what perceptions students have about how a possible third world war could affect their academic life. Therefore, the objective of this research was to determine the perception of academic repercussion according to the fear of the onset of a large-scale war in Latin American university students.

Method

Design and population

A cross-sectional, analytical, and multicentric research was designed, as university students living in various Latin American countries were surveyed. This was generated through a virtual survey, which was transmitted only once to each respondent, generating both descriptive and analytical results.

Students from various academic programs were included in the study, most of whom resided in Colombia, Paraguay, Peru, Bolivia, Ecuador, Mexico, and Panama. These countries were selected based on the access available to the authors and other collaborators in these regions. At the time of the survey, the participants were actively pursuing academic studies and agreed to be part of the research. This aspect was particularly important as the survey aimed to explore perceptions specifically among this population.

The sample ($n = 1455$) was obtained using non-probabilistic and purposive sampling. This approach was chosen because the objective of the research was to identify associations between variables rather than to extrapolate the results to all student populations in the mentioned countries. If the goal had been to generalize the findings, a probabilistic sampling method would have been required.

Subsequently, a statistical power calculation will be performed to confirm that this sample size was sufficient to test most of the primary variable interactions. A total of 147 participants were excluded for not completing the DASS-21 test and 75 were excluded for not responding to questions about their perception of war. These variables were deemed critical to the research, and their omission made it necessary to exclude these cases from the analysis.

They were reached with a non-random sampling; this thanks to the fact that a group of students was first contacted, then they referred us to others until reaching a sufficient quantity to be able to have the certainty that the crossings were being made correctly. For this, the statistical power of the crossing of the perception of academic repercussion versus each of the independent variables was calculated. This was done with a Stata statistical program, in

which it was found that the variables —type of university, career of study, and the subcategory of living in the country of Panama— did not reach an adequate statistical power (less than 80%), so these three crossings should be taken as exploratory.

Variables

The dependent variable was the perception of the academic impact that would occur if a third world war were to break out, which originally had 5 responses (from none to a lot). They had to be categorized and then worked as a dichotomous variable, where those who perceived that they would have a great impact were those who responded to the subcategories: “quite a bit” or “a lot”; this was compared against those who said they would have “none”, “little” or “regular” amount of academic repercussions. The main independent variable would be the fear they had of a possible war, to which they responded affirmatively or negatively.

Inquiries were also made about the direct influence on classes, where there were four types of responses: they would not be modified, they would decrease, they would stop completely or they would increase. Other secondary variables were sex (male or female), age (years completed), type of university (public or private), field of study (human medicine or other careers), country of residence (Colombia, Paraguay, Peru, Bolivia, Ecuador, Mexico, and Panama). In addition, three conditions of the mental sphere (anxiety, depression, and stress) were measured, so the DASS-21 survey was used, which consists of 21 questions (7 questions for each condition). This test has been validated worldwide and has been used and validated in several Latin American countries. It is also widely used and validated for Hispanic/Latino populations, demonstrating strong psychometric properties [26]. In general, the measurement of perceived repercussions in the academic domain was conducted using direct questions, while the assessment of anxiety, stress, depression, and post-traumatic stress employed standardized tests that have been previously validated, are extensively used worldwide, and exhibit appropriate reliability values.

Procedures and ethics

The research project was reviewed and approved by the Bioethics Committee of the Universidad Privada Antenor Orrego, with registration code No. 0420-2022-UPAO. At all times, the recommendations for working with human beings were respected. The surveys were anonymous. Also, the respondents were informed about the purpose of the research, that their participation was voluntary, and that they could stop participating at any time. The survey was posted on the Google Forms platform, which is free and allows it to be sent via a web link.

Once the survey phase was completed and the data obtained, the quality control of the data began (based on the inclusion and exclusion criteria). This was carried out by the principal investigator and initially worked on in the Microsoft Excel program (2019 version). Then, the filtered base was transferred to the Stata statistical program (version 16), where the data analysis was performed.

Data analysis

To analyze the data, the frequencies and percentages of the categorical variables were first calculated, along with the measures of central tendency and dispersion for the age variable (the only quantitative variable, recorded in completed years). The Shapiro-Wilk test was used to assess normality, as it is one of the most commonly employed tests for this purpose, along with the Shapiro-Francia test, both of which are widely recognized for performing this procedure.

Then, the crude prevalence ratio (RPc, from the Spanish abbreviation), 95% confidence intervals (CI 95%), and p-values were calculated using generalized linear models (Poisson family, log link function, and models with robust variance). This technique is widely utilized for studies with an analytical cross-sectional design [27,28]. The values that were statistically significant went to the multivariate model, where the adjusted prevalence ratio (RPa, from Spanish initials) and the other association statistics were obtained; a $P < .05$ was considered as the cut-off point to determine statistical significance.

Results

Of the 1455 students surveyed throughout Latin America, a higher percentage of women, 940 out of 1455 participants (64.6%) was found. The majority of respondents belonged to state universities: 815 out of 1455 participants (56.0%); 576 out of 1455 participants (60.4%) were students of human medicine. Colombia was the country with the highest number of completed surveys, 434 out of 1455 participants (29.8%), followed by Peru, 234 out of 1455 participants (16.1%). Regarding severe or very severe levels, 267 out of 1455 participants (18.3%) had anxiety; 219 out of 1455 participants (15.0%), depression; and 196 out of 1455 participants (13.5%), stress (Table 1).

Table 1. General characteristics of the respondents.

Variables	Frequency	Percentage
Sex		
Female	940	64.6%
Male	515	35.4%
Age (years)		
Mean and standard deviation	21.9	3.2
Median and interquartile range	21	20-23
Type of university		
Public or state-owned	815	56.0%
Private	640	44.0%
Major/career		
Other majors/careers	576	39.6%
Human medicine	879	60.4%
Country		
Others	94	6.5%
Colombia	434	29.8%
Paraguay	213	14.6%
Peru	234	16.1%
Bolivia	135	9.3%
Ecuador	149	10.2%
Mexico	106	7.3%
Panama	90	6.2%

Severe anxiety o >*		
No	1188	81.7%
Yes	267	18.3%
Severe depression o >*		
No	1236	85.0%
Yes	219	15.0%
Severe stress o >*		
No	1259	86.5%
Yes	196	13.5%

Note. *Measured with DASS-21 scale. The variable age was measured in its quantitative form.

The completed surveys indicated that a large percentage believed there would be many academic repercussions if a third world war were to break out, 490 out of 1455 participants (33.7%), which means a significant contrast with the respondents who answered that there would be no academic repercussions, 80 out of 1455 participants (5.5%). 791 out of 1455 participants (54.4%) of the surveyed students believed that classes would decrease, only 36 out of 1455 participants (2.5%) thought they would increase, 220 out of 1455 participants (15.1%) that they would not change at all, and 408 out of 1455 participants (28.0%) that they would stop completely. 891 out of 1455 participants (61.2%) reported not being afraid of the possibility of a third world war (Table 2).

Table 2. Perception of academic impact among Latin American students.		
Variables	Frequency	Percentage
Overall impact		
Nothing	80	5.5%
Little	168	11.5%
Regular	282	19.4%
Quite a lot	435	29.9%
A lot	490	33.7%
Classes...		
No changes will be made	220	15.1%
They would decrease	791	54.4%
Would stop completely	408	28.0%
They would increase	36	2.5%
Fear of possible war		
No	891	61.2%
Yes	564	38.8%

The average perception of academic consequences was 64%, with the highest value occurring in Panama (73%) and the lowest value in Peru (53%). A value of $P < .001$ was obtained for the percentage of repercussions of a possible war in each country (obtained with the chi-square test), as it can be seen in Figure 1.

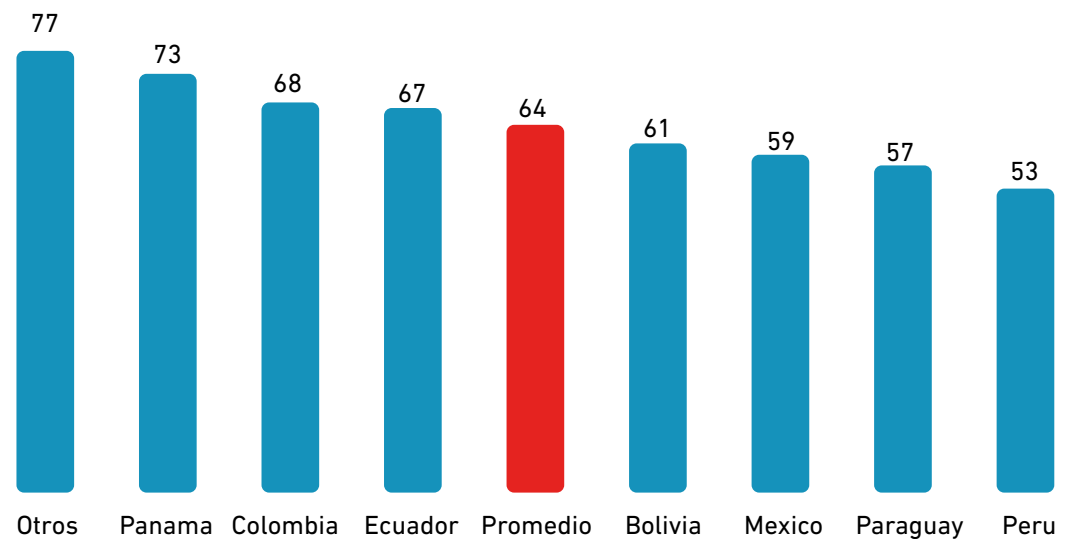


Figure 1. Perception of the academic impact of a possible war according to each country in Latin America.

Upon conducting the bivariate analysis, it was found that the perception of impact on studies was associated with sex ($P < .001$). There were also differences according to age ($P = .002$), in Paraguay ($P < .001$), Peru ($P < .001$), Bolivia ($P < .010$), Mexico ($P = .010$), among those who presented severe anxiety ($P < .001$), severe depression ($P < .001$), severe stress ($P < .001$), as well as having fear of a possible war ($P < .001$) (Table 3).

Table 3. Factors associated with the perception of academic impact in Latin America in the event of a possible war.

Variables	Would it affect studies?		cPR (CI 95%) <i>P</i>
	No n (%)	Yes n (%)	
Sex			
Female	287 (30.5)	653 (69.5)	Category of comparison
Male	243 (47.2)	272 (52.8)	0.76 (0.69-0.83) <.001
Age (years)*	22 (20-24)	21 (20-23)	0.98 (0.96-0.99) .002
Type of university			
Public or state-owned	297 (36.4)	518 (63.6)	Category of comparison
Private	233 (36.4)	407 (63.6)	1.00 (0.93-1.08) .989
Major/career			
Other majors/careers	213 (37.0)	363 (63.0)	Category of comparison
Human medicine	317 (36.1)	562 (63.9)	1.01 (0.94-1.10) .723
Country			
Others	22 (23.4)	72 (76.6)	Category of comparison
Colombia	137 (31.6)	297 (68.4)	0.89 (0.79-1.02) .086

Paraguay	91 (42.7)	122 (57.3)	0.75 (0.64-0.88) <.001
Peru	111 (47.4)	123 (52.6)	0.69 (0.58-0.81) <.001
Bolivia	53 (39.3)	82 (60.7)	0.79 (0.67-0.95) .010
Ecuador	49 (32.9)	100 (67.1)	0.88 (0.75-1.03) .102
Mexico	43 (40.6)	63 (59.4)	0.78 (0.64-0.94) .010
Panama	24 (26.7)	66 (73.3)	0.96 (0.81-1.13) .610
Severe anxiety o >**			
No	473 (39.8)	715 (60.2)	Category of comparison
Yes	57 (21.4)	210 (78.6)	1.31 (1.21-1.41) <.001
Severe depression o >**			
No	475 (38.4)	761 (61.6)	Category of comparison
Yes	55 (25.1)	164 (74.9)	1.22 (1.11-1.33) <.001
Severe stress o >**			
No	481 (38.2)	778 (61.8)	Category of comparison
Yes	49 (25.0)	147 (75.0)	1.21 (1.11-1.33) <.001
Fear of possible war			
No	406 (45.6)	485 (54.4)	Category of comparison
Yes	124 (22.0)	440 (78.0)	1.43 (1.33-1.54) <.001

Note. *Variable taken in its quantitative form. **Measured with DASS-21 scale. Fear of possible war was measured with a validated scale. Crude prevalence ratios (PRc, from Spanish initials), 95% confidence intervals (CI 95%) and *P* were obtained with generalized linear models (Poisson family, log link function and models for robust variances).

In the multivariate analysis, it was found that there was more perception of great academic impact among those who were afraid of a large-scale war happening (*aPR*: 1.35; 95%CI: 1.25-1.46; *P*<.001) and according to having anxiety in severe or very severe degrees (*RPa*: 1.25; 95%CI: 1.12-1.40; *P*<.001). In contrast, there was less perception among men (*aPR*: 0.81; 95%CI: 0.74-0.89; *P*<.001), among those residing in Paraguay (*aPR*: 0.76; 95%CI: 0.65-0.89; *P* = .001), Peru (*RPa*: 0.73; 95%CI: 0.62-0.86; *P*<.001), Bolivia (*aPR*: 0.77; 95%CI: 0.64-0.91; *P* = .003), Ecuador (*RPa*: 0.84; 95%CI: 0.71-0.98; *P* = .028) and Mexico (*aPR*: 0.72; 95%CI: 0.60-0.88; *P* = .001); adjusted for age, depression, and stress (Table 4).

Table 4. Multivariate model of the factors associated with the perception of academic impact in Latin America in the event of a possible war.

Variables	aPR	CI 95%	<i>P</i>
Male sex	0.81	0.74-0.89	<.001
Age (years)*	0.99	0.98-1.00	.193
Country			
Others	Category of comparison		
Colombia	0.88	0.77-1.01	.064
Paraguay	0.76	0.65-0.89	.001

Peru	0.73	0.62-0.86	<.001
Bolivia	0.77	0.64-0.91	.003
Ecuador	0.84	0.71-0.98	.028
Mexico	0.72	0.60-0.88	.001
Panama	0.98	0.83-1.16	.811
Severe anxiety o >**	1.25	1.12-1.40	<.001
Severe depression o >**	1.03	0.91-1.17	.588
Severe stress o >**	0.89	0.78-1.02	.100
Fear of possible war	1.35	1.25-1.46	<.001

Note. *Variable taken in its quantitative form. **Measured with DASS-21 scale. Fear of possible war was measured with a validated scale. Adjusted prevalence ratios (RPa), 95% confidence intervals (CI 95%) and *P* were obtained with generalized linear models (Poisson family, log link function and models for robust variances).

Therefore, the key findings are as follows: in the descriptive analysis, the average perception of repercussions from a potential war was 64%. In the analytical analysis, a significant association was identified based on gender in five of the evaluated countries, particularly in relation to severe anxiety and fear of a possible war. Secondary findings include that more than half of the respondents perceived that there would be a significant impact, including the suspension of classes.

Discussion

Our main finding reveals that individuals who expressed fear of a potential war also perceived a significantly greater academic impact. This fear appears to be influenced by intrinsic factors, such as personal characteristics, or external factors, such as recent experiences that may have affected their emotional well-being, including those related to the Covid-19 pandemic. However, since a direct relationship with the pandemic was not measured in this study, any connection to this event should be interpreted with caution, avoiding causal attributions without solid evidence. This highlights the need for future research to specifically evaluate how global crisis contexts, such as the pandemic, may interact with risk perceptions and their academic impact [29]. Lawrence Leshan proposes the mythical way in which some people face the truth of a war or in relation to how they see the adversaries, including ourselves. It is not only about the academic side, but also about how it will impact our friends and families and about the uncertainty in the future [21]. A study shows that university students feel stressed in the face of a war due to the possible interruption of their long-term plans, such as the postponement of their graduation, incompetence to achieve academic and financial goals, among others [21]. Since, according to figures from international organizations, such as UNICEF, students in war-torn countries have 30% less chance of finishing primary education, the longer a war lasts, the less likely they are to return to study, added to the fears of many university students of losing their studies by being forcibly recruited for their nation's army or for the rebels [21].

As can be seen, all of this is a very complex construct that this research tried to adjust to some social, demographic, and mental health variables. However, it should be evaluated in detail in populations that have a higher risk, suffer from underlying pathologies, have other phobias or fears, etc. This is especially important considering that fear severely damages the

brain structure of learning and memory, causing students who experience this fear, especially those who have it constantly or chronically, to also suffer from somatizations, such as insomnia, nightmares, and impairment of their learning competence. This, as a whole, puts their learning, internalization of content, grades at risk, generates poor academic performance and retention level, and even increases levels of depression and others that could affect in the short, medium, or long term [21,22,29].

Residents of some countries had a lower perception of academic impact, such as the cases of Paraguay, Peru, Bolivia, Ecuador, and Mexico. This shows that the perception of repercussions varies according to the territory where they are located. This is already known and is based on the potential impact a war conflict could have on each nation once it begins. Although Latin America has had limited participation in global war conflicts during the 19th and 20th centuries—especially compared to regions such as the United States, Europe, Asia, and Africa, which have experienced numerous direct and indirect wars during the same period—, this does not necessarily imply that Latin American countries have lived in peace. Instead, the region has faced internal conflicts, dictatorships, social crises, and political tensions that, while different in nature, have also shaped perceptions of the impact of international events such as wars. This complex context must be considered when analyzing how these perceptions develop in Latin America compared to other regions more directly affected by global armed conflicts [30]. Among some of the most important for the region can be mentioned the Triple Alliance (1865-1870), a fierce war, but in its magnitude cannot be compared with the devastating conflicts that occurred in large territories of the northern planet, which destroyed entire populations and cultures [31]. Another regional war that occurred in recent decades was the war between Argentina and Chile (1978), which was interrupted due to the intervention of the Pope [32]. Many more conflicts could be mentioned, but it is known that most were local or with neighboring countries, so almost no participating country has a significant war history, at least involving countries in the northern hemisphere. Therefore, it could be the lower perception of some of the countries as to what a massive war could affect them, at least immediately or directly; which should continue to be investigated.

While men reported a lower perception of potential repercussions, it would be important to distinguish those within this group who may exhibit underlying levels of anxiety, depression, or stress. Such an analysis could help identify less apparent patterns and strengthen the conclusions regarding gender disparities in the perception of impact and mental health [33–35]. For example, in a study conducted on healthcare workers during the pandemic, it was evidenced that women presented more cases of severe symptoms of depression, anxiety, insomnia, and distress [36]. Similarly, in another study, it was demonstrated that women presented a greater psychological impact and worse mental health during the pandemic [37]. In another study, it was evidenced that there was a high prevalence of depression in women [23]. Likewise, another report demonstrated that women show a higher risk of breaking their mental health, as they presented nervousness, fatigue, restlessness, or anger [38]. It is for all this that it was expected that women would be the ones who perceive greater repercussions of a global war occurring; this due to their reported vulnerability in the mental sphere, which should serve to continue characterizing this population, as well as generating interventions that help improve this situation.

Those who experienced severe or very severe anxiety had a greater perception of significant academic impact. This is important because anxiety is an increasingly common pathology that exacerbates feelings of distress, fear, worry, and others that have been widely reported. This is shown by Alotaibi in his study 'Future Anxiety among Youth Affected by War and Armed Conflict', which addresses a population similar to the one that was part of our

study [39]. In addition, some authors indicate that anxious students often have problems with socialization, which is driven by frustration in a university/society that stimulates competition among its students [40-42].

The differences in perception observed between genders may be associated with psychological and sociocultural factors. Previous studies have shown that women tend to report higher levels of anxiety, stress, and concern in response to uncertain events, as was observed during the COVID-19 pandemic [37,23]. This vulnerability can partly be attributed to traditional gender roles that place greater emotional responsibility and caregiving expectations on women. Conversely, the lower perceived impact among men may be influenced by cultural norms that discourage the expression of emotions related to fear or anxiety [33].

The differences observed between countries may be attributed to contextual factors, such as sociopolitical history and perceived proximity to conflict. For instance, countries like Peru and Paraguay, which have remained relatively isolated from international conflicts, might perceive the threat of a global war as less immediate or relevant. This contrasts with countries like Colombia, which have experienced prolonged internal conflicts and may have a population more attuned to the effects of violence on their academic and social lives [25]. This finding suggests that each country's prior experiences significantly shape the perception of the impact of a global threat.

Our findings align with those reported by Mayer et al. [25], where students exposed to the threat of war exhibited higher levels of anxiety that negatively affected their academic performance. This underscores the necessity of implementing psychosocial intervention strategies, particularly in vulnerable regions. Moreover, the observed gender differences in perception can be partially explained by previous studies showing a greater susceptibility among women to experience anxiety and fear in uncertain contexts [37].

Our findings have important practical implications for designing intervention strategies to mitigate the perceived impact on students during global crises. First, psychological support programs in universities should be strengthened, particularly targeting women and students with high levels of anxiety, who are the most vulnerable to such perceptions. Additionally, the results highlight the need for educational campaigns aimed at promoting resilience and managing uncertainty in conflict-related contexts, focusing on regions with higher perceived impact, such as Panama and Colombia.

Based on the results of our study, we propose implementing targeted interventions to reduce the psychological and academic impact perceived by students in global crisis contexts. First, we recommend establishing psychological support programs that prioritize students experiencing severe or very severe anxiety. These programs could include group or individual therapy sessions designed to address fear and anxiety management associated with large-scale global events.

Moreover, we emphasize the importance of implementing educational workshops focused on resilience. These practical activities would help students develop coping skills for uncertain situations, utilizing evidence-based approaches such as cognitive-behavioral therapy. We also suggest launching awareness campaigns to disseminate reliable scientific information about the actual likelihood of catastrophic events and to present effective strategies for managing uncertainty. These campaigns should be culturally tailored to the perceptions and needs of each country, thereby maximizing their impact.

It is also critical to develop effective communication policies to reduce irrational fears among students by sharing trustworthy information and fostering dialogue about global

challenges. Such initiatives should be adapted to the cultural and social characteristics of each country to enhance their effectiveness. Finally, the study underscores the importance of integrating workshops on stress management and socio-emotional skill development into the university curriculum.

We further propose creating peer support networks, both virtual and in-person. These spaces would allow students to share experiences, provide mutual support, and foster a sense of community and security during crises. Such initiatives could significantly contribute to students' psychological well-being and academic performance, enhancing their ability to face global challenges.

We acknowledge the methodological limitations that must be addressed in future research to deepen these findings and ensure their applicability. One of the primary limitations is the use of non-probabilistic sampling, which restricts the generalizability of the results across the region. Additionally, the cross-sectional design does not allow for causal relationships between the analyzed variables to be established. For future studies, we recommend implementing longitudinal designs and probabilistic sampling to assess the evolution of these perceptions over time and their relationship with broader contextual factors. Furthermore, it would be valuable to include qualitative assessments to explore students' subjective experiences in greater depth regarding this type of global crisis.

Conclusions

It is concluded that there is a significant relationship between the perception of a major academic impact in the face of a potential armed conflict and the fear of such a conflict materializing. This association is influenced by factors such as gender, residence in specific Latin American countries —particularly Paraguay, Peru, Bolivia, Ecuador, and Mexico—, and the presence of severe or very severe anxiety among students.

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