Estrés pospandemia ante el regreso a clases en estudiantes universitarios

Post-pandemic stress in the face of back-to-school in university students

Estresse pós-pandemia no retorno às aulas em estudantes universitários

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Resumen

La palabra *estrés* se convirtió en un vocablo usual en la sociedad en la que vivimos; incluso, en los espacios educativos, se le llegó a considerar como una dificultad creciente de atención en la población estudiantil. Por tal motivo, el objetivo de esta investigación fue establecer la prevalencia del estrés pospandemia ante el regreso a clases en estudiantes universitarios y establecer su relación con las variables género, edad, licenciatura y semestre. Para ello, se realizó un estudio cuantitativo, de corte transversal, tipo correlacional y no experimental, con una población de 254 estudiantes de primero a octavo semestre, con edad de 18 a 25 años, de los cuales 82.3 % son mujeres y 17.7 % hombres. A todos se les aplicó el instrumento denominado Inventario del Estrés Pospandemia ante el Regreso a Clases Presenciales (IEP-RCP).

En tal sentido, los alumnos reportaron un nivel moderado de estrés pospandemia (3.19) ante el regreso a clase (*DTE*: .602); asimismo, el análisis de la relación entre la variable género y estrés arrojó los siguientes valores: *t:* -4.353; *gl*: 252; sig: .000. A partir de este resultado, se puede afirmar que la variable *género* si tiene una discrepancia en el nivel con que se presenta el estrés pospandemia ante el regreso a clases; en otras palabras, las mujeres son las que lo presentaron con un mayor nivel. En el análisis de la relación entre la variable edad y estrés se obtuvo un valor *p* > .05, por lo que se concluye que no existe relación entre ambas variables. El regreso a clases presenciales no fue el final de los problemas de salud mental dentro de la población universitaria, De hecho, la presencia del estrés de pospandemia ante el regreso a clase muestra la necesidad de que las instituciones trabajen en beneficio de la salud mental de sus alumnos.

Palabras clave: espacios educativos, gestión de la educación, población universitaria, salud mental.

Abstract

The meaning of stress became a common word in the society in which we live; As part of the dissemination of its use, it began to be mentioned also in educational spaces and came to be considered as a growing difficulty of attention in the student population. The objective of the research was to establish the prevalence of post-pandemic stress in the face of the return to classes in university students and to establish its relationship with the variables sex, age, degree and semester. A quantitative, cross-sectional, correlational and non-experimental study was conducted, considering a population of 254 students from first to eighth semester, aged 18 to 25 years, of

which 82.3% are women and 17.7% men to whom the instrument called Post-Pandemic Stress Inventory before the Return to Face-to-Face Classes (IEP-RCP).

The students reported a moderate level of post-pandemic stress before the return to class of 3.19 (SDE: .602), the analysis of the relationship between the variable sex and stress shows the following values: t: -4.353; GL: 252; sig: .000.; From this result, it can be affirmed that the sex variable does have a discrepancy in the level with which post-pandemic stress is presented before the return to classes, with women presenting it with a higher level. In the analysis of the relationship between the variable age and stress, a value $p > .05$ was obtained, so it is concluded that there is no relationship between both variables. The return to face-to-face classes was not the end of mental health problems within the university population and the presence of post-pandemic stress before the return to class shows the need for institutions to work for the benefit of the mental health of their students.

Keywords: Educational spaces, education management, university population, mental health.

Resumen

A palavra estresse tornou-se uma palavra comum na sociedade em que vivemos; Nos espaços educacionais, considerou-se inclusive uma dificuldade crescente no atendimento à população estudantil. Por esse motivo, o objetivo desta pesquisa foi estabelecer a prevalência de estresse pós-pandemia no retorno às aulas em estudantes universitários e estabelecer sua relação com as variáveis sexo, idade, curso e semestre. Para isso foi realizado um estudo quantitativo, transversal, correlacional e não experimental, com uma população de 254 estudantes do primeiro ao oitavo semestre, com idades entre 18 e 25 anos, dos quais 82,3% são mulheres e 17,7% homens. A todos eles foi aplicado o instrumento denominado Inventário de Estresse Pós-Pandemia no Retorno às Aulas Presenciais (IEP-RCP).

Nesse sentido, os alunos relataram nível moderado de estresse pós-pandemia (3,19) no retorno às aulas (DTE: 0,602); Da mesma forma, a análise da relação entre a variável sexo e o estresse apresentou os seguintes valores: t: -4,353; gl: 252; sinal: 0,000. A partir deste resultado, pode-se afirmar que a variável gênero apresenta sim uma discrepância no nível em que ocorre o estresse pós-pandemia no retorno à escola; Ou seja, são as mulheres que o apresentam em um nível superior. Na análise da relação entre a variável idade e stress obteve-se um valor de $p > 0,05$, pelo que se conclui que não existe relação entre ambas as variáveis. O retorno às aulas presenciais não foi o fim dos problemas de saúde mental da população universitária, aliás, a presença do estresse pós-

pandemia no retorno às aulas mostra a necessidade das instituições trabalharem em benefício da saúde mental de seus alunos.

Introduction

According to the World Health Organization (WHO) (2023), academic stress is the set of physiological reactions that allow the body to be prepared for action. That is, how the body tends to respond optimally to various situations that arise throughout life (Churampi, 2021), and in the case of university students, it is classified as a silent enemy (Toribio and Franco, 2016).

The concept of stress mentioned by Barraza (2020), from the cognitive systemic approach, asserts that it is an essentially adaptive phenomenon that has accompanied human beings since their origins, and is evident in the following three moments:

1. Perception of danger or threat. When starting this process, the human being perceives situations that represent a risk, threat or danger to his or her personal integrity (stressors: first structural component of stress).

2. Faced with this potentially dangerous situation, a series of reactions occur in humans that serve as an alarm of the imminent danger that looms over them (symptoms: second structural component of stress).

3. Once the potentially dangerous situation has been identified and the body is prepared to act, action takes place to preserve its personal integrity (coping strategies: third structural component of stress).

Silva *et al*. (2020) mention that stress is a frequent expression today. For this reason, they classify it as a complex, interesting and current term for which there is no consensus on its definition. Even so, they conceive it as a negative response that causes an imbalance in the individuals who suffer from it due to the differences between the pressure and the ability to cope with it.

The factors that predispose an individual to stress can be determined by the uniqueness of each one, including factors based on personality, self-esteem and organic resistance. A stress trigger may be perceived differently by two or more individuals. Consequently, responses to stressful stimuli are subjective and manifest according to the adaptive capacity of each subject (Domingues *et al*., 2018).

In this regard, González (2020) explains that stress has been the subject of extensive study both in the American continent and in the rest of the world. The term *stress* has become popular among college students, often associating it with feelings of fatigue and even depression, although without a clear understanding of its systemic nature. Stress is closely related to the comparison between current circumstances and a self-imposed standard that the individual considers appropriate (Pego, 2018).

Now, due to the emergency generated by covid-19, stress levels increased significantly both in university students and in the general population worldwide. This was due to uncertainty over when and how the pandemic would unfold. To date, there is no conclusive data on the socio-emotional effects of this pandemic disease on the population and, in particular, on students (Conchado, 2019).

In Mexico, in early March 2020, in-person classes were suspended, following a similar trend in many countries around the world. This situation worsened educational gaps, since the system was not prepared to face a pandemic. Many families lacked technological tools and internet access, which made it difficult to continue their children's academic training and develop their skills.

On April 8, 2021, the Ministry of Public Education (SEP) reaffirmed that the return to in-person classes would be gradual. In June of that same year, the Mexican government decided to allow the return to in-person classes at all educational levels. It seemed that the stress generated by the pandemic was behind us and that normality was returning. However, this "new normal" revealed the presence of a series of problems among students, and one of the problems identified was stress related to returning to school (SEP, 2022).

According to Barraza (2020), physical distancing, complementary hygiene measures, the suspension of non-priority activities and the proliferation of information generated by the covid-19 pandemic created a different environment than what human beings were accustomed to. This reality generated new demands for action in people, hence this situation was called *pandemic stress*.

Given this situation and considering the lack of previous research on the topic, it was decided to address the study of post-pandemic stress related to returning to classes in university students. However, this interest is not purely empirical. The theoretical interest in this field is based on a conceptual premise raised by Barraza (2020), which suggests that stress is an adaptive phenomenon triggered by environmental demands. It is assumed that returning to school involves a change in the environment and the creation of new demands that individuals may perceive as

overwhelming in terms of their resources to cope with them. Therefore, these demands could be considered stressful.

In line with this conceptual premise, the research hypothesis is that returning to school in a post-pandemic period generates a series of specific demands that test the individual's ability to adapt. These demands, once cognitively evaluated, can become stressors and eventually trigger the stress process. With the above explained, this research focused on two objectives:

- Establish the prevalence of post-pandemic stress upon returning to classes in university students.

- Determine the relationship between post-pandemic stress when returning to school and the variables gender, age, degree and semester that students are studying.

Materials and methods

Design of the investigation

A quantitative, cross-sectional, correlational and non-experimental study was carried out.

Population

In the research, a population of 254 students from the first to eighth semester of the Juárez University of the State of Durango (UJED) was considered. The age range ranged from 18 to 25 years. The choice was non-probabilistic in nature and under the criterion of accessibility. The inclusion criteria were the following:

1) Be students of the institution where the questionnaire was applied and,

2) Attend classes on the day of application.

The population surveyed was mainly female (table 1).

Table 1. Sample characterization

Gender	Man	17.7%
	Women	82.3%
Age	Minimum	18 years
	Maximum	25 years
	Average	20 years
Bachelor's degree	Nutrition	36.6%
	Medicine	9.1%
	Human Communication Therapy	eleven %
	Psychology	13%
	Nursing	14.2%
	Chemistry	16.1%
semester in progress	First	20.9%
	Second	24.8%
	Third	eleven %
	Room	18.1%
	Fifth	16.1%
	Sixth	3.9%
	Seventh	2.4%
	Eighth	2.8%

Source: self made

Instrument and methodologies for collecting information

instrument to identify post-pandemic stress upon returning to school was applied to each student. This instrument was developed from the systemic cognitive approach (Barraza, 2020).

Initially, based on the three structural components of stress, various open questions were asked to a group of 59 students about the potential stressors, symptoms and coping strategies that they identified upon returning to school. Subsequently, a filter was made, repetitions were eliminated and based on the theoretical foundation, the most representative items were selected.

This first version was made up of 61 items, with a Cronbach's alpha reliability of .90, and distributed into four sections as follows:

- Sociodemographic data composed of four items: age, gender, name of the degree you are studying and semester in which you are enrolled. This reference made it possible to determine the academic characteristics of the student.

- 18 items on a Likert-type scale of five categorical values (never, almost never, sometimes, almost always and always) to consider the frequency with which the student becomes stressed in various situations when returning to classes in person.

- 19 items on a Likert-type scale with five categorical values (never, almost never, sometimes, almost always and always) to identify the frequency with which the student presents various reactions when stressed.

- 24 items on a Likert-type scale with five categorical values (never, almost never, sometimes, almost always and always) to identify the frequency with which the student performs various actions to mitigate or reduce stress.

This first version was initially subjected to two consecutive exploratory factor analyzes using the least squares method with direct oblimin rotation; In each analysis, the values reported in the communalities and the factorial weight shown in the factorial matrix were taken as a basis to decide the elimination of 43 items. Therefore, the second version was composed of 18 items: six for the stressors dimension, six for the symptoms dimension and six for the coping strategies dimension.

The exploratory factor analysis of this second version (*KMO* = .839; Bartlett's test of sphericity: $p < .001$) reported three factors that explain 49% of the variance. Table 2 reports the communalities and Table 3 reports the factor matrix of this version.

Table 2. Communalities of the items of the definitive version of the instrument

	Initial	Extraction
E9	.409	.411
E11	.410	.371
E13	.514	.457
E14	.541	.548
E15	.494	.455
E18	.357	.325
S1	.411	.413
S12	.436	.450
S14	.524	.539
S15	.555	.623
S16	.591	.674
S19	.577	.603
A6	.428	.418
A7	.420	.420
A14	.354	.364
A19	.654	.630
TO 20	.657	.682
A23	.413	.447

Note: E (stressors), S (symptoms) and A (coping strategies); The original numbering of the items

is respected.

Source: self made

Table 3. Factor matrix of the final version of the instrument

	Factor		
	1	2	3
E9			.632
E11			.590
E13			.671
E14			.727
E15			.671
E18			.550
S1	.611		
S12	.669		
S14	.734		
S15	.781		
S16	.811		
S19	.769		
A6		.636	
A7		.647	
A14		.598	
A19		.793	
TO 20		.822	
A23		.662	

Note: E (stressors), S (symptoms) and A (coping strategies); The original numbering of the items

is respected.

Source: self made

Post-Pandemic Stress Inventory for Returning to In-Person Classes (IEP-RCP), has a Cronbach's alpha reliability of .82; The internal consistency analysis, carried out using Pearson's *r statistic*, reports that all items correlate positively (with a significance level of $p < .001$) with the global score achieved with each research subject. The lowest correlation coefficient was .236 and the highest was .655.

Procedure

First, the problem was stated based on the search for antecedents. With this, it was possible to verify the insufficiency of information regarding post-pandemic stress when returning to classes in university students. Subsequently, three questions were asked for the exploratory inquiry to 59 students, in which they were asked directly the following:

1. Now that you're back in school, what situations stress you out? (stressors: first structural component of stress).
2. What reactions or symptoms do you have when you are stressed? (symptoms: second structural component of stress).
3. What actions do you take to mitigate this stress? (coping strategies: third structural component of stress).

With the responses obtained, a first version of the instrument was formulated consisting of 61 items, which was applied to the population of interest in the facilities where they carry out their studies and with prior authorization from the authorities of each academic unit.

To the students who participated in the research, because they were of legal age, the objective of the research was verbally expressed to them and the confidentiality of the results was affirmed, requesting their participation; It is worth mentioning that in the presentation of the questionnaire they were made aware that their response was voluntary and they had the right to respond or not.

The people responsible for applying the instrument were the authors of the research, so they shared the information necessary for its completion, clarified doubts immediately and, at the end, a database was built using the SPSS program, version 25.

Once the database was built, two exploratory factor analyzes were carried out that led to the elimination of 43 items due to problems in the value extracted in the communities or due to the factorial weight reported for each item.

With the second version of the 18-item instrument, the psychometric properties were analyzed using the statistical tests of a) exploratory factor analysis with the least squares method with direct oblimin rotation, b) Cronbach's alpha and, c) Pearson's *r*.

After having the database with the final results, the *stress variable was calculated* and subjected to a normality test using the Kolmogorov statistic. Smirnov ($KS = .200$), which led to establishing that for inferential analyzes it was pertinent to use parametric statistics.

Likewise, five statistical analyzes were carried out: first, descriptive data were obtained through the arithmetic mean and standard deviation; Secondly, the relationship between the gender variable and stress was analyzed with the Student t *test* ; Thirdly, the relationship between the variable age and stress was analyzed with Pearson's *r statistical test* and, fourthly, the relationships between the variable *degree* , *semester being studied* and *stress were analyzed* with the one- fact Anova statistical test. In all these tests, was used as the decision rule $p < .05$.

During the exploration period, the responsible researchers at all times took care of the confidentiality of participation and its voluntary nature.

Results

The descriptive data on the items that make up the questionnaire used are presented in Table 4, where you can see the situations that most stress the students considered for this research, which are mentioned below: returning to the old routine, seeing a lot of people together and the fact that you can get infected. For their part, the symptoms that occurred most frequently were fatigue and despair; and the coping strategies they mostly used were trying to solve problems and trying to find a solution to everything they went through. The general mean of post-pandemic stress before returning to school was 3.19 (*DTE*: .602).

Table 4. Descriptive data

Stressors	Half	DTE
Return to the old routine	2.88	1,155
See a lot of people together	2.88	1,364
That some colleagues do not wear face masks	2.81	1,324
The one that you can catch	2.88	1,244
Not getting used to face-to-face classes	2.56	1,227
The insensitivity of teachers in relation to students who work apart from studying	2.84	1,310
Symptoms	Half	DTE
Anxiety	3.50	1,222
Concentration problems	3.50	1,175
Irritation	3.14	1,334
Fatigue	3.74	1,139
Uncertainty	3.20	1,268
Despair	3.54	1,221
Coping strategies	Half	DTE
try to relax	3.08	1,136
Carry out my activities step by step	3.35	1,088
Try to solve the problems	3.62	.953
Try to see things in the most positive way possible	3.26	1,136
Try to find a solution to everything that comes my way	3.43	1,100
Thinking that everything will be fine	3.27	1,209

Source: self made

The analysis of the relationship between the variables *gender* and *stress* reports the following values: *t:* - 4.353; *df*: 252; sig: .000; From this result, it can be stated that the *gender variable* does make a difference in the level at which post-pandemic stress occurs when returning to school, since women were the ones who presented it at a higher level.

In the analysis of the relationship between the variables *age* and *stress, a value p > .05* was reached, therefore it is concluded that there is no relationship between both variables.

Regarding the analysis of the relationships between the variable's *degree* and *semester* and *stress,* values $p > .05$ were obtained, which shows that there is no relationship between said variables.

In the internal consistency analysis carried out using Pearson's *r statistic*, the results revealed that all items correlate positively (with a significance level of $p < .001$) with the global score achieved with each research subject, being lowest correlation coefficient of .236 and the highest of .655.

Discussion

The results reveal that the general average of post-pandemic stress before returning to school is 3.19, which transformed into a percentage gives a value of 64%. This can be interpreted as a moderate level of stress, based on the following indicative scale based on the theoretical value of the variable: 0% to 33% mild level; from 34% to 66% moderate level, and from 67% to 100% deep level of stress.

This result is worrying if one considers that Alfonso *et al*. (2015) mention that students who experience stress present a series of alterations in academic performance. In addition, it can encourage the consumption of substances that are harmful to health, cause alterations in the sleep cycle, omission of academic responsibilities, being constantly in a bad mood, having family conflicts and a host of situations that have a negative impact on the development of future children. professionals, as well as in achieving their personal, family and professional aspirations.

The analysis of the relationship between post-pandemic stress when returning to school and the four sociodemographic variables of interest showed that only the *gender variable* influences the level at which stress occurs. This result coincides with what was reported by Moreno-Treviño *et al*. (2022) and Rodríguez and Sánchez (2022); However, this data should be taken with caution, since the possibility of bias must be considered due to the fact that the population surveyed was predominantly female.

An aspect that we wish to highlight was the great willingness of the university community to participate in this research, which demonstrates their support and interest in providing their responses with the purpose of achieving a safe return to classes in person. Likewise, permanent and constant support was considered through experts in the health area to care for students who are at risk or who have suffered a post-pandemic crisis.

For the correct analysis and interpretation of the results, it was essential to consider the various aspects that were presented regarding the research, which is why it is highlighted that the university students who participated were selected randomly and that of their own volition they responded to the measurement instrument provided both in the first and the second version. It is worth mentioning that the second group of people was larger compared to the one selected in the initial version. In addition, the students provided their answers at different times and different and independent groups were considered to avoid duplication in the answers.

Conclusions

The present investigation had the intention of highlighting that the mental health of young university students was affected by the confinement derived from the pandemic, and that returning to classes was not the solution to these problems, but other problems derived from the change were added. of situation.

Given this, it was hypothesized that the change in environment was going to generate new demands and demands that could give rise to stress, which was confirmed with the present investigation. Consequently, the empirical body of evidence in this regard increases and consolidates the idea of stress as an essentially adaptive phenomenon, since the prevalence of post-pandemic stress upon returning to classes in university students was established.

This was verified with the analysis of results, as the students responded that they feel stressed about returning to class, with a moderate level, but very close to the deep level. This data demonstrates that greater institutional support is required for students to return to the new normal and maintain their mental health in optimal functioning.

Finally, the relationship was established between the aforementioned condition and the variables gender, age, degree and semester that the university students were studying at the time of applying the measurement instrument.

Future lines of research

It is suggested to apply the Post-Pandemic Stress Inventory upon Return to In-Person Classes (IEP-RCP) to students who are enrolled from the third to eighth semester and determine the variability of the results. With this, the hypothesis can be verified that student adaptation derived from career advancement usually cushions the effects of stress.

Likewise, it is recommended to continue with the permanent support of professionals in the area of psychology and health to propose guidance strategies, emotional support and provide it to the entire university population that remains affected by the consequences of the pandemic.

Thanks

We thank the Juárez University of the State of Durango, its students and staff in general for their support, time and willingness to carry out this research.

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