

RESEARCH

Academic stress and mental health problems in nursing students during the COVID-19 pandemic

Estrés académico y problemas de salud mental en estudiantes de enfermería durante la pandemia de COVID-19

Estresse acadêmico e problemas de saúde mental em estudantes de enfermagem durante a pandemia de COVID-19

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Abstract

Introduction: The COVID-19 pandemic has had an important impact on the training of nursing professionals, affecting the mental health of students due to the experiences they have faced. **Objective:** Assess the level of academic stress in nursing students and its relationship to anxiety, depression, insomnia, post-traumatic stress disorder, and experiences during the COVID-19 pandemic. **Methodology:** Correlational study with 1009 nursing students who agreed to participate. A virtual survey was applied, collecting sociodemographic and COVID-19 Pandemic experiences data, in addition to questionnaires on anxiety, depression, insomnia, and post-traumatic and academic stress, with prior authorization from the research and ethics committee. Statistical analysis such as Square Chi, Spearman's Rho and logistic regression model were used. **Results:** 68.1 % presented anxiety, 64.3 % depression, 56.3 % insomnia and 85.7 % academic stress. Academic stress showed statistical association with sex, school period, diagnosis in a family member and contact with a person suspected or confirmed of having COVID-19. Presenting academic stress is 3.9 times higher with moderate anxiety, 10.6 times higher with moderate depression, 12.7 times higher with moderate clinical insomnia, 1.8 times higher with a family member diagnosed with the disease, and 2.6 times higher with contact of suspected or confirmed COVID-19 cases. **Conclusions:** Mental health problems were related to academic stress levels in nursing students during the COVID-19 pandemic. The nursing professional must design educational and training strategies to reduce the levels of these problems, applicable from educational training to the workplace.

Key words: Nursing students; Anxiety; Depression; Insomnia; Stress; COVID-19 (DeCS).

Resumen

Introducción: La pandemia por COVID-19 ha generado un impacto importante en la formación de profesionales de enfermería, afectando la salud mental en estudiantes debido a las experiencias enfrentadas. **Objetivo:** Evaluar el nivel de estrés académico en estudiantes de enfermería y su relación con la ansiedad, depresión, insomnio, estrés postraumático y experiencias durante la pandemia de COVID-19. **Metodología:** Estudio correlacional con 1009 estudiantes matriculados de licenciatura en enfermería que aceptaron participar. Se aplicó encuesta virtual, recolectando datos sociodemográficos y de experiencias durante la pandemia de COVID-19, además de los cuestionarios sobre ansiedad, depresión, insomnio, estrés postraumático y académico, con previa autorización del comité de investigación y ética. El análisis se realizó con Ji cuadrada, Rho de Spearman, y el modelo de regresión logística. **Resultados:** El 68.1 % presentaron ansiedad, el 64.3 % depresión, el 56.3 % insomnio y el 85.7 % estrés académico. El estrés académico mostró asociación estadística con sexo, periodo académico, diagnóstico en familiar y contacto con persona sospechosa/confirmada de COVID-19. Presentar estrés académico es 3.9 veces mayor con ansiedad moderada, 10.6 veces mayor con depresión moderada, 12.7 veces mayor con insomnio clínico moderado, 1.8 veces mayor con familiar diagnosticado con la enfermedad y 2.6 veces mayor con contacto de casos sospechosos/confirmados de COVID-19. **Conclusión:** Problemas de salud mental mostraron relación estadística con estrés académico en estudiantes de enfermería durante la pandemia por COVID-19. El profesional de enfermería debe diseñar estrategias educativas y de capacitación para disminuir los niveles de estos problemas, aplicables desde la formación hasta lo laboral.



Palabras clave: Estudiantes de enfermería; Ansiedad; Depresión; Insomnio; Estrés; COVID-19 (DeCS).

Abstrato

Introdução: A Pandemia do COVID-19 teve um impacto significativo na formação dos profissionais de enfermagem, afetando a saúde mental dos estudantes devido às vivências por eles enfrentadas. **Objetivo:** Avaliar o nível de estresse acadêmico em estudantes de enfermagem e sua relação com ansiedade, depressão, insônia, transtorno de estresse pós-traumático e experiências durante a pandemia de COVID-19. **Metodologia:** Estudo correlacional com 1009 graduandos de enfermagem que concordaram em participar. Foi aplicada uma pesquisa virtual, coletando dados sociodemográficos e experiências da Pandemia da COVID-19, além de questionários sobre ansiedade, depressão, insônia e estresse pós-traumático e acadêmico, com autorização prévia do comitê de ética e pesquisa. Foram utilizadas análises estatísticas como Qui-cuadrado, Rho de Spearman e modelo de regressão logística. **Resultados:** 68.1 % presented anxiety, 64.3 % depression, 56.3 % insomnia and 85.7 % academic stress. Academic stress showed statistical association with sex, school period, diagnosis in a family member and contact with a person suspected or confirmed of having COVID-19. Presenting academic stress is 3.9 times higher with moderate anxiety, 10.6 times higher with moderate depression, 12.7 times higher with moderate clinical insomnia, 1.8 times higher with a family member diagnosed with the disease, and 2.6 times higher with contact of suspected or confirmed COVID-19 cases. **Conclusões:** Problemas de saúde mental foram relacionados aos níveis de estresse acadêmico em estudantes de enfermagem durante a pandemia de COVID-19. O profissional de enfermagem deve traçar estratégias educacionais e de treinamento para reduzir os níveis desses problemas, aplicáveis desde a formação educacional até o ambiente de trabalho.

Palavras-chave: Estudantes de enfermagem; Ansiedade; Depressão; Insônia; Estresse; COVID-19 (DeCS).

Introduction

The SARS-CoV2 pandemic (COVID-19) implied great challenges in the adjustment of people's lifestyles, leading to the generation of strategies for the prevention, cure, and treatment of the new disease ⁽¹⁾. For the education sector, the impact was severe, so that, from the political to the operational level, strategies were implemented to develop actions to mitigate the consequences on students, trying to prevent academic lag. The strategies implemented focused on the adaptation of teaching methods based on digital dynamics and on line methods ⁽²⁾, in order to meet the



requirements of social distancing, which was a totally drastic change that had a major impact on the academic life of the students, who were the group most affected by this change ⁽³⁾.

For health care professions, such as nursing, the challenges were greater due to the academic and education dynamics, implying a test for the performance capacity in these institutions ⁽³⁾. The change from traditional to virtual or on line teaching, as well as the academic complexities of university education in the nursing area, had an impact on the mental health of students, where situations of isolation during the quarantine period favored the development of mood and anxiety disorders ⁽⁴⁾, observing elevated levels of stress, anxiety, depression, and other psychological symptoms that altered well-being in students ⁽⁵⁻⁷⁾.

Regarding mental health disorders, the National Institute of Statistics and Geography (INEGI) ⁽⁸⁾ reported in 2021 that 19.5 % of women and 10.7 % of men showed some symptom of depression, while 56 % of women and 44.7 % of men showed signs of anxiety. In Tamaulipas, Mexico, 21.6 % showed symptoms of depression and 43.2 % of anxiety ⁽⁸⁾, where women showed higher prevalence of depression (19.2 %) and anxiety (51.2 %) compared to men (9.4 % and 36.8 % respectively) ⁽⁹⁾.

In addition to the foregoing, the situation of positive cases and deaths due to COVID-19 caused emotional problems and negative thoughts in people ⁽⁶⁾. Reports at the end of 2020 by the Ministry of Health in Tamaulipas indicated a balance of 40,317 positive cases, of which 3,339 deaths occurred ⁽¹⁰⁾. Of these deaths, only 25 of them were associated with the 18-25 age group, an age range that is related to the group of university students ⁽¹¹⁾. These figures indicated that, even when the students took refuge at home, they could have been infected along with their family and social circle, or they could have become ill or had a very significant personal loss. These situations were also factors that influenced the presence of mental health problems during the pandemic ^(1,5,6).



The effect of the repercussions of both mental health status and lived experiences during the COVID-19 pandemic period on students can be seen through academic stress. This situation manifests itself in students when they experience the demands of both teachers and educational institutions related to their learning ⁽¹²⁻¹⁴⁾. The use of this variable can help us to understand the impact of the mental health issue and the experiences of the COVID-19 pandemic on the academic life of the nursing student, and describe the possible risks of failure, lagging or dropout.

The nursing professional should be able to identify mental health situations in the population, particularly in human resources in education, in order to provide adequate support and/or guidance so that these do not evolve into more serious problems. It cannot be denied that situations of anguish, stress, anxiety, depression among others that have been shown in nursing students showed important variations during the pandemic, affecting the development of their academic life ⁽¹⁵⁾.

Failure to opportunely identify mental health problems in students and the conditions or reasons that lead to them, implies a negative academic repercussion, impacting educational indicators. Therefore, the objective of the present study was to evaluate the level of academic stress in nursing students and its relationship with anxiety, depression, insomnia, post-traumatic stress, and experiences during the COVID-19 pandemic.

Methodology

Descriptive, correlational study with multivariate exploratory analysis. It was conducted in a higher education institution (HEI) of the public sector that prepares nursing graduates in Ciudad Victoria, Tamaulipas, Mexico; for the period from January to May 2021. The study population was the total enrollment of 1,609 students enrolled during the period in the HEI. Students from 1st to 10th semester who agreed to participate in the survey were included. Those who indicated that they did not want to participate, and incomplete questionnaires were excluded. The sample consisted of 1,009 students who met the aforementioned criteria.



Dependent variable was academic stress. Independent variables included sociodemographic data (age, sex, school period, etc.), experiences during the COVID-19 pandemic (confirmed diagnosis, diagnosis in family member, loss of family member, contact with suspected or confirmed case), anxiety, depression, severity of insomnia, and post-traumatic stress. For the collection of sociodemographic information, a general data form was used and for the experiences during the pandemic, four questions were designed with a dichotomous Yes/No answer option.

Generalized Anxiety Disorder Scale (GAD-7) was used, which classifies anxiety as normal, mild, moderate, and severe, with Cronbach's alpha values ranging from 0.79 to 0.91 ⁽¹⁶⁾. The Patient Health Status Evaluation Questionnaire (PHQ-9) ⁽¹⁷⁾ assessed the level of depression, considering the categories of minimal, mild, moderate, major, and severe. The PHQ-9 has shown Cronbach's alpha of 0.89 ⁽¹⁸⁾. The severity of insomnia was assessed with the Insomnia Severity Index (ISI-7) ⁽¹⁹⁾ which handles no insomnia, below threshold, moderate and major levels ⁽¹⁹⁾. The Impact of Event Scale-Revised (IES-R) ⁽²⁰⁾ rates low, moderate, and high levels of posttraumatic stress (distress) ⁽²⁰⁾. The instruments showed Cronbach's alpha values of 0.91 ⁽¹⁹⁾ and 0.89 ⁽²⁰⁾ respectively.

Academic stress level was determined with the Systemic Cognitive Inventory (SISCO-21), which has a filter question that determines if there are signs of stress, and 21 questions focused on stressors, symptoms and coping strategies, reporting a Cronbach's alpha of 0.85 ⁽¹²⁾. The mean of the 21 questions was calculated to obtain a percentage that allows its classification into mild, moderate, and severe. The category no stress was considered, which is obtained from the negation in the filter question ⁽¹²⁾. All the instruments used showed good internal consistency (GAD-7, $\alpha= 0.917$; PHQ-9, $\alpha= 0.932$; ISI-7, $\alpha= 0.906$; IES-R, $\alpha= 0.985$; SISCO-21, $\alpha= 0.955$).



Data collection instrument was applied virtually by means of Google Forms, the link to these forms was provided via a virtual teaching platform to the student enrollment. This strategy was selected due to the epidemiological emergency conditions at the time of the study. Data analysis was performed with the Statistical Package for the Social Sciences (SPSS) version 23. Descriptive statistics, Chi-square and Spearman's Rho tests were used for the relationship between variables and the logistic regression model for the effect of the independent variables with respect to academic stress.

Research was conducted in accordance with the Regulations of the General Health Law on Health Research ⁽²¹⁾, with the approval of the Research and Ethics Committee of the School of Nursing (Opinion No. 003/2020). The student's information was handled confidentially. Their opinion of participating in subsequent phases of the project was requested and, if they accepted, they were requested a means of contact (telephone number), which was kept by the research group. When severe cases of mental health problems were identified, referrals to psychology professionals were offered for the corresponding support.

Results

Women accounted for 77.0 % of the patients. The average age was 21 years, within an interquartile range of 19 and 22 years. The minimum age was 17 years while the maximum age was 41 years. As for the distribution by school period, there was a higher participation of the 7th period (22.6 %), while those who participated the least were 9th period (3.4 %).

Regarding the experience with COVID-19 disease, 6.4 % indicated having contracted the disease during the period corresponding to the beginning of the pandemic in Mexico up to the date of answering the questionnaire. As a proportion, men were the most likely to have had the disease (7.8 %). Also, 28.6 % stated that a family member had been diagnosed with the disease, while



8.0% reported the loss of family members to COVID-19. Finally, 15.3 % stated that they had contact with a person suspected or with a confirmed diagnosis of SARS-CoV2, (Table 1).

Table 1. Sociodemographic characteristics and experiences during the COVID-19 pandemic of nursing students Cd. Victoria, Tamaulipas, México, 2021 (n=1009).

Variable*	Male	Female	General
Distribution	232 (23.0)	777 (77.0)	1009 (100.0)
Age [†]	21.0 (20.0 – 23.0)	21.0 (19.0 – 22.0)	21.0 (19.0 – 22.0)
School period			
1°	22 (9.5)	75 (9.7)	97 (9.6)
2°	18 (7.8)	61 (7.9)	79 (7.8)
3°	35 (15.1)	111 (14.3)	146 (14.5)
4°	12 (5.2)	54 (6.9)	66 (6.5)
5°	21 (9.1)	58 (7.5)	79 (7.8)
6°	37 (15.9)	71 (9.1)	108 (10.7)
7°	41 (17.7)	167 (24.1)	228 (22.6)
8°	18 (7.8)	57 (7.3)	75 (7.4)
9°	4 (1.7)	30 (3.9)	34 (3.4)
10°	24 (10.3)	73 (9.4)	97 (9.6)
Experiences during COVID-19 pandemic			
Confirmed diagnosis			
No	214 (82.2)	730 (94.0)	944 (93.6)
Yes	18 (7.8)	47 (6.0)	65 (6.4)
Diagnosis in the family			
No	177 (76.3)	543 (69.9)	720 (71.4)
Yes	55 (23.7)	234 (30.1)	289 (28.6)
Loss of family member			
No	220 (94.8)	708 (91.1)	928 (92.0)
Yes	12 (5.2)	69 (8.9)	81 (8.0)
Contact with a person confirmed or suspected of being infected			
No	196 (84.5)	659 (84.8)	855 (84.7)
Yes	36 (15.5)	118 (15.2)	154 (15.3)

Source: Own development

* Continuous variables represented by median and quartiles. Categorical variables represented by frequencies and percentages. † Kolmogórov-Smirnov test, sig.>0.05.

Mental health status of students

Table 2 indicates that, in the case of anxiety, 38.0 % presented moderate and severe signs. On the other hand, 36.4 % presented signs of depression between moderate and severe values, showing similar behavior between men and women. In the case of insomnia, 19.8 % presented moderate and severe symptoms. For post-traumatic stress, 23.7 % presented moderate and severe symptoms. Finally, for academic stress, 39.5 % presented moderate and severe symptoms. It is important to



mention that for anxiety, insomnia, post-traumatic stress and academic stress, women presented higher prevalences compared to men.

Table 2. Mental health status of nursing students. Cd. Victoria, Tamaulipas, México, 2021 (n=1009).

Variable*	Male	Female	General
Anxiety			
Regular	91 (39.2)	231 (29.7)	322 (31.9)
Mild	69 (29.7)	235 (30.7)	304 (30.1)
Moderate	48 (20.7)	211 (27.2)	259 (25.7)
Severe	24 (10.3)	100 (12.9)	124 (12.3)
Depression			
Minor	88 (37.9)	272 (35.0)	360 (35.7)
Mild	60 (25.9)	221 (28.4)	281 (27.9)
Moderate	40 (17.2)	140 (18.0)	180 (17.8)
Major	29 (12.5)	75 (9.7)	104 (10.3)
Severe	15 (6.5)	69 (8.9)	84 (8.3)
Severity of insomnia			
Without insomnia	112 (48.3)	329 (42.3)	441 (43.7)
Below threshold	85 (36.6)	283 (36.4)	368 (36.5)
Moderate	30 (12.9)	141 (18.1)	171 (16.9)
Major	5 (2.2)	24 (3.1)	29 (2.9)
Post-traumatic stress			
Low	184 (79.3)	588 (75.7)	772 (76.5)
Moderate	35 (15.1)	130 (16.7)	165 (16.3)
High	13 (5.6)	59 (7.6)	72 (7.2)
Academic stress			
No stress	55 (23.7)	89 (11.5)	144 (14.3)
Mild	103 (44.4)	364 (46.8)	467 (46.3)
Moderate	35 (15.1)	126 (16.5)	163 (16.1)
Severe	39 (16.8)	196 (25.2)	235 (23.3)

Source: Own development

* Categorical variables represented by frequencies and percentages.

Within the relationship between sociodemographic and health data and mental health problems, it was identified that anxiety showed statistically significant associations with the variables sex, school period, confirmed diagnosis and contact with a suspected or confirmed case of COVID-19 ($p = .000$). In the case of depression and insomnia, a statistically significant association was only seen with school period, confirmed diagnosis, diagnosis in the family member, loss of family member and contact with a suspected or confirmed case of COVID-19 ($p = .002$). Academic stress only showed significant statistical association with sex, school period, diagnosis in family member



and contact with suspected or confirmed case of COVID-19 ($p = .001$). Post-traumatic stress only showed significant statistical association with contact with a person suspected or confirmed with the disease ($p = .010$), (Table 3).

Table 3. Relationship between sociodemographic characteristics and COVID-19 experiences with mental health problems in nursing students. Cd. Victoria, Tamaulipas, Mexico, 2021 (n=1009).

Variable	Anxiety sig.	Depression sig.	Insomnia Sig.	Post-traumatic stress sig.	Academic stress Sig.
Gender ^{† †}	.031 **	.467	.183	.450	.000 *
Age [‡]	.356	.307	.150	.063	.126
School period [†]	.008 **	.000 *	.001 *	.101	.000 *
Confirmed diagnosis [†]	.002 **	.006 **	.029 **	.094	.124
Diagnosis in the family [†]	.000 *	.000 *	.002 **	.320	.000 *
Loss of family member [†]	.075	.024 **	.019 **	.258	.493
Contact with a person confirmed or suspected of being infected [†]	.000 *	.003 **	.002 **	.010 **	.001 *

Source: Own development

[†] Chi-square test; [‡] Spearman's correlation

* $p \leq .001$; ** $p \leq .050$.

A binary logistic regression analysis was conducted to identify the factors that could be influencing the presence of academic stress in the students, for this, the sample was reclassified into those who did or did not present some level of academic stress, it was observed that being female (OR= 2.724, CI 95%= 1.677-4.426), having had a family member with COVID-19 disease (OR= 1.863, CI 95%= 1.001-3.465) and having had contact with a suspected/confirmed case of COVID-19 (OR= 2.643, CI 95%= 1.191-5.867) showed significant statistical associations with the presence of academic stress in students. With respect to mental health problems, statistically significant associations were seen between the presence of academic stress with mild (OR= 3.366, CI 95%= 1.904-5.949) and moderate (OR= 3.945, CI 95%= 1.367-11.386) levels of anxiety, as well as with mild (OR= 1.840, CI 95%= 1.010-3.352) and moderate (OR= 10.604, CI 95%= 1.277-88.093) levels of depression. The same was true for the presence of insomnia, with the relationship of academic stress with moderate clinical insomnia being most notable (OR= 12.751, CI 95%= 1.232-131.929), (Table 4).



Table 4. Correlations of the presence of academic stress in nursing students Ciudad Victoria, Tamaulipas, México, 2021 (n=1009).

Variable	Odds Ratio	Sig.	95% CI	
			Lower	Higher
Gender				
Female	2.724	.000*	1.677	4.426
Male†				
School period				
Tenth	.134	.000*	.047	.383
First†				
Anxiety				
Mild	3.366	.000*	1.904	5.949
Moderate	3.945	.011**	1.367	11.386
Normal†				
Depression				
Mild	1.840	.046**	1.010	3.352
Moderate	10.604	.029**	1.277	88.093
Minimal†				
Insomnia				
Below threshold	3.316	.000*	1.770	6.214
Moderate clinical	12.751	.033**	1.232	131.929
Without insomnia†				
Post-traumatic stress				
Moderate	.490	.254	.144	1.670
High	1.5 E ⁺⁰⁷	.997	.000	.000
Low†				
COVID-19 diagnosis				
Yes	2.221	.248	.574	8.592
No†				
Family member with COVID-19				
Yes	1.863	.050**	1.001	3.465
No†				
Loss of family member due to COVID-19				
Yes				
No†	.329	.036**	.117	.928
Contact with a person confirmed or suspected of being infected with COVID-19				
Yes				
No†	2.643	.017**	1.191	5.867

Source: Own development

† Reference category; * $p \leq .001$; ** $p \leq .050$.

Discussion

Based on the objective of evaluating the level of academic stress in nursing students and its relationship with anxiety, depression, insomnia, post-traumatic stress and experiences during the COVID-19 pandemic, it was possible to identify that the distribution of the nursing students interviewed was similar to the data reported by the National Association of Universities and Institutions of Higher Education (ANUIES by its acronym in Spanish) for 2020-2021, where 77.8%



of the registered enrollment in the nursing career in Mexico were women ⁽²²⁾. In terms of age, the results obtained were similar to what ANUIES reported at the national level, where the minimum age ranged from 17 years old to over 40 years old ⁽²²⁾.

Several authors ^(23, 24) reported that there were fewer cases of students who experienced a family member being diagnosed with COVID-19 or having become ill, a situation different from what is reported in this investigation, where almost a third of the students experienced cases of COVID-19 diagnosis in family members. It is important to clarify that both studies ^(23, 24) conducted their investigations at the beginning of the pandemic in China and the results reported in this study correspond to approximately one year after the SARS-CoV2 pandemic in Mexico.

Additionally, when talking about situations such as family loss and having had contact with suspected cases, although they showed low prevalence values, these experiences were very significant for the students, who felt emotionally affected; in this regard, a researcher ⁽⁶⁾ commented that when there is a loss of a loved one due to COVID-19, the impossibility of having an adequate farewell tends to generate pathological grief in people. Another aspect that altered mental health had to do with having had contact with people who had suffered from the disease or were suspects, which was reflected in the others as anxiety problems. ^(3,23,24).

Several studies ^(3-6,15,23-29), both in students and in general population, reported important prevalences of anxiety, depression, insomnia, and post-traumatic stress at different times during the SARS-CoV2 pandemic, showing important statistical associations with health problems. It has been described that during the quarantine derived from the SARS-CoV2 pandemic, the lack of interpersonal communication favored the appearance of depression and anxiety problems in people ⁽⁶⁾. Likewise, in a study ⁽²⁹⁾ it was explained that one of the causes that generated the increase of symptoms and states of anxiety, anguish and stress in students was the social confinement/isolation itself, considering that these mental health problems increased with the fear of presenting the



disease or the loss of loved ones. Reviewing the behavior of these mental health problems, some of the results obtained present differences with what has been reported in other studies regarding the prevalence levels of stress, anxiety, anguish, and depression ^(23,28,30,31). For example, in foreign university students in South Korea it was observed that the problems of insomnia, anxiety and depression were more prevalent in men ⁽³¹⁾; likewise, it was identified that in young populations these problems were exacerbated by confinement or social distancing due to the pandemic ⁽²⁸⁾. Although it is true that there are important prevalences of mental health problems in the population examined in the present investigation, the group of women was the most affected.

The situation due to experiences such as having been ill, having sick relatives, deaths of close people or having had contact with confirmed or suspected cases, it was observed that they also had an impact on high levels of mental health problems, in anxiety, having had contact with people with suspicions of the disease presented high values ⁽²³⁾. In the case of anxiety in university students ^(3,24), this problem was explored at the beginning of the pandemic, where they presented an important relationship when a family member or friend presented the COVID-19 disease, as well as having been ill, this situation was similar to the discoveries found in this work, where a significant statistical association was observed between the presence of mental health problems with these experiences lived during the pandemic.

In the case of post-traumatic stress (anguish) and insomnia, manifestations had previously been observed in health students in a pandemic period, as happened with the AH1N1 virus, where males were the most affected ⁽³²⁾, almost a quarter with insomnia problems ⁽³⁰⁾, being totally opposite to what was reported in the present investigation, where the prevalences were low for this problem, however, in spite of having low prevalences, it is considered important to address them since this can generate the development of other physiological problems, such as insomnia ⁽²⁸⁾.



In relation to academic stress, studies conducted in Perú ⁽¹³⁾ and México ⁽¹⁴⁾ before the start of the COVID-19 pandemic described that nursing students presented values of moderate academic stress with a very high prevalence, with academic overload being the main cause of the problem. In recent years, the subject continued to be analyzed, but now under the effect of the pandemic ⁽³³⁾, where a high prevalence of moderate academic stress has been observed, with an increase in the prevalence of high level. The identified prevalences of academic stress in nursing students were similar to what several authors have reported ^(13,14,33). These discoveries coincide, that women were the most affected group, presenting high levels of academic stress in comparison with men, finding similarities in the results of other investigators ^(26,34).

The presence of academic stress was identified as being affected by the presence of mental health problems and some of the experiences that the nursing students faced during the period of confinement due to COVID-19, it was seen that this problem is 3.9 times greater with moderate anxiety, 10.6 times greater with moderate depression, 12.7 times greater with moderate clinical insomnia, 1.8 times greater with a family member diagnosed with the disease and 2.6 times greater if they had contact with suspected or confirmed cases of COVID-19. Although some studies ^(25,27) evidenced that there was a statistically significant relationship between mental health problems and academic stress, particularly anxiety levels, they did not explain how it impacted in combination with the COVID-19 pandemic. Regardless of the presence or not of mental health problems and insomnia, the experiences analyzed during the SARS-CoV2 pandemic revealed greater impact with academic stress. This situation has not been reported, so the investigation group considered that it is a discovery that should be taken into account, because although these experiences during the pandemic affect the mental health of the student, it is also reflected in the academic environment through academic stress.



Social isolation, confinement, as well as all those experiences related to the SARS-CoV2 pandemic presented an important impact on the presence and level of severity of mental health problems in students, being a need to be addressed by the nursing professional. In this sense, it is necessary to provide continuous training to generate the necessary competencies for the identification, prevention, orientation, and care of people with mental health problems, aimed at both the professional and the student in training. It is not only a matter of addressing the situation of students who present these problems, but also of orienting and supporting their families, since they are also affected, this would be possible through a comprehensive intervention, or through new intervention strategies. There is a need to train teachers in the timely identification and proper referral of cases that arise in the classroom, in order to act appropriately in such situations.

Finally, researches that have been conducted on the subject of mental health and academic stress in recent years have emphasized that, although these are problems that have been present in the education years of the students in any career, they were exacerbated both by the context of the pandemic and the strategies that were implemented to reduce the number of cases, such as quarantine and social isolation ⁽⁴⁾. The results of the present study revealed a scenario that is almost not addressed within the health area, particularly in the training stage of health professionals. Generally, there is a misconception that every student in the health area, such as nursing, is healthy; however, there are health problems that are not adequately distinguished, such as mental health, which is evidenced in this work. It is necessary to remember that the nursing professional should acquire skills and abilities that allow the timely identification of mental health problems, from education to the work environment, and that these competencies should be applied at all times.

Conclusions

The results presented in the current study make us reflect on the academic and mental repercussions generated by the SARS-CoV2 pandemic, being essential to take immediate action in order to



confront these ravages in university populations, such as the nursing career. Mental health problems presented a significant relationship with the level of academic stress in nursing students during the COVID-19 pandemic. It would not be surprising that these behaviors described here are also reflected in other student populations in different academic degrees, so it is necessary to work on intervention projects to reduce the damage, or to seek the emotional stabilization of the student. The nursing professional should design educational and formative strategies to reduce the levels of these problems throughout their education and working life. One of the strategies suggested by the investigation team is the development of an educational intervention proposal, whose purpose is the positive improvement of the mental health problems that nursing students are manifesting; contributing, in this way, not to increase the rates of desertion and/or lag of these students. It is not only necessary to see the issue as a consequence of the COVID-19 pandemic phenomenon, but also to consider that the strategies to be implemented should be considered within the educational program of each career, with qualified personnel for it, where the nursing professional can take action in a multidisciplinary approach.

Conflict of interests

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