

**ORIGINAL ARTICLE** 

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# Psychological distress and fear of Covid-19 in student nurses before clinical placement: a cross-sectional study

Distrés psicológico y miedo a la Covid-19 en estudiantes de enfermería antes de la colocación clínica: un estudio transversal

Sofrimento psicológico e medo da Covid-19 em estudantes de enfermagem antes do estágio clínico: um estudo transversal

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#### **ABSTRACT**

Objective: To determine the degree of psychological distress and fear of COVID-19 experienced by undergraduate student nurses who were about to begin their clinical placements. Method: A cross-sectional study was carried out with 100 second- and third-year undergraduate student nurses of the University of Zaragoza (Spain). Measures included the Fear of COVID-19 Scale and the Depression Anxiety Stress Scales. Results: Regularly, student nurses did not think of themselves as vulnerable to COVID-19. However, a significant association was observed between the student nurses' level of psychological distress and cohabiting with relatives or people who were considered vulnerable to the infection (p = 0.035). The Depression Anxiety Stress Scale results revealed a low level of psychological distress in general; the Fear of COVID-19 Scale indicated moderate fear (2.94). Conclusion: Student nurses who lived with their relatives experienced higher levels of stress due to the perceived risk of transmission, but were less fearful of loss of work and income. Anxiety in our sample was associated principally with not knowing their upcoming placement location.

## **DESCRIPTORS**

Students, Nursing; COVID-19; Professional training; Mental Health; Anxiety; Psychological Distress.

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# **INTRODUCTION**

The 2019 novel coronavirus disease (COVID-19) pandemic has had a worldwide impact, causing dramatic loss of human life. The emergence and unprecedented spread of COVID-19 has posed substantial challenges to the practices of everyday life<sup>(1)</sup>, including university teaching and learning<sup>(2)</sup>. In Spain, a nationwide lockdown was officially announced on 15<sup>th</sup> March, 2020, to control the spread of the virus. This resulted in the suspension of classroom teaching and subsequent adaptation (with more or less success) to e-learning. In addition, clinical placements were suspended for undergraduate healthcare students<sup>(3)</sup>, raising concerns regarding the trainees' clinical skills competence and progression.

University students are susceptible to experience a variable degree of psychological distress, including symptoms of anxiety, depression, and stress<sup>(4)</sup>. Common sources of psychological distress in this population are related to academic and psychosocial pressures<sup>(5)</sup>, including heavy workloads, assessment tasks, insufficient leisure time, competitiveness, meeting parents' expectations, forming and maintaining new relationships and, often, moving to a new place. Other risk factors for psychological distress include age and sex, with women being more vulnerable than men<sup>(6)</sup>, and financial pressures<sup>(7)</sup>. Healthcare students experience a moderate level of psychological distress<sup>(8)</sup>, but student nurses, in particular, experience a higher degree of anxiety in relation to their clinical placements<sup>(9)</sup>.

Spain is no longer under lockdown, but restrictions to public mobility and social distancing measures are still in force. Such measures continue to affect academic programs, educational approaches and methodologies, teaching and learning activities and assessment tasks. This has resulted in an unprecedented degree of uncertainty, which has affected students and teachers' lives alike<sup>(10)</sup>. Uncertainty is probably the most significant consequence of the pandemic for higher education staff and students<sup>(11)</sup>. The degree of uncertainty experienced by nurse students and teachers alike at the beginning of the academic year 2020–2021 was very high. In the case of the student nurses who were about to begin their clinical placements after summer break, this state of uncertainty was aggravated by the fact that they were about to access clinical areas, thus being in close contact with diagnosed and undiagnosed cases of COVID-19.

There is growing concern for well-being of future health-care professionals in the midst of the COVID-19 pandemic and it may have an impact on their academic progression, skills competence, and professional commitment<sup>(12)</sup>. The COVID-19 pandemic is affecting population's general health<sup>(13)</sup>, in particular women, with student and qualified nurses being the most affected. This increased level of psychological distress is due to close contact with the virus during placements and shifts, the fear of being infected and/or infecting others, such as close friends, relatives, cohabitant peers or vulnerable people in general. Specifically, in the case of students, the fear of academic delay and/or missed opportunities for learning could be added. Furthermore, nursing students may lack information, or have misconceptions, about the disease and infection control measures relevant to clinical practice<sup>(14)</sup>, which may result in

increased infection transmission and could increase the students' psychological distress<sup>(15)</sup>.

The aim of this research was to determine the level of psychological distress and fear of COVID-19 in a sample of undergraduate student nurses who were about to begin their clinical placements during the academic year 2020-2021. In addition, we analysed the association between the students' level of psychological distress and fear of COVID for themselves and for their cohabiting relatives and/or significant others.

## **METHOD**

# **DESIGN**

Cross-sectional study of psychological distress and fear of COVID-19 in a sample of undergraduate student nurses who were about to begin their clinical placements during the academic year 2020-2021. The manuscript was written in accordance with the Strengthening the reporting of Observational Studies in Epidemiology (STROBE) protocol<sup>(16)</sup>.

# POPULATION AND LOCAL

Following the universal sampling yardstick, all the secondand third-year undergraduate student nurses were informed about the project and were invited to participate voluntarily if they complied with inclusion and exclusion criteria. A total of 100 undergraduate student nurses registered in the bachelor's degree in nursing offered by the University of Zaragoza during the academic year 2020-21 took part in this study. Participant recruitment and data collection took place from October to November 2020. The students were informed about the aims of the study and the methods of data collection by a researcher in the classroom; a copy of the participant information leaflet and consent form was made available to the students at this time. The students were assured that privacy and confidentiality would be maintained, and that they had the right to refuse to participate in the study or to withdraw consent to participate at any time without reprisal.

Inclusion criteria included: 1) being registered in the bachelor's degree in nursing at the University of Zaragoza and 2) giving their informed consent to participate in the study. We excluded students who: 1) had already commenced their clinical placements at the time of data collection, and 2) had a formal diagnosis of mental illness. First year students were excluded as they do not undertake clinical placements during the first academic year, and fourth year students were also excluded as they had already commenced their clinical placements at the time of data collection.

# **DATA COLLECTION AND STUDY PROCEDURES**

Data were collected using a self-administered, anonymous electronic survey designed through Google Forms and accessible only to second- and third-year student nurses through the institutional learning platform Moodle. Three lecturers and co-authors participated in the data collection process. Data were collected in the classroom at the beginning of the teaching sessions after explaining the study aims and objectives, and guaranteeing anonymity and confidentiality. In addition, the

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students were assured that participation was voluntary and that no consequences would follow from a decision not to participate. All the participants were informed about the nature of the study, the objectives, and that they could abandon the study if they wanted without giving any explanations. Consent to participate in the study was implied when the student nurses voluntarily completed and sent the electronic survey.

A questionnaire of sociodemographic variables was designed ad hoc in order to describe the characteristics of our sample, including age, sex, living arrangements, perception of personal vulnerability to COVID-19, perception of cohabitants' vulnerability to COVID-19, clinical placement location, year of study, and prior clinical experience.

The Fear of COVID Scale and DASS-21 Scale were used in their already translated Spanish version in both cases. The student nurses' fear of COVID-19 was assessed using the Fear of COVID-19 Scale (FCS), designed and validated in the general Spanish population<sup>(17)</sup>. This scale comprises 18 items measuring the intensity of fears and concerns in relation to COVID-19 and is subdivided into 4 dimensions, namely fear of infection, illness and death, fear of lack of resources, fear of social isolation, fear of loss of employment and income. The instrument is answered on a 5-point intensity scale ranging from 1 (not at all or very little) to 5 (very much or extremely). Cronbach's alpha for the total scale was 0.89.

The level of psychological distress in our sample was measured through the Depression Anxiety Stress Scales (DASS-21) in its Spanish version (18). The DASS-21 is a 21-item scale comprising three subscales: DASS-D (depression), DASS-A (anxiety) and DASS-S (stress). Respondents must rate the extent to which each statement applies during the past week on a 4-point Likert scale ranging from 0 (did not apply to me at all) to 3 (applied to me very much). Because the DASS-21 scale is a short-form version of the DASS (42 items), the final score for each sub-scale is multiplied by two and evaluated according to its severity rating index. Depression, anxiety and stress scores are calculated by adding up the scores of the items in each separate subscale. The results are interpreted as follows: DASS-A (>19 = extremely severe anxiety; 19–15 = severe anxiety; 14–10 = moderate anxiety; 9–8 = mild anxiety; 7–0 = no anxiety/ normal), DASS-D (>27 = extremely severe depression; 27–21 = severe depression; 20–14 = moderate depression; 13–10 = mild depression; 9-0 = no depression/normal), DASS-S (>33 = extremely severe stress; 33–26 = severe stress; 25–19 = moderate stress; 18–15 = mild stress; 14–0 = no stress/normal).

The Spanish version of the DASS-21 scale has good psychometric properties with good reliability and validity; Cronbach's alpha for the whole scale is 0,81, ranging from 0,73 to 0,81 for each separate dimension<sup>(18)</sup>.

# **D**ATA **A**NALYSIS

Mean and standard deviation were used to represent continuous variables; frequencies and percentages were used to represent categorical variables. Normal distribution of the variables was verified through the Kolmogorov-Smirnov test. We used the Mann-Whitney test to perform the bivariate analyses, whereas multivariate inference was analyzed using the Kruskal Wallis test. The relationship between qualitative

variables was analyzed using the Chi-square test. Data codification, processing and analysis were completed using the software Statistical Package for the Social Science (SPSS version 26 for Windows, IBM Corp., Chicago, IL, USA), accepting a level of significance of p < 0.05.

# **ETHICAL CONSIDERATIONS**

This study was reviewed and approved by the Clinical Research Ethics Committee of Aragón (Institute of Research of Aragón, Zaragoza) (IRB Ref: C.P. - C.I. PI20/499) prior to the start of this investigation. We confirm that each and every national and international standard for ethical research with human subjects was followed.

## **RESULTS**

The participants' sociodemographic characteristics have been described in Table 1. Most of the participants were female student nurses (92%), and their mean age was 21.09 years. Approximately half of the participants were on the second year of studies (45%) and the other half were on their third year of study (55%). At the beginning of their clinical placement, most of the student nurses were living with relatives (83%). The vast majority of the participants did not have prior clinical work experience (90%) and did not consider themselves to be

**Table 1** – Description of the sociodemographic characteristics of the sample – Zaragoza, Spain, 2020.

Variables	N	%
Sex		
Female	92	92%
Male	8	8%
Living arrangements		
Alone	1	1%
Relatives	83	83%
Shared house/apartment	12	12%
Halls of residence	4	4%
Perception of vulnerability of cohabitants to COV-19		
No	66	66%
Yes	34	34%
Perception of individual vulnerability to COV-19		
No	96	96%
Yes	4	4%
Year of study		
2nd year	45	45%
3rd year	55	55%
Clinical work experience		
No	90	90%
Yes	10	10%
Clinical placement location		
Unknown	46	46%
Special service (ICU, Emergency, Surgery room)	27	27%
Hospital Ward	12	12%
Community care	15	15%

particularly vulnerable to COVID-19 (96%). Interestingly, one third of the participants did consider one or more of their cohabitants to be particularly vulnerable to COVID-19. Only 46% of the student nurses knew the location of their upcoming clinical placement at the time of entering this study.

The results from the DASS-21 reveal that, in general, the student nurses' level of psychological distress was low before commencing their clinical placements. However, the average score of the global FCS was 2,94, indicating a moderate fear of COVID-19 in our population, especially in relation to fear of infection illness and death (3,09), and fear of social isolation (3,11) (Table 2).

We dichotomized the variable living arrangements into living with relatives and other living arrangements, including living alone, sharing a flat or a house with peers, and living in halls of residence. We found that, generally, the student nurses' level of psychological distress and fear of COVID-19 was slightly higher when they were living with their relatives. A significant difference was found in terms of fear of loss of employment and income between the students who were living with their relatives and those who lived alone or with peers (p = 0.026) (Table 3).

A significant association was observed between the student nurses' stress level specifically (p = 0.013), as well as their symptoms of distress (p = 0.035), and cohabiting with people who were perceived as being vulnerable to COVID-19 (Table 4).

We analyzed the student nurses' level of psychological distress and their fear of COVID-19 in relation to the information received about their upcoming placement location. As it can be observed, those students who did not know their placement location experienced higher levels of anxiety (p = 0.029) and a greater fear of social isolation (p = 0.037) (Table 5). We analyzed other variables, namely perception of individual vulnerability to COVID-19 and year of study, in relation to the level of fear of COVID-19 and psychological distress, but we found no significant associations between them.

# **DISCUSSION**

This study showed a low level of psychological distress in general, in a sample of undergraduate student nurses who were about to begin their clinical placements during the academic year 2020-2021. Meanwhile, the fear of COVID-19 was

**Table 2** – Average scores from the DASS-21 and FCS scales – Zaragoza, Spain, 2020.

Dimensions and global scales	Mean (SD)	Range
DASS – Stress	13.62 (8.65)	0-38
DASS – Anxiety	7.26 (6.56)	0–26
DASS – Depression	8.66 (8.61)	0-34
DASS – Global	29.54 (20.81)	2-84
FCS – Fear of infection, illness and death	3.09 (0.67)	1.33-4.56
FCS – Fear of lack of resources	2.47 (1.00)	1–5
FCS – Fear of social isolation	3.11 (0.81)	1–5
FCS – Fear of loss of employment and income	2.76 (1.09)	1–5
FCS – Global	2.94 (0.66)	1.39-4.33

**Table 3** – Differences between psychological distress and fear of COVID-19 scores by living arrangement – Zaragoza, Spain, 2020.

Dimensions and global scales	Living arrangements	n	Mean	SD	Z	p
DASS – Stress	With relatives	83	13.66	9.02	2 0.212 1.677 0.398 0.524 1.269 1.566 0.056	0.832
DASS – Stress	Other	17	13.41	6.77	0.212	0.032
DASS Assists	With relatives	83	7.88	6.89	1 (77	0.004
DASS – Anxiety	Other	17	4.24	3.38	1.6//	0.094
DASS –	With relatives	83	8.87	8.71	0.200	0.600
Depression	Other	17	7.65	8.28	0.398	0.690
DASS – Global	With relatives	83	30.41	21.85	0.524	0.601
DASS – Global	Other	17	25.29	14.42	0.524	0.601
FCS – Fear of	With relatives	83	3.05	0.65	1 260	0.204
infection, illness and death	Other	17	3.30	0.72	1.269	0.204
FCS – Fear of lack	With relatives	83	2.40	0.97	4.500	0.44=
of resources	Other	17	2.84	1.08	1.566	0.117
FCS – Fear of	With relatives	83	3.10	0.82	0.056	0.056
social isolation	Other	17	3.14	0.80	0.056	0.956
FCS – Fear of loss	With relatives	83	2.64	1.03		0.006
of employment and income	Other	17	3.35	1.21	2.229	0,026
500 0111	With relatives	83	2.88	0.63	4.556	
FCS – Global	Other	17	3.21	0.76	1.556	0.120

**Table 4** – Differences between psychological distress and fear of COVID-19 scores by perception of vulnerability of cohabitants to COVID-19 – Zaragoza, Spain, 2020.

	Vulnerability of cohabitants	n	Mean	SD	Z	p
DACC Character	No	66	12.24	8.74	2 402	0.013
DASS – Stress	Yes	34	16.29	7.94	2.482	0,013
DACC Assista	No	66	6.55	6.31	1 (70	0.003
DASS – Anxiety	Yes	34	8.65	6.91	1.678	0.093
DASS –	No	66	7.85	8.31	1.640	0.101
Depression	Yes	34	10.24	9.08	1.642	0.101
DASS – Global	No	66	26.64	20.27	2.109	0.025
DASS – Global	Yes	34	35.18	20.98		0,035
FCS – Fear of	No	66	3.05	0.64	0.000	0.221
infection, illness and death	Yes	34	3.19	0.71	0.992	0.321
FCS – Fear of	No	66	2.40	0.99	4 005	0.005
lack of resources	Yes	34	2.62	1.01	1.025	0.305
FCS – Fear of	No	66	3.14	0.74	0.000	0.605
social isolation	Yes	34	3.04	0.95	0.393	0.695
FCS – Fear of loss of employment and income	No	66	2.70	1.11	0.746	0.474
	Yes	34	2.87	1.06	0.716	0.474
500 0111	No	66	2.90	0.63		
FCS – Global	Yes	34	3.01	0.72	0.754	0.451

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**Table 5** – Comparison of psychological distress and fear of COVID-19 scores between the students who knew their next placement location and those who did not know – Zaragoza, Spain, 2020.

	Categories	n (%)	<b>Unknown</b> ( <i>n</i> = 46)	Known $(n = 54)$	p
	No stress	62 (62%)	27 (58.7%)	35 (64.8%)	
DASS-S	Mild	10 (10%)	6 (13%)	4 (7.4%)	
	Moderate	15 (15%)	4 (8.7%)	11 (20.4%)	$0.140^{a}$
	Severe	11 (11%)	7 (15.2%)	4 (7.4%)	
	Extremely severe	2 (2%)	2 (4.3%)	0 (0%)	
	Mean (SD)	13.62 (8.65)	14.09 (9.87)	13.22 (7.54)	0.961 <sup>b</sup>
	No anxiety	65 (65%)	27 (58.7%)	38 (70.4%)	
	Mild	5 (5%)	2 (4.3%)	3 (5.6%)	
DACC A	Moderate	14 (14%)	6 (13%)	8 (14.8%)	0.171ª
DASS-A	Severe	11 (11%)	9 (19.6%)	2 (3.7%)	
	Extremely severe	5 (5%)	2 (4.3%)	3 (5.6%)	
	Mean (SD)	7.26 (6.56)	8.83 (7.09)	5.93 (5.81)	0,029b
	No depression	61 (61%)	28 (60.9%)	33 (61.1%)	
	Mild	17 (17%)	9 (19.6%)	8 (14.8%)	
DASS-D	Moderate	9 (9%)	4 (8.7%)	5 (9.3%)	0.757ª
	Severe	10 (10%)	3 (6.5%)	7 (13%)	
	Extremely severe	3 (3%)	2 (4.3%)	1 (1.9%)	
	Mean (SD)	8.66 (8.61)	8.09 (8.73)	9.15 (8.55)	$0.344^{b}$
DASS-Global	Mean (SD)	29.54 (20.81)	31.00 (22.79)	28.30 (19.08)	0.758 <sup>b</sup>
EMCCoEnMu	Mean (SD)	3.09 (0.67)	3.06 (0.66)	3.12 (0.68)	0.665 <sup>b</sup>
EMCProBas	Mean (SD)	2.47 (1.00)	2.54 (0.99)	2.42 (1.00)	$0.697^{\rm b}$
EMCAisSoc	Mean (SD)	3.11 (0.81)	2.30 (0.72)	2.94 (0.86)	0,024 <sup>b</sup>
EMCTraIng	Mean (SD)	2.76 (1.09)	2.67 (1.13)	2.83 (1.06)	0.479 <sup>b</sup>
EMCGlobal	Mean (SD)	2.94 (0.66)	2.95 (0.64)	2.93 (0.69)	0.841 <sup>b</sup>

<sup>a</sup>χ-square; <sup>b</sup>Mann-Whitney's U test.

moderate, specifically in relation to fear of infection, illness or death, and fear of social isolation. Furthermore, the student nurses did not think of themselves as vulnerable; regularly, their level of psychological distress was in relation to cohabiting with relatives or people who were perceived as being vulnerable to the infection.

Healthcare workers in general, and nurses in particular, have experienced higher levels of psychological distress during the COVID-19 pandemic than the general population. Specifically, in Spain, healthcare professionals experienced significant levels of stress, feelings of exhaustion and emotional overload, among other psychological symptoms<sup>(19)</sup>. Student nurses who were either working or on placement during the pandemic also experienced symptoms of psychological distress, including moderate to severe anxiety<sup>(20)</sup>.

The results from DASS-21 reveal that, in general, the student nurses' level of psychological distress was relatively low before their clinical placement. However, it is important to highlight that, as opposed to previous studies in this population<sup>(21)</sup>,

our data were collected in the last trimester of the year 2020, when more became known about the nature of the disease, and preventative measures, including personal protective equipment, became available and accessible to the students(22). In addition, as the pandemic progressed, health systems became more competent in the management of the situation and new protocols were developed and implemented. For instance, some health services were organized in a double circuit for COVID-19 and non-COVID-19 patients(23). This was done to reduce contact and prevent transmission between infected patients and non-infected patients and healthcare staff. Our undergraduate student nurses beginning their clinical placements in the autumn term were allocated to "COVID-19free services" when possible, but this could not be guaranteed, especially in areas such as accident and emergency and community care.

Regarding the participants' fear of COVID-19 before placement, the student nurses experienced a moderate level of fear, especially in the dimensions fear of infection, illness and

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death, and fear of social isolation. Similar results were obtained in a sample of healthcare students from Jordan<sup>(14)</sup>. Their fears were not unfounded as our undergraduate student nurses faced several challenges and difficulties directly and indirectly brought about by the pandemic. Namely, we identified a high level of anxiety in relation to social isolation. It is important to highlight that, up to the end of the summer 2020, the Spanish government's main anti-COVID-19 strategy had been based on a countrywide lockdown first, from March to May 2020, and then on the confinement of specific groups, including those who were more vulnerable and those who had been in contact with a positive person or were positive themselves. Although strict lockdowns did reduce the incidence of the virus and avoid collapse of the Spanish health service, these measures had a negative emotional and psychological impact on the population(24). However, this phenomenon was not exclusive to our country, but was replicated in other countries all over the world. For example, general lockdowns were found to be a contributing factor for increased stress<sup>(11)</sup>, anxiety and depression<sup>(25)</sup> among college students during the pandemic.

As mentioned above, as well as social isolation, our participants scored higher in the dimension fear of infection, illness, and death, especially if they were living with relatives. Thus, we argue that the student nurses' fear of becoming infected, falling ill, and even dying was not so much for themselves but for the possibility of infecting their significant others (26). According to the International Council of Nurses(13), over 1.6 million healthcare workers from 34 different countries had been infected with COVID-19. Furthermore, by this date, the cumulative number of reported COVID-19 deaths in nurses was 2262 in 59 countries. However, according to this same source, qualified nurses all over the world said that the risk of infecting others, and not themselves, was the greatest stress factor. This may explain why many healthcare workers, including nurses, put their relatives' best interests first and left their homes and chose to live in isolation and away from their loved ones, especially at the beginning of the pandemic<sup>(27)</sup>. Yet, living in isolation often had a negative impact on the psychological status of these healthcare professionals. Although the student nurses on placement were, whenever possible, allocated to "COVID-free services", they were in clinical areas and thus exposed to other professionals and patients who could be undiagnosed and/or asymptomatic, thus at risk of, unknowingly, transmitting the infection to their friends and relatives.

Generally, women outnumber men in the field of nursing; accordingly, our sample of student nurses was predominantly female. Although only a minority of male students took place in our study, we found no significant differences in the level of psychological distress between male and female student nurses. Similarly, several studies found equal rates of stress, anxiety and depression in male, female (or other) healthcare professionals and healthcare undergraduate students<sup>(28)</sup>. More specifically, according to previous reports<sup>(29)</sup>, mental distress experienced by medical undergraduate during COVID-19 was more severe than that of the general population, and the female students were more prone to develop depressive symptoms. In contrast, previous studies<sup>(30)</sup> identified higher rates of anxiety, self-esteem,

and irrational thinking in male students, contributing to a more impulsive and anxious response to stressful stimuli.

We found a significant association between the students' living arrangement and fear of loss of employment and income. Not surprisingly, those who lived with their relatives, and were supported by them, were less worried about their financial situation than those who had alternative living arrangements. Previous investigations<sup>(25)</sup> have detected an association between financial burden and psychological distress during mass quarantine periods. In fact, many students and their families have suffered loss of jobs and income during the pandemic<sup>(24)</sup>. Loss of employment and income may impact on the students and their families' ability to pay academic fees and other costs associated to college life, which may result in students dropping out of university or delaying graduation. Unfortunately, it is not always easy for the students and/or the universities to find alternative ways of financing higher education studies.

Not knowing their upcoming placement location increased the students' symptoms of anxiety. However, previous studies<sup>(27)</sup> have identified an increase in the students' symptoms of anxiety as they anticipate their clinical placement under normal circumstances. Thus, it is possible that this increase in the students' symptoms of anxiety was unrelated to COVID-19. A follow-up study in a similar population once the situation is back to normal would be necessary to confirm this point. In contrast, knowing their upcoming placement location increased the students' fear of social isolation. In our opinion, this may be due to the realization of the imminence of their clinical placement, which probably made the students reflect on the possible consequences of joining their qualified colleagues in the field. Upon reflection, it is possible that neither the faculty nor the clinical mentors address and manage clinical placement-related anxiety sufficiently under normal circumstances (26). Student nurses need support before, during and after clinical placement, and both academic and clinical educators should be aware of this and systematically address these issues, even more so in these circumstances.

To our knowledge, this is the first study to measure psychosocial distress and fear of COVID-19 before clinical placement in Spanish student nurses during the pandemic. However, our findings should be interpreted with caution as there are some limitations to our study that we wish to highlight. First, our sample comprised student nurses registered at one single higher education institutions and, therefore, our results may not be applicable to the general population of Spanish student nurses. In addition, our findings allowed us to establish associations between some of the variables analyzed and psychological distress and fear of COVID-19 in our sample. However, a mixed methodological approach incorporating qualitative methods of data collections, such as personal interviews or focus groups, may have helped shed some light on the students' feelings and emotions before commencing their clinical placement in the third trimester of the year 2021. Future studies should address this gap in the literature and minutely analyze and describe the student nurses' pre-placement experience and needs, to inform the design of adequate strategies to support the students, both personally and academically, before, during and after placement.

# **CONCLUSION**

The student nurses who were living with relatives before commencing their clinical placement, experienced higher levels of stress than those who had other living arrangements. More symptoms of anxiety were associated with not knowing their upcoming placement location, whereas fear of isolation was associated with knowing their upcoming placement location.

Additionally, the students who lived with their family were less fearful of loss of work and income than those who lived independently. We highly recommend that higher education institutions implement strategies and programs aiming at preventing and decreasing psychological distress among student nurses, not only under normal circumstances but especially during COVID-19 crisis.

#### **RESUMEN**

Objetivo: Determinar el grado de angustia psicológica y miedo al COVID-19 que experimentan los estudiantes de pregrado de enfermería que estaban a punto de empezar sus prácticas clínicas. Método: Se realizó un estudio transversal en 100 estudiantes de enfermería de segundo y tercer año de la Universidad de Zaragoza (España). Las medidas incluyeron la Escala de Miedo a la COVID-19 y la Escala de Depresión, Ansiedad y Estrés. Resultados: Normalmente, los estudiantes de enfermería no se consideraban vulnerables a la COVID-19. Sin embargo, se observó una asociación significativa entre el nivel de distrés psicológico de los estudiantes de enfermería y la convivencia con familiares o personas percibidas como vulnerables a la infección (p = 0,035). Los resultados del Escala de Depresión, Ansiedad y Estrés revelaron un bajo nivel de distrés psicológico en general; la Escala de Miedo a la COVID-19 indicó un miedo moderado (2,94). Conclusión: Los estudiantes de enfermería que vivían con sus familiares experimentaron mayores niveles de estrés debido al riesgo percibido de transmisión, pero tenían menos miedo a la pérdida de trabajo e ingresos. La ansiedad en nuestra muestra se asoció principalmente con el desconocimiento de su próxima ubicación de colocación.

#### **DESCRIPTORES**

Estudiantes de Enfermería; COVID-19; Capacitación profesional; Salud Mental; Ansiedad; Distrés psicológico.

#### **RESUMO**

Objetivo: Determinar o grau de sofrimento psicológico e medo da COVID-19 experimentado por estudantes de enfermagem que estavam prestes a iniciar seus estágios clínicos. Método: Um estudo transversal foi realizado em 100 estudantes de enfermagem do segundo e terceiro anos da Universidade de Zaragoza (Espanha). As medidas incluíram a Escala de Medo da COVID-19 e as escalas de Depressão, Ansiedade e Estresse. Resultados: Regularmente, os estudantes de enfermagem não se consideravam vulneráveis à COVID-19. No entanto, observouse associação significativa entre o nível de sofrimento psicológico dos estudantes de enfermagem e a convivência com familiares ou pessoas percebidas como vulneráveis à infecção (p = 0,035). Os resultados da Escala de Depressão, Ansiedade e Estresse revelaram um baixo nível de sofrimento psicológico em geral; a Escala de Medo da COVID-19 indicou um medo moderado (2,94). Conclusão: Estudantes de enfermagem que moravam com seus familiares experimentaram níveis mais altos de estresse devido ao risco percebido de transmissão, mas tinham menos medo de perda de trabalho e renda. Á ansiedade em nossa amostra foi associada principalmente ao desconhecimento de seu próximo local de estágio.

#### **DESCRITORES**

Estudantes de Enfermagem; COVID-19; Capacitação Profissional; Saúde Mental; Ansiedade; Angústia Psicológica.

## **REFERENCES**

- 1. Peimani N, Kamalipour H. Online Education and the COVID-19 Outbreak: A Case Study of Online Teaching during Lockdown. Educ Sci (Basel). 2021;11(2):72. DOI: https://doi.org/10.3390/educsci11020072
- 2. Nuere S, de Miguel L. The Digital/Technological Connection with COVID-19: An Unprecedented Challenge in University Teaching. Technology, Knowledge and Learning. 2021;26(4):931-43. DOI: https://doi.org/10.1007/s10758-020-09454-6
- 3. Tay YX, Sng LH, Chow HC, Zainuldin MR. Clinical placements for undergraduate diagnostic radiography students amidst the COVID-19 pandemic in Singapore: Preparation, challenges and strategies for safe resumption. J Med Imaging Radiat Sci. 2020;51(4):560-6. DOI: https://dx.doi.org/10.1016/j.jmir.2020.08.012
- 4. Beiter R, Nash R, McCrady M, Rhoades D, Linscomb M, Clarahan M, et al. The prevalence and correlates of depression, anxiety, and stress in a sample of college students. J Affect Disord. 2015;173:90-6. DOI: https://doi.org/10.1016/j.jad.2014.10.054
- 5. Shamsuddin K, Fadzil F, Ismail WSW, Shah SA, Omar K, Muhammad NA, et al. Correlates of depression, anxiety and stress among Malaysian university students. Asian J Psychiatr. 2013;6(4):318-23. DOI: https://doi.org/10.1016/j.ajp.2013.01.014
- 6. Wong JGWS, Cheung EPT, Chan KKC, Ma KKM, Tang SW. Web-based survey of depression, anxiety and stress in first-year tertiary education students in Hong Kong. Aust N Z J Psychiatry. 2006;40(9):777-82. DOI: https://doi.org/10.1080/j.1440-1614.2006.01883.x
- 7. Kruisselbrink Flatt A. A Suffering Generation: Six Factors Contributing to the Mental Health Crisis in North American Higher Education. The College Quarterly [Internet]. 2013 [cited 2021 Nov 25];16(1). Available from: https://eric.ed.gov/?id=EJ1016492
- 8. Ramón-Arbués E, Gea-Caballero V, Granada-López JM, Juárez-Vela R, Pellicer-García B, Antón-Solanas I. The Prevalence of Depression, Anxiety and Stress and Their Associated Factors in College Students. Int J Environ Res Public Health. 2020;17(19):7001. DOI: https://doi.org/10.3390/ijerph17197001
- 9. Son C, Hegde S, Smith A, Wang X, Sasangohar F. Effects of COVID-19 on College Students' Mental Health in the United States: Interview Survey Study. J Med Internet Res. 2020;22(9):e21279. DOI: https://doi.org/10.2196/21279
- 10. Islam MA, Barna SD, Raihan H, Khan MNA, Hossain MT. Depression and anxiety among university students during the COVID-19 pandemic in Bangladesh: A web-based cross-sectional survey. PLoS One. 2020;15(8):e0238162. DOI: https://doi.org/10.1371/journal.pone.0238162
- 11. Chang J, Yuan Y, Wang D. Mental health status and its influencing factors among college students during the epidemic of COVID-19. Nan Fang Yi Ke Da Xue Xue Bao. 2020;40(2):171-6. DOI: https://doi.org/10.12122/j.issn.1673-4254.2020.02.06

- 12. Sani I, Hamza Y, Chedid Y, Amalendran J, Hamza N. Understanding the consequence of COVID-19 on undergraduate medical education: Medical students' perspective. Ann Med Surg (Lond). 2020;58:117-9. DOI: https://doi.org/10.1016/j.amsu.2020.08.045
- 13. Moreira WC, Sousa AR, Nóbrega MPSS. Mental illness in the general population and health professionals during covid-19: a scoping review. Texto & contexto enfermagem. 2020;29:e20200215. DOI: https://doi.org/10.1590/1980-265X-TCE-2020-0215
- 14. Mustafa RM, Alrabadi NN, Alshali RZ, Khader YS, Ahmad DM. Knowledge, Attitude, Behavior, and Stress Related to COVID-19 among Undergraduate Health Care Students in Jordan. Eur J Dent. 2020;14(S 01):S50-5. DOI: https://doi.org/10.1055/s-0040-1719212
- 15. Kim JS, Choi JS. Middle East respiratory syndrome-related knowledge, preventive behaviours and risk perception among nursing students during outbreak. J Clin Nurs. 2016;25(17-18):2542-9. DOI: https://doi.org/10.1111/jocn.13295
- 16. Elm E von, Altman DG, Egger M, Pocock SJ, Gøtzsche PC, Vandenbroucke JP, et al. The Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) statement: guidelines for reporting observational studies. Lancet. 2007;370:P1453-7. DOI: https://doi.org/10.1016/S0140-6736(07)61602-X.
- 17. Sandín B, Valiente RM, García-Escalera J, Campagne DM, Chorot P. Psychological impact of the COVID-19 pandemic: Negative and positive effects in Spanish population during the mandatory national quarantine. Rev Psicopatología Psicol Clínica. 2020;25(1):1-21. DOI: https://doi.org/10.5944/rppc.28107
- 18. Fonseca-Pedrero E, Paino M, Lemos-Giráldez S, Muñiz J. Psychometric properties of the Depression Anxiety and Stress Scales-21 (dass-21) in Spanish college students. Revista Ansiedad y Estrés [Internet]. 2010 [cited 2021 Nov 25];16(2-3):215-26. Available from: http://www.ansiedadyestres.org/content/vol-16\_2-3-pp-215-226-2010
- 19. Del Pozo-Herce P, Garrido-García R, Santolalla-Arnedo I, Gea-Caballero V, García-Molina P, Viñaspre-Hernández RR, et al. Psychological Impact on the Nursing Professionals of the Rioja Health Service (Spain) Due to the SARS-CoV-2 Virus. Int J Environ Res Public Health. 2021;18(2):580. DOI: https://doi.org/10.3390/ijerph18020580
- 20. Bashir TF, Hassan S, Maqsood A, Khan ZA, Issrani R, Ahmed N, et al. The Psychological Impact Analysis of Novel COVID-19 Pandemic in Health Sciences Students: A Global Survey. Eur J Dent. 2020;14(S 01):S91-6. DOI: https://doi.org/10.1055/s-0040-1721653
- Eweida RS, Rashwan ZI, Desoky GM, Khonji LM. Mental strain and changes in psychological health hub among intern-nursing students at pediatric and medical-surgical units amid ambience of COVID-19 pandemic: A comprehensive survey. Nurse Educ Pract. 2020;49:102915. DOI: https://doi.org/10.1016/j.nepr.2020.102915
- 22. Sønderskov KM, Dinesen PT, Santini ZI, Østergaard SD. Increased psychological well-being after the apex of the COVID-19 pandemic. Acta Neuropsychiatr. 2020;32(5);277-9. DOI: https://doi.org/10.1017/neu.2020.26
- 23. Vilallonga R, Gordejuela AGR, Cossio-Gil Y, González JMD, Sánchez RM, Carrasco MA. Transforming a surgical department during the outbreak of new coronavirus pandemic. Clinical implications. Langenbecks Arch Surg. 2020;405(6):867-75. DOI: https://doi.org/10.1007/s00423-020-01931-x
- 24. Gismero-González E, Bermejo-Toro L, Cagigal V, Roldán A, Martínez-Beltrán MJ, Halty L. Emotional Impact of COVID-19 Lockdown Among the Spanish Population. Front Psychol. 2020;11:616978. DOI: https://doi.org/10.3389/fpsyg.2020.616978
- 25. Faez M, Hadi J, Abdalqader M, Assem H, Ads HO, Ghazi HF. Impact of lockdown due to covid-19 on mental health among students in private university at selangor. European journal of molecular & clinical medicine. 2020 [cited 2021 Nov 25];7(11)508-17. Available from: https://pesquisa.bvsalud.org/global-literature-on-novel-coronavirus-2019-ncov/resource/en/covidwho-1006538
- 26. Cai H, Tu B, Ma J, Chen L, Fu L, Jiang Y, et al. Psychological Impact and Coping Strategies of Frontline Medical Staff in Hunan Between January and March 2020 During the Outbreak of Coronavirus Disease 2019 (COVID-19) in Hubei, China. Med Sci Monit. 2020;26:e924171. DOI: https://doi.org/10.12659/MSM.924171
- 27. Mo Y, Deng L, Zhang L, Lang Q, Liao C, Wang N, et al. Work stress among Chinese nurses to support Wuhan in fighting against COVID-19 epidemic. J Nurs Manag. 2020;28(5):1002-9. DOI: https://doi.org/10.1111/jonm.13014
- 28. Ahmed MA, Jouhar R, Ahmed N, Adnan S, Aftab M, Zafar MS, et al. Fear and Practice Modifications among Dentists to Combat Novel Coronavirus Disease (COVID-19) Outbreak. Int J Environ Res Public Health. 2020;17(8):2821. DOI: https://doi.org/10.3390/ijerph17082821
- 29. Savitsky B, Findling Y, Ereli A, Hendel T. Anxiety and coping strategies among nursing students during the covid-19 pandemic. Nurse Educ Pract. 2020;46:102809. DOI: https://doi.org/10.1016/j.nepr.2020.102809
- 30. Han W, Xu L, Niu A, Jing Y, Qin W, Zhang J, et al. Online-Based Survey on College Students' Anxiety During COVID-19 Outbreak. Psychol Res Behav Manag. 2021;14:385-92. DOI: https://doi.org/10.2147/PRBM.S298539

## **ASSOCIATE EDITOR**

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**ERRATUM** 

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# Where it was written:

"Sofrimento psicológico e medo da Covid-19 em estudantes de enfermagem antes do estágio clínica: um estudo transversal".

## Should read:

"Sofrimento psicológico e medo da Covid-19 em estudantes de enfermagem antes do estágio clínico: um estudo transversal".