Stressful and fear factors in Rehabilitation students during the COVID-19 pandemic

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Abstract:
Background: Evidence suggests that the COVID-19 pandemic has generally increased students' fear, stress, and anxiety levels. However, the impact of the pandemic on university students in Mexico has not been well documented. This study examines the fear of Rehabilitation university students at the Autonomous University of Yucatán during the COVID-19 pandemic.
Materials and Methods: An online survey was conducted on undergraduate students recruited from the Bachelor of Rehabilitation by email. The survey consisted of a standardized scale applied online through the Microsoft365 FORMS platform on stressful factors for students facing COVID-19.
Results: The results show that the highest frequency of fear perceived by students is due to the variables: I am afraid that a family member will get infected by SARS-COV-2; I am afraid that a family member will die; and I am afraid that it will affect my academic formation.
Conclusion: The proportion of respondents presented fears of covid-19 in an alarming way. Students reported academic and health-related concerns caused by the pandemic. Given the unexpected length and severity of the outbreak, these concerns need to be further understood and addressed
Key Word: COVID-19; SARS-CoV-2; Fear; Health; Academic Situation.

I. Introduction

On March 11, 2020, the world health organization declared the disease COVID-19 caused by SARS-CoV2 infection to have become a pandemic.[1] From the pandemic's beginning until November 22, 2022, 635.2 million people were sick with COVID-19, and 6.6 million deaths were reported.[2] Currently, globally 2.5 million new cases were reported in week 46 (11/22/22) and 7910 new deaths. In the Americas, during this same week, 457,718 cases and 3,066 deaths were reported (PAHO/WHO, 2022).[2] Since the pandemic's start in Mexico, 7.19 million infections and 331,000 deaths have been reported from this disease.[3]

The speed with which the SARS-CoV-2 virus was transmitted caused the countries' governments to take preventive measures to prevent its spread. Among the actions carried out were using masks, forced quarantines, reduced mobility, and suspension of work, school, and social activities, among others.[4] These measures caused a radical change in the entire population, which required adaptation to new work, educational and social realities. Given this, virtual jobs and education arose. In addition, the absence of social activities predominated.[5] These sudden changes in daily activities generated psychological effects in the population, with significant repercussions on mental health and the subsequent appearance of symptoms of stress, anxiety, sleep problems, and depression.[6-8] In this sense, one of the most vulnerable groups is university students since some studies indicate that difficulties in academic activities and academic stress trigger anxiety and depressive symptoms.[9-11]

Notably, some studies report that during the COVID-19 pandemic, students' fear of becoming infected, sick, or dying increased, increasing levels of stress and anxiety.[12-15] Fear of contracting COVID-19 led to mental disorders such as anxiety, depression, and even suicide.[16-19] That is why, in order to reduce and mitigate the mental health consequences of COVID-19 in students in the health area, it is essential to detect adverse psychological problems (for example, fear) and implement appropriate strategies and interventions in the early stage of its appearance.[20,21] Therefore, this study developed a tool to detect fear of COVID-19 in students from the Rehabilitation area of the Autonomous University of Yucatán.

II. Material And Methods

This prospective comparative study was carried out on patients of Department of general Medicine at Dr. Ram This study is cross-sectional, with a non-experimental qualitative design, with a descriptive and correlational scope. In this study, the fear of COVID-19 was analyzed in students from the Rehabilitation Program of the Autonomous University of Yucatán, Mexico.

Participants

The sample comprised 68 undergraduate students from the Rehabilitation educational program. 72.1% were women, and 27.9% were men (see graph 1), aged between 17-25 years (19.02 ± 1.45 years). Participating students come, 78% from urban areas and 22% from rural areas. The sampling method used in this study was non-probabilistic for convenience with inclusion criteria. These criteria included:
1. Voluntary participation in the study,
2. Being in a suitable physical and mental state to carry out the evaluation, and
3. Agreeing with the dissemination of the research results.

Instrument

The instrument for the fear evaluation in students was carried out using the scale to measure fear and behaviors before COVID-19. Which has eight multiple-choice questions to evaluate sociodemographic data, nine reagents to evaluate fears of getting sick or dying before COVID-19, including: *I'm afraid of getting infected, I'm afraid of getting sick, I'm afraid to die, I'm afraid that a family member will get infected, I am afraid that a family member will get sick, I am afraid that a family member will die, I am afraid that it will affect my economic situation, I am afraid that it will affect my academic situation, I am afraid that it will affect my relationship with my partner*; and nine reagents to measure fear due to school impacts by COVID-19, including: *Failing to satisfactorily complete the semester, not passing all courses, not handing in homework, not being able to work as a team, my study plan is extended, failure to comply in social service, professional practices, and thesis, my grades drop, not complying with laboratory practices, and loss effective communication with the school administrative system and teachers.* These 18 items were measured on a 5-Likert scale ranging from nothing (1) to a lot of fear (5). Regarding the interpretation of the test, there are no specific normative tables, but a significant presence of fear can be considered with total values greater than 4 points.

Process

Data collection was carried out between August 16, 2021, and January 14, 2022. Data collection was virtually performed through the Microsoft 365 Forms Platform due to the sanitary confinement generated by the COVID-19 pandemic. The participants had to give their authorization and respective informed consent to fill out the questionnaire. It is essential to highlight that the criteria established for collecting, safeguarding, and protecting data were respected, following the ethical guidelines of the Declaration of Helsinki (2003) and compilation with the General Regulations of the General Health Law on Health Research in Mexico (RLGS). ,1987).

Statistical analysis

Two types of statistical analyzes were used in the study. The first corresponds to a descriptive analysis of the values obtained in the evaluations about fear in Rehabilitation students. The second analysis corresponds to a comparison of the mean values obtained with the cut-off points of the scale. For qualitative data comparisons, the chi-square test was used. For the comparison of age and total score of the scale, the U-Mann-Whitney test was used. Subsequently, a correlation analysis was carried out between the fear of getting sick or dying and the fear of school affectations by COVID-19, using the Spearman Correlation Coefficient test to determine the degree of association between the study variables. Statistical analysis was performed with the GraphPad Prism version 8 program (GraphPad Software, Inc., La Jolla, USA).

III. Results

Sixty-eight students were included in the study, of which 49 (72.1%) were female and 19 (27.9%) male (Figure 1). The average age of the participants was 19.02 ± 1.45 years. The mean age of women was 19.12 ±1.4 years, and for men, 18.79 ±1.55 years (p=0.252, U-Mann-Whitney test). The average age of the participants ranged from 17 to 25 years.

Gender Frequency
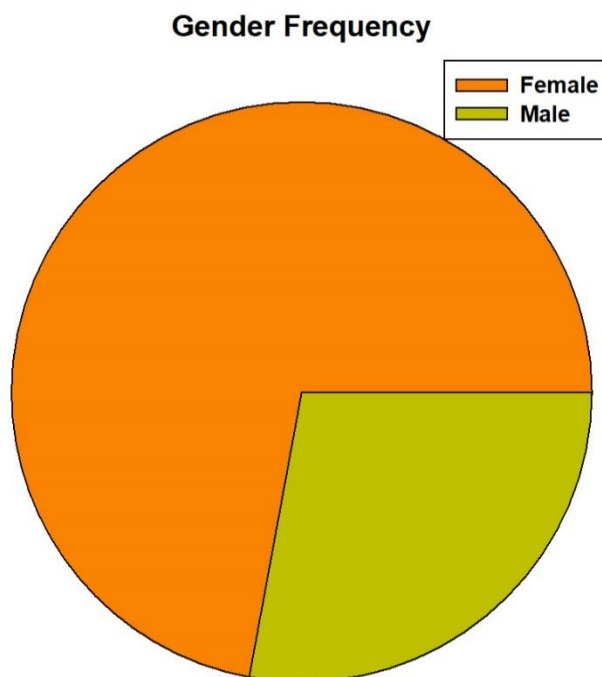
Figure 1. Frequency of females and males participating in the study.

Table 1 shows the results of the means obtained by the participants in evaluating their fears of COVID-19 concerning their health and family members. On this scale, it stands out that the fear of a family member getting infected, sick, or dead was the primary concern presented by the students. In contrast, the variables that students could get sick, die, or that COVID-19 affects their relationship were the ones that received the lowest scores. These last variables were below the cut-off point (<4 points), which shows that students' fear of getting sick or dying is not widely generalized.

The answers average to the nine items of the fears by the covid-19 concerning their health and family members were 30.83 ±5.62. The fear average of women was 31.47 ± 5.59, and for men, 29.21 ±5.54 (p=0.156 U-Mann-Whitney test). The frequency of students who experienced fear of covid-19 showed that 71.4% of women and 63.2% of men reported being afraid of their health or their relatives. (p=0.50772, χ2 test).

Table no1. Students' perception of fear regarding health during the COVID-19 pandemic

| Health Variables	X̄	DS	Asymmetry	Kurtosis
Getting infected	3.47	1.15	-0.348	-0.585
Getting sick	3.37	1.16	-0.053	-0.659
I'm afraid to die	2.66	1.84	-0.213	-1.353
Family member will get infected	4.65	0.56	-1.368	0.965
Family member will get sick	4.51	0.74	-1.348	1.049
Family member will die	4.63	0.84	3.033	9.881
Affect my economic situation	3.57	1.31	-0.928	0.726
Affect my academic situation	3.98	1.06	-1.061	1.527
Affect my relationship with my partner	3.05	1.40	-0.475	-0.331

Table 2 shows the results of the means obtained by the participants in evaluating their fears of COVID-19 concerning their academic situation. On this scale, it stands out that the fear of Failing to satisfactorily complete the semester, not passing all courses and grades drop, and not having laboratory practices were the primary concerns presented by the students. In contrast, the variables that students could Failure to finish social service, professional practices, and thesis, not being able to work as a team, and losing effective communication with the school administrative system were the ones that received the lowest scores.

The answers average to the nine items of the fears by the covid-19 concerning their health, and family members were 34.31 ± 7.21. The fear average for women was 34.08 ± 7.82, and for men, 34.89 ± 5.45 (p=0.956 U-Mann-Whitney test). The frequency of students who experienced fear of covid-19 showed that 69.4% of women and 73.4% of men reported being afraid of their academic situation (p=0.727, χ2 test).

Table no2. Students' perception of fear regarding academic situation during the COVID-19 pandemic

Academic Variables	X̄	DS	Asymmetry	Kurtosis
Failing to satisfactorily complete the semester	4.12	0.97	-0.848	-0.292
Not passing all courses	4.07	1.18	-1.409	1.223
Not handing in homework	3.66	1.28	-0.844	-0.350
Not being able to work as a team	3.51	1.29	-0.623	-0.605
My study program is extended	3.18	1.34	-0.293	-0.997
Failure to finish social service, professional practices, and thesis	3.75	1.34	1.012	0.103
my grades drop	4.09	1.07	-1.14	0.658
Not having laboratory practices	4.18	0.98	-1.258	1.597
Loss effective communication with the school administrative system	3.75	0.97	-0.489	-0.192

Finally, Figure 2 shows the relationship between fears that students or family members will get sick or die in their academic situation. It can be observed that both variables are positively correlated and with moderate intensity (r=0.546, p<0.01, Spearman correlation coefficient). These results suggest that worries about family members getting sick or dying significantly impact their academic concerns.
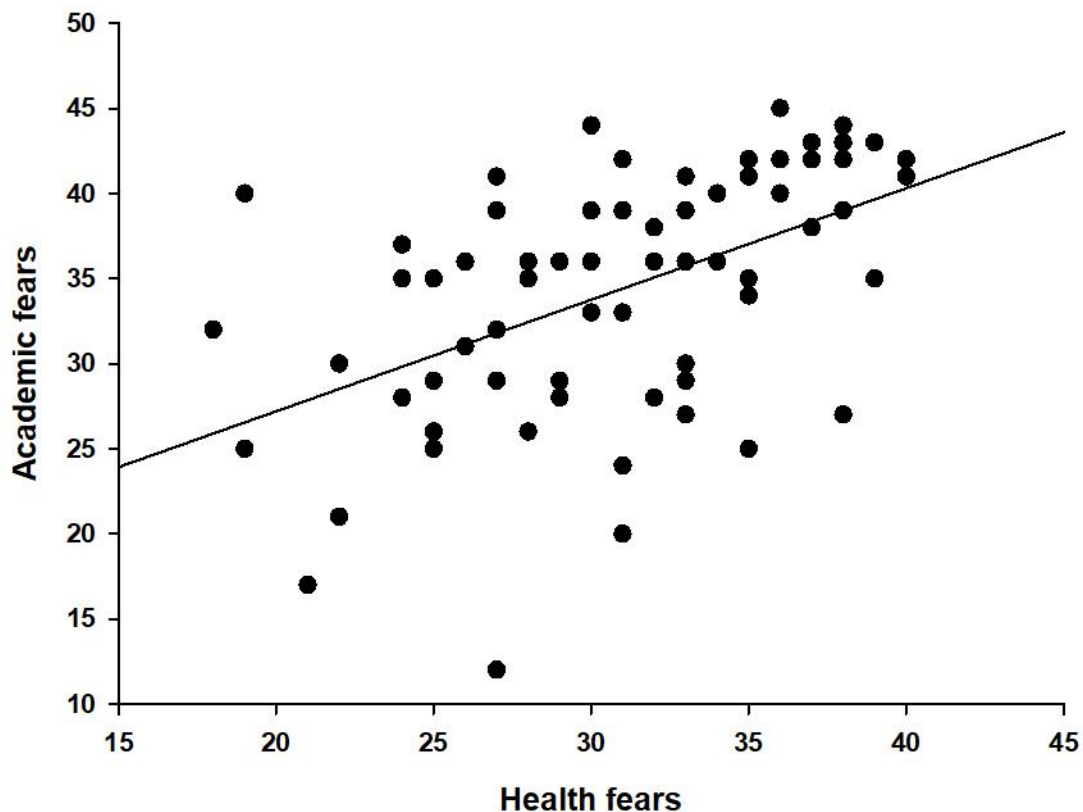
Figure 2. Relationship of students' perception of fear between health variables and academic situation during the COVID-19 pandemic. Note that there is a moderate and significant correlation (p<0.05).

IV. Discussion

During the COVID-19 pandemic, university students have presented negative perceptions and family and social stressors that trigger stress, fear, and anxiety. As a result, students are at risk of mental health issues, especially issues related to quarantine and lockdown.

This study aimed to identify the prevalence of fears among Rehabilitation students at the UADY School of Medicine, in Mexico, during the COVID-19 pandemic. The results show that the highest frequency of fear perceived by students is due to the variables I am afraid that a family member will get infected by SARS-COV-2, I am afraid that a family member will die, and I am afraid that it will affect my academic formation. Although the data collection was carried out one year after the start of the COVID-19 pandemic, many countries, including Mexico, still have many infections and deaths. Notably, many mental health problems emerged in the general population during this pandemic.[22]

Regarding mental health problems in undergraduate students, an increase in fear, stress, anxiety, and depression was observed during the COVID-19 pandemic.[22-28] All of these affected students by reducing their concentration and motivation, causing difficulties in the learning process and students' academic performance.[29,30]

In this study, I highlight the main fear presented by the Rehabilitation students as I am afraid that a family member will get infected by SARS-COV-2, and I am afraid that a family member will die after infection (table 1). One possible explanation is that the students were exposed to much information about the virus's lethality in older people and that they presented different comorbidities, which could cause psychological distress.[31] Like reported in another study, most nursing students feared SARS-COV-2 infection and worried about their families.[30] This study showed that nursing students were afraid and worried about family members, mainly older adults. However, this study reported that students did present intense fear of getting sick from COVID-19.[30]

Another study in China found that 53% of university students presented a slight fear of COVID-19, with students with careers related to the health area having the highest risk of fear of the virus. Interestingly, this study reported that students with the lowest and highest grades were the most fearful.[32]

On the other hand, this study showed that Rehabilitation students feared that the COVID-19 pandemic and the quarantine would affect their academic training, especially the practical clinical part. Similar results were found in medical students, who found that those in the initial part of their medical education were more likely to present mental distress.[33] A possible explanation is that the students had difficulties adapting to the new ways of conducting classes and new modes of online learning during the COVID-19 pandemic.[34]

In this study, no differences were reported between women and men regarding fear risk factors in students. Contrary to other studies that suggest that women may have greater fear, anguish, and anxiety, which could lead to more significant mental health problems during the pandemic.[35-37]

On the other hand, in this study, a moderate correlation was found between students' fears regarding health (fear of getting sick, dying, or that their relatives will get sick) and their academic situation. This suggests that students' fears of a family member getting sick may cause additional stress that affects their academic situation. Moreover, in other studies, it has been reported that there is dissatisfaction among students with learning online, and this causes fear that their academic training is inadequate. This can contribute as a risk factor that causes psychological and mental alterations.[38-41] In this study, it was reported that not having laboratory practices, not accrediting all their courses, and lowering their school average were the main academic concerns of the students of the Rehabilitation major. In contrast, medical students' main fears are difficulties in continuing their education online, poor communication with their professors, and developing practical skills.[39,41-43]

Finally, our study had some limitations. 1) Being a cross-sectional study, it was impossible to identify the causal relationships between the risk factors and the student's academic performance. 2) When conducting an exploratory study, more studies are required to confirm the results about the relationship between fears concerning health and academic fears of students during the COVID-19 pandemic. 3) In our study, there was a memory bias concerning the study's temporality (a year and a half after the start of the pandemic). Furthermore, 4) The scale used does not have formal validations, so it is possible that its understanding could have been not optimal.

V. Conclusion

In this study, we show that students of the Rehabilitation major at the Autonomous University of Yucatán developed relatively high fear symptoms during the COVID-19 pandemic. Highlighting the variables: I am afraid that a family member will get infected by SARS-COV-2, I am afraid that a family member will die, and I am afraid that it will affect my academic formation, as the main risk factors associated with fear during the COVID-19 pandemic.

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