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# Teachers' mental health issues associated with the university reopening at the onset of the post-COVID-19 era in Ecuador

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## Abstract

Progressive return to face-to-face teaching and learning activities were planned to resume worldwide once most higher education community members are vaccinated against COVID-19. However, mental health issues triggered by this imminent return under unprecedented teaching scenarios, mainly among university teachers, may occur. Therefore, this study aims to determine the psychological response of university teachers to the multiple uncertainties generated by the university reopening in Ecuador. A cross-sectional online survey was conducted, and a sample of 273 university teachers completed a semi-structured questionnaire aiming to collect socio-demographic, health conditions, and professional and family-related data. Measures of stress, anxiety, and depression were also collected based on 5-point Smiley Face Likert scales. Data were quantitatively analyzed with multiple linear regression to determine the factors associated with teachers' mental health outcomes. Stress and anxiety were significantly related to face-to-face activities scenarios ( $p < 0.001$ ). Factors such as age, marital status, academic degree, pre-infections with COVID-19, family member loss, employment status, and teaching experience were also significantly associated with psychological disorders observed ( $p < 0.05$ ). Findings may help develop timely preventive programs and policies to cope with and mitigate the knock-on effects of future disease outbreaks in Ecuador, consequently helping reduce social and financial costs.

**Keywords:** University professors; COVID-19 pandemic; face-to-face teaching activities, teaching; mental health.

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# Problemas de salud mental generados por la reapertura de las universidades en el inicio de la era pos-COVID-19, en profesores del Ecuador

## Resumen

El regreso a las actividades presenciales de enseñanza/aprendizaje en todo el mundo se realizaría una vez que la mayoría de los miembros de la comunidad universitaria hayan sido vacunados contra el COVID-19. Sin embargo, este retorno podría haber desencadenado problemas de salud mental en los docentes universitarios. Este estudio se enfoca en determinar la respuesta psicológica de los docentes universitarios ante la inminente reapertura de las universidades en el Ecuador. En este estudio transversal, 273 docentes completaron un cuestionario en línea para recopilar datos sociodemográficos, condiciones de salud, e información profesional y familiar. El estrés, ansiedad y depresión se midieron mediante escalas de 5 puntos de Likert, que incluían emoticones. Los datos se analizaron cuantitativamente con regresión lineal múltiple para determinar los factores asociados con la salud mental de los docentes. El estrés y la ansiedad se relacionaron significativamente con el retorno a las actividades presenciales ( $p < 0.001$ ). Factores como la edad, estado civil, grado académico, pre-infecciones por COVID-19, pérdida de familiares, estatus laboral y experiencia docente se relacionaron con los trastornos psicológicos observados ( $p < 0.05$ ). Los resultados podrían ayudar a desarrollar programas y políticas preventivas para mitigar los efectos colaterales de futuros brotes de enfermedades en Ecuador.

**Palabras clave:** Docentes universitarios; pandemia COVID-19; presencialidad; salud mental.

## 1. Introduction

The World Health Organization (WHO) declared the coronavirus disease COVID-19 outbreak as pandemic in March 2020. Thus, multiple economic activities were suspended due to its ease of spreading and the associated high risk of death (WHO, 2020). Accordingly, mandatory actions were implemented, such as quarantine, social distancing, home confinement, partial and total

lockdowns and stay-at-home orders. Consequently, educational institutions, leisure activities, businesses, transport systems, and borders were closed worldwide until the effective approved vaccines were supplied to the frontline health-care staff and high-risk population (Han et al, 2021; McCracken et al, 2020).

Undoubtedly, the adopted economic and social measures to grapple with the health emergency caused an unprecedented crisis in all

areas worldwide (Economic Commission for Latin America and the Caribbean-United Nations Office for Disaster Risk Reduction [ECLAC-UNDRR], 2021; Hisham et al, 2021). The educational sector was one of the sectors highly impacted by the activities disruption that led to massive educational institutions closures and switched the modality of delivery from face-to-face learning in the classrooms to remote online learning (British Broadcasting Corporation [BBC], 2020; Hamza et al, 2021; Schleicher, 2020; United Nations Educational, Scientific and Cultural Organization [UNESCO], 2021).

Concerning higher education, two years after the onset of the COVID-19 pandemic, the combination of multiple factors, including the complete closures of Higher Education Institutions (HEIs), the switch to virtual learning, and long lockdowns affected all university community members (UNESCO, 2020). These drastic changes brought severe psychological problems for students, non-academic, and academic staff, particularly since the first year of the pandemic (Aristovnik et al, 2020; Aylie et al, 2020; Kecojevic et al, 2020; Odriozola-González et al, 2020; Romeo et al, 2021). These psychological issues persisted even though vaccination plans rapidly included teachers and students to mitigate the spread and impacts of COVID-19.

Massive vaccination programmes in developed and developing countries throughout the year 2020-2021 not only ensured the protection of these priority groups and the continuity of learning but also marked the starting point for their progressive and imminent return to face-to-face teaching/learning activities (United Nations Educational, Scientific and Cultural Organization- International

Institute for Higher Education in Latin America and the Caribbean [UNESCO-IESALC], 2022; UNESCO, 2020). Thus, months before the reopening of HEIs and the associated safe return of the vaccinated university community to in-person academic activities, major concerns have been raised about the psychological responses of students, faculty, and other staff to unprecedented teaching/learning scenarios. These events may considerably impact their physical and mental health, work performance, and lives (Ozamiz-Etxebarria et al, 2021; UNESCO-IESALC, 2022).

## 2. Literature review

Most concerns among vaccinated populations are predominantly linked to COVID-19 vaccine efficacy against presently circulating variants and the need for booster shots when immunity decreases or other more contagious variants appear (Frazier et al, 2022). It is believed that these uncertainties among university members may generate similar effects to those already experienced during the first year of the COVID-19 pandemic. For instance, the prevalence of boredom, lack of motivation, stress, fear, anxiety, disordered eating, depression, insomnia, substance misuse, and suicide risk were observed among multiple vulnerable groups and the general population (Aristovnik et al, 2020; Kecojevic et al, 2020; Velásquez-Rojas et al, 2022; Xiong et al, 2020).

Importantly, under the imminent return, educational and health authorities will have to prioritize a safe return to in-person activities while mitigating the overwhelming effects of continuous COVID-19 outbreaks observed in many countries, ultimately reducing

social and financial costs (Frazier et al, 2022). Hence, it is understood that most research and support will focus mainly on the psychological responses of third-level education students (i.e., colleges and universities) rather than academic and non-academic staff. The former group of people has been progressively recognized as a vulnerable population facing constant psychological distress even before the onset of the COVID-19 pandemic (Cullinan et al, 2022; Eisenberg et al, 2013; Hamza et al, 2021; Prince, 2015).

Despite the progress in understanding the complexity of the negative effects of the COVID-19 pandemic on mental health within the higher education community, further research on other populations who may be at greater risk of poorer mental health is still required (Lewis et al, 2022). For instance, university teachers have also been considerably affected at work and professionally due to the pandemic (UNESCO, 2020). However, limited literature on the risk of mental health problems in this group has been conducted before (Jácome & Chi6n, 2022) and during the COVID-19 pandemic (Ozamiz-Etxebarria et al, 2021). Accordingly, more attention needs to be paid to vaccinated university teachers who may be highly concerned prior to their imminent return to face-to-face academic activities.

It is more likely that teachers' concerns are related to multiple factors that may render this population more vulnerable during the reopening process (Ozamiz-Etxebarria et al, 2021). Firstly, they will be fully in contact with students, increasing the risk of direct virus transmission from infected students as young people can adopt some relaxation in social distancing measures during their social interactions.

Consequently, students may have asymptomatic infections, putting the lives of older and other vulnerable groups at risk (Frazier et al, 2022). Secondly, there are still uncertainties regarding the implementation of preventive and protective measures to safeguard vulnerable groups within HEIs, which must consider the potential of new coronavirus variants to be more contagious than previous variants.

## 2.1 The present study

Taking into consideration that there is a particular knowledge gap concerning the risk factors generating psychological issues among university teachers in developing countries, specifically prior to the reopening and return to in-person academic activities; the present study aims to determine the psychological response of university teachers to the multiple uncertainties generated by the reopening of one of the largest public universities in Ecuador. It is hypothesized that after an extended confinement during the first two years of the COVID-19 pandemic, the imminent return to face-to-face teaching activities is causing a priori mental health problems among university teachers, proving that this population group is unprepared for such a challenge and rendering them a vulnerable population to be considered in future intervention plans and research studies.

## 3. Materials and methods

A cross-sectional online survey was conducted from early September 2021 to January 2022. A total of 1250 teachers from one of the largest public universities, located in the Central area of Ecuador, were invited to partake in the survey. Of this number, 311 teachers replied to the invitation

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and agreed to complete an online semi-structured questionnaire. However, only 273 questionnaires with valid responses were collected from ten faculties, resulting in an effective response rate of 87.8%. All participants were recruited randomly and belonged to the academic group that received at least the first two vaccine doses against COVID-19 (94.7%). Additionally, this group had also completed 18 months of telework, since the onset of the pandemic officially declared in mid-March 2020 for most countries, including Ecuador.

Prior to commencing the survey, all participants were fully informed about the research objectives and other essential information. All respondents gave consent following the Declaration of Helsinki principles and agreed to participate in the survey voluntarily and willingly. All participants' information was confidential and anonymous, and respondents were allowed to decline to answer any questions or refuse to complete the survey at any time.

Additionally, the Research Committee from the Management School at the Universidad Técnica de Ambato (UTA) reviewed and approved the current research, exempting it from an ethical review or approval as it was a survey-based.

To date, as no previous works have been conducted in any country concerning this topic, the survey was designed ad hoc, collecting data related to sociodemographic (e.g., age, marital status, number of children), health conditions (e.g., previous infection with COVID-19), professional information (e.g., degree achieved, current employment status), and effects of the pandemic-in the family context (e.g., family member loss, family member infected).

Additionally, measures of stress, anxiety, and depression were also collected based on 5-point Smiley Face Likert

scales, including emojis with respective descriptions. The response scale ranged from strongly disagree to strongly agree, including a neutral mid-point. Notably, this innovative scale has been previously proposed to ensure respondents feel more confident while expressing their emotions and feelings in online environments, resulting in optimal responses for quantitative questions under evaluation (Hall et al, 2016; Solis et al, 2022).

The questionnaire was applied using a Spanish version, and its design merged pre-existing items from significant studies on effects of COVID-19 outbreak on other vulnerable groups (Balluerka et al, 2020; Gavilanes et al, 2022; Guamán et al, 2021, 2022). This instrument was also based on the need to explore other associated factors not covered in previous studies (Ozamiz-Etxebarria et al, 2021). In an early stage, five academics with expertise in Behavior and Education validated the construct which was subsequently used to obtain the datasets through the Google survey platform.

Data collected were quantitatively analyzed using the SPSS software version 25. A priori, the construct was statistically validated through Cronbach's alpha test to determine the reliability of the items and respective dimensions. This reliability test exhibited an overall score of 0.877, indicating high stability or consistency among questionnaire items (Field, 2005; Hair et al, 2014).

Subsequently, sociodemographic data were analyzed using descriptive statistics (i.e., percentages). Additionally, the factors and associated dimensions were used for further analysis using a multivariable regression method to determine the key factors influencing the mental health of university teachers prior to their return to face-to-face academic

activities. This statistical technique has been applied in similar studies (Keckojevic et al, 2020).

## 4. Results

The main findings are summarised as detailed below:

### 4.1 Socio-demographic variables

Of the 273 participants, most respondents were males (61.5%), followed by females with 38.5 %. Among all categories of age groups, the majority of participants were between 46-55 years (38.1%) and 36-45 years (36.3%), followed by 56-65 years (15%), 25-35 years (7.3%), and over 66 years (3.3%). Regarding their educational level, 75.8% of respondents held a Master's degree.

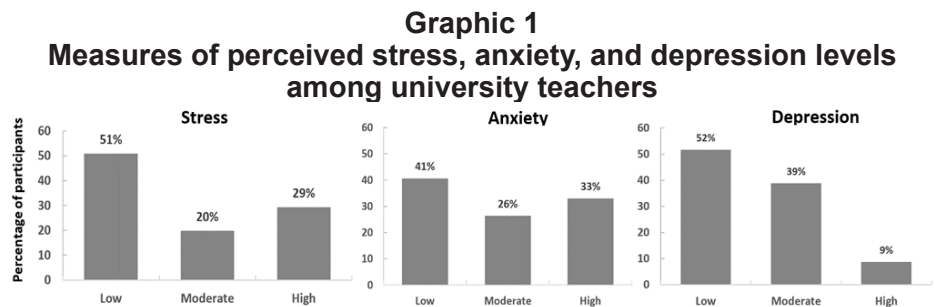
Furthermore, most respondents had at least one child (54.9%).

### 4.2. Health conditions

Of all participants, 24.2% indicated that during the first two years of telework were infected with COVID-19 at least once; however, 66.7 % of respondents indicated to have a family member infected with the actual virus. Only 23.1 % of the participants had close relatives who died due to the pandemic.

### 4.3 Mental health problems

Most participants showed low levels of stress (51%), anxiety (41%), and depression (52%). However, the remaining teachers exhibited moderate and high-stress levels (Graphic 1).



Source: Own elaboration



#### 4.4. Factors associated with mental health problems and the imminent return to the face-to-face activities scenario

Results revealed significant

relationships between factors associated with mental health problems and the imminent return to the face-to-face educational activities scenario, as detailed below (Table 1).

**Table 1**  
**Multiple linear regression analysis to determine the factors associated with teachers' mental health outcomes directly linked to the imminent return to in-person activities**

Model	Unstandardized coefficients		Standardized coefficients		
	Standard error	B	$\beta$	t	Sig.
(Constant)	1.862	0.308		6.045	0.000
<b>Socio-demographic factors</b>					
Age	0.093	0.025	0.298	3.722	0.000
Marital status	0.076	0.028	0.202	2.734	0.007
Educational level	0.091	0.043	0.137	2.097	0.037
<b>Health conditions</b>					
Had previously infected with COVID-19	-0.140	0.050	-0.208	-2.794	0.006
<b>Family related pandemic factors</b>					
Family members loss by COVID-19	0.135	0.046	0.198	2.952	0.003
<b>Profession-related factors</b>					
Employment status (job stability)	-0.122	0.026	-0.356	-4.717	0.000
Years of academic experience	-0.131	0.040	-0.237	-3.237	0.001
<b>Mental health problems</b>					
Stress	0.136	0.036	0.576	3.797	0.000
Anxiety	0.128	0.029	0.546	4.339	0.000

Note. R= 0.543; R<sup>2</sup> = 0.295; Adjusted R<sup>2</sup> = 0.245; Std. Error= 0.251; F= 5.893; Sig.= 0.000  
 Source: Own elaboration in SPSS

Results indicated that among the socio-demographic factors assessed, age ( $\beta = 0.298$ ,  $p < 0.001$ ), marital status ( $\beta = 0.202$ ,  $p < 0.05$ ), educational level ( $\beta = 0.137$ ,  $p < 0.05$ ) had a significant positive relationship with the mental health problems and the return to face-to-face teaching activities scenario. This suggests that older teachers, married and holding a higher degree, are more likely to exhibit higher levels of stress or

anxiety prior to resuming face-to-face teaching activities.

Concerning the teachers' health conditions-related factors evaluated, being previously infected with COVID-19 had a significant negative relationship with mental health problems generated by the return to face-to-face teaching activities ( $\beta = -0.208$ ,  $p < 0.05$ ).

Family-related factors in the context of the COVID-19 pandemic, such



as family member loss, had a significant positive relationship with mental health problems generated by the return to face-to-face teaching activities ( $\beta = 0.198, p < 0.05$ ). These results suggest that university teachers still struggle with negative past experiences and possibly future uncertainties about the pandemic.

Regarding professional-related factors, current employment status (job stability) ( $\beta = -0.356, p < 0.001$ ) and years of academic experience ( $\beta = -0.237, p < 0.001$ ) had significant negative relationships with mental health problems generated by the return to face-to-face teaching activities scenario. These findings suggest that academic staff with long experience in academic activities and full-time employment (tenured teachers) may help exhibit less stress or anxiety.

Finally, stress ( $\beta = 0.576, p < 0.001$ ) and anxiety ( $\beta = 0.546, p < 0.001$ ) were the most significant mental health problems positively associated with the return to in-person teaching activities scenario. For stress, findings indicated that symptoms of insomnia, nightmares, psychosomatic problems (i.e., headaches, muscle tension), and disordered eating habits exhibited by nearly 50% of teachers were significantly important as responses to excessive thoughts of the return to in-person academic activities. For anxiety, results revealed that symptoms of dry mouth, breathing problems, fear of COVID-19 re-infection within HEIs and subsequent risk of infection of family members, palms sweating, fear of failure to COVID-19 vaccine efficacy, and fear of failure to bio-safety measures within HEIs were the most significant responses to excessive thoughts of the return to in-person academic activities.

As could be observed, results revealed that socio-demographic factors

such as age, marital status, and academic degree had statistical significance with the mental health problems outcomes among university teachers prior to the university reopening. At least for variable age, this is corroborated by previous works on other educational levels where older teachers are more likely to exhibit stress, anxiety, and depression symptomatology (Ozamiz-Etxebarria et al, 2021).

Regarding health conditions, findings indicated that university teachers with previous infections with COVID-19 are more likely to exhibit less stress or anxiety prior to resuming face-to-face teaching activities. This response may indicate that having been previously exposed and infected with COVID-19 helped to build positive behavior traits (i.e., learning from experience, increased self-confidence, courage, grit, optimistic perception of the future) and resilience against the pandemic and potential re-infection. In addition to this, in the context of the current pandemic, resilience could be understood as a critical personal resource allowing better adaptation and positive response to any adversity (Kaye-Kauderer et al, 2021; Pretorius & Padmanabhanunni, 2022). Therefore, this positive behaviour, combined with the knowledge of preventive and protective measures and vaccine application (i.e., booster) will help safeguard this vulnerable group; consequently, reducing their fear of contracting COVID-19 during the university reopening and associated challenges.

Family-related factors in the context of COVID-19, particularly family member loss due to the pandemic, were positively related to mental health problems generated by the return to face-to-face teaching activities scenario. These findings are consistent with previous

studies indicating that high family stress events, such as the death of any family member or other close people during the pandemic, can cause psychological disorders (Balluerka et al, 2020). Here, these previous experiences may trigger behavioral disorders among university teachers, mainly in response to the fear of contracting COVID-19 during the university reopening which may put their lives at risk of death.

In contrast to other studies where job stability during the pandemic became a primary concern for a large group of teachers due to a significant reduction in teaching staff (Andaregie & Astatkie, 2021); in this study, professional-related factors assessed, such as current employment status (i.e., job stability indicator) and years of academic experience, had negative relationships with mental health problems generated by the university reopening and associated in-person teaching activities.

This fact is partially explained as most academics are tenured teachers rather than contract staff; therefore, their job stability and finances have been ensured even before the onset of the pandemic. Furthermore, having a long academic experience may become a key asset for university teachers during the university reopening because they already know how to manage classroom activities effectively. Hence, they will be capable of moderating the interaction among students and other academic personnel and ensuring compliance with safety measures during in-person activities, including adequate physical distancing and hygiene protocols, ultimately mitigating the potential impacts of the pandemic on the health and well-being of all university community members.

Within the university community,

anxiety and depression are considered the most prevailing psychological disorders, particularly among students (Odriozola-González et al, 2020). However, unlike this group, the findings of this study revealed that among teachers, stress and anxiety were the most frequent psychological disorders, followed by depression. Thus, levels of stress and anxiety observed were positively related to the return to in-person teaching activities scenario. Notably, nearly 50% of evaluated teachers exhibited moderate and high stress and anxiety levels, rendering this group highly vulnerable to new or unknown academic scenarios during the university reopening. The latter magnitude of psychological disorders found in this study is similar to those separately exhibited by students in one Spanish university (Odriozola-González et al, 2020), and also in a Polish one (Rogowska et al, 2020).

Undoubtedly, based on the findings of the present study, the COVID-19 pandemic is still profoundly impacting the educational sector. Thus, the prevalence of mental disorders (i.e., stress and anxiety) among university teachers, particularly a priori to the imminent university reopening, is comparable to that observed at the start of the pandemic outbreak. During the initial stage of the pandemic, abrupt educational changes led teachers to take on new responsibilities and roles, particularly in remote teaching activities, without adequate training and material resources. These unprecedented conditions led to high work-related stress levels, deleterious mental health symptoms, and severe impacts on teachers' personal lives across all educational levels (Pretorius & Padmanabhanunni, 2022; Schleicher,

2020; UNESCO, 2020).

Finally, results suggest that academic staff is presenting mental health symptoms, thus, urgent intervention programs and policies in conjunction with access to mental health services are needed to reduce those levels exhibited prior to the university reopening. This latter scenario is considered one of the most important challenges at the onset of the post-pandemic era.

## 6. Conclusions

Two years after the onset of the COVID-19 pandemic, mental health symptoms associated with moderate and high levels of stress and anxiety were prevalent in nearly 50 % of the vaccinated teachers evaluated. These psychological responses are related to the imminent reopening of the university and subsequent return to in-person teaching activities.

Positive and negative significant relationships were observed between assessed key factors and the stress and anxiety levels generated by the imminent university reopening and associated in-person teaching activities. Thus, factors such as age, marital status, and educational level, family member loss due to the pandemic had significant positive relationships with mental health problems observed. In contrast, previous infection with COVID-19, current employment status (job stability), and years of academic experience had significant negative relationships with mental health problems identified.

To the best authors' knowledge, this research is the first study in suggesting that educational institutions and government authorities should pay

close attention to the mental health and well-being of university teachers. Hence, the findings from this study should not be underestimated as the academic staff may not be ready for this challenge associated to the reopening of university activities.

Assessed factors associated with the mental health issues observed among vaccinated teachers may help characterize this group as a high-risk group requiring enhanced support and immediate psychological assistance services. Therefore, assistance services must be deployed to prevent and reduce unfavorable mental health problems, as those reported in this study.

Reopening universities may benefit mainly students and the local economy. However, authorities should understand that the entire university community, specifically teaching staff, may experience permanent health risks due mainly to the new highly transmissible variant of COVID-19 and the progressive avoidance of preventive behaviours and practices. In addition, educational institutions should be aware the universities reopening in the context of a post-pandemic scenario may lead teachers and the entire university community to deal with events never experienced before the COVID-19 pandemic, as discussed by other studies (Aristovnik et al, 2020).

Finally, findings from this research may help develop timely preventive programs and policies to cope with and mitigate the knock-on effects of future disease outbreaks in Ecuador, consequently helping reduce social and financial costs. In addition, the local and national governments should allocate more economic resources to support this particular group through counselling services that provide suited

psychological interventions.

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