



Mental Health Stressors in Higher Education Instructors and Students in Mexico During the Emergency Remote Teaching Implementation due to COVID-19

Rogelio Zapata-Garibay^{1,2*}, Jesús Eduardo González-Fagoaga^{1,2},
Ahmed Ali Asadi-González³, Julio Román Martínez-Alvarado⁴, Silvia M. Chavez-Baray⁵,
Ismael Plascencia-López⁶ and Clara Judith González-Fagoaga⁷

¹Healthy Border Program, US-Mexico Border Health Commission, Tijuana, Mexico, ²Facultad de Humanidades y Ciencias Sociales, Universidad Autónoma de Baja California, Tijuana, Mexico, ³Facultad de Medicina y Psicología, Universidad Autónoma de Baja California, Tijuana, Mexico, ⁴Facultad de Ciencias de la Salud, Universidad Autónoma de Baja California, Tijuana, Mexico, ⁵The University of Texas at El Paso, El Paso, TX, United States, ⁶Facultad de Contaduría y Administración, Universidad Autónoma de Baja California, Tijuana, Mexico, ⁷Escuela Internacional de Negocios, Universidad Anáhuac, Cancún, Mexico

OPEN ACCESS

Edited by:

M. Meghan Raisch,
Temple University, United States

Reviewed by:

Nicholas Daniel Hartlep,
Berea College, United States
Thandi Sule,
Oakland University, United States

*Correspondence:

Rogelio Zapata-Garibay
rogeliozapatag@gmail.com

Specialty section:

This article was submitted to
Higher Education,
a section of the journal
Frontiers in Education

Received: 21 February 2021

Accepted: 19 May 2021

Published: 14 June 2021

Citation:

Zapata-Garibay R,
González-Fagoaga JE,
Asadi-González AA,
Martínez-Alvarado JR,
Chavez-Baray SM, Plascencia-López I
and González-Fagoaga CJ (2021)
Mental Health Stressors in Higher
Education Instructors and Students in
Mexico During the Emergency Remote
Teaching Implementation due
to COVID-19.
Front. Educ. 6:670400.
doi: 10.3389/feduc.2021.670400

The COVID 19 pandemic has had a significant impact on the physical and emotional health of the population. In the case of specific populations, such as students and instructors, the change in the teaching-learning model has required both groups to adapt to online learning platforms and modify all academic activities in the context of implementing the emergency remote education model. The relevance of mental health has been continually neglected; however, due to the COVID-19 epidemiological outbreak, the impact of confinement on populations' mental health has been incorporated into public discussion. In particular, the health emergency's impact on health workers in the first line of care has been highlighted. The effect of mental health on the lockdown population and those encouraged to work from home, a group in which university professors and students are located, has been emphasized. To understand the changes faced by higher education instructors and students, derived from the implementation of the emergency remote teaching model in the context of the pandemic, we developed a study to investigate the experiences of this sector, with particular emphasis on the mental health stressors associated with their academic activities. We examined indicators related to anxiety, depression, motivation-demotivation, coping, and contextual and family conditions that could generate stress in the teaching-learning process during the emergency remote teaching model. We recruited a sample of 1,040 participants (380 instructors and 660 students) from more than 97 universities and 118 academic programs across the country. As a result, we have found that teachers have faced less difficulty with the teaching-learning model changes and how they deal with confinement. Similarly, this study has identified that women in general, both instructors and students, have more significant signs and symptoms related to mental health conditions, while men, both instructors, and students, resent the lack of socialization in the work and study centers environments.

Keywords: mental health stressors, emergency remote teaching, higher education, Mexico, COVID-19

INTRODUCTION

The World Health Organization (WHO) has warned that the current COVID-19 pandemic will cause a significant increase in stress-related conditions and mental health problems (Kaufman et al., 2020). Public health emergencies and epidemics have been documented to be associated with increased psychological distress and uncertainty affecting the general population (Lotsch et al., 2017; Sahu, 2020). During isolation, derived from quarantine, individuals experience frustration, lack of freedom and boredom, worrying about contracting the infection, concern for family and friends, and general affections on emotional wellbeing (Brooks et al., 2020). During epidemics, the population most vulnerable to developing mental health problems is economically disadvantaged and people with chronic diseases (Torales et al., 2020; Bao et al., 2019; Jones et al., 2017), as well as women, older persons, and migrant workers (Lou et al., 2020), health personnel (Naser et al., 2020; Sundarasan et al., 2020), and students (Lou et al., 2020; Naser et al., 2020; Sundarasan et al., 2020).

Lockdown mobility restrictions have an imminent impact on university students' lifestyles and may lead to various psychological maladjustments, such as stress, anxiety, and depression (Jakovljevic et al., 2020). This series of changes that significantly modify the daily routine requires both students and instructors to adapt to online learning platforms and modify face-to-face academic activity (Debbarma and Durai, 2021). Practices of social estrangement, travel restrictions, and isolation are stressful experiences that are also associated with self-inflicted harm and suicidal tendencies (Matthews et al., 2019), as well as sleep disorders (Gritsenko et al., 2020; Besser et al., 2020), and low perception of general health status (Besser et al., 2020).

The COVID-19 pandemic is unique and, in the case of university students, stressful for various reasons, such as the uncertainty they may have when estimating the danger that the pandemic represents for them and their university careers. A fundamental part of the correct management of stress, depression, and other adverse effects is the coping strategies of pressure (Amaral-Prado et al., 2020).

It is crucial to explore university students' psychosocial experience, especially during an unforeseen emergency such as the COVID-19 pandemic (Islam et al., 2020). University students may be considered a population vulnerable to mental health problems due to age-specific transitions (Auerbach et al., 2018) and other relevant factors such as unforeseen socioeconomic status changes.

During the COVID 19 pandemic, low-income students from rural areas have an increased risk of suffering from anxiety (Cao et al., 2020). On the other hand, socioeconomic and family changes tend to contribute to the increase of anxiety and depression; it has also been observed that the older the students present more significant depression (Islam et al., 2020).

The pandemic's economic consequences, such as sudden unemployment and economic uncertainties, putting university students in a vulnerable situation; this is important because a significant number of students are involved in part-time work to finance their education expenses and support their families (Son et al., 2020).

University students face the situation that all educational institutions are closed, causing a feeling of uncertainty about the academic and professional condition. The shift to online learning in courses that were not originally designed to be developed in that format could increase stress among students, mainly due to difficulties accessing computers and the internet at home. These difficulties could result in a lack of concentration (Sahu, 2020), combined with a series of academic and everyday challenges with high anxiety levels (Kecojevic et al., 2020). As another of the COVID 19 impacts, high levels of depression were associated with difficulties concentrating on academic work and job loss (Kecojevic et al., 2020). Before the COVID-19 contingency, research shows that one in five students experienced one or more mental health disorders worldwide (Zhai and Xue, 2020).

From the instructor's perspective, they face a similar situation of negative stress, and anxiety experienced during the COVID-19 pandemic (Besser et al., 2020). It has been documented that the instructor's profession in everyday pre-pandemic situations can be considered one that requires great patience, understanding, resilience, and diligence to offer a quality education during the academic preparation period of his students (Sierra-Molina et al., 2019). It is also recognized as a work of great stress and high exhaustion levels (Sokal et al., 2021). In the pandemic reality, this task becomes too complicated, and the change in the school ecosystem, including the need to use multiple electronic resources that had not been previously used (Amaral-Prado et al., 2020). Also, the stress, problems, and obligations used to stay inside the home are now present in and out of the classroom (Besser et al., 2020); if students' academic burden increases, also on the teacher, an increase in the workload is expected (Nambiar, 2020).

The acceptance of dynamic changes may be due to each teacher's subjectivity, work background, actual ability and level of awareness when using computers, training on changes to virtual models, and the quality of the Internet connection (Moralista et al., 2020). Distance education is not only the change of physical classrooms to virtual classrooms. There are various factors to ensure the best transition to this model; The institution's or even country's infrastructure should be strengthened and trained teachers in advance (Lassoued, Z. et al., 2020). Teachers' willingness to use video conferencing may be overshadowed by insufficient attention, constant distractors, slow interactions, and schedule changes, underlining the need to find new measures to be ready for the digital environment (Rapanta et al., 2020).

This article is based on a study that aims to research higher education teachers' and students' experiences related to switching from face-to-face to remote education mode because of the COVID-19 outbreak. This study's relevance lies in the need for empirical evidence on the impact that confinement and the shift to a remote education model for the health emergency had the mental health of university professors and students. In Mexico, return to face-to-face courses is expected once COVID-19 epidemiological risk is defined as low, according to criteria specified by Mexican health authorities (Ministry of Health, 2020). To date, all educational levels courses continue in the remote model at least until January 2021; some universities'

remote courses have been scheduled to be maintained at least until the end of the first half of 2021. This scenario implies that higher education instructors and students would be outside the classroom for at least 16 months, affecting both groups' mental health.

MATERIALS AND METHODS

We developed a cross-sectional, exploratory, nonexperimental, and descriptive study through an online questionnaire. We decided to carry out the online information survey derived from the accelerated increase of communication technology among the academic community due to the confinement itself to avoid the dispersion of COVID-19. This manuscript results from a study that had, as a general research question, understanding the changes faced by teachers and students of higher education derived from implementing the emergency remote teaching model in the context of the COVID-19 outbreak. One of the study's particular objectives was to learn about mental health stressors occurring in the academic community due to the change in the teaching modality. The general results of the research on students' and teachers' experience were presented in other research teams' manuscripts (Zapata-Garibay et al., 2021). This document explains the mental health indicators associated with this change in the teaching model.

Sample

The study implemented a snowball sampling method to recruit teachers and higher education students in Mexico's public and private institutions due to the lack of access to teachers and students census across the country, needed for a random selection of a sample (Etikan et al., 2016). Nevertheless, the collected data ensures greater diversity in universities, geographical areas, and knowledge fields of the participants. The inclusion criterion was university professors who had taught courses between January and July 2020 and students enrolled in the same period. The target population included undergraduate, master's, doctoral, and specialty students and professors.

Data Collection Instrument

A convened group of researchers from public and private universities in Mexico designed the research and the data collection instruments. The team developed two questionnaires, one for the teacher population and the other one for the student population. The questionnaires consisted of eleven sections. For the data collection method, we recruited teachers and students from different universities. The study's general aim was to document the experiences by higher education teachers and students related to the change from a face-to-face teaching/learning environment to an emergency online delivery teaching/learning model, derived from the implementation of the healthy distance strategy by the emergence of the global COVID-19 health outbreak.

Overview

Participants were asked about their demographic characteristics, including age and gender, marital status, housing and cohabitation status, household configuration, care of minors, elderly and persons with special needs, state, and city of residence. Students were asked if they were involved in household chores.

Affiliation Institution

This section includes information about the institutions where teachers worked and where students were enrolled. Teachers were asked about their field of knowledge and areas of expertise, the number of students they attend, and the academic program's name. If they worked in more than one institution, they were asked to refer to the institution that is considered the main one because they taught the largest number of courses or had the most significant number of students assigned. Students were asked about the institution in which they are enrolled, their study program, area of knowledge, and the number of courses taken during the analysis period.

Jobs

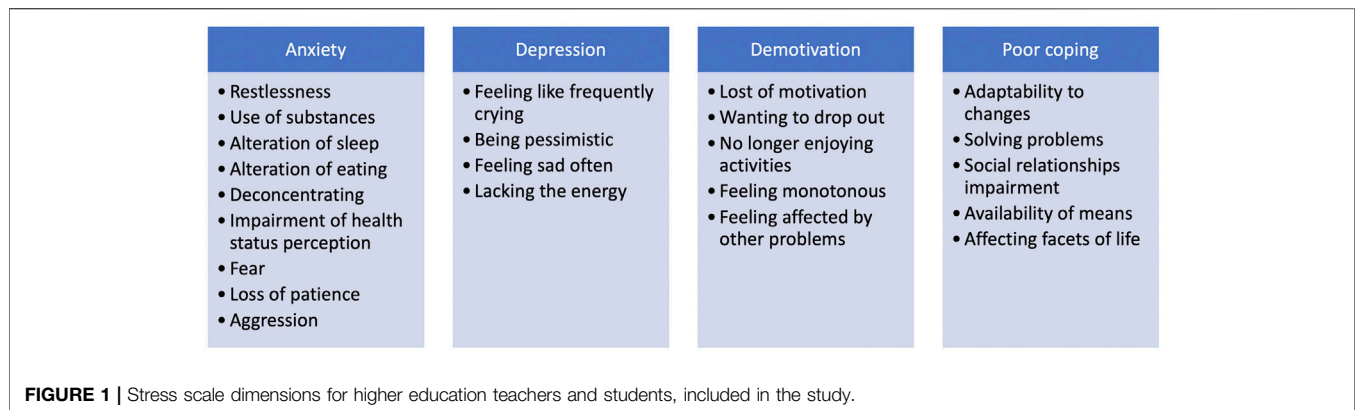
Students were asked if they worked between the dates of January and June 2020. If they worked from home, what they do for work, contribute to household income, and contribute to their educational expenses. Teachers were asked about having other jobs, the type of work, and their work conditions during the lockdown by COVID-19.

Physical and Mental Health Conditions

Risk factors questions related to COVID-19 complications to students and people with whom they share housing and teachers, like diabetes, hypertension, overweight/obesity, and other chronic diseases, were also included. The survey included questions about specific symptoms and signs of anxiety, depression, motivation, and satisfaction that the subject experienced through this time. The study's main objective was to learn about universities teachers and students' coping experiences due to the change from face-to-face to emergency remote teaching. The questionnaire focused on the teaching-learning experience. However, we also sought to investigate mental health stressors that teachers and students faced due to the courses' modality change.

For this reason, the revision of specific instruments on teacher stress under ordinary conditions and adapted to the change in modality resulting from confinement and recover the students' experience. As the scales of this nature were too extensive to be included in the study, the stress ED-6 scale of Gutiérrez-Santander et al., 2005, including 77 items in six dimensions, anxiety, depression, pressures, beliefs, demotivation, and low coping, was adapted and simplified for teachers and students' questionnaires. The overall reliability of the scale is 0.93.

Questionnaires included four scale dimensions. Teaching stress was adapted to confinement stress for students and was simplified to 23 items, as shown below. Nine questions on anxiety were used: restlessness due to work/class problems, usage of



substances to relieve discomfort, alteration of sleep, eating habits, difficulty in concentration, perception of impairment of health status, fear when performing tasks, loss of patience, and increased aggressivity; four items on depression were included: feeling like frequently crying, being pessimistic about work/school problems, feeling sad more often, and lacking the energy to cope with the work/class; five items on demotivation: having lost motivation for teaching/studying, wanting to change job/drop out, no longer enjoying work/class, feeling that work/class is monotonous, feeling affected by students'/classmates' problems; and five items on poor coping: ease of adapting to changes in work/school, ease of solving work/school problems, impairment of primary social relationships (family, partner, friends, etc.), availability of the necessary means to develop work/school activities, and affecting other facets of life due to work/school (**Figure 1**).

Data Collection

Data was collected using an online Google Forms questionnaire; the survey was taken from June 19 to December 14, 2020, when the general public, including higher education teachers and students, was ordered to stay home in isolation. The research group sent an invitation to a contact database associated with the Binational Border Health Network and other colleagues of the US-MBHC, asking for participation in the study. The invitation included a brief description of the study, its objectives, and its scope. Participants were also asked to share the questionnaire link among their colleagues, dispersing the invitation by a snowball effect. Participants answered the questionnaires anonymously, as no names, email addresses, or any other ways to identify the respondents were asked. Participants agreeing to join the study gave their informed consent to provide the study's information and consented to such data for statistical analysis purposes.

Data Analysis Strategy

Data were exported and analyzed using SPSS version 25.0 (IBM Corporation). Descriptive statistics were presented as a quantitative and percentage measure to summarize the collected data. The analysis strategy contrasts the general characteristics among students and teachers, and mental health stressors include the distinction by sex.

RESULTS

We received a total of 1,225 responses; from them, we excluded 185 responses due to eligibility criteria for a total sample of 1,040 complete responses. We had an 84% response rate. 82% of participants' professors live in seven states of Mexico, and 83.4% of participating students live in three states. We had participants from 29 of the country's 32 states. Professors and students from more than 97 universities around the country participated; they are in 118 undergraduate academic programs, 31 master's programs, seven specialty programs, and 14 doctoral programs. About the discipline, the most significant participation was in the areas of Economic and Administrative Sciences (20.9%), Medicine and Human Pathology (19.5%), Psychology (16.9%), Political Sciences (13.3%), Humanities and Social Sciences (5.5%), Veterinary and Agronomy Sciences (5.4%), and Pedagogy and Educational Sciences (5.3%).

Demographic Characteristics of Participants

There was greater participation of women in both groups, 51.3% of teachers and 64.1% of students. About 70.1% of teachers were over 40, and 76.2% of students were in the 20–29 age group. Many teachers (66.0%) reported being in a relationship, and 90.7% of students were not in a relationship (**Table 1**).

TABLE 1 | Demographic characteristics of participants.

Sex	Teachers	Students
Female	51.3	64.1
Male	48.7	35.8
Non-binary	0.0	0.2
Age groups		
<20 years	0.0	16.4
20–29 years	4.5	76.2
30 a 39 years	25.5	4.4
40 a 49 years	33.2	3.0
50 a 59 years	26.1	0.0
60 years and older	10.8	0.0
Marital situation		
Single, widow, separated, divorced	34.0	90.7
Married, in a consensual union	66.0	9.3

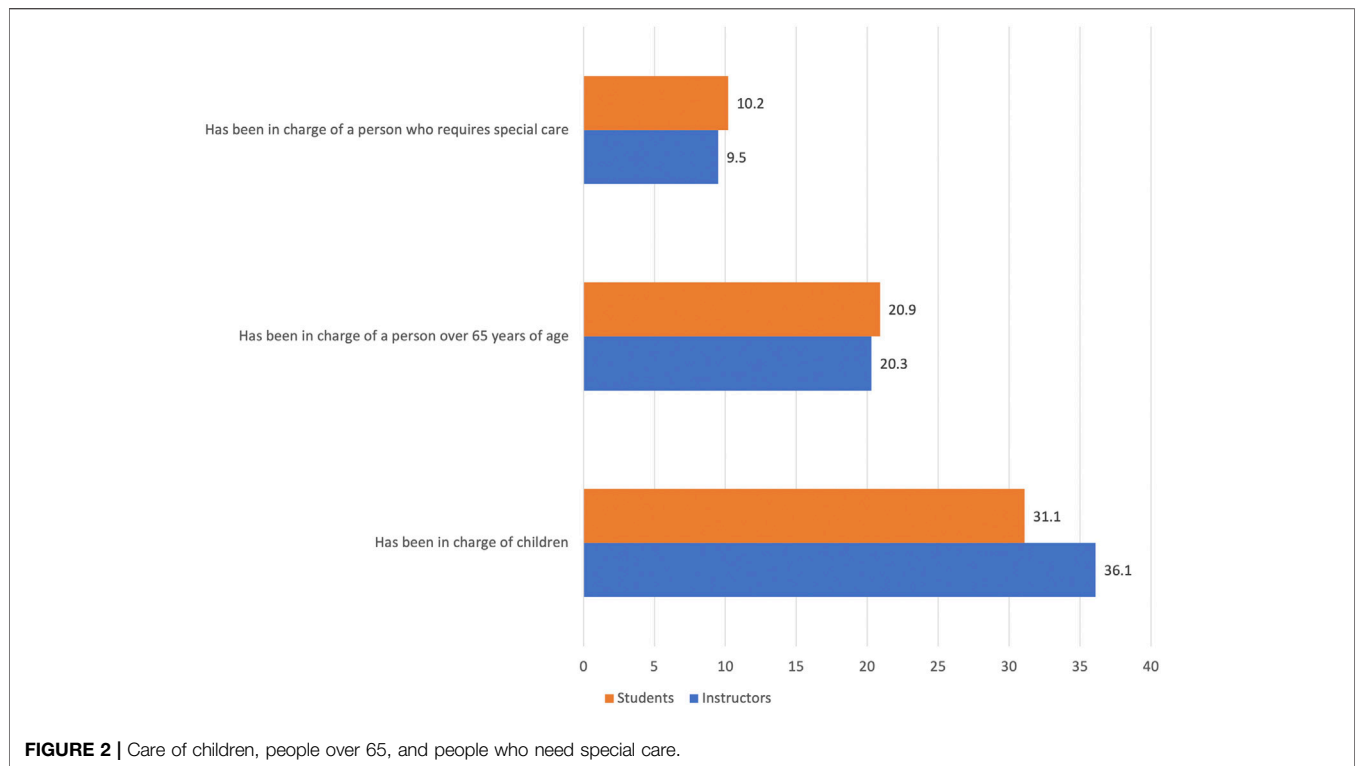


FIGURE 2 | Care of children, people over 65, and people who need special care.

Type of Institution, level of Studies, Career Time, and Years of Experience

Seventy percent of teachers and 61.4 percent of students were in public higher education institutions. A significant proposition of teachers (85.5%) and students (94.8%) had taken undergraduate courses. In the students' case, 54.0% had completed at least two years of study, and 45.8% of teachers had more than 14 years of teaching experience. (Table 2).

Participants Job Profile

The financial obligations of teachers and students bring additional stressors to their mental health during confinement. Concerning their job profile, 40.0% of students worked; for

TABLE 2 | Type of institution, academic level, teacher experience time and career progression for students.

Type of institution	Teachers	Students
Public	70.0	61.4
Private	30.0	38.6
Academic level where you teach/where you are enrolled		
Undergraduate	85.5	94.8
Graduate	15.5	5.2
Time since enrolled at school		
Up to two years		54.0
More than two years		46.0
Teaching experience		
Less than seven years	24.2	
7–13	30.0	
14–19	15.0	
20 and more	30.8	

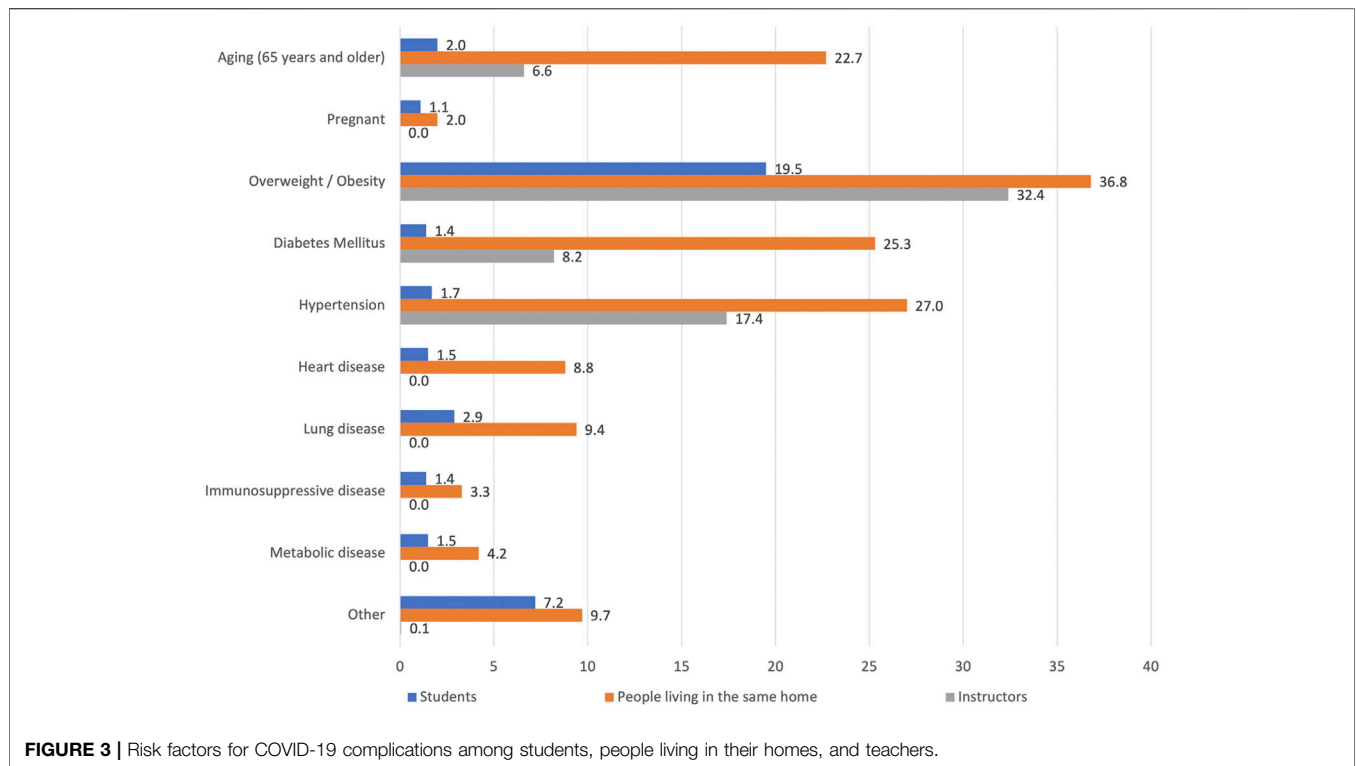
teachers, teaching was not their only job, 52.9% said they had another job. 59.8% of students and 30.8% of teachers do not work from home, leading to more significant stressors in their practice. Additionally, 29.8% of students contribute to house expenses, and 30.3% pay for their school expenses. Also, as a result of the health contingency, 15.6% of primary income providers of student households lost their jobs, and in the case of students, this proportion was 17.0%. (Table 3).

Risk Factors for Complications From COVID-19, Students, People in Their Homes, and Teachers

Teachers and students were asked about other responsibilities in their homes to identify additional stressors to those generated by the emergency remote teaching implementation, finding that 10.2% of the students and 9.5% of the teachers had taken care of people in need of special care. 20.9% of students and 20.3% of teachers had dependents over 65. Finally, 31.1 percent of students and 36.1 percent of teachers had children under their responsibility. Additionally, 94.2% of students declared that they are involved in housework (Figure 2).

Risk Factors Related to Complications for COVID-19, Students, People in Their Homes, and Teachers

The questionnaires included risk factor questions related to COVID-19 complications for students and people living at the same home and teachers. An analysis of the student's family at home was included, as



additional stress due to family concerns. The 6.6% of teachers and 22.7% of people living at home with students are over 65. The main risk factor observed for the three populations was overweight or obesity; even students have 19.5% overweight/obesity, teachers 32.4%, and people living with students 36.8%. Hypertension and diabetes are the following risk factors for teachers. Nearly a quarter of people living at students' homes have hypertension (27.0%) and diabetes (25.3%). These indicators were included in the analysis as potential mental health stressors, either because they or people living in their homes have those risk factors (Figure 3).

Computer Usage

A shared computer to develop their work/study was reported by 33.7% of teachers and 40.8% of students. Half of the students share it with more than one person; this can be an additional stressor on student performance (Figure 4).

Teachers and Students' Stressors due to the Change of Teaching Modality

We asked about difficulties faced due to the change from a face-to-face modality to the emergency remote teaching and changes in temperament and habits, stress indicators, depression indicators, and interpersonal relationships changes.

Difficulties due to the Change of Teaching Modality in Teachers and Students

First, it is surprising that half of the students (50.8%) pointed out that it was challenging for them to migrate from face-to-face to online

modality. Good familiarity with the use of technologies and distance and asynchronous activities was expected among the student population. Less than a quarter of teachers said they had found it very difficult to change the modality (23.7%). There are no differences between men and women in either category. Regarding the increase in working and study hours, women in both types (86.2% teachers, 71.6% students) stated that they considered the working days more strenuous because of the double or triple shifts that women have at home. Finally, in this category of indicators, the questionnaires included questions about perceiving aggression or harassment in the teaching/learning practice. To which 17.4% of female teachers and a quarter of students (27.7%) responded positively. However, in

TABLE 3 | Participants job profile and economic conditions.

Working	Teachers	Students
Yes	100.0	40.0
No		60.0
More than one job		
Yes	52.9	
Loss of job		
The main household provider		15.6
The student		17.0
Working from home		
Yes ^a	51.7	40.2
No	30.8	59.8
Some yes, some no	17.4	0.0
Expenditures		
Contribute to household expenses		29.8
Pay for school expenses		30.3

^aIn teachers, refers to the other work.

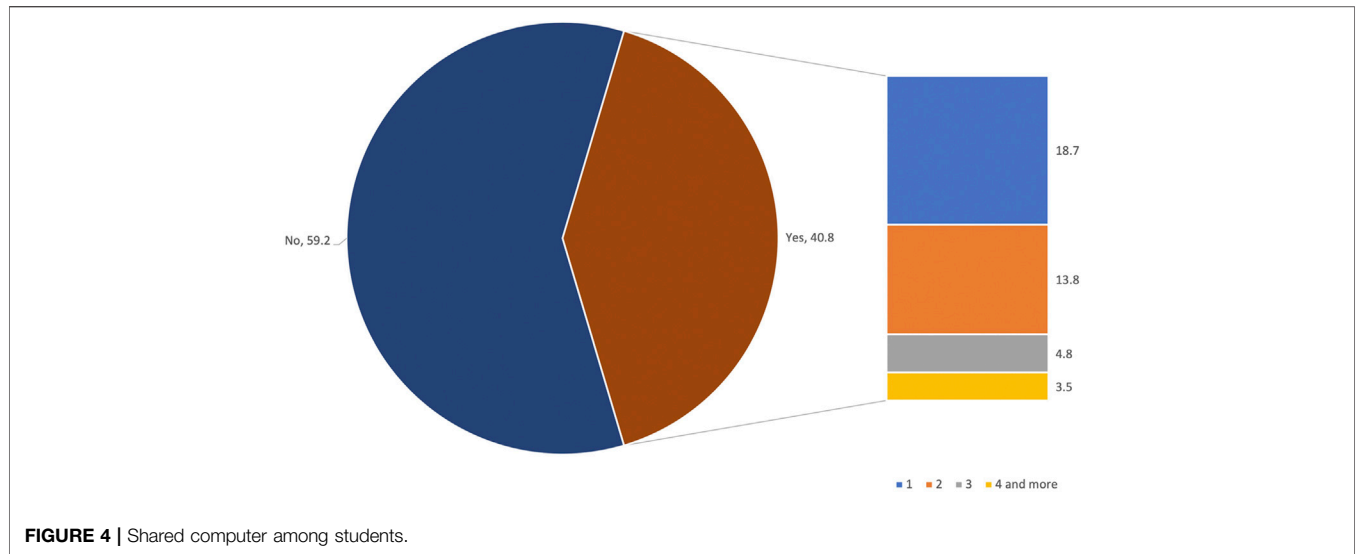


FIGURE 4 | Shared computer among students.

TABLE 4 | Difficulties faced by teachers and students due to the change of teaching modality.

	Teachers			Students		
	Total	Females	Males	Total	Females	Males
Difficulties change modality						
Migration to the online modality was complicated	23.7	25.1	22.2	50.8	50.6	51.3
Considers that the days of (work/study) are more strenuous	74.5	86.2	62.2	68.6	71.6	63.1
Felt attacked by actions or attitudes from (students/teachers)	13.9	17.4	10.3	27.7	27.7	28.0

The numbers included in this table are the percentage of participants who answered "Yes" to the listed items.

TABLE 5 | Changes in temperament and habits in teachers and students resulting from the change in teaching modality.

	Teachers			Students		
	Total	Females	Males	Total	Females	Males
Change of temperament						
Feels more aggressive	14.5	18.5	10.3	36.2	38.8	31.8
Loses patience more easily	24.2	32.3	15.7	59.4	61.7	55.5
Changing habits						
Turns to smoke or alcohol to relieve your discomfort	7.4	6.7	8.1	18.2	15.4	22.9
Sleep habits have been altered	56.6	62.6	50.3	76.4	79.2	71.2
Eating habits have been altered	46.8	53.3	40.0	65.9	71.9	55.5
Physical health is being affected	43.9	51.8	35.7	58.9	63.4	50.8

The numbers included in this table are the percentage of participants who answered "Yes" to the listed items.

the male students, this promotion was slightly higher (28.0%). (Table 4).

Changes in Temperament and Habits Resulting From the Shift in Teaching Modality in Teachers and Students

Two indicators were presented on the change of temperament derived from confinement and classroom modality change to online courses. In general, students were the ones who declared the most significant changes. In the case of feeling more

aggressive and losing patience more easily, 38.8 and 61.7% of female students reported these conditions, respectively. Students reported a higher percentage of changing habits. The least reported changes in practices were tobacco or alcohol use to relieve discomfort, which was more pronounced by male students (22.9%). The main habit that has been modified in a more significant proportion for all participants is sleeping pattern, mainly among students in general, and in a more considerable proportion among female students (79.2%). Eating habits are declared to have been modified in second place, also having a more significant presence among female students (71.9%).

TABLE 6 | Stress and depression indicators among teachers and students derived from the change in teaching modality.

	Teachers			Students		
	Total	Females	Males	Total	Females	Males
Stress indicators						
Afraid to perform some activities (my work/courses)	24.5	31.8	16.8	46.1	50.4	38.1
Had too many activities (teachers/courses) to perform and that could not be completed	46.3	59.0	33.0	74.2	79.9	64.0
Hard to concentrate when getting to (work/activities as a student)	32.4	35.9	28.6	75.8	79.2	69.5
Difficulties to calm down with (work setbacks/activities as a student)	30.0	37.9	21.6	60.9	68.6	47.0
It has affected because it does not adapt well to the changes that arise in (work/school)	10.8	9.7	11.9	38.3	37.6	39.8
It has affected because does not efficiently solve the problems (work /in school)	14.5	15.9	13.0	36.1	36.6	35.2
Depression	28.2	36.9	18.9	62.4	64.5	58.5
Feel sad more often	15.5	19.0	11.9	38.5	38.3	38.6
Lack of energy to cope with activities (work /as a student and others)	11.3	16.9	5.4	41.4	49.6	26.3
Tend to be pessimistic	12.1	11.8	12.4	51.5	52.5	49.6
Often feel like crying	6.6	6.7	6.5	24.1	24.1	24.2
Have lost motivation by (teaching/courses or by career)	24.2	21.0	27.6	66.2	66.2	66.1
Would like to change (job/career or stop studying)	18.7	15.4	22.2	62.7	63.4	61.4
Enjoy less (work/activities as a student)	10.8	9.7	11.9	38.3	37.6	39.8
Find monotonous (work/activities as a student)	14.5	15.9	13.0	36.1	36.6	35.2

Note: The numbers included in this table are the percentage of participants who answered "Yes" to the listed items.

Finally, when checking whether changes in habits affect physical health, 58.9% of students and 43.9% of teachers consider changes in practices are affecting their physical health; female students (63.4%) and female teachers (51.8%) believe this in the highest proportion (Table 5).

Stress and Depression Indicators Derived From the Change in Teaching Modality in Teachers and Students

Although the data collection instruments do not consider a stress assessment, stress-related indicators were included in the questionnaires, resulting in students' more relevant indicators than those for teachers. In addition, the questionnaires ask regarding the fear of teaching-studying activities; nearly 46.1% of students and one in four teachers said yes; this proportion was 50 percent for female students and 31.8 percent for female teachers. Students indicated a more considerable proportion of feeling overwhelmed by the workload; specifically, 79.9 percent of female students and 59.0 percent of female students were in this situation. As for the difficulty of concentrating on teaching-studying practice, 79.2% of female students and 35.9% of female teachers had problems. Finally, concerning the difficulty of being reassured by setbacks, 68.6% of female students and 37.9% of female teachers stated that they find it

difficult to reassure themselves about the setbacks of their teaching/learning activities (Table 6).

Concerning depression-related indicators is observed that students have a more prominent presence of these indicators, especially female students: 57.2% of this population reported feeling sad more often; 64.5% perceived a lack of energy; 38.3% tend to be pessimistic; 49.6% often feel like crying; the 52.5% have lost motivation for courses or their career; 24.1 would like to change jobs or stop studying; 63.4% their activities as students are monotonous, and 36.6% do not quickly solve problems related to school. Male students only outnumber the female students in which they have been affected because they do not adapt well to the changes that arise in the school. Concerning depression indicators, it was observed that teachers' proportions of these indicators are much lower than those presented by students, and there are considerable differences between female and male teachers. The first indicators related to feelings are declared in a more significant proportion by female teachers, feel sadness more often (25.6%), lack of energy (36.9%), tendencies to pessimism (29.0%), and often feel like crying (16.9%). On the other hand, the indicators associated with the lack of motivation and desire were more pronounced by male teachers, the loss of motivation for teaching (12.4%), the desire to change jobs (6.5%), enjoy less work (27.6%), and the job is monotonous (22.2%) (Table 6).

TABLE 7 | Change in interpersonal relationships resulting from the shift in teaching modality in teachers and students.

	Teachers			Students		
	Total	Females	Males	Total	Females	Males
Interpersonal relationships						
Social relationships outside (work/school) have been affected: family, partner, friendsetc.	48.7	53.8	43.2	57.0	58.6	54.2
Have had a greater estrangement with (students/classmates)	50.8	44.6	57.3	75.0	72.8	78.8
(Work/school) negatively affects other life facets	26.1	32.3	19.5	33.9	32.9	36.0

The numbers included in this table are the percentage of participants who answered "Yes" to the listed items.

Changes in Interpersonal Relationships Resulting From the Shift in Teaching Modality in Teachers and Students

Finally, it was asked how their interpersonal relationships were affected by the shift from modality to remote courses. In general, students have been impacted more significantly than teachers in this item. In affecting social relationships outside the school environment, both female students (58.6%) and female teachers (53.8%) consider having a more significant impact. Regarding meaningful distancing with students or co-workers, male teachers (57.3%) and male students (78.8%) declared that they had felt it in a more significant proportion. Finally, when asked whether academic work or school has affected other facets of their lives, 32.3% of female teachers and 36.0% of male students have reported this situation (Table 7).

DISCUSSION

One of the questions that have arisen in the wake of the COVID-19 health emergency is to what extent this emergency can lead to negative psych-emotional responses, deliberate failure to comply with the health authorities' recommendations, and even initiating or increasing unhealthy behavior, such as substance use (Pfefferbaum and North, 2020). Generally speaking, the most likely reactions resulting from confinement are stress, depression, irritability, insomnia, fear, confusion, anger, frustration, and boredom, or stigma; these conditions may persist even long after completion of confinement (Brooks et al., 2020). In the COVID-19 pandemic context, students' and teachers' mental health conditions in the Mexican higher education system have been impacted by the COVID-19 outbreak itself and the implications of all aspects of individuals' lives, primarily in their socioeconomic situation. The vulnerability of this population regarding mental health exists since before the pandemic; the COVID-19 outbreak increased the stressors that affect their mental health.

A first point to note is that a significant proportion of students lost their jobs due to the health emergency; this situation is consistent with data reported nationally. In our study, 16.8% of the total sample of students said to have lost their jobs. Considering this percentage, the total number of students who reported was working between January and June 2020 has more than doubled. In other words, of the total number of students who said they had a job at the beginning of the epidemic, 43% said they had lost it during the first six months of 2020. This figure is consistent with other sources, which state that young people are one of the social groups that have had the most significant impact on their unemployment levels due to the health emergency caused by COVID-19.

Although a significant proportion of students reported not having a job, our study records that they were in charge of providing care for children, older adults, and people with special needs; this situation is seen in the same way by teachers. The proportion of students who served over 65 years of age and persons with special needs was higher than that observed in

teachers. On the other hand, the teachers had children in their care more significantly, making sense by remembering that individuals in some marital union predominate in this group. In general, this information tells us about the presence of a double shift for both teachers and students, which outlines paying attention to other people's needs (because they are developing their academic activities from home) and at the same time their courses. Undoubtedly, this situation can translate into stress conditions in both groups, in addition to those they may be experiencing arising from their responsibilities as teachers and students. It has been documented that caregivers of children, older adults, people with disabilities, and students and education professionals are among the groups most likely to develop burnout syndrome (Arias et al., 2019). In this case, coupling both activities due to confinement, the risk of emotional wear may increase.

Since the beginning of the epidemic, the current information highlighted the higher prevalence of complications in people with COVID-19 and some pre-existing medical conditions, such as diabetes, obesity, and hypertension. This situation was particularly noticeable in Mexico due to the high prevalence of the general population's diseases mentioned above. In 2018, Mexico registered 75.5% of overweight and obesity among the population aged 20 and over, 18.4% with previously diagnosed hypertension, and 10.1% with a previous diagnosis of diabetes (INEGI, 2020). For this reason, a battery of questions was included in both questionnaires that sought to capture, through self-declaration, the presence of medical conditions that would make them more vulnerable to complications if they developed COVID-19. In students' case, they were asked the same health conditions regarding other people living at their homes to identify possible sources of stressors related to their health conditions. The results showed that students, their families, and teachers have overweight and obesity below the national average. In this case, it is necessary to remember that this is a self-declaration, so the answer to this question may be biased by the interviewees' subjectivity around what levels are considered overweight and obesity. In contrast, self-reported hypertension and diabetes were higher than the national data for people living with students and for teachers. In general, the presence of conditions associated with complications related to COVID-19 can translate as an additional source of stress for students and teachers since the expectation of acquiring the virus and developing the disease in the presence of comorbidities is associated with complications and even fatal outcomes.

Other possible sources of mental health stressors included in this study are those factors related to how teachers and students developed their academic activities. The first factor explored was computer sharing. Due to the implementation of the emergency remote teaching model and the limited availability of computer equipment for each household member, both students and teachers shared a computer with other household members. This circumstance could have occurred in conditions of overlapping schedules or situations that involved negotiations inside the home to achieve the computer's harmonious use among those who shared it.

Additionally, this study considered the assumption that teaching modality could have generated stress and other situations related to mental health. In this sense, half of the students expressed as very difficult the change to the new learning mode. This situation could be due to facing a model with which they were possibly unfamiliar and distancing the students' dynamics, such as coexistence with classmates, discussion in courses, access to libraries, and reference materials. In contrast, teachers declared, to a lesser extent, that they had difficulty changing the model; at the beginning of the study, the authors expected the opposite because younger generations have been exposed to information technologies for longer.

One aspect to highlight, based on the obtained results, is the impact of academic work on the mental health of teachers and students; if the working days are long and strenuous, it can trigger burnout syndrome. Thus, we found that women (both teachers and students) expressed to a greater extent than they considered their days strenuous. Women have been traditionally designated as caregivers of household members and responsible for housework even if they have joined the extra-domestic workforce. Women have had to conduct their academic activities from home; this temporarily and spatially overlaps with home activities and childcare, which means assigning to women additional responsibility of supervising the children's school activities. This situation, known as a triple shift, maybe is the reason why women teachers and students reported to a large extent that their academic days were strenuous. Although this concept has been discussed since before the pandemic, it has become more visible since the pandemic. The triple working shift causes an overload of tasks and responsibilities, generating a delay in self-care among women by prioritizing attention to others, which leads to a deterioration in the quality of life and an increase in the chances of developing some mental illness (Saavedra, 2017).

Other important aspects related to mental health are changes in habits and temperament. Teachers and students were also surveyed about tobacco or alcohol use to alleviate any discomfort they might have had. There is evidence to suggest that exposure to post-traumatic stress disorder such as terrorist attacks, natural disasters, serious accidents, violence could be linked to an increase in alcohol and tobacco use (García-Álvarez et al., 2020; Boscarino, Adams, and Galea, 2006; Lebeaut, Tran and Vujanovic, 2020). Additionally, some studies have indicated that alcohol and tobacco use may reflect symptoms related to depression and post-traumatic stress disorder (Ben-Zur and Zeidner, 2009; Jiménez-Treviño et al., 2019; Gross et al., 2020). In this context, students in our study reported increased consumption of tobacco or alcohol. When analyzed by sex, male teachers and male students were the ones who said this habit to a greater extent. However, it should be noted that in the case of female students, the percentage of alcohol and tobacco consumption was more than double that reported by teachers. In this sense, it is essential to note that women, both teachers, and students, said a more significant proportion of both factors related to behavior change, such as factors relating to habits changes. They were more aggressive and more straightforward loss of patience; they had more sleeping alteration, change eating

habits, and perception of impairment of physical health status. This situation may be related to the overload of activities in women, resulting from the triple shift previously mentioned.

This predominance of women is also present in the indicators related to stress and depression included in this study, in a more noticeable way among the female students. This result coincides with what was found in various studies in which the authors have found a high prevalence of anxiety and depression in populations of university students (González et al., 2018). Particularly in students in health sciences, and mainly due to adverse academic outcomes, adoption of unhealthy habits (Meyer et al., 2013), academic overload, lack of time to fulfill school responsibilities, and the preparation of exams (Marty et al., 2005; Castillo-Pimienta et al., 2016).

Finally, the results presented in this article focus on the impact of confinement on teachers' and students' interpersonal relationships. Whereas, with male teachers, there is a higher percentage of cases indicating that they have perceived a greater distance from pupils. Female teachers pointed out that their off-the-job relationships have been affected by the shift to the emergency remote teaching model, as their work affects many other facets of their lives.

CONCLUSION

The presence of signs and symptoms related to mental health conditions was commonly present in women, including teachers and students. This situation could be explained because of women being designated individuals to perform household tasks, which, together alongside their activities as teachers and students, subject them to higher physical and emotional wear levels. Although there were higher percentages in men, it was in the items related to socialization in the work and study centers.

Another critical aspect being highlighted is related to the worst conditions recorded among students than those recorded among teachers. In general, students reported to a greater extent having difficulty with switching to an online mode and the way they dealt with the confinement.

Additionally, the presence of comorbidities associated with COVID-19 complications may be considered an additional stressor. Since the beginning of the pandemic, evidence indicated that people with chronic degenerative conditions were more likely to develop severe cases of COVID19. In Mexico, this topic was of particular interest due to the high prevalence of these health conditions in the general population.

The results of this study show the importance of considering the development and implementation of programs in the universities, which could provide mental health counseling and support to instructors and students, to alleviate the effect of the lockdown and any other situations that could impact their emotional wellbeing.

DATA AVAILABILITY STATEMENT

The datasets presented in this article are not readily available because the data is still being analyzed. Requests to access the datasets should be directed to RZ, rogeliowitzapata@gmail.com.

ETHICS STATEMENT

This project received approval from the ethics committee established by the Mexico Section of the US-Mexico Border Health Commission. A de-identified database was part of the data analysis; the data analysis did not include any personal information or any other way to identify the participants.

AUTHOR CONTRIBUTIONS

RZ-G: lead author, study conception and design, compiled/ collected data, data analysis, manuscript writing, critical revision of the manuscript, and final approval of the published version. JG-F: co-author, study conception and design, compiled/collected data, data analysis, interpretation of data, manuscript writing, critical

revision of the manuscript, and final approval of the published version. AA-G: co-author, article writing, critical revision of the document, and final approval of the published version. JM-A: co-author, manuscript writing, critical revision of the manuscript, and final approval of the published version. SC-B: co-author, article writing, critical revision of the document, and final approval of the published version. IP-L: co-author, revision of the manuscript, final approval of the published version. CG-F: co-author, revision of the document, final approval of the published version.

ACKNOWLEDGMENTS

We want to thank all the professors and students who participated in this study and the colleagues who supported us in recruiting more participants.

REFERENCES

- Amaral-Prado, H. M., Borghi, F., Vichi, T. M. y., and Grassi-Kassisse, D. M. (2020). The Impact of Confinement in the Psychosocial Behavior Due to COVID-19 Among Members of a Brazilian university. *Int. J. Soc. Psychiatry*, 1–8. doi:10.1177/0020764020971318
- Arias, W., Cahuana, M., Ceballos, K., and Caycho-Rodríguez, T. (2019). Síndrome de burnout en cuidadores de pacientes con discapacidad infantil. *Interacciones* 5 (1), 7–16. doi:10.24016/2019.v5n1.135
- Auerbach, R. P., Mortier, P., Bruffaerts, R., Alonso, J., Benjet, C., Cuijpers, P., et al. (2018). WHO World Mental Health Surveys International College Student Project: Prevalence and Distribution of Mental Disorders. *J. Abnormal Psychol.* 127 (7), 623–638. doi:10.1037/abn0000362
- Bao, Y., Sun, Y., Meng, S., Shi, J., and Lu, L. (2020). 2019-nCoV Epidemic: Address Mental Health Care to Empower Society. *Lancet* 395 (10224), 37–38. doi:10.1016/S0140-6736(20)30309-3
- Ben-Zur, H., and y Zeidner, M. (2009). Threat to Life and Risk-Taking Behaviors: a Review of Empirical Findings and Explanatory Models. *Personal. Soc. Psychol. Rev.* 13, 109–128. doi:10.1177/1088868308330104
- Besser, A., Lotem, S., and y Zeigler-Hill, V. (2020). Psychological Stress and Vocal Symptoms Among university Professors in Israel: Implications of the Shift to Online Synchronous Teaching during the COVID-19 Pandemic. *J. Voice*, 1–8. doi:10.1016/j.jvoice.2020.05.028
- Boscarino, J. A., Adams, R. E., and y Galea, S. (2006). Alcohol Use in New York after the Terrorist Attacks: a Study of the Effects of Psychological Trauma on Drinking Behavior. *Addict. Behaviors* 31, 606–621. doi:10.1016/j.addbeh.2005.05.035
- Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Simon, W., Greenberg, N., et al. (2020b). The Psychological Impact of Quarantine and How to Reduce it: Rapid Review of the Evidence. *The Lancet*. 395(10227), 912–920. ISSN 0140-6736. doi:10.1016/S0140-6736(20)30460-8
- Brooks, S. K., Webster, R. K., Smith, L. E., Woodland, L., Wessely, S., Greenberg, N., et al. (2020a). The Psychological Impact of Quarantine and How to Reduce it: Rapid Review of the Evidence. *Lancet* 395, 912–920. doi:10.1016/S0140-6736(20)30460-8
- Cao, W., Fang, Z., Hou, G., Han, M., Xu, X., Dong, J., et al. (2020). The Psychological Impact of the COVID-19 Epidemic on College Students in China. *Psychiatry Res.* 287, 112934. doi:10.1016/j.psychres.2020.112934
- Castillo Pimienta, C., Chacón de la Cruz, T., Díaz-Véliz, G., and Octubre-Diciembre, D. (2016). Ansiedad y fuentes de estrés académico en estudiantes de carreras de la salud. *Investigación en Educación Médica* 5 (20), 230–237. Consultado el 21 de enero de 2021 en Available at: <http://www.redalyc.org/pdf/3497/349747925004.pdf>.
- Debbarma, I., and Durai, T. (2021). Educational Disruption: Impact of COVID-19 on Students from the Northeast States of India. *Child. Youth Serv. Rev.* 120, 105769. doi:10.1016/j.childyouth.2020.105769
- Etikan, I., Alkassim, R., and Abubakar, S. (2016). Comparison of Snowball Sampling and Sequential Sampling Technique. *Biometrics Biostatistics Int. J.* 3 (1), 55. doi:10.15406/bbij.2015.03.00055
- García-Álvarez, L., Fuente-Tomás, L., Sáiz, P., García-Portilla, M., and Bobes, J. (2020). ¿Se observarán cambios en el consumo de alcohol y tabaco durante el confinamiento por COVID-19?. *Adicciones*, 32(2), 85–89. doi:10.20882/adicciones.1546
- González, L. Z. T., Guevara, E. G., Nava, M. G., Estala, M. A. C., García, K. Y. R., and Peña, E. G. R. (2018). Depresión, ansiedad y estrés en estudiantes de nuevo ingreso a la educación superior. *Revista Salud Pública y Nutrición* 17 (4), 41–47.
- Gritsenko, V., Skugarevsky, O., Konstantinov, V., Khamenka, N., Marinova, T., Reznik, A. y., et al. (2020). COVID-19 Fear, Stress, Anxiety, and Substance Use Among Russian and Belarusian university Students. *Int. J. Ment. Health Addict.*, 1–7. doi:10.1007/s11469-020-00330-z
- Gross, G. M., Bastian, L. A., Smith, N. B., Harpaz-Rotem, I., and Hoff, R. (2020). Sex Differences in Associations between Depression and Posttraumatic Stress Disorder Symptoms and Tobacco Use Among Veterans of Recent Conflicts. *J. women's Health* 29 (5), 677–685. doi:10.1089/jwh.2019.8082
- Gutiérrez-Santander, P., Morán-Suárez, S., and Sanz-Vázquez, I. (2005). El estrés docente: elaboración de la escala ED-6 para su evaluación. *Relieve: Revista Electrónica de Investigación y Evaluación Educativa* 11 (1), 2.
- Instituto Nacional de Estadística y Geografía – INEGI (2020). *Prevalencia de Obesidad, Hipertensión y Diabetes para los Municipios de México 2018*. (Consultado el 17 de enero de 2021 en Available at: <https://www.inegi.org.mx/investigacion/pohd/2018/#Tabulados>).
- Islam, M. A., Barna, S. D., Raihan, H., Khan, N. A., and Hossain, T. (2020). Depression and Anxiety Among university Students during the COVID-19 Pandemic in Bangladesh: A Web-Based Cross-Sectional Survey. *PLoS ONE*, 15(8), 1–12. doi:10.1371/journal.pone.0238162
- Jakovljevic, M., Bjedov, S., and Jaksic, N. y. Jakovljevic, I. (2020). COVID-19 Pandemic and Public and Global Mental Health from the Perspective of Global Health Security. *Psychiatria Danubina*, 32(1), 6–14. doi:10.24869/psyd.2020.6
- Jiménez-Treviño, L., Velasco, Á., Rodríguez-Revuelta, J., Abad, I., De la Fuente-Tomás, L., González-Blanco, L., et al. (2019). Factors associated with tobacco consumption in patients with depression. Factores asociados con consumo de tabaco en pacientes con depresión. *Adicciones* 31 (4), 298–308. doi:10.20882/adicciones.1191
- Jones, N. M., Thompson, R. R., Dunkel Schetter, C., and Silver, R. C.. (2017). Distress and Rumor Exposure on Social media during a Campus Lockdown. *Proc. Natl. Acad. Sci. USA*. 114(44). 11663–11668. doi:10.1073/pnas.1708518114
- Kaufman, K. R., Petkova, E., Bhui, K. S., and Schulze, T. G. (2020). A Global Needs Assessment in Times of a Global Crisis: World Psychiatry Response to the COVID-19 Pandemic. *British J. Psychiatry* 217 (1), 399. doi:10.1192/bjo.2020.25
- Keceojevic, A., Basch, C. H., and Sullivan, M. y. Davi, N. K. (2020). The Impact of the COVID-19 Epidemic on Mental Health of Undergraduate Students in New Jersey, Cross-Sectional Study. *Plos ONE*, 15(9), e0239696. doi:10.1371/journal.pone.0239696

- Lötsch, Felix., Jenny SchnyderAbraham, Goorhuis., Martin, P., and Grobusch. (2017). Neuropsychological Long-Term Sequelae of Ebola Virus Disease Survivors – A Systematic Review. *Trav. Med. Infect. Dis.* 18, 18–23. ISSN 1477-8939. doi:10.1016/j.tmaid.2017.05.001
- Lassoued, Z., Alhendawi, M., and Bashithalshaer, R. (2020). An Exploratory Study of the Obstacles for Achieving Quality in Distance Learning during the COVID-19 Pandemic. *Education SciencesMDPI AG* 10 (9), 232. doi:10.3390/educsci10090232
- Lebeaut, A., Tran, J. K., and y Vujanovic, A. A. (2020). Post-traumatic Stress, Alcohol Use Severity, and Alcohol Use Motives Among Firefighters: The Role of Anxiety Sensitivity. *Addict. Behaviors* 106, 106353. doi:10.1016/j.addbeh.2020.106353
- Luo, Y., Chua, R., Xiong, Z., Ho, R. C., and Cyrus, S. H. (2020). A Systematic Review of the Impact of Viral Respiratory Epidemics on Mental Health: An Implication on the Coronavirus Disease 2019 Pandemic. *Front. Psychiatry* 11, 1–21. doi:10.3389/fpsy.2020.565098
- Marty, M., Lavín, G., M., Figueroa, M., M., Larráin de la, C., D., and Cruz, M. C. (2005). Prevalencia de estrés en estudiantes del área de la salud de la Universidad de los Andes y su relación con enfermedades infecciosas. *Revista Chilena de neuropsiquiatría* 43 (1), 25–32. (Consultado el 21 de enero de 2021 en Available at: <https://scielo.conicyt.cl/pdf/rchnp/v43n1/art04.pdf>).
- Matthews, T., Danese, A., Caspi, A., Fisher, H., Goldman-Mellor, S., Képa, A., et al. (2019). Lonely Young Adults in Modern Britain: Findings from an Epidemiological Cohort Study. *Psychol. Med.* 49 (2), 268–277. doi:10.1017/S0033291718000788
- Meyer, K., A., Ramírez, F., L., and Pérez, V., C. (2013). Percepción de estrés en estudiantes chilenos de Medicina y Enfermería. *Rev. Educ. Cienc Salud* 10 (2), 79–85. Consultado el 21 de enero de 2021 en Available at: <http://www2.udec.cl/ofem/recs/antiores/vol1022013/artinv10213a.pdf>.
- Ministry of Health (2020). *Lineamiento para la estimación de riesgos del semáforo por regiones COVID-19*. Available at: https://coronavirus.gob.mx/wp-content/uploads/2020/10/SemaforoCOVID_Metodo.pdf.
- Moralista, R. B., and Oducado, R. M. F. (2020). Faculty Perception toward Online Education in a State College in the Philippines during the Coronavirus Disease 19 (COVID-19) Pandemic. *Universal J. Educ. Res.* 8 (10), 4736–4742. doi:10.13189/ujer.2020.081044
- Nambiar, D. (2020). The Impact of Online Learning during COVID-19: Students' and Teachers' Perspective. *Int. J. Indian Psychol.* 8 (2), 783–793. doi:10.25215/0802.094DIP:18.01.094/20200802
- Naser, A. Y., Dahmash, E. Z., Al-Rousan, R., Alwafi, H., Alrawashdeh, H. M., Ghoul, I., et al. (2020). Mental Health Status of the General Population, Healthcare Professionals, and university Students during 2019 Coronavirus Disease Outbreak in Jordan: A Cross-Sectional Study. *Brain Behav.* 10 (8). doi:10.1002/brb3.1730
- Pfefferbaum, B., and North, C. S. (2020). Mental Health and the CovidCOVID-19 Pandemic. *New Engl. J. Med.* 383 (6), 510–512. doi:10.1056/NEJMp2008017
- Rapanta, C., Botturi, L., Goodyear, P., Guardia, L., and Koole, M. (2020). Online University Teaching during and after the CovidCOVID-19 Crisis: Refocusing Teacher Presence and Learning Activity. *Postdigital Sci. Edu.* 2 (3), 923–945. doi:10.1007/s42438-020-00155-y
- Saavedra, L. D. (2017). Género y salud: estudio sobre la doble jornada laboral en las mujeres y su relación con el autocuidado de su salud. In IX Congreso Internacional de Investigación y Práctica Profesional en Psicología XXIV Jornadas de Investigación XIII Encuentro de Investigadores en Psicología del MERCOSUR. Buenos Aires: Facultad de Psicología-Universidad de Buenos Aires.
- Sahu, P. (2020). Closure of Universities Due to Coronavirus Disease 2019 (COVID-19): Impact on Education and Mental Health of Students and Academic Staff. *Cureus* 12 (4), e7541. doi:10.7759/cureus.7541
- Sierra-Molina, T., Sevilla-Santo, D., and Martín-Pavón, M. (2019). The university professor, a resilient being: a look at professors' work in the current educational environment. *Diálogos sobre educación. Temas actuales en investigación educativa* 10 (19), 00006. doi:10.32870/dse.v0i19.539
- Sokal, L., Trudel, L. E., and Babb, J. (2021). I've Had it! Factors Associated with Burnout and Low Organizational Commitment in Canadian Teachers during the Second Wave of the COVID-19 Pandemic. *Int. J. Educ. Res. Open* 2 (2), 1–9. doi:10.1016/j.ijedro.2020.100023
- Son, C., Hedge, S., Smith, A., Wang, X., and Sasangohar, F. (2020). Effects of COVID-19 on College Students' Mental Health in the United States: Interview Survey Study. *J. Med. Internet Res.* 22 (9), e21279. doi:10.2196/21279
- Sundarasan, S., Chinnna, K., Kamaludin, K., Nurunnabi, M., Baloch, G. M., Khoshaim, H. B., et al. (2020). Psychological Impact of COVID-19 and Lockdown Among University Students in Malaysia: Implications and Policy Recommendations. *Int. J. Environ. Res. Public Health* 17 (17), 1–13. doi:10.3390/ijerph17176206
- Torales, J., Ríos-González, C., Barrios, I., O'Higgins, M., González, I., García, O., et al. (2020). Self-Perceived Stress during the Quarantine of COVID-19 Pandemic in Paraguay: An Exploratory Survey. *Front. Psychiatry* 11, 1–6. doi:10.3389/fpsy.2020.558691
- Zapata-Garibay, R., Gonzalez-Fagoaga, J. E., Clara, J., González-FagoagaCauch-García, Jose. R., and Plascencia-Lopez, Ismael. (2021). Higher Education Teaching Practices Experience in Mexico, during the Emergency Remote Teaching Derived from the Health Implementation Due COVID-19. *Front. Educ.* 6, 1–14. doi:10.3389/feduc.2021.628158
- Zhai, Y., and Xue, D. (2020). Mental Health Care for International Chinese Students Affected by the COVID-19 Outbreak, *The Lancet Psychiatry*, 7(4), 22. doi:10.1016/S2215-0366(20)30089-4

Conflict of Interest: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Copyright © 2021 Zapata-Garibay, González-Fagoaga, Asadi-González, Martínez-Alvarado, Chavez-Baray, Plascencia-López and González-Fagoaga. This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY). The use, distribution or reproduction in other forums is permitted, provided the original author(s) and the copyright owner(s) are credited and that the original publication in this journal is cited, in accordance with accepted academic practice. No use, distribution or reproduction is permitted which does not comply with these terms.