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Mental health in Peruvian adolescents during and after the COVID-19 lockdown: A comparative analysis of depression, anxiety and stress

Salud mental en adolescentes peruanos durante y después del confinamiento por COVID-19: un análisis comparativo de la depresión, ansiedad y estrés

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Abstract

The World Health Organization (WHO) reported an increase in mental health disorders among adolescents during the COVID-19 pandemic, attributed to social isolation, economic uncertainty, and educational disruptions. In Peru, prolonged confinement severely impacted the emotional well-being of this population. In this context, the present study aimed to compare levels of depression, anxiety, and stress in Peruvian adolescents during and after confinement. A descriptive, non-experimental, cross-sectional, and comparative design was used. The DASS-21 scale was administered to two groups: 951 adolescents during the pandemic (13–18 years old; 61.2% female) and 381 post-confinement (13–18 years old; 54.1% male). The results showed a significant reduction in severe and extremely severe levels of depression (from 41.5% to 19.7%), anxiety (from 49.8% to 30.7%), and stress (from 19.1% to 5.8%), with an increase in the normal categories. The Mann-Whitney U test confirmed statistically significant differences ($p < 0.01$) between periods. In conclusion, although adolescents' mental health improved after the lockdown, relevant emotional manifestations persisted, highlighting the need to strengthen psychological support programs in educational settings.

Keywords: adolescents, anxiety, COVID-19, depression, stress.

Resumen

La Organización Mundial de la Salud (OMS) reportó un incremento en los trastornos mentales entre adolescentes durante la pandemia de COVID-19, atribuido al aislamiento social, la incertidumbre económica y las interrupciones educativas. En Perú, el confinamiento prolongado impactó gravemente el bienestar emocional de esta población. En este contexto, el presente estudio tuvo como objetivo comparar los niveles de depresión, ansiedad y estrés en adolescentes peruanos durante y después del confinamiento. Para ello, se utilizó un diseño descriptivo, no experimental, transversal y comparativo. La escala DASS-21 se aplicó a dos grupos: 951 adolescentes durante la pandemia (13-18 años; 61,2% mujeres) y 381 postconfinamiento (13-18 años; 54,1% hombres). Los resultados mostraron una reducción significativa en los niveles severos y extremadamente severos de depresión (de 41,5% a 19,7%), ansiedad (de 49,8% a 30,7%) y estrés (de 19,1% a 5,8%), con un aumento en las categorías normales. La prueba U de Mann-Whitney confirmó diferencias estadísticamente significativas ($p < 0,01$) entre periodos. En conclusión, aunque la salud mental de los adolescentes mejoró tras el confinamiento, persisten manifestaciones emocionales relevantes, lo que resalta la necesidad de fortalecer programas de apoyo psicológico en el ámbito educativo.

Palabras clave: adolescentes, ansiedad, COVID-19, depresión, estrés.

Introduction

According to the World Health Organization (WHO) approximately one in seven adolescents aged 10–19 years experiences some form of mental disorder, accounting for 15% of the global disease burden in this age group (OMS, 2025). Adolescence represents a unique and formative stage of human development during which physical, emotional, and social changes may heighten vulnerability to mental health problems, particularly when young people confront poverty, abuse, or violence. In this regard, fostering socioemotional learning, shielding adolescents from adverse conditions, and ensuring access to appropriate mental health services are essential actions for safeguarding their psychological well-being, both during this developmental phase and into adulthood.

The United Nations Children's Fund (UNICEF, 2020) reported a significant impact of the COVID-19 pandemic on adolescent and youth mental health, with 27% presenting anxiety and 15% depression. Most respondents attributed their emotional changes primarily to the economic situation they were facing; 43% of young women and 31% of young men expressed pessimism about their future. According to the WHO the global prevalence of anxiety and depression increased by 25% during the first year of the pandemic (OMS, 2022). This rise has been linked to the unprecedented stress induced by social isolation, economic uncertainty, and fear of infection. Likewise, the Pan American Health Organization (OPS, 2022) underscored the devastating impact of the pandemic on mental health across the Americas. Lockdown measures, loss of loved ones, financial hardship, and general uncertainty have all contributed to elevated rates of anxiety, depression, sleep disturbances, and psychoactive substance use.

In Peru, the Ministry of Health (MINSA, 2021) and UNICEF (2020) assessed mental health risks among children and adolescents using the Baby Pediatric Symptom Checklist (BPSC), finding that 56.6% presented behavioral or emotional difficulties; additionally, three out of every ten Peruvian children and adolescents aged 6–17 experienced pandemic-related mental health problems. They noted that during the health emergency in Peru, girls, boys, and adolescents faced prolonged confinement. From March through July 2020, they remained under the same mobility restrictions as the general population. Subsequently, limitations continued in a more targeted manner: first for those under 14 years of age and then for those under 12, extending through December of that year. Nearly nine months of isolation substantially reduced contact with relatives, friends, classmates, and neighbors, a situation that contributed to the emergence or exacerbation of mental health issues. The Ministry of Education (MINEDU, 2021) issued an official announcement for the return to in-person classes beginning in March 2022. Until late 2021, adolescents continued receiving virtual education, without the possibility of interacting face-to-face with teachers or peers, thereby prolonging their social and academic isolation.

In this context, the present study was guided by the overarching research question: What differences exist in depression, anxiety, and stress among Peruvian adolescents during and after the COVID-19 lockdown? From this central query, the following specific questions were derived: (1) What are the levels of depression among Peruvian adolescents during and after the COVID-19 lockdown? (2) What are the levels of anxiety among Peruvian

adolescents during and after the COVID-19 lockdown? and (3) What are the levels of stress among Peruvian adolescents during and after the COVID-19 lockdown?

It is also important to note that this investigation is theoretically grounded in Beck's cognitive model (1976), which explains how distortions and negative thoughts influence depression and anxiety, patterns that were accentuated during confinement. In addition, the theory of stress and coping of Lazarus and Folkman (1984) provides a framework for understanding how the demands of the pandemic exceeded personal resources and how, following confinement, adolescents adjusted their adaptive strategies.

Among international antecedents, Aldana-Zavala and Rodríguez-Partidas (2020) conducted a study in Venezuela during the COVID-19 confinement with the aim of analyzing depression, anxiety, and stress among students and teachers. Using a descriptive design and a virtual survey administered to 434 participants, they found considerable psychological impairment: 70% of students presented severe and extremely severe symptoms. These results reflect the strong emotional impact of confinement and the difficulties of adapting to virtual education. The authors concluded that the pandemic generated high levels of tension, worry, and emotional maladjustment among educational actors facing new conditions of study and daily life.

During confinement, Pérez-Cano et al. (2020) conducted a mixed-methods study in Mexico to evaluate anxiety, depression, and stress in the general population. Instruments included a sociodemographic questionnaire, emotional perceptions, and behaviors during confinement, along with the DASS-21 scale. The sample was heterogeneous, and findings showed that more than 40% presented some degree of anxiety, 41.3% depressive symptoms, and nearly 30% stress. Very severe anxiety and more than 55% very severe depression were observed, evidencing a high coexistence of intense symptomatology. Significant sex-based differences were also reported, with greater prevalence of depression ($p = 0.04$), anxiety ($p = 0.01$), and stress ($p = 0.02$) among women.

At the national level, Ulloa (2022) conducted a study in Piura aimed at analyzing the relationship between depression, anxiety, stress, and fear of COVID-19 among adolescents. The research employed a non-experimental design with a descriptive-correlational approach and was carried out with a sample of 328 students. Results showed that 26.5% presented severe or extremely severe depression, 45.4% had anxiety at those levels, and 8.5% exhibited severe or extremely severe stress. A weak but significant relationship was also identified between depression and stress with fear of COVID-19 ($p < .05$), suggesting that these emotional indicators were linked to the psychological impact of the pandemic on Peruvian adolescents.

Olivares and Ynca (2023) analyzed the impact of COVID-19 on the mental health of 134 adolescents from the Canta Gallo Human Settlement in Lima. This study was conducted after the confinement period to assess the emotional sequelae derived from the pandemic. Results showed a high prevalence of symptomatology: 33.2% presented severe or extremely severe depression, 51.2% anxiety at the same levels, and 24.7% severe or extremely severe stress. These findings confirm the significant impact of the pandemic, particularly the heightened anxiety, which aligns with other national studies revealing the persistence of emotional distress in the post-pandemic stage.

Díaz Del Ulmo et al. (2022) developed a study in Lima during the COVID-19 confinement aimed at determining the association between social isolation and the presence of stress, anxiety, and depression among 66 fifth-year secondary school students. The results showed that 24.3% had severe or extremely severe anxiety, 21.2% depression, and 15.2% stress at those levels. Greater emotional distress was identified among women, and higher anxiety was found among those who partially complied with quarantine, evidencing the psychological effect of prolonged isolation.

Regarding the theoretical framework for the variables under study, Lovibond and Lovibond (1995) note that depression is a persistent emotional state characterized by sadness, hopelessness, loss of interest, and diminished pleasure. The DASS assesses dysphoria, self-depreciation, anhedonia, and inertia, reflecting impaired well-being and daily functioning. From cognitive theory, Beck explains depression through dysfunctional schemas that generate negative interpretations organized around the cognitive triad: negative views of oneself, the world, and the future. Complementarily, Seligman's learned helplessness theory points out that exposure to uncontrollable events produces helplessness, passivity, and reduced motivation, giving rise to symptoms similar to those of depression (Maier & Seligman, 1976).

With respect to anxiety, Lovibond and Lovibond (1995) describe it as a psychophysiological response characterized by autonomic arousal, muscle tension, worry, and fear in the face of perceived threats. The anxiety subscale of the DASS evaluates the intensity of these symptoms. Beck (n.d.) maintains that anxiety arises from an overestimation of danger and the perception of personal inadequacy to cope with it. Lazarus and Folkman (1984) add that anxiety emerges when environmental demands exceed coping resources, generating an emotional threat response.

Regarding stress, Lovibond and Lovibond (1995) conceptualize it as a state of physical and emotional tension associated with irritability, overload, and difficulty relaxing. Selye (1950, as cited in Rochette et al., 2023) defined it as a non-specific response of the organism to any demand, manifested in the phases of alarm, resistance, and exhaustion, which can be adaptive or harmful depending on its duration. Lazarus and Folkman (1984) emphasize that stress depends on the cognitive appraisal of the situation and the resources available to manage it.

Together, these explanatory models allow for an understanding that depression, anxiety, and stress are interrelated phenomena involving cognitive, emotional, and physiological processes, particularly relevant during adolescence, a period of heightened vulnerability.

Taking all the above into account, the general objective of this study was to compare depression, anxiety, and stress in Peruvian adolescents during and after the COVID-19 confinement. From this purpose, the following specific objectives were formulated: (1) To describe the levels of depression in Peruvian adolescents during and after the COVID-19 confinement; (2) To describe the levels of anxiety in Peruvian adolescents during and after the COVID-19 confinement; and (3) To describe the levels of stress in Peruvian adolescents during and after the COVID-19 confinement. In accordance with the general objective, the following hypothesis was proposed: There are significant differences in depression, anxiety, and stress among Peruvian adolescents during and after the COVID-19 confinement.

Finally, it is pertinent to note that this research is practically justified by the need to understand the psychological impact of confinement and its evolution among Peruvian adolescents, given the limited local evidence. Its findings provide inputs for the design of public policies and school-based programs aimed at strengthening emotional well-being and early detection. Methodologically, it is justified by its quantitative approach, which enabled objective measurement of depression, anxiety, and stress during and after confinement. The use of standardized instruments and non-parametric tests, such as the Mann–Whitney U test, ensured valid results and a rigorous comparative analysis of adolescent mental health.

Methodology

This basic, quantitative study employed a non-experimental, descriptive, cross-sectional, comparative design aimed at analyzing the differences in depression, anxiety, and stress among Peruvian adolescents during and after the COVID-19 confinement. As Kerlinger and Lee (2002) indicate, non-experimental research is characterized by observing phenomena as they occur, without manipulating independent variables. Likewise, cross-sectional studies gather information at a single point in time to describe and compare variables within a specific context (Hernández et al., 2014), while comparative designs allow for the identification of differences between groups or time points without researcher intervention (Llobell et al., 1995).

Participants

The sample consisted of 951 adolescents assessed during confinement and 381 assessed after confinement. During confinement, the sample was predominantly female (61.2%), with ages ranging from 13 to 18 years (M = 14.86; SD = 1.36), and the most frequent age group was 14 years (24.6%). Students were enrolled between the second and fifth years of secondary education, with second year being the most represented (32.3%). Following confinement, with the return to in-person schooling, the sample was predominantly male (54.1%), also aged 13 to 18 (M = 14.75; SD = 1.20), with greater representation at 15 years (29.9%) and 14 years (28.9%). Second year again accounted for the highest percentage (29.4%), showing stability in grade-level distribution. In both phases, intentional non-probability sampling was used, including only regular secondary school students who agreed to participate voluntarily and met the established inclusion criteria.

Table 1 presents the sociodemographic characteristics of the students evaluated *during* (n = 951) and *after* (n = 381) the COVID-19 confinement.

Table 1

Sociodemographic description of the sample during and after confinement

	During (n = 951)		After (n = 381)	
	f	%	f	%
Sex				
Female	582	61.2	175	45.9

Male	369	38.8	206	54.1
Age				
13 years	184	19.3	60	15.7
14 years	234	24.6	110	28.9
15 years	208	21.9	114	29.9
16 years	211	22.2	68	17.8
17 years	84	8.8	22	5.8
18 years	30	3.2	7	1.8
Grade Level				
Second	307	32.3	112	29.4
Third	227	23.9	105	27.6
Fourth	192	20.2	78	20.5
Fifth	225	23.7	86	22.6
Total	**951**	**100.0**	**381**	**100.0**

As previously indicated, female participation predominated during confinement (61.2%), with the largest age group being 14 years (24.6%). The highest percentage corresponded to second grade (32.3%), followed by third grade (23.9%). After confinement, a slight male majority was observed (54.1%), with greater representation of students aged 14 (28.9%) and 15 years (29.9%). The most frequent grade levels were second (29.4%) and third (27.6%).

Data collection instrument

The *Depression, Anxiety and Stress Scale* was originally developed by Lovibond and Lovibond (1995) and consists of 42 items designed to assess three negative emotional states: depression, anxiety, and stress. In Latin America, Román et al. (2014) performed the linguistic and cultural adaptation of the DASS-21 for secondary school students in Chile, demonstrating adequate levels of validity and reliability. They reported Cronbach's alphas of 0.85 for depression, 0.72 for anxiety, and 0.79 for stress, supporting the internal consistency of the three-factor model. The instrument has also shown convergent and discriminant validity with measures such as the BDI and BAI (Román et al., 2014), confirming its utility for assessing emotional health in adolescents within school and community contexts.

Research procedure

The study was carried out in two consecutive phases (2021 and 2022) at secondary-level educational institutions. In the first phase, a valid and reliable instrument for adolescents (DASS-21) was selected, and the necessary institutional and ethical permissions were secured, ensuring respect, confidentiality, and informed assent and consent. Due to COVID-19 restrictions, application procedures varied according to the context. In 2021, during confinement, classes were conducted remotely, and data collection was carried out virtually via a Google Forms form, which included consent for parents or guardians and assent for students; with both authorizations, adolescents accessed the survey, sent via WhatsApp to be completed independently. In 2022, with the return to in-person instruction, printed surveys were administered at the educational institutions, distributed by classroom for individual completion during school hours, with teacher support and direct oversight by the researchers. Finally, data from both phases were verified, cleaned, and organized in Excel for subsequent statistical analysis.

Statistical analysis

Prior to statistical analysis, qualitative data were coded and transformed into quantitative data using Microsoft Excel spreadsheets. Subsequently, data were imported and processed using IBM SPSS Statistics software (IBM Corp., 2023). Descriptive analyses were conducted to identify depression, anxiety, and stress levels during and after the COVID-19 confinement.

To verify data distribution, the Kolmogorov–Smirnov normality test was applied, widely used to determine whether variables follow a normal distribution (Drezner et al., 2016). The results indicated a non-normal distribution; therefore, the non-parametric Mann–Whitney U test for independent samples was employed, which allows for comparing differences between two groups when data do not meet normality assumptions (Nachar, 2008).

A statistical significance level of $p < 0.05$ was established, with differences considered significant when the p-value fell below this threshold. These statistical procedures provided a solid foundation for interpreting the results and conducting a comparative analysis of the severity of emotional symptoms among adolescents during and after confinement.

Ethical considerations

This study was developed in accordance with the ethical principles for research involving human beings established by the Declaration of Helsinki (Asociación Médica Mundial, 2013) and the Ethical Code of the American Psychological Association (APA, 2010). The data analyzed came from databases of two studies conducted in 2021 and 2022, which were collected with informed assent and consent. Since the analysis was based on secondary information, no new ethics committee approval was required. In all cases, confidentiality and anonymity of participants were guaranteed, and data were used exclusively for scientific purposes.

Results

With respect to the first specific objective, depression levels in Peruvian adolescents during and after the COVID-19 confinement were described. Table 2 presents the distribution of these levels across both periods. During confinement, a high prevalence of severe and extremely severe depressive symptoms was observed, exceeding 50% of the sample (41.5% extremely severe and 11.6% severe), evidencing the strong impact of prolonged isolation on adolescents' emotional health. After confinement, these symptoms decreased to approximately 31% of participants (19.7% extremely severe and 11.5% severe). Likewise, the normal level increased to 39.4%.

Table 2

Depressive symptom levels in secondary school students during and after confinement

Levels	During (n = 951)		After (n = 381)	
	f	%	f	%
Depression				
Normal	223	23.4	150	39.4
Mild	77	8.1	42	11.0
Moderate	146	15.4	70	18.4
Severe	110	11.6	44	11.5
Extremely Severe	395	41.5	75	19.7
Total	**951**	**100.0**	**381**	**100.0**

Regarding the second specific objective, anxiety levels in secondary school students during and after the COVID-19 confinement were described. During confinement, a high prevalence of severe and extremely severe anxiety symptoms was recorded, exceeding 58% of the sample (8.8% severe and 49.8% extremely severe), reflecting the strong impact of isolation and health uncertainty. After confinement, these symptoms decreased to 42.2% (11.5% severe and 30.7% extremely severe), while the normal level increased to 31.0%.

Table 3

Anxiety symptom levels in secondary school students during and after confinement

Levels	During (n = 951)		After (n = 381)	
	f	%	f	%
Anxiety				
Normal	188	19.8	118	31.0
Mild	98	10.3	55	14.4
Moderate	107	11.3	47	12.3
Severe	84	8.8	44	11.5
Extremely Severe	474	49.8	117	30.7
Total	**951**	**100.0**	**381**	**100.0**

Regarding the third specific objective, stress levels in secondary school students during and after the COVID-19 confinement were described. During confinement, a high presence of stress symptoms was identified in the severe (23.9%) and extremely severe (19.1%) categories, evidencing the emotional burden associated with isolation and remote learning. Following the return to in-person schooling, these symptoms decreased to 16.5% and 5.8%, respectively, while the normal level increased to 48.3%.

Table 4

Stress symptom levels in secondary school students during and after confinement

Levels	During (n = 951)		After (n = 381)	
	f	%	f	%
Stress				
Normal	321	33.8	184	48.3
Mild	94	9.9	49	12.9
Moderate	127	13.4	63	16.5
Severe	227	23.9	63	16.5
Extremely Severe	182	19.1	22	5.8
Total	**951**	**100.0**	**381**	**100.0**

To initiate inferential analysis, a normality test was applied to determine whether depression, anxiety, and stress data followed a normal distribution. The following hypotheses were established: H_0 ($p > 0.05$), data follow a normal distribution; H_1 ($p < 0.05$), data do not exhibit normality. Table 5 reports the results of the Kolmogorov–Smirnov test with Lilliefors correction, applied to the distributions during confinement (n = 951) and after confinement (n = 381). In all cases, significance values were $p < 0.05$, for depression, anxiety, and stress, in both evaluation periods. These results indicate that the distributions do not conform to a normal model; therefore, the null hypothesis is rejected and the alternative hypothesis is accepted, concluding that the variables do not follow a normal distribution.

Given that the data do not meet normality assumptions, the non-parametric Mann–Whitney U test for independent samples was employed to compare emotional symptoms between the confinement and post-confinement periods. This methodological choice ensures the validity of the analysis and supports the reliable interpretation of the observed differences in mental health indicators among Peruvian adolescents.

Table 5

Kolmogorov–Smirnov Test during and after confinement

	During confinement[a]			After confinement[b]		
	Kolmogorov-Smirnov[a]			Kolmogorov-Smirnov[b]		
Variables	**Statistic**	**df**	**Sig.**	**Statistic**	**df**	**Sig.**
Depression	0.103	951	0.000	0.129	381	0.000
Anxiety	0.091	951	0.000	0.108	381	0.000
Stress	0.083	951	0.000	0.086	381	0.000

a. Confinement
b. Lilliefors significance correction

To test the general hypothesis, the Mann–Whitney U test was applied to compare depression, anxiety, and stress in adolescents during and after the COVID-19 confinement. As shown in Table 6, all three variables yielded asymptotic bilateral significance values of $p < 0.01$, evidencing statistically significant differences between the two periods.

The negative Z-values indicate that the ranks for depression, anxiety, and stress were lower after confinement ($p < 0.01$), suggesting a relative decrease in emotional symptoms during the post-confinement period. These results confirm that confinement was associated with greater psychological distress among adolescents.

Table 6
Comparison of depression, anxiety, and stress during and after confinement

Confinement		n	Mean Rank	Mann–Whitney U	Z	Asymp. Sig. (two-tailed)
Depression	During	951	718.84	131391.5	-7.857	0.00*
	After	381	535.86			
Anxiety	During	951	717.09	133053.5	-7.594	0.00*
	After	381	540.22			
Stress	During	951	714.97	135073	-7.276	0.00*
	After	381	545.52			

*p<0.01

Discussion

The study's findings reveal that depression, anxiety, and stress indicators were considerably higher during the COVID-19 confinement than in the subsequent period. Regarding depression, 41.5% of participants presented extremely severe symptoms during confinement, decreasing to 19.7% afterward. These results align with Ulloa (2022), who reported 26.5% severe or extremely severe depressive symptoms among adolescents in Piura, and with Aldana-Zavala and Rodríguez-Partidas (2020) in Venezuela, where 70% of educational actors exhibited severe psychological impairment during quarantine. The differences between periods suggest that social and educational reopening, along with adaptation to daily life, contributed to the reduction of depressive symptomatology, reflecting a gradual recovery of emotional well-being. Nevertheless, the persistence of clinically relevant symptoms underscores the need to strengthen psychological support in the post-pandemic stage and implement emotional support strategies within the school environment.

For anxiety, 49.8% of participants displayed extremely severe levels during confinement, dropping to 30.7% afterward. These findings are consistent with Olivares and Ynca (2023), who identified 51.2% severe or extremely severe anxiety among adolescents in Lima after the pandemic, evidencing the persistence of anxious symptoms in the post-confinement period. Similarly, Pérez-Cano et al. (2020) reported a prevalence exceeding 40% in Mexico, with greater affectation among women, a trend also observed in the present study's sample. The elevated frequency of anxiety may be explained by prolonged uncertainty, fear of infection, and abrupt changes in family and educational dynamics, all of which call for ongoing psychological support.

For stress, 43% of participants presented severe or extremely severe levels during confinement, dropping to 22.3% afterward. These findings coincide with those of Díaz Del Ulmo et al. (2022) among Peruvian students during mandatory social isolation and with the results of Pérez-Cano et al. in Mexico. The observed decline reinforces the notion that confinement restrictions acted as an emotional trigger, while subsequent social adaptation facilitated more effective regulation of perceived stress.

This descriptive information was confirmed by the comparative rank analysis of depression, anxiety, and stress, all of which were lower after confinement ($p < 0.01$), suggesting a relative decrease in emotional symptoms in the post-confinement period.

Taken together, the differences between the two periods allow for the inference that confinement intensified negative emotional indicators, whereas the restoration of social interaction strengthened coping resources and contributed to partial recovery of emotional well-being upon returning to in-person activities. These results are consistent with the theory of Lazarus and Folkman (1984) concerning the relationship between environmental demands and coping capacity.

It is worth noting that this study has several limitations. As a cross-sectional design, it does not permit establishing causal relationships between confinement and depression, anxiety, and stress levels. Likewise, the use of self-report questionnaires may have introduced response biases. Furthermore, convenience sampling limits the generalizability of findings, as the sample may not represent all Peruvian adolescents. The absence of longitudinal follow-up precludes knowledge of symptom evolution over time. Finally, factors such as socioeconomic status, geographic region, or access to mental health services were not fully controlled and may have influenced the results.

Conclusions

The study's findings demonstrate that the COVID-19 confinement had a significant impact on the mental health of Peruvian adolescents, as reflected in elevated indicators of depression, anxiety, and stress during the isolation period. Upon the end of confinement, a general decrease in the severity of these symptoms was observed ($p < 0.01$), although emotional manifestations persisted that require continued psychosocial attention. For depression, a high prevalence of severe and extreme symptoms was identified during confinement, with a notable reduction afterward. For anxiety, severe and extreme levels also declined, yet continued to affect a relevant subgroup. For stress, the improvement was more pronounced, with an increase in normal levels and a reduction in severe and extreme cases. Comparing both periods, partial recovery was evident, though persistent vulnerabilities remain. In sum, confinement exerted a considerable adverse effect, and while improvement occurred, sustained interventions are required to strengthen emotional well-being and youth resilience.

References

Aldana-Zavala, J. J., & Rodríguez-Partidas, N. J. (2020). Depresión, ansiedad y estrés por COVID -19 en actores educativos. *Revista Arbitrada Interdisciplinaria de Ciencias de la Salud. Salud y Vida*, *4*(8), 6–23. https://doi.org/10.35381/s.v.v4i8.932

American Psychological Association. (2010). *Principios éticos de los psicólogos y código de conducta* (Versión en español). https://www.psicologia.unam.mx/documentos/pdf/comite_etica/Codigo_APA.pdf

Asociación Médica Mundial. (2013). *Declaración de Helsinki: Principios éticos para la investigación médica en seres humanos*. https://medicina.udd.cl/centro-bioetica/files/2010/10/declaracion_helsinski.pdf

Beck Institute for Cognitive Behavior Therapy. (s. f.). *Understanding CBT*. https://beckinstitute.org/about/understanding-cbt/

Beck, A. T. (1976). *Cognitive therapy and the emotional disorders*. International Universities Press. https://cdn.bookey.app/files/pdf/book/en/cognitive-therapy-and-the-emotional-disorders.pdf

Díaz Del Ulmo, F., Muñoz Del Carpio-Toia, A., Arias Gallegos, W. L., & Rivera, R. (2022). Estrés, ansiedad y depresión en estudiantes de secundaria de una institución educativa privada de Lima durante la pandemia por COVID-19. (2022). *Educationis Momentum*, *6*(1), 43-60. https://doi.org/10.36901/em.v6i1.1448

Drezner, Z., Turel, O., & Zerom, D. (2010). A Modified Kolmogorov–Smirnov Test for Normality. *Communications in Statistics - Simulation and Computation*, *39*(4), 693–704. https://doi.org/10.1080/03610911003615816

García, J. F., Frías, M. D., & Pascual, J. (1998). *Diseños de investigación experimental: Formación práctica*. https://www.referentibus.com/L/Perez_et_1998.pdf

Hernández Sampieri, R., Fernández Collado, C., & Baptista Lucio, P. (2014). *Metodología de la investigación* (6ta ed.). McGraw-Hill Education. https://apiperiodico.jalisco.gob.mx/api/sites/periodicooficial.jalisco.gob.mx/files/metodologia_de_la_investigacion_-_roberto_hernandez_sampieri.pdf

IBM Corp. (2023). *IBM SPSS Statistics 28 brief guide*. https://www.ibm.com/docs/en/SSLVMB_28.0.0/pdf/IBM_SPSS_Statistics_Brief_Guide.pdf

Kerlinger, F. N., & Lee, H. B. (2000). *Fundamentals of behavioral research* (4th ed.). McGraw-Hill. https://padron.entretemas.com.ve/INICC2018-2/lecturas/u2/kerlinger-investigacion.pdf

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. Springer Publishing Company. https://www.academia.edu/39838289/STRESS_APPRAISAL_AND_COPING

Llobell, J. P., Pérez, J. G., & Navarro, M. D. F. (1995). *El diseño y la investigación experimental en psicología*. Cristóbal Serrano Villalba.

Lovibond, S. H., & Lovibond, P. F. (1995). *Manual for the Depression Anxiety Stress Scales*. Psychology Foundation of Australia.

Maier, S. F., & Seligman, M. E. P. (1976). Learned helplessness: Theory and evidence. *Journal of Experimental Psychology: General*, *105*(1), 3-46. https://ppc.sas.upenn.edu/sites/default/files/lhtheoryevidence.pdf

Ministerio de Educación. (2021, 11 de noviembre). *En marzo del 2022 retornan las clases presenciales* (Comunicado). https://www.gob.pe/institucion/minedu/informes-publicaciones/2339630-comunicado

Ministerio de Salud & UNICEF. (2021). *La salud mental de niñas, niños y adolescentes en el contexto de la COVID-19: Estudio en línea | Perú 2020*. https://www.gob.pe/institucion/minsa/informes-publicaciones/2016408-la-salud-mental-de-ninas-ninos-y-adolescentes-en-el-contexto-de-la-covid-19

Nachar, N. (2008). The Mann-Whitney U: Test for assessing whether two independent samples come from the same distribution. *Tutorials in Quantitative Methods for Psychology*, *4*(1), 13-20. https://www.tqmp.org/RegularArticles/vol04-1/p013/p013.pdf

Olivares Condezo, M. L., & Ynca Amao, J. K. (2023). *Impacto de la COVID-19 en la salud mental de los adolescentes del Asentamiento Humano Canta Gallo, 2023* [Tesis de pregrado, Universidad María Auxiliadora]. Repositorio UMA. https://repositorio.uma.edu.pe/bitstream/handle/20.500.12970/1753/TESIS%20OLIVARES-YNCA.pdf?sequence=1&isAllowed=y

Organización Mundial de la Salud. (2022, 2 de marzo). *La pandemia de COVID-19 aumenta en un 25% la prevalencia de la ansiedad y la depresión en todo el mundo*. https://www.who.int/es/news/item/02-03-2022-covid-19-pandemic-triggers-25-increase-in-prevalence-of-anxiety-and-depression-worldwide

Organización Mundial de la Salud. (2025, 1 de septiembre). *Salud mental de los adolescentes* (Hoja informativa). https://www.who.int/news-room/fact-sheets/detail/adolescent-mental-health

Organización Panamericana de la Salud. (2022, 28 de septiembre). *COVID-19 presenta una oportunidad para fortalecer la salud mental en las Américas*. https://www.paho.org/es/noticias/28-9-2022-covid-19-presenta-oportunidad-para-fortalecer-salud-mental-americas

Pérez-Cano, H. J., Moreno-Murguía, M. B., Morales-López, O., Crow-Buchanan, O., English, J. A., Lozano-Alcázar, J., & Somilleda-Ventura, S. A. (2020). Anxiety, depression, and stress in response to the coronavirus disease-19 pandemic. *Cirugía y Cirujanos*, *88*(6), 562-568. https://pubmed.ncbi.nlm.nih.gov/33064695/

Rochette, L., Dogon, G., & Vergely, C. (2023). Stress: Eight decades after its definition by Hans Selye: “Stress is the spice of life”. *Brain Sciences*, *13*(2), 310. https://doi.org/10.3390/brainsci13020310

Román, F., Santibáñez, P., & Vinet, E. V. (2016). Uso de las escalas de depresión ansiedad estrés (DASS-21) como instrumento de tamizaje en jóvenes con problemas clínicos. *Acta de Investigación Psicológica*, *6*(1), 2325-2336. https://www.sciencedirect.com/science/article/pii/S2007471916300539

Ulloa Ecca, G. I. (2022). *Depresión, ansiedad y estrés relacionado con miedo al COVID-19 en adolescentes de una institución educativa. Piura, 2022* [Tesis de pregrado, Universidad César Vallejo]. Repositorio UCV. https://repositorio.ucv.edu.pe/bitstream/handle/20.500.12692/111370/Ulloa_EGI-SD.pdf?sequence=1&isAllowed=y

United Nations Children's Fund. (2020). *El impacto del COVID-19 en la salud mental de adolescentes y jóvenes*. https://www.unicef.org/lac/el-impacto-del-covid-19-en-la-salud-mental-de-adolescentes-y-j%C3%B3venes

AUTHORSHIP CONTRIBUTION

Rocío Yrene Torres-Prado was responsible for the conception and design of the study, in-person data collection during the post-confinement period, statistical analysis, and comprehensive manuscript writing.
Rocío Yrene Torres-Prado and **Patrik Manuel Toledo Quispe** participated in survey administration during the COVID-19 confinement and supported the drafting of the introduction.
Nancy Elena Cuenca Robles, **Carlos Bacilio De La Cruz Valdiviano**, **Rosario Margarita Yslado Méndez**, and **Santa Obdulia Camacho Silva** conducted critical review of the article, provided academic and methodological suggestions, and improved scientific writing. All authors approved the final version of the manuscript and declare no conflicts of interest.