

Self-efficacy to self-regulate the study, mental health, and sociodemographic variables in Ecuadorian students during COVID-19

Autoeficacia para autorregular el estudio, salud mental y variables sociodemográficas en estudiantes ecuatorianos durante COVID-19

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Abstract

Research has shown special interest in academic variables, mental health and sociodemographic in students during the COVID-19 Pandemic by the drastic changes that the health emergency has caused in Higher Education. The aim of this study was to describe and to explore relations between self-efficacy to self-regulate studying, mental health variables and students' sociodemographic conditions. The sample was non-probabilistic, made up of 534 university students from Ecuador. A descriptive, correlational cross-sectional design was used. The instruments applied had evidence of validity and reliability, and were applied through the SurveyMonkey tool. The results showed mild depression, moderate stress, severe anxiety, and insufficient levels of self-efficacy. Significant relationships were identified between mental health and the self-efficacy variables. Differences were found in the groups based on sex, availability of materials and connection, work and study, variation in income during the pandemic and according to area of knowledge. It is suggested to use these results for the development of psychoeducational interventions that seek to improve the mental health and self-efficacy of university students during the health emergency.

Keywords: mental health – self-efficacy – sociodemographic variables – university student – COVID-19.

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Resumen

La investigación ha mostrado especial interés en variables académicas, sociodemográficas y salud mental de estudiantes durante la Pandemia COVID-19 por los drásticos cambios que la emergencia sanitaria ha provocado en la Educación Superior. El objetivo de este estudio fue describir y explorar las relaciones entre la autoeficacia para autorregular el estudio, las variables de salud mental y las condiciones sociodemográficas de los estudiantes. La muestra fue no probabilística, compuesta por 534 universitarios de Ecuador. Se utilizó un diseño descriptivo, correlacional, transversal. Los instrumentos aplicados tenían evidencia de validez y confiabilidad; se aplicaron a través de la herramienta SurveyMonkey. Los resultados mostraron depresión leve, estrés moderado, ansiedad severa y autoeficacia en niveles insuficientes. Se identificaron relaciones significativas entre las variables de salud mental y autoeficacia. Se encontraron diferencias en los grupos por sexo, disponibilidad de materiales y vinculación, trabajo y estudio, variación de ingresos durante la pandemia y según área de conocimiento. Se sugiere utilizar estos resultados para el desarrollo de intervenciones psicoeducativas que busquen mejorar la salud mental y la autoeficacia de los estudiantes universitarios durante la emergencia sanitaria.

Palabras clave: salud mental – autoeficacia – variables sociodemográficas – estudiantes universitarios – COVID-19.

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Disponibilidad de los datos: El conjunto de datos que apoya los resultados de este estudio no se encuentran disponibles para su uso público. Los datos de la investigación estarán disponibles para los revisores, si así lo requieren.

1. Introduction

At the end of December 2019, the new coronavirus disease COVID-19 emerged in the city of Wuhan - China (Wang *et al.*, 2020). By March 11, 2020, the WHO declared the disease a pandemic (Duong *et al.*, 2020). In Ecuador, the first case confirmed by the Ministry of Public Health was on February 27, 2020, and on March 16 the Ecuadorian Government declared through Executive Decree 107 a state of exception due to calamity in which it was specified that as of midnight on March 17 (Ministerio de Telecomunicaciones, 2021) the right to free movement was limited, face-to-face work was suspended in the public and private sector, all types of public and private transport were restricted, the closure of educational centers and all kinds of public activity was mandated (Presidency of the Republic of Ecuador, s.f). Invoking the provisions of Executive Order 107, universities suspended classroom academic activities and moved on to emergency remote education. Therefore, digital platforms had to be enabled to guarantee the continuity

of academic training. However, most institutions of higher education were not prepared for this modality and major efforts focused on solving the difficulties for education accessibility and continuity (Lobos *et al.*, 2023; Mella-Norambuena *et al.*, 2021; Sáez-Delgado *et al.*, 2023).

However, universities are also strategic places of psychosocial support for students: social exchange and communication with their peers and teachers are protective factors of mental health. With physical distancing measures, students were deprived from this support, creating the risk of a vulnerable situation (López-Angulo *et al.*, 2023; Sáez-Delgado *et al.*, 2022).

In this sense, we know that the mental health of students has been strongly affected, evidencing problems such as: depression, anxiety, stress, chronic exhaustion, phobias and fears, a strong feeling of instability and uncertainty (Cao, 2020; Díaz *et al.*, 2020; Duong *et al.*, 2020; Khodabakhshi-koolaei, 2020; Liu *et al.*, 2020; Praghlapati, 2020; Rajkumar, 2020). It has been found that women may have a greater predisposition to develop psychopathological conditions such as depression (Elmer *et al.*, 2020; Wang *et al.*, 2020) and men may be more predisposed to anxiety disorders. Likewise, those who are at greater economic, occupational, health, social and institutional support risk present more psychological vulnerability (Rajkumar, 2020; Wang *et al.*, 2020).

The difficult economic, psychological, and emotional conditions that students may be going through due to a direct or indirect effect of the COVID-19 disease and quarantine, could have an influence on self-regulatory learning skills (Contreras-Saavedra *et al.*, 2024; Bao, 2020) and a direct impact on their success and academic performance (Sáez-Delgado *et al.*, 2021). In fact, it has been found that there are lower levels of concentration and persistence in the online learning modality (Bao, 2020; Huang *et al.*, 2020). Similarly, stress, anxiety and depression disorders have been associated with a decrease in academic performance and perception of self-efficacy (Alemany-Arrebola *et al.*, 2020; Lee, 2017; Wallin *et al.*, 2019).

Specifically, self-efficacy has acquired a prominent relevance in the educational psychology area since the appearance of Bandura's Social Cognitive Theory (1977). This concept has been defined as those beliefs (i.e., perceptions or expectations) that people have about their ability to manage and deploy the actions necessary to achieve the proposed objectives (Bandura, 2012).

Applied to the educational context, this concept has been defined as those beliefs that students have regarding their ability to learn, to complete their studies or a given task, which implies identifying opportunities and associated challenges in the process (Schunk, 1991). The evidence available in higher education demonstrates the relevance of self-efficacy in achievement and successful academic performance (Sáez-Delgado *et al.*, 2020). In addition, the specialized literature has emphasized measuring self-efficacy in specific domains, which means that the operationalization of self-efficacy should be consistent with its conceptual definition (Bandura, 2006; Díaz-Mujica *et al.*, 2022). In response to this recommendation, the present research focuses on self-efficacy to self-regulate study (Sáez-Delgado *et al.*, 2018).

Knowing the situation of Ecuadorian university students regarding these factors would allow higher education institutions to establish and improve effective academic procedures and psychosocial support for students during the time they need to maintain distance learning. Therefore, the objective of this study was to describe and establish relationships between self-efficacy to self-regulate study, mental health, and socio-demographic variables of Ecuadorian university students.

2. Method

2.1 Participants

The sample was non-probabilistic for convenience and accessibility. It was made up of 534 Higher Education students from both private (Universidad Católica del Ecuador, Pontificia Universidad Católica del Ecuador Sede Ibarra, and Universidad de las Américas) and public universities (Universidad Técnica del Norte, Universidad Central del Ecuador) located in the Provinces of Pichincha and Imbabura. The average age was 22.81 years and $SD = 4.59$, of which 322 (60.3%) were women and 212 (39.7%) were men. In relation to OECD, 306 career areas (57.3%) students belonged to Social Sciences, 161 (30.1%) to Engineering and Technology, 60 (11.2%) to Humanities and 7 (1.3%) to other areas.

2.2 Design and Materials

This study considered a quantitative approach and a cross-sectional correlational descriptive design (Ato *et al.*, 2013). This research used two instruments: mental health was measured with DASS -21 and self-efficacy for self-regulation to study with SE-QSRS. Additionally, questions about sociodemographic variables including gender, discipline area, materials, and variation of income.

The DASS-21 consists of 3 scales corresponding to Anxiety, Stress and Depression. Each scale contains 7 Likert-type items with four points, where 0 is “does not apply to me at all” and 3 is “it applies a lot to me or for the most part of time”. Using the sum of the scores, the levels for each scale are determined. For depression, the levels are mild (5 to 6), moderate (7 to 10), severe (11 to 13) or extremely severe (14 or more points). For anxiety, mild (4), moderate (5 to 7), severe (8 to 9) and extremely severe (10 or more points) anxiety. For stress, mild (8-9), moderate (10 to 12), stern (13 to 16) and extremely severe (17 or more points) (Orellana, Orellana, 2020). This instrument has a total alpha of .96, the alpha of the scales is: .93 for the depression subscale, .91 for the stress scale and .86 for the anxiety scale (Daza *et al.*, 2002; Norton, 2007).

The Self-Efficacy Questionnaire for Self-Regulation of the Study, SE-QSRS, is a nine item self-report instrument, which represent a major dimension that theoretically relates to the central construct (self-efficacy for study self-regulation) but, at the same time, the questionnaire has three secondary subdimensions defined theoretically, which correspond to the self-efficacy for setting academic goals (SE-SAG), self-efficacy for academic time management (SE-ATM) and self-efficacy for the organization of material and environmental resources (SE-OMER). Each of these

three sub-dimensions has three items. The students responded to the assertion “I think I can use the following strategy”. The response scale is in a Likert-type format from 1 to 5 points, where 1 is “completely unsure” and 5 is “completely sure” (Sáez-Delgado *et al.*, 2018).

2.3 Procedure

An online survey was designed using the SurveyMonkey tool that made it possible to incorporate the informed consents, instruments, and questions of this study to be answered in an online format. This tool generated a link that was sent to the participants through email and social networks (Facebook and WhatsApp). The first part of this online survey presented the informed consent. Then, for those who agreed to participate, the following 3 sections were displayed, where the first were questions about sociodemographic variables and the next two parts corresponded to the two instruments used in this study. The link was shared during the second half of 2020 for 3 weeks. Once the invitation period to participate in the study was closed, the information collected by the SurveyMonkey tool was downloaded into an Excel template for subsequent data analysis.

2.4 Data analysis

Descriptive and correlational analysis were performed. Data distribution was verified using the Kolmogorov-Smirnov test with modifying Lilliefors (Thode, 2002), which resulted significant for the variables: age, stress, depression, anxiety, SE-SAG, SE-ATM and SE-OMER, confirming that the data did not follow a normal distribution. With these results for the analysis of the relationship between the variables, the Spearman correlation test was performed for the distribution of non-parametric data (Best, Roberts, 1975).

For the group comparisons analyzes, the assumptions relating to the student t- test were verified. Firstly, the assumption of normality for mental health variables by group were verified (sociodemographic variables) using the Kolmogorov-Smirnov test since all the groups were bigger than 50 students. Also, the Lilliefors modification was performed (Thode, 2002), because the data did not follow a normal distribution ($p < 0.001$).

Subsequently, constant variance between groups was verified (homoscedasticity) using Levene’s test (Fox, Weisberg, 2019), which resulted significant ($p = 0.022$). Therefore, homoscedasticity cannot be assumed between the groups (sex and anxiety; materials and depression; depression and work situation; anxiety and income variation; and stress with income variation). The rest of the groups did show compliance with the assumption of homoscedasticity.

With these results, it was decided to carry out a robust analysis using the YUEN test (Yuen, 1974), which resulted significant $t(280.8) = 2.4084$, $p = 0.017$. Regarding the effect size, the dR was used as proposed by Algina *et al.*, (2005), which follows the same criteria as Cohen.

The information collected was analyzed using the Software R version 4.0.5 and the RStudio IDE Version 1.3.959. The packages tidyverse, car, psych, WRS2, nortest, and reshape were used.

2.5 Ethical considerations

An informed consent form was designed setting out the description of the study (title, objective, name of researchers, contacts of the researchers, importance of the study) and the ethical international principles recommended in the Area of Social Sciences for research with human beings (non-maleficence, beneficence, truth, justice and autonomy) (Code of Ethics of the American Association for Educational Research, 2011; Ethical Principles for Psychologists and Code of Conduct, 2017). In addition, it was specified that participation was anonymous, voluntary, did not present risk, did not represent any cost, and that they could request a summary of the global results of the study.

3. Results

3.1 Variable descriptive statistics

The descriptive analyses of the variables are shown in Table 1. The sociodemographic variables showed that 62 (11.6%) students worked while they studied; for 430 (80.5%) the family income was reduced during the pandemic, and for 112 (21.0%) the materials and internet connection needed to carry out their studies was unavailable.

As for mental health variables, the results indicated that depression was mild ($M = 6.34$; $SD = 3.95$), stress was moderate ($M = 9.70$; $SD = 3.64$) and anxiety was severe ($M = 8.09$; $SD = 3.36$). Severe anxiety indicates that students have frequently exhibited worries, unreasonable fears, dry mouth, breathing difficulties, and agitation without exertion. Mild depression indicates that students have had a few feelings of sadness, disappointment, and a lack of enthusiasm. Moderate stress indicates that students have sometimes found it difficult to release tension and relax, react appropriately to certain stressful situations, feel calm and still. Regarding self-efficacy, students are not believed capable of setting academic goals ($M = 1.15$; $SD = 0.36$), do not to perceive themselves as able to manage their academic time ($M = 1.68$; $SD = 0.47$), and they see themselves “somehow capable” to organize their material and environmental resources ($M = 2.84$; $SD = 1.03$)

Table 1. Descriptive analyses for mental health and self-efficacy variables

Variables	<i>M</i>	<i>SD</i>	min	max	skew	kurtosis	alpha
Stress	9.70	3.64	0.00	21.00	-0.72	0.73	0.64
Depression	6.34	3.95	0.00	21.00	0.37	-0.18	0.80
Anxiety	8.09	3.36	0.00	18.00	-0.39	0.28	0.58
SE-SAG	1.15	0.36	1.00	2.00	1.92	1.68	0.81
SE-ATM	1.68	0.47	1.00	2.00	-0.76	-1.43	0.74
SE-OMER	2.84	1.03	1.00	4.00	-0.37	-1.08	0.80

Note. SE-SAG: Self-Efficacy for Setting academic goals; SE-ATM: Self-Efficacy for Academic Time Management; SE-OMER: Self-efficacy for the organization of material and environmental resources.

3.2 Correlations between variables mental health, self-efficacy

The relations between mental health and self-efficacy variables showed significant relationships, negative, and weak between depression and SE-SAG, SE-ATM, SE-OMER (between $r = -0.16$ and $r = -0.26$, $p < 0.001$). Relations among these same characteristics were found between stress with SE-ATM ($r = -0.16$; $p < 0.001$) and SE-OMER ($r = -0.14$; $p < 0.001$). The intra-scale relationships are significant, strong, and positive both between the dimensions of mental health and between the dimensions of self-efficacy (see Table 2).

Table 2. Relationship between mental health variables and self-efficacy

	Stress	Depression	Anxiety	SE-SAG	SE-ATM	SE-OMER
Stress	1	0.65 ***	0.48 ***	-0.073	-0.16 ***	-0.14 **
Depression		1	0.53 ***	-0.26 ***	-0.25 ***	-0.16 ***
Anxiety			1	0.005	-0.035	-0.0083
SE-SAG				1	0.77 ***	0.72 ***
SE-ATM					1	0.73 ***
SE-OMER						1

Note. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

3.3 Mental health comparison according to sociodemographic variables

Mental health variables were compared to different sociodemographic variables corresponding to: (a) sex; (b) availability of materials and internet connection; (c) work while studying; (d) variation of income during the pandemic; and (e) knowledge area of their studies (see Table 3).

As for the area of knowledge to which the studies of the participants belong, statistically significant differences were observed and the magnitude of these differences were between small to medium in all mental health variables, for anxiety [$F(2,106.9) = 7.481$, $p < 0.001$, $dR = 0.3$], stress [$F(2,92.76) = 4.799$, $p < 0.05$, $dR = 0.24$] and depression [$F(2,91.93) = 8.9211$, $p < 0.001$, $dR = 0.38$]. Higher scores in anxiety were observed $M = 9.53$ ($SD = 3.01$), stress $M = 10.88$ ($SD = 3.37$) and depression $M = 8.6$ ($SD = 3.8$) in the humanities knowledge area. Stress had higher scores than anxiety in all areas of knowledge ($M = 9.39$ to $M = 10.88$).

Regarding the difference in mental health according to sex, significant differences were observed in the three scales corresponding to anxiety [$t(280.8) = 2.408$, $p = 0.017$]; stress [$t(266.53) = 2.583$, $p = 0.010$] and depression [$t(269.86) = 5.2489$, $p = 0.00$]. The magnitude of these differences was small for anxiety and stress ($dR = 0.22$ and $dR = 0.24$ respectively), while for depression it was medium ($dR = 0.50$).

Regarding availability of materials and internet connection, the difference was significant only for the stress variable and showed small magnitude differences [$t(108.63) = 2.166$, $p = 0.032$, $dR = 0.24$]. Higher scores for stress were observed in students who do not have the materials and internet connection ($M = 10.22$, $SD = 3.44$).

Statistically significant differences were found and the magnitude of this difference was average between students who work compared to those who do not work in the depression

variable [$t(59.29) = 4.487, p < 0.001, dR = 0.49$]. Those who were working reported lower scores in depression $M = 4.5$ ($SD = 3.21$) compared to those were not working $M = 6.58$ ($SD = 3.98$). In the variable income variation, statistically significant differences were found in the variables stress [$t(79.77) = 2.7294, p = 0.008, dR = 0.38$] and depression [$t(92.63) = 3.824, p < 0.001, dR = 0.45$]. The magnitude of these differences was medium. Higher scores of stress and depression were observed in students whose income decreased.

Table 3. Comparisons of mental health variables according to sociodemographic variables

	group	n	Anxiety		Stress		Depression	
			M (SD)	Yuen (t) -Welch-type test (F)	M (SD)	Yuen (t) -Welch-type test (F)	M (SD)	Yuen (t) -Welch-type test (F)
Sex	man	212	7.76 (3.02)	$t(280.8) = 2.408^*$	9.33 (3.50)	$t(266.53) = 2.5832^*$	5.39 (3.86)	$t(269.86) = 5.248^{***}$
	woman	322	8.31 (3.55)	$d_R = 0.22$	9.94 (3.71)	$d_R = 0.24$	6.96 (3.89)	$d_R = 0.50$
Availability of materials and connection	not	112	7.66 (3.45)	$t(94.86) = 1.768, p = 0.080$	10.22 (3.44)	$t(108.63) = 2.166^*$	6.46 (3.37)	$t(147.71) = 1.736, p = 0.085$
	Yes	422	8.2 (3.33)		9.56 (3.68)	$d_R = 0.24$	6.3 (4.09)	
Works	not	472	8.09 (3.41)	$t(48.79) = 0.641, p = 0.524$	9.71 (3.68)	$t(51.34) = 0.756, p = 0.453$	6.58 (3.98)	$t(59.29) = 4.487^{***}$
	Yes	62	8.11 (2.98)		9.61 (3.28)		4.5 (3.21)	$d_R = 0.49$
Pandemic income variation (decreases)	equal or more	104	7.54 (2.99)	$t(121) = 1.687, p = 0.094$	8.81 (3.91)	$t(79.77) = 2.729^{**}$	5.21 (4.23)	$t(92.63) = 3.824^{***}$
	less	430	8.22 (3.43)		9.92 (3.54)	$d_R = 0.38$	6.61 (3.84)	$d_R = 0.45$
Career area	SS	306	7.74 (3.43)	$F(2,106.9) = 7.4818^{***}$ $d_R = 0.3$	9.39 (3.63)	$F(2,92.76) = 4.799^*$ $d_R = 0.24$	6.29 (3.86)	$F(2,91.93) = 8.921^{***}$ $d_R = 0.38$
	H	60	9.53 (3.01)		10.88 (3.37)		8.6 (3.8)	
	ET	161	8.16 (3.25)		9.84 (3.75)		5.57 (3.96)	

Note. * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$; dR: Effect size; SS: Social Sciences; H: Humanities; ET: Engineering and technologies.

4. Discussion

The present research aimed to describe and establish relationships between self-efficacy to study self-regulation, mental health, and sociodemographic variables of Ecuadorian students from public and private universities during the Covid-19 pandemic.

Regarding sociodemographic variables, 88% of students were not working and more than 80% reported that family income decreased during the health crisis. This is consistent with a study on the economic impact of Covid -19 in Ecuador whose findings indicated that the unemployment rate increased, greatly reducing the economic income of families (Sumba-Bustamante *et al.*, 2020). Despite these economic difficulties, only 21% of the students claimed not to have the resources to connect to the internet and materials required for classes in an online mode.

Similar results were shown in the study by Asanov *et al.* (2020), carried out at the secondary education level in Ecuador, where it was found that more than half of the surveyed population stated that they had connectivity and technological resources for online classes. This may be due to the Government's plan of democratization of telecommunications published in the newsletter of 17 May 2020 of the digital portal of the Presidency, which states that in the year 2015, 50% of the population had access to the internet and that 833 community info centers were implemented.

Among the mental health variables, results showed the presence of anxiety, depression, and stress. This can also be found in several studies which have shown that students have been affected in their mental health during the time of pandemic (Chi *et al.*, 2020; Ihm *et al.*, 2021; Ramón-Arbués *et al.*, 2021; Tasso *et al.*, 2021). Among the population studied, anxiety shows severe levels, followed by moderate stress results and depression that presents mild levels. This could be due, among other reasons, to little access to work and a limited income due to the health crisis, as was found at work Othman *et al.* (2019), where economic factors were related to anxiety. However, recent studies have shown that students are still experiencing mental health and psychological well-being problems after returning to face-to-face education (Liverpool *et al.*, 2023; Mishra, Kumar, 2023). This suggests that even more interventions are needed to support students.

Economic difficulties can also explain why those students who said that their household income fell presented higher levels of depression. This is confirmed by the work done by Hertz-Palmor *et al.* (2020), which indicates that the reduction in income was associated with a detriment to people's mental health and was mainly related to depression. Likewise, in the study by Meza-Dávalos *et al.* (2023), it is evident that those who provide for the family economy present severe levels of anxiety and depression.

Regarding gender differences, women have higher levels of mental health dysregulation than men, this phenomenon has also been evidenced in previous research such as Maia and Dias (2020) in which women have seemed to be more affected in the emotional area during the pandemic, presenting higher levels of anxiety and stress than men. In Issa *et al.* (2023) there were also statistically significant differences in depression and anxiety based on gender. These differences may be due to socio-cultural and biological factors (Saldivar, Ramirez, 2020).

Regarding the majors that the students study, it was found that those corresponding to the humanities area scored higher in anxiety, depression, and stress, and these results match those found in other studies such as Aristovnik *et al.* (2020), which mention that liberal arts students have higher levels of anxiety and frustration than those in other areas of knowledge.

The study found significant and negative relationships between mental health variables and self-efficacy. This finding suggests that as students' self-efficacy to address and manage various situations related to their academic and personal well-being decreases, an increase in

the levels of mental health problems is observed. An aspect consistent with previous correlational studies – for example, Alemany-Arrebola *et al.* (2020) – found an inversely proportional relationship between anxiety and self-efficacy in Spanish university students, emphasizing that a stressful situation such as COVID-19 alertness, as well as an event of contagion or death of a family member, increases anxiety levels and influences the perception of academic self-efficacy. Ayala (2022) found a significant inverse relationship between depression and self-efficacy in Peruvian university students during the pandemic. Recently, Zapata and De Lille (2024) found significant and negative correlations between self-efficacy in academic behaviors, anxiety and depression in Mexican university students in a post-pandemic context. These results reinforce the idea that self-efficacy to self-regulate study plays a crucial role in the mental health of students, both in situations of generalized stress and in specific contexts, such as that experienced during and after the pandemic.

Gutiérrez-García & Landeros-Velázquez (2018) indicate that events and negative stressors have a negative impact on motivation and self-expectations of success, in a way that feeds and exacerbates symptoms of depression and anxiety.

Regarding the stress, anxiety and depression levels and availability of materials and internet connection, it was observed that there were higher levels of stress in those students who do not have the necessary materials and good connectivity. One of the reasons for this is the concern generated by connectivity failures and the limitations of basic devices in sending and receiving assignments and attending classes (Cornejo *et al.*, 2023; Fawaz, Samaha, 2020; Meza-Dávalos *et al.*, 2023).

As limitations of the study, we found that, being a cross-sectional correlational design, it is not possible to establish causal relationships. Moreover, the data were collected at a specific moment in the development of the pandemic in Ecuador. It is possible that the current situation of university students has changed; likewise, the data were collected in students from the northern highlands region of the country and other variables that, according to the literature, could also influence academic self-efficacy and mental health were not considered.

Future lines of research could delve into longitudinal studies that allow for monitoring of the mental health of university students, as well as their self-efficacy for self-regulation of study and propose intervention programs that consider the sociodemographic particularities of higher education students. It would also be important that new jobs include students from more areas of the country and consider other variables such as: teacher support, institutional support, and social support. Finally, considering that after the pandemic online teaching (hybrid or completely virtual environments) has been proliferating, it is recommended to replicate this study considering the different teaching modalities with the objective of providing scientific background that contributes to national and international educational public policy.

5. Implications

The findings emphasize the urgent need to strengthen and expand the availability of mental health support and interventions focused on student well-being to meet the demands of those students who are experiencing pre-existing mental health symptoms or who have developed emotional difficulties during and after the COVID-19 pandemic. Furthermore, the findings highlight the troubling prevalence of mental health disparities among different student groups. Therefore, educational institutions and policy makers should prioritize the implementation of tailored, student-centered mental health services, addressing both treatment and prevention and wellness promotion.

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