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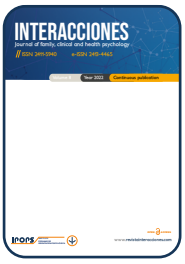

ORIGINAL ARTICLE

Academic self-efficacy as a protective factor for the mental health of university students during the COVID-19 pandemic

La autoeficacia académica como factor protector de la salud mental en estudiantes universitarios durante la pandemia de COVID-19

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ABSTRACT

Background: University students are vulnerable to developing mental health problems due to constant exposure to academic demands. A situation that has been exacerbated by the COVID-19 pandemic and observed in several recent studies. Therefore, current practices require further research and identification of potentially protective factors for mental health. **Objective:** This study aimed to analyze academic self-efficacy as a protective factor against depression, anxiety, and stress in university students. **Methods:** A cross-sectional design was used with 3525 university students from Lima, Peru. The prevalence of depression, anxiety, and stress was measured using the DASS-21. Academic self-efficacy was measured with the EPAESA and defined as a predictor of the three mental health conditions. Structural equation modeling was used to test the model, together with a multigroup analysis for gender and working status. **Results:** One-third of the sample had severe to extremely severe symptoms of depression, anxiety, and stress. Academic self-efficacy was a moderately statistically significant predictor of the three mental health conditions. Relationships were invariant to gender and working status. **Conclusions:** Self-efficacy can be considered a protective factor for mental health. Interventions to promote academic self-efficacy may be effective in reducing depression, anxiety, and stress in university students. The findings are discussed together with current studies on the topic.

Keywords: Self Efficacy, Mental health, Depression, Anxiety, Stress, Higher Education, University Students, COVID-19.

RESUMEN

Antecedentes: los estudiantes universitarios son propensos a desarrollar problemas de salud mental debido a la exposición constante a las exigencias académicas. Una situación que se ha agravado con la pandemia de COVID-19 y se ha observado en varios estudios contemporáneos. Por esta razón, las prácticas actuales requieren más investigación e identificación de posibles factores protectores de la salud mental. **Objetivo**: El objetivo de este estudio fue analizar la autoeficacia académica como factor protector frente a la depresión, la ansiedad y el estrés en estudiantes universi-

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tarios. **Método**: Se realizó un diseño transversal en 3525 estudiantes universitarios de Lima, Perú. La prevalencia de depresión, ansiedad y estrés se midió con el DASS-21. La autoeficacia académica se midió con la escala EAPESA y se definió como predictor de las tres condiciones de salud mental. Se llevó a cabo un enfoque de modelado de ecuaciones estructurales para probar el modelo junto con un análisis multigrupo con respecto al sexo y la situación laboral. **Resultados**: Un tercio de la muestra presentó síntomas severos a extremadamente severos de depresión, ansiedad y estrés. La autoeficacia académica fue un predictor estadísticamente significativo moderado de las tres condiciones de salud mental. Las relaciones fueron invariantes en cuanto al sexo y la situación laboral. **Conclusiones**: La autoeficacia puede considerarse como un factor protector de la salud mental. Las intervenciones para fomentar la autoeficacia académica podrían ser efectivas para reducir la depresión, la ansiedad y el estrés en estudiantes universitarios. Los hallazgos se discuten junto con los estudios contemporáneos sobre el tema.
Palabras clave: Autoeficacia, Salud mental, Depresión, Ansiedad, Estrés, Educación Superior, Estudiantes Universitarios, COVID-19.

BACKGROUND

The COVID-19 pandemic posed an unprecedented challenge to governments around the world due to its alarming contagiousness and severity of symptoms (Krishnan et al., 2021). Since the World Health Organization (WHO) declared it a pandemic on March 11, 2020, most countries have opted to implement lockdown and social distancing measures to contain its spread. As a result, organizations that are not essential to governments, such as educational institutions, have been forced to adapt from a face-to-face to a remote methodology. Preparing for distance learning requires addressing several immediate challenges related to access to digital connectivity and adapting pedagogical teaching strategies to a virtual context to ensure appropriate learning (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2020). Nevertheless, various economic, social, and health factors have affected the academic performance of university students during the pandemic (Aucejo et al., 2020; Reyes-Portillo et al., 2022). Among these, students' mental health was one of the most affected factors, consistently reported in several studies (e.g., Chen & Lucock, 2022; Elharake et al., 2022).

According to the World Health Organization (WHO, 2022), mental health is essential to the overall well-being of a person. In this sense, mental health problems are considered the leading cause of disability and a fundamental public health problem worldwide. During the COVID-19 pandemic, a greater emphasis was placed on the mental health of vulnerable socio-demographic groups, such as university students (Son et al., 2020). For most universities, social restrictions imposed strict social learning measures, which became a constant stressor for students as it required greater effort to adapt to a new learning approach and to cope with pandemic-related stressors (Ghazawy et al., 2021). Indeed, previous research has already shown that university students tend to experience stress, anxiety, and depression due to the stressful nature of academic demands (Limone & Toto, 2022).

Indeed, adolescents and young adults are vulnerable to mental health problems (Nobre et al., 2021), such as depression, anxiety, and stress are common in this socio-demographic group (Das et al., 2016; García-Carrión et al., 2019; Silva et al., 2020). Also, mental disorders affect motivation, concentration, and social interactions, which are relevant aspects of the academic performance of university students (Son et al., 2020). Furthermore, mental disorders rank high among the factors that hinder academic success (Agnafors et al., 2021). Globally, between 12 and 50% of university students meet at least one diagnostic criterion for one or more mental disorders (Bruffaerts et al., 2018). However, recent studies have shown an increase in mental health conditions due to the COVID-19 pandemic and social distancing measures (e.g., Xiong et al., 2020; Tsamakis et al., 2021; Jones et al., 2021; Chadi et al., 2022).

In Peru, university students usually belong to adolescence and early adulthood, being between 15 and 29 years old. The Peruvian Ministry of Health (MINSA, 2020) estimates that 20% of the adult population has mental health problems, highlighting stress, depression, and anxiety. Ruiz-Frutos et al. (2021) found that approximately 59% of Peruvian adults suffered from high levels of psychological distress during the first year of the COVID-19 pandemic. In addition, Antiporta et al. (2021) showed that the pandemic had a drastic effect on the general mental health of the Peruvian population, with three out of ten participants reporting moderate to severe symptoms of depression. Notably, the prevalence of these symptoms was five times higher than the national level reached in 2018. In addition, Figueroa-Quiñones et al (2022) conducted a study on university students during the pandemic and showed that 75% of students had mild to severe symptoms of depression, as well as multiple difficulties in performing daily activities, pain, and general discomfort, which significantly affected their quality of life.

In the context of the increasing prevalence of mental health problems, studies are needed to identify potential protective factors against these problems in university students. This study aimed to assess academic self-efficacy as a potential protective factor. Self-efficacy, a concept proposed by Albert Bandura, refers to an individual's assessment of their abilities and capabilities to perform tasks of varying difficulty levels. Self-efficacy emphasizes an individual's past performance (Bong & Clark, 1999). Along with goal setting, self-efficacy is one of the most relevant motivational predictors of how well people will perform in almost any activity. This means that self-efficacy is a powerful determinant of people's effort, persistence, strategy, training, and job performance (Heslin et al., 2017). In academic contexts, self-efficacy is defined as an individual's belief that they will be able to perform assigned academic tasks at a given level. Several studies on academic self-efficacy have found that it is directly related to perceived academic performance, stress, general satisfaction, school attendance, school adjustment, and problem-coping behavior (Karakose et al., 20-23).

In the academic context, it is necessary to consider self-efficacy, as students with high self-efficacy set more complex goals and

show high commitment to achieving them. In addition, positive self-efficacy is a predictor of good academic performance (Yokoyama, 2019). Furthermore, self-efficacy has a strong correlation with mental health, which has been demonstrated in the results of different studies (e.g., Grøtan et al., 2019; García-Álvarez et al., 2021). For example, Tak et al. (2017) shows that there is a negative relationship between academic self-efficacy and depressive symptoms in early to middle adolescence. This finding is echoed by Tahmassian and Jalali Moghadam (2011), who also found a negative relationship between academic self-efficacy and anxiety. Furthermore, Sabouripour et al. (2021) state that self-efficacy is crucial for stress management as it influences the evaluation of stressors and allows the correct implementation of methods to deal with them. In this sense, effective coping strategies to deal with stressors are associated with higher student self-efficacy (Freire et al., 2020).

As mentioned above, symptoms of depression, anxiety, and stress are considered important indicators of mental health that can negatively affect well-being (Wainberg et al., 2017). This study focused on one protective factor within the academic context, academic self-efficacy, as a potentially protective factor against the three aforementioned mental health conditions during the first year of the COVID-19 pandemic. As shown in the literature, the pandemic itself brought several stressors, and for university students, most of them are related to changes in their academic efforts and well-being (e.g., Oliveira Carvalho et al., 2021; Sauer et al., 2022; Werner et al., 2021). For this reason, we hypothesize that higher academic self-efficacy in university students will be associated with less severe symptoms of depression, anxiety, and stress. Therefore, this study aimed to determine the predictive role of academic self-efficacy on depression, anxiety, and stress in university students residing in Lima Metropolitana, Peru, during the first year of the COVID-19 pandemic.

METHOD

Participants

A sample of 3525 undergraduate university students from Lima, Peru was recruited. Inclusion criteria included participants who were at least 18 years old and enrolled in correspondence courses during the 2020 academic year. Data were collected through an online survey that indicated the voluntary nature of participation and informed consent, which had to be accepted before answering further questions. The sample consists of 32.40% males and 67.60% females, aged between 18 and 28 years (M=20.52, SD=2.00). In addition, 20.79% of the sample reported that they were working or in pre-professional work placements alongside their respective studies, and the remaining 79.21% were studying full-time.

Instruments

Academic Self-Efficacy

Academic self-efficacy is defined as students' own beliefs about their ability to organize and perform actions related to the achievement of academic goals (Bandura, 2001). In the present study, this variable is operationalized by the Specific Perceived Self-Efficacy Scale for Academic Situations (EAPESA; Palenzuela, 1983). The original version consists of 10 items. However, it was decided to use a 9-item version resulting from the adaptation study of the scale in Peruvian university students. The format corresponds to Likert-type items with four response alternatives, from never to always. In terms of its psychometric properties, a high internal consistency indicates a high reliability (ω=.933) and an excellent fit to a unidimensional model that reports validity based on its internal structure.

Mental Health

Mental health is measured as symptoms of depression, anxiety, and stress experienced by university students and is operationalized in the Spanish versions of the Depression, Anxiety, and Stress Scales (DASS). Lovinbond and Lovinbond (1995) proposed the original 42-item scale; however, Antony et al. (1998) showed that a shortened 21-item version retained fair to excellent psychometric properties and the ability to discriminate features of depression, stress, and anxiety as well as the full version. Both versions have been renamed DASS-42 and DASS-21 respectively. In the present study, the Spanish version of the DASS-21 is used, where the items are presented with a four-level response scale from "*Did not apply to me at all"* to "*Applied to me very much or most of the time"*. The total scores of the DASS-21 can be used to categorize people into symptom severity levels: *None*, *Mild*, *Moderate*, *Severe*, and *Extremely severe*. In terms of its psychometric properties, high internal consistency was found for the three subscales (ω=.848-.932), indicating strong evidence of reliability. In addition, an excellent fit to a multidimensional correlated 3-factor model provided evidence of validity based on its internal structure.

Data Analysis Procedures

The data analysis is based on a structural equation modeling (SEM) approach, an analytical technique that integrates the modeling of latent variables through the fitting of measurement models and the analysis of their relationships through structural models (Wang & Wang, 2020). In this way, SEM uses the matrix of covariances or correlations of the observed data for the joint estimation of the parameters of a model and the evaluation of its respective fit, without having to rely on the estimation of overall scores that ignore the theoretical models proposed for the latent variables (McNeish & Wolf, 2020), although this may be useful in certain circumstances (Widaman & Revelle, 2022).

First, an exploratory analysis is presented together with the distribution of severity of depression, anxiety, and stress as an approximation of the prevalence of these mental health conditions in the observed sample. Subsequently, the measurement models for the EAPESA and DASS-21 are tested using confirmatory factor analysis (CFA; Brown, 2015), together with the estimation of reliability measures with the omega coefficient when assuming a congeneric model (Cho, 2016).

The structural models are then evaluated against the main conceptual hypothesis of the study. The evaluation of the models is developed considering the Comparative Fit Index (CFI), Root Mean Squared Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR) indicators. Values of CFI≥.95, RMSEA≤.05, and SRMR≤.06 are established as indica-

tors of excellent fit, while CFI≥.90, RMSEA≤.08, and SRMR≤.08 suggest an adequate value (Keith, 2019). The analyses are developed taking into account polychoric correlation matrices, consistent with the ordinal nature of the variables. The WLSMV estimator will be used in congruence with the use of polychoric matrices and is robust to deviations from normality (Li, 2016).

To end with, a multigroup analysis is carried out to assess the invariance of the proposed relationships regarding sex and work status. We follow the modern approach shown by Svetina et al. (2020) which is an applied demonstration of Wu and Estabrook (2016) approach to assess measurement invariance for ordered categorical outcomes in which a baseline model is established, followed by subsequent models where the thresholds and loadings are constrained. Then, we analyzed the structural invariance by constraining the latent variable variances, covariances, and regressions. Incremental indexes ΔCFI, ΔRMSEA, and ΔSRMR were used to determine invariance following common suggestions by Chen (2007), Rutkowski and Svetina (2014;2017), and Svetina and Rutkowski (2017).

Ethical considerations

The participants completed an online questionnaire after expressing their informed consent. The research project was accepted by the *Comité de Investigación y Ética* (CIE) of the Faculty of Psychology of the *Universidad de Lima*.

RESULTS

Prevalence of Depression, Anxiety and Stress and Exploratory Analysis

An approximation of the prevalence of the severity of depression, anxiety, and stress in the sample of university students is presented in Figure 1. As can be seen, the distribution of severity in the three mental health conditions explored denotes that approximately one-third of the sample experienced severe to extremely severe symptoms of all three conditions. In the same way, most participants presented a degree of severity that is mild at best. The similarities in the observed distributions represent empirical evidence about the relationship between the mental health conditions studied, which means that correct modeling of these variables must recognize their respective relationship.

A set of descriptive statistics on the total scores is presented in Table 1, as an exploratory analysis of the distribution of the observed measures. Additionally, no atypical response patterns were identified in the data set; however, floor effects were identified for the three mental health measures and a ceiling effect was identified for the academic self-efficacy measure. The presence of both indicators supposes limitations that were addressed by using robust estimation methods towards non-normality.

Measurement Models

The one-dimensional measurement model proposed for the EAPESA scale showed an excellent fit to the empirical data $X^2(27)=743.010$, CFI=.990, RMSEA=.087 (90% CI .081-.092), SRMR=.026. High factor loadings were found for all 9 items ranging from λ=0.732 to λ=0.883. These measures denoted a high observed internal consistency ω=.933 and average explained variance AVE=0.683. In the same way, the multidimensional 3-factor model proposed for the DASS-21 scale presents an appropriate fit to the empirical data $X^2(186)=6042.479$, CFI=.936, RMSEA=.095 (90% CI .092-.097), SRMR=.054, with high factor loadings, internal consistency, and average explained variance for depression λ=.650-.882, ω=.921, *AVE*=.672 ; anxiety λ=.474-.871, ω=.848, *AVE*=.524; and stress λ=.681-.847, ω=.932, *AVE*=.561.

Structural Model

The identified relationships supported the suitability of the proposed model. Figure 2 presents the theoretical model proposed in this study, with the respective estimated parameters. In summary, the estimated model presents an excellent fit to the data $X^2(399)=5700.779$, CFI=.959, RMSEA=.061 (90% CI .060-.063), SRMR=.046. A moderate effect size was found in the negative statistically significant relationship between perceived academic self-efficacy and depression β=-.451, p<.001; anxiety β=-.357, p<.001; and stress β=-.337, p<. 001. Since the initial proposed model showed an excellent fit to the empirical data, no ex post facto modifications were made.

Multigroup Models

To further test the proposed model, a multigroup analysis was carried out and its results are shown in Table 2. We found supporting evidence for thresholds and loadings invariances regarding sex and work status which denotes evidence for measurement invariance. Additionally, structural invariance was supported for both sex and work status groups, denoting invariant latent variable variances and covariances, as well as the proposed regression paths on the structural model. As a reference, the parameters estimated in the configural models are shown in Figure 3 to show no practical differences regarding both sex and work status.

DISCUSSION

Most university students face multiple challenges in the transition towards accessing higher education such as the need to adapt to academic demands in a highly competitive environment while still learning to make independent decisions about their lives and careers (Bruffaerts et al., 2018; Hernández-Torrano et al., 2020). These challenges impose psychological distress in a way that the probability of suffering from mental health problems such as anxiety and depression can be six times higher for graduate students than for the general population (Evans et al., 2018). For this reason, there is a growing need to strengthen policies to address mental health problems on university students, as well as increasing the studies to further understand the burden of mental health challenges and potential coping mechanisms (Grando Gaiotto et al., 2021; Nair & Otaki, 2021). In addition, the COVID-19 pandemic brought a stronger need to address mental health problems in university students, since several studies show an increase in prevalence of psychological distress and multiple negative repercussions for this sociodemographic group (e.g., Antiporta et al., 2021; Chen & Lucock, 2022). In response to this need, it is necessary and im-

Figure 1. Prevalence of Depression, Anxiety, and Stress in University Students.

Table 1. *Descriptive Statistics of Depression, Anxiety, and Stress Total Scores.*

Variable	M	SD	Med	γ_1	γ_2
Depression	16.178	11.315	14	0.465	-0.724
Anxiety	11.956	9.741	10	0.902	0.203
Stress	18.615	9.956	18	0.199	-0.624
Academic Self-Efficacy	24.069	5.923	24	0.037	-0.500

Note. M = Mean, SD = Standard Deviation, Med = Median, γ_1 = Skewness, γ_2 = Kurtosis.

portant to identify protective factors to mental health problems in university students. Since academic demands are among the most related factors to psychological distress on university students, the aim of this study is to propose academic self-efficacy as a potential protective factor against mental health problems. Self-efficacy is defined as the judgment that a person has about their own skills and abilities in order to achieve success in different tasks with different levels of complexity (Bandura, 2001). In the academic field, self-efficacy allows university students to propose complex tasks and commit themselves, to a greater extent, to carrying them out. Academic self-efficacy is significantly related to psychological well-being and mental health, since several authors have found that a higher confidence to address academic tasks has a negative relationship with mental health disorders, such as depression, anxiety, and stress (e.g., Tak et al., 2017; Tahmassian & Jalali Moghadam, 2011; Sabouripour et

Figure 2. Proposed Structural Model for the Relationship Between Academic Self-Efficacy on Depression, Anxiety and Stress.

Table 2. *Multigroup Analysis Regarding Sex and Work Status.*

Group	Model	χ^2 (df)	CFI	ΔCFI	RMSEA (CI 90%)	ΔRMSEA	SRMR	ΔSRMR
Sex	Baseline	5902.396 (798)	0.959		0.060 (0.059 - 0.062)	-	0.048	-
	Thresholds invariance	6179.408 (854)	0.957	-0.002	0.059 (0.058 - 0.061)	-0.001	0.048	0.000
	Thresholds and loadings invariance	6110.116 (880)	0.958	0.001	0.058 (0.057 - 0.059)	-0.001	0.048	0.000
	Structural invariance	4196.830 (890)	0.974	0.024	0.046 (0.045 - 0.047)	-0.012	0.048	0.000
Work status	Baseline	5785.346 (798)	0.96		0.060 (0.058 - 0.061)	-	0.047	-
	Thresholds invariance	5933.104 (854)	0.959	-0.001	0.058 (0.057 - 0.060)	-0.002	0.047	0.000
	Thresholds and loadings invariance	5892.764 (880)	0.959	0.000	0.057 (0.055 - 0.058)	-0.001	0.047	0.000
	Structural invariance	3977.289 (890)	0.975	0.024	0.044 (0.043 - 0.046)	-0.013	0.048	0.001

Note: χ^2 = Chi-squared value, df = degrees of freedom, CFI = Comparative Fit Index, RMSEA = Root Mean Square Error of Approximation, CI = Confidence intervals. SRMR = Standardized Root Mean Square Residual. ΔCFI = Change in CFI. ΔRMSEA = Change in RMSEA. ΔSRMR = Change in SRMR.

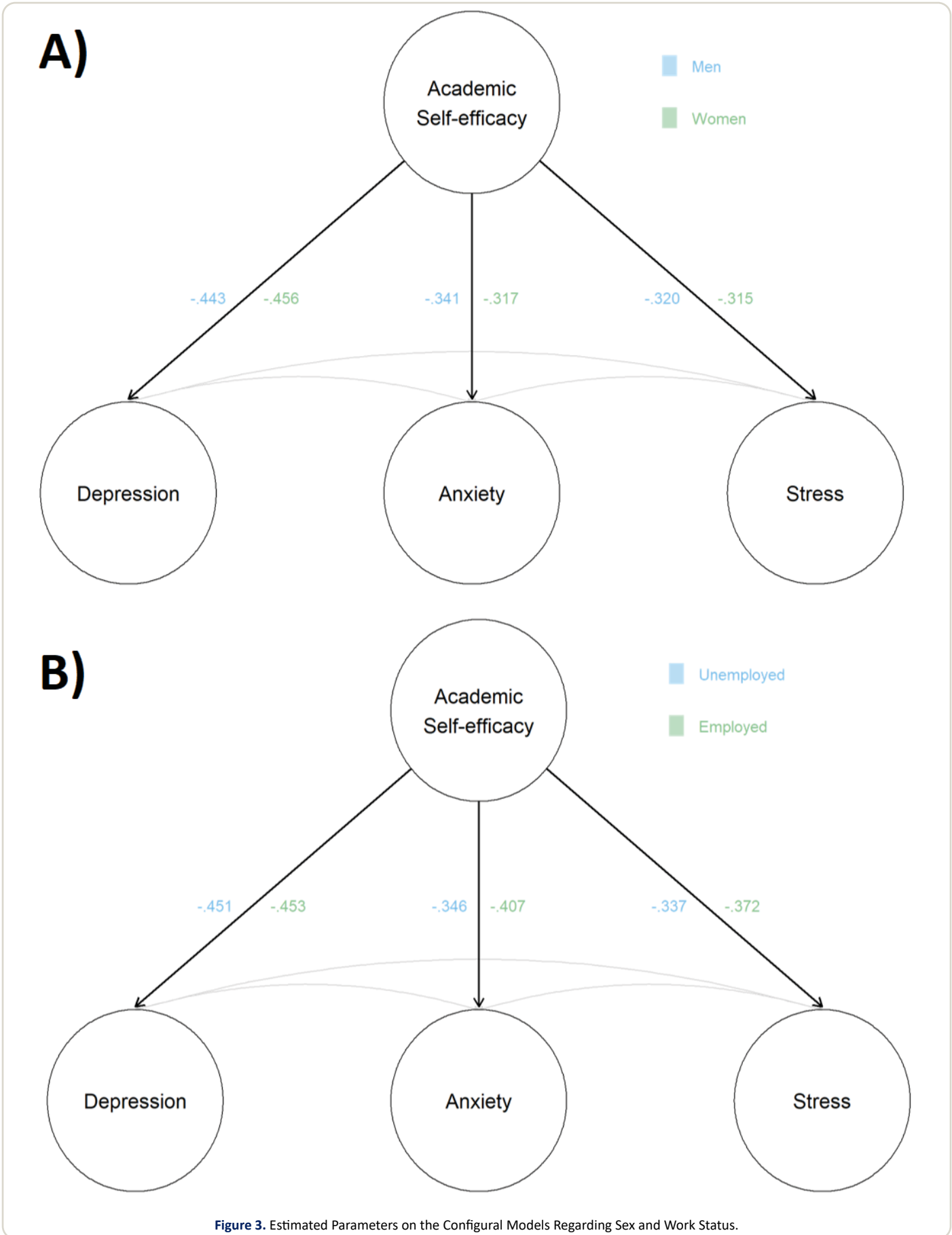

Figure 3. Estimated Parameters on the Configural Models Regarding Sex and Work Status.

al., 2021; Freire et al., 2020).

In correspondence to several studies on the prevalence of mental health problems on university students during the COVID-19 pandemic (e.g., Chen & Lucock, 2022; Li et al., 2021; Wang et al., 2021; Chang et al., 2021), we found that approximately one third of the sample experienced severe to extremely severe symptoms of depression, anxiety, and stress. In most cases, students faced a disruption on their lives during the pandemic such as the feelings of loneliness due to the social isolation practices, lack of financial resources which increased stress and implied poor nutrition and housing, as well as the need to keep adapting to academic demands (Sauer et al., 2022). As such evidence persists, researchers conclude that there is a strong need for providing mental health care resources to university students, not only by their educational institution (Copeland et al., 2021), but also as a government policy (Chen et al., 2020).

Regarding academic self-efficacy as a potential protective factor, we observed a statistically significant negative relationship with depression, with a moderate effect size. As noted, our results are consistent with previous findings on the literature (e.g., Tak et al., 2017). García-Méndez and Rivera (2020) argued that a severe experience of depressive symptoms implies a constant negative perspective on current and future events as well as a lack of confidence in one's own abilities. On the contrary, a higher academic self-efficacy allows university students to be aware and have confidence in their own abilities and skills in different academic tasks. In this way, a positive self-perspective towards reaching academic goals may prevent a pessimistic thinking about future academic endeavors and even allowing students to see academic challenges as opportunities to develop instead of potential stressors (Chen et al., 2020; Krifa et al., 2022).

With respect to anxiety, our results denote a moderate statistically significant relationship with academic self-efficacy. Previous studies have consistently found that a strong believe in one's capability to achieve academic goals is related to a lesser experience of anxiety-related symptoms on undergraduate students (Tahmassian & Jalali, 2011; Faramarzi & Khafri, 2017; Hood et al., 2020). To further understand this relationship, it is important to note that anxiety is characterized by the persistent presence of worried thoughts and concerns either internal or external that often provoke the avoidance of certain situations as well as the experience of physical symptoms such as dizziness, trembling, increased heart rate, among others (Craske et al., 2017). In this sense, having a strong sense of credibility on one's abilities reduces uncertainty and concerns regarding academic chores while also reducing potential avoidance behaviors such as absences or dropout. As Bandura (2007) stated, persons believing in one's ability to control potential treats are not perturbed by them; in contrast, a low self-efficacy will experience high levels of anxiety.

With reference to stress, a statistically significant negative relationship was identified with academic self-efficacy, with a moderate effect size. This finding is consistent with several investigations that address the strong relationship between self-efficacy and positive adaptation to stressful situations (Cattelino et al., 2021; Freire et al., 2020). In fact, if a student has better strategies for coping with stress, they will be able to feel more confident about their own capabilities, thus they will achieve their academic goals; however, if a student does not have efficient coping strategies towards stress, their academic self-efficacy would be affected in such a way that the student would not be able to successfully complete their assignments because they will not feel capable of doing them and will experience chores as potential stressors (Mete, 2021). In addition, Sabouripour et al. (2021) denote that self-efficacy is important to effectively manage stress since one's beliefs on their own capabilities influence the way in which they assess potential stressors and, in an academic environment, such assessment would lead to a more efficient assignment of coping strategies do deal with academic stressors (Freire et al., 2020). Furthermore, Meyer et al. (2022) explains that self-efficacy can act as a mediator between a person's beliefs regarding COVID-19 and the potential stressful effects of the pandemic, suggesting that fostering self-efficacy can lead to reducing the impact of stressing factors.

Further multigroup analyses revealed that the proposed relationships were invariant among two main demographic groups. The invariance of regression coefficients between men and women suggests that the strength of the relationship is the same for both groups. This is particularly revealing since it has been shown in previous studies that women tend to experience more severe mental health problems during the pandemic (Dal Santo et al., 2022). The same result has been found for work status, even though working and studying impose higher demands on higher education students which is related to more mental health problems and considerations (Pedrelli et al., 2015).

In conclusion, academic self-efficacy can act as a protective factor towards mental health problems related to depression, anxiety, and stress. The observed relationship between academic self-efficacy and all three mental health conditions was statistically significant, moderate, and negative, with a slightly higher effect size for depression. Regarding depression, a higher academic self-efficacy allows university students to be more confident in their own skills, thus allowing them to successfully address academic tasks and avoid negative feelings about their present and future academic endeavors. With reference to anxiety, higher academic self-efficacy prevents worried thoughts and concerns regarding academic chores; as a consequence, academic demands are not seen as potential threats and students are not perturbed by them. Lastly, having a strong confidence in one's own abilities can act as a coping mechanism towards stressful academic situations. Lastly, multigroup analyses revealed that the measurement and structural model are invariant across sex and work status. Thus, we recommend improving efforts to foster academic self-efficacy on university students in order to reduce the mental health impact that the academic environment and the COVID-19 pandemic brought.

It is important to note that this study presents some limitations. To begin with, we did not use a randomized sampling procedure which limits the generalizability of results to wider populations. This is because the non-probabilistic sampling doesn't give each individual the possibility of being part of the sample, which is why it may not be representative of the population. Furthermore, we employed a cross-sectional approach and longitudi-

nal designs may bring further insights into the dynamics of the proposed relationships.

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Nayeli Lucía Ampuero Tello: Design of the study, literature search, drafting of the manuscript, and final revision of the manuscript.
Angel Christopher Zegarra López: Design of the study, statistical procedures and analysis, drafting of the manuscript, translation to English, and final revision of the manuscript.
Dharma Ariana Padilla López: Design of the study, literature search, drafting of the manuscript, and final revision of the manuscript.
Dafne Silvana Venturo Pimentel: Design of the study, literature search, drafting of the manuscript, and final revision of the manuscript.

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CONFLICTS OF INTEREST

The authors of this study report no conflict of interest.

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REVIEW PROCESS

This study has been reviewed by external peers in a double-blind mode. The editor in charge Anthony Copez-Lonzoy. The review process can be found as supplementary material 1.

DATA AVAILABILITY STATEMENT

The datasets that support the present study are available upon reasonable request and with permission of the Faculty of Psychology and the Research and Ethics Committee of the Universidad de Lima.

DISCLAIMER

The authors are responsible for all statements made in this article.

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