

Access this article online
Quick Response Code:

Website: www.jehp.net
DOI: 10.4103/jehp.jehp_1574_23

# Evaluation of the effectiveness of the training on “Home care of COVID-19 positive/suspicious patients” given to nursing students: A quasi-experimental study

Hande Sabandüzen<sup>1</sup>, Öznur Kavaklı<sup>2</sup>

## Abstract:

**BACKGROUND:** This study aims to evaluate the effects of education on home care of infected or suspected COVID-19 patients on the levels of knowledge, anxiety, and awareness of nursing students in Turkey.

**MATERIALS AND METHODS:** The study is in quasi-experimental design. A sample of 158 volunteer students studying nursing at a private university in Turkey was formed. Data were collected using, descriptive information form, “Coronavirus Anxiety Scale,” “COVID-19 Awareness Scale,” and the “Knowledge of COVID-19 Home Care Test.” Pre-test was performed before the participants received education. Post-test was performed seven days after the intervention. SPSS version 25.0 was used for data analysis. “TREND checklist” was used for quasi-experimental/non-randomized evaluations to report the findings of the study.

**RESULTS:** Anxiety levels decreased and the levels of awareness and knowledge on COVID-19 increased after receiving education on home care of infected or suspected COVID-19 patients ( $p < 0.001$ ), indicating the effectiveness of the education. Education on home care of infected or suspected COVID-19 patients was an effective method to reduce anxiety and increase knowledge and awareness in nursing students.

**CONCLUSIONS:** To contribute to community health, home care training can be given to nursing students, other people receiving home care, or providing home care to COVID-19 patients, infected or suspected COVID-19 patients.

## Keywords:

Anxiety, awareness, COVID-19 pandemic, home health nursing, education, knowledge, nursing students

## Introduction

Coronaviruses comprise a large family of viruses that cause different diseases, from simple cold to more serious ones, including Middle East respiratory syndrome (MERS-CoV) or severe acute respiratory syndrome (SARS-CoV). The coronavirus disease (COVID-19), which emerged in Wuhan in December 2019, has

been considered a pandemic by the World Health Organization (WHO) due to the 13-fold increase in the number of cases outside China within two weeks and an alarming rate of spread<sup>[1]</sup>

Although the symptoms of COVID-19 may vary, its clinical manifestations include fever, cough, shortness of breath, and, in severe cases, pneumonia, severe respiratory failure, renal failure, and death. Patients

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: WKHLRPMedknow\_reprints@wolterskluwer.com

**How to cite this article:** Sabandüzen H, Kavaklı Ö. Evaluation of the effectiveness of the training on “home care of COVID-19 positive/suspicious patients” given to nursing students: A quasi-experimental study. J Edu Health Promot 2024;13:250.

<sup>1</sup>Department of Nursing,  
Faculty of Health  
Sciences, Bahcesehir  
University, Istanbul,  
Turkey, <sup>2</sup>Department of  
Fundamentals of Nursing,  
Gulhane Faculty of  
Nursing, University of  
Health Sciences, Ankara,  
Turkey

## Address for correspondence:

Hande Sabandüzen,  
MSc. Department of  
Nursing, Faculty of Health  
Sciences, Bahcesehir  
University, Istanbul,  
Turkey.  
E-mail: hande.sabanduzen  
@bau.edu.tr

Received: 03-10-2023

Accepted: 07-12-2023

Published: 29-07-2024

may experience different clinical courses, ranging from home to intensive care.<sup>[1,2]</sup>

Patients with a diagnosis of COVID-19 or evidence of respiratory infection should be evaluated in terms of hospitalization indications and those without the need to be hospitalized should be followed up at home. On the other hand, care and treatment should be planned and given at a hospital if the patient does not have any caregivers, physical conditions at home are not appropriate for the isolation of the patient, or if there are people at risk at home, including older people, infants, and pregnant women.<sup>[3-5]</sup> Depending on the course of treatment, hospitalized patients may be discharged and receive treatment at home after the treatment is planned.<sup>[6]</sup> COVID-19 patients should be isolated at home until the risk of infection transmission is removed.<sup>[4]</sup>

COVID-19 has been an experience that has both physical and psychological impacts. The fear of COVID-19 has been observed in both the patients and caregivers. Most concerns about COVID-19 stemmed from the lack of information about the disease. Besides, patients and relatives experienced high level of anxiety due to social isolation. Within this context, the aims of nursing care are to reduce anxiety in patients and their relatives, ensure treatment adherence, and develop effective coping strategies. Nursing education, especially during the undergraduate years, is crucial to achieve these goals.<sup>[1]</sup>

In the study conducted by Hafız *et al.*<sup>[7]</sup> to evaluate the effectiveness of the Helicobacter pylori-related education given to university students, they stated that the students' awareness of Helicobacter pylori increased after the training. Gutiérrez-Puertas *et al.*<sup>[8]</sup> analyzed 19 research articles in a systematic review to determine the effect of educational interventions for nursing students to improve their communication skills with patients. As a result of the articles they examined, they revealed that educational interventions increased students' communication skills with patients. The study of Sadafi *et al.*<sup>[9]</sup> where they investigated the effect of multimodal intervention on nursing students' adherence to hand hygiene, it was found that students' compliance with hand hygiene increased after the intervention. When we look at these studies, we see that as a result of the education given to students, students' knowledge and awareness of the relevant subject increased.

Negative developments in the psychological and physical health of nursing students may lead to professional alienation, which, in turn, may have negative effects on community health.<sup>[10,11]</sup> Psychological support and education may reduce anxiety and help nursing students to develop coping strategies. Educational support may

increase the level of knowledge and help to reduce anxiety by increasing self-confidence in nursing students. Within this context, this study aimed to evaluate the effects of health education on home care of infected or suspected COVID-19 patients on the levels of anxiety, awareness, and knowledge in nursing students.

## Materials and Methods

### Study design and setting

This study had a quasi-experimental design and was conducted as a master's degree thesis in fundamentals of nursing. After obtaining the necessary permissions, data collection and sampling were done from students studying nursing at a private university in Turkey was formed.

### Study participants and sampling

The population of the study comprised 243 nursing students at the nursing department of the faculty of health sciences in a private university in Turkey. G\*Power was used to calculate the sample size within the context of two-tailed matched pairs protocol. The minimum sample size was 147 patients for 5% type I error rate, 95% confidence interval, 0.3 effect size, and 95.08% power<sup>[12-14]</sup> The sample of the study comprised 158 undergraduate nursing students, who studied at the department of nursing a private university in Turkey between December 2021 and February 2022 and agreed to participate.

### Data collection tools and technique

After obtaining the necessary permission, voluntary participants above the age of 18 years were informed about the aim of the study and written informed consent was obtained. The students were grouped according to their years of study and asked to complete the data collection tools during face-to-face interviews. After the pre-test, the students received an 80-minute lecture on home care of infected or suspected COVID-19 patients. Post-test was performed seven days after the lecture.

### Descriptive information form

This form comprised 18 questions on the socio-demographic characteristics, health status, and COVID-19 experiences of the participants.

### Coronavirus anxiety scale (CAS)

Coronavirus anxiety scale (CAS) was developed by Lee<sup>[15]</sup> to identify probable cases of dysfunctional anxiety associated with the COVID-19 crisis and was adapted into Turkish by Biçer *et al.*<sup>[16]</sup> The one-dimensional scale had five items, which were scored on a 5-point scale, ranging from 0 (not at all) to 4 (nearly every day). Possible scores ranged from 0 to 20, with the scores

over 9 indicating a high level of anxiety<sup>[15]</sup> Cronbach's alpha of the Turkish version of CAS was 0.832.<sup>[16]</sup> Cronbach's alpha for pre-test and post-test in our study was 0.83 and 0.97, respectively.

### *Coronavirus (COVID-19) awareness scale (CAWS)*

Coronavirus (COVID-19) awareness scale (CAWS) was developed by Bilgin<sup>[17]</sup> to measure awareness on COVID-19. The scale consisted of 17 items in three subscales, namely contagion precaution awareness, awareness of following current developments, and hygiene precaution awareness. Items were scored on a 5-point Likert scale, ranging from 1 (never) to 5 (always). Possible scores ranged from 17 to 95, with higher scores indicating a higher level of awareness. Cronbach's alpha of the three subscales was 0.93, 0.87, and 0.82, respectively. In our study, Cronbach's alpha for pre-test and post-test was 0.84 and 0.91, respectively.

### *Knowledge of COVID-19 home care test (KCHCT)*

Knowledge of COVID-19 home care test (KCHCT) was developed by the researchers in line with the literature to measure the effectiveness of education on home care of infected or suspected COVID-19 patients in improving knowledge levels.<sup>[3,5,6,18-21]</sup> The test asked ten questions with five choices on general knowledge of COVID-19, transmission ways, COVID-19 contacted persons, follow-up at home, and home care of infected or suspected COVID-19 patients. The questions were reviewed by two experts in infectious diseases and clinical microbiology and three experts in nursing and were finalized in line with their suggestions.

### **Data analysis**

SPSS version 25.0 was used for data analysis. Number, frequency, minimum and maximum values, mean and standard deviation were used for descriptive analysis. Kolmogorov-Smirnov test was performed to evaluate the normality of the data. Since the data did not meet normal distribution, non-parametric Wilcoxon test was used to compare pre-test and post-test scores. Spearman's correlation was used to compare the scores obtained from CAS, CAWS, and the KCHCT. Statistical significance was set at  $P < 0.05$ .

### **Ethical considerations**

Before data collection, approval of the Ethics Committee (dated 22.12.2021 and numbered 153) and permission from the scale owners were obtained.

## **Results**

Participants mean age was  $20.6 \pm 1.69$  years (min. 18-max. 28), 72.8% of the participants were female ( $n = 115$ ), and 27.2% were male ( $n = 43$ ). Finally, the percentages

of first-, second-, third- and fourth-year students were 33.5%, 29.1%, 18.4%, and 19.0%, respectively. Of the participants, 7% ( $n = 11$ ) had a chronic disease, 5% ( $n = 8$ ) stated that they used a drug regularly, 27.2% ( $n = 43$ ) stated that they had hospitalization experience, 42.4% ( $n = 67$ ) stated that there was an individual with a chronic disease in their family, and 27.8% ( $n = 44$ ) an individual over the age of 65 in their family.

Table 1 presents the comparison of descriptive characteristics and the pre-test and post-test scores obtained from the KCHCT. Compared to the first-year students, the students in the second, third, and fourth years of nursing obtained statistically significantly higher scores from the KCHCT ( $P < 0.05$ ). Besides, the participants, who had chronic diseases and regularly used medications, obtained statistically significantly higher scores from the KCHCT ( $P < 0.05$ ) [Table 1].

There was a statistically significant difference between the pre-test and post-test scores obtained from CAS, CAWS, and KCHCT ( $P < 0.05$ ) [Table 2].

Table 3 presents the distribution of correct and wrong answers given to each item of the KCHCT. There was a statistically significant difference between the pre-test and post-test scores obtained from the questions 1 (general knowledge), 2 (transmission ways), 4 (home care), 5 (COVID-19 contacted person), 7 (follow-up at home), 8 (home care), and 10 (transmission ways) ( $P < 0.05$ ). Besides, the percentage of correct answers in post-test was significantly higher than those of the pre-test.

## **Discussion**

This study aimed to evaluate the effects of health education on home care of infected or suspected COVID-19 patients on the levels of anxiety, awareness, and knowledge in nursing students. The pre-test scores obtained from the KCHCT were higher in the second-, third-, and the fourth-year students and in participants, who had chronic diseases or used medications regularly. Similarly, the study of Ikhtlaq *et al.*<sup>[22]</sup> on the awareness and attitudes of undergraduate medical students towards COVID-19 found that nursing students and students with a higher year of study had a higher level of information and awareness in Pakistan. Another cross-sectional study on the knowledge, attitudes, and fear of COVID-19 in Bangladesh reported that knowledge of COVID-19 was associated with age and chronic diseases<sup>[23]</sup> Given that the course of COVID-19 is more severe in patients with chronic diseases, and it is plausible to assume that the students with chronic disease may have more information on COVID-19 to protect themselves. On the other hand, comparison of the pre-test and post-test scores obtained from the KCHCT

**Table 1: Comparison of descriptive characteristics and the pre-test and post-test scores obtained from the KCHCT**

Descriptive Variables	KCHCT Scores						P
	n	Mean	Median	SD	Min	Max	
Year of study							0.003 <sup>a*</sup>
1	53	8.06	1.50	8.00	3.00	10.00	
2	46	8.24	1.37	9.00	4.00	10.00	
3	29	6.97	1.76	7.00	3.00	10.00	
4	30	8.40	1.07	8.50	6.00	10.00	
Gender							0.109 <sup>b</sup>
Female	115	8.07	1.53	8.00	3.00	10.00	
Male	43	7.72	1.45	8.00	3.00	10.00	
Lives in							0.940 <sup>a</sup>
Provincial center	112	7.96	1.57	8.00	3.00	10.00	
District	41	8.05	1.36	9.00	4.00	10.00	
Village/town	5	7.80	1.64	8.00	5.00	9.00	
Chronic diseases							0.004 <sup>b*</sup>
No	147	7.90	1.48	8.00	3.00	10.00	
Yes	11	8.91	1.76	9.00	4.00	10.00	
Regular medication use					3.00	10.00	0.002 <sup>b*</sup>
No	150	7.90	1.51	8.00			
Yes	8	9.38	0.52	9.00	9.00	10.00	
Prior hospitalization experience							0.936 <sup>b</sup>
No	115	7.98	1.49	8.00	3.00	10.00	
Yes	43	7.95	1.59	8.00	4.00	10.00	
Family members with chronic diseases							0.949 <sup>b</sup>
No	91	8.01	1.41	8.00	4.00	10.00	
Yes	67	7.93	1.65	8.00	3.00	10.00	
Family members in need of care/disabled family members							0.723 <sup>b</sup>
No	155	7.97	1.52	8.00	3.00	10.00	
Yes	3	8.33	1.15	9.00	7.00	9.00	
Family members above the age of 65 years							0.313 <sup>b</sup>
No	114	7.93	1.49	8.00	3.00	10.00	
Yes	44	8.09	1.58	9.00	4.00	10.00	
Diagnosed with COVID-19							0.526 <sup>b</sup>
No	99	8.02	1.54	8.00	3.00	10.00	
Yes	59	7.90	1.48	8.00	3.00	10.00	
Family members diagnosed with COVID-19							0.546 <sup>b</sup>
No	57	7.98	1.76	8.00	3.00	10.00	
Yes	101	7.97	1.37	8.00	3.00	10.00	
Family members referred to intensive care unit due to COVID-19							0.659 <sup>b</sup>
No	150	7.98	1.48	8.00	3.00	10.00	
Yes	8	7.88	2.17	9.00	4.00	10.00	
Loss of family members due to COVID-19							0.426 <sup>b</sup>
No	149	7.95	1.54	8.00	3.00	10.00	
Yes	9	8.44	1.01	9.00	7.00	10.00	
Mortality and morbidity rates reported by the Ministry of Health are exaggerated							0.391 <sup>b</sup>
No	143	7.99	1.55	8.00	3.00	10.00	
Yes	15	7.87	1.13	8.00	6.00	10.00	

KCHCT: Knowledge of COVID-19 home care test. <sup>a</sup>Kruskal–Wallis test. <sup>b</sup>Mann–Whitney U test. \*P<0.05

revealed that education on home care of infected or suspected COVID-19 patients had a significant effect on raising knowledge in nursing students.

In our case, anxiety was higher in participants with a higher level of awareness. The demand for more clear and comprehensive information may increase anxiety about COVID-19. A study on public awareness and anxiety

during COVID-19 epidemic in China reported that anxiety levels were significantly related with the awareness on transmission but not clinical features or preventive measures.<sup>[24]</sup> Therefore, we may suggest that the risk of transmission may be an important factor triggering anxiety.

COVID-19 awareness scores of the participants increased after receiving education. Although there was no

similar study in the literature, a study on the effects of multimodal intervention on adherence to hand hygiene in nursing students, which had a research design and sample similar to ours, found that adherence to hand hygiene increased after the intervention<sup>[9]</sup>

Nursing is a profession that requires constant attention and long hours of work. Nursing students, who are

candidates for such an important profession, are expected to display attitudes and behaviors that improve health status of themselves, their family members, and the people they provide health care.<sup>[25]</sup> The study of Birimoğlu Okuyan *et al.*<sup>[11]</sup> on the effects of COVID-19 on anxiety levels of nursing students found that the high level of anxiety in nursing students stemmed from the concerns about social isolation and fear of infection and death. Negative feelings, such as fear and anxiety during the COVID-19 pandemic may lead to the alienation of nursing students from profession, which, in turn, may lead them to encounter undesirable situations in the near future.<sup>[11]</sup> The literature suggests that education on coping strategies during pandemics should be integrated into nursing curriculum and effective education programs should be planned for the COVID-19 pandemic.<sup>[11,26,27]</sup> Our study revealed that education on home care of infected or suspected COVID-19 patients was an effective method to inform nursing students, direct their family members and improve the levels of knowledge and awareness. Therefore, we may suggest that similar education

**Table 2: Comparison of the pre-test and post-test scores obtained from CAS, CAWS, and KCHCT**

	Mean	SD	Median	Min	Max	Z	P
<b>CAS</b>							
Pre-test	1.32	2.49	0.00	0.00	16.00	-4.615	<0.001**
Post-test	0.89	2.13	0.00	0.00	16.00		
<b>CAWS</b>							
Pre-test	55.4	10.2	55.00	27.00	81.00	4.647	<0.001**
Post-test	58.3	15.9	57.00	27.00	175.00		
<b>KCHCT</b>							
Pre-test	7.97	1.51	8.00	3.00	10.00	9.130	<0.001**
Post-test	9.11	1.15	9.00	4.00	10.00		

CAS: Coronavirus anxiety scale, CAWS: COVID-19 awareness scale, KCHCT: Knowledge of COVID-19 home care test. Z: Wilcoxon test, \*\*P<0.001

**Table 3: Distribution of correct and wrong answers given to each item of the KCHCT**

Questions	Answers	Post-test			Probability value <sup>e</sup> (P)	
		Correct n (%)	Wrong n (%)	Total n (%)		
Q 1 (General knowledge)	Pre-test	Correct n (%)	139 (92.1)	2 (28.6)	141 (89.2)	0.013*
		Wrong n (%)	12 (7.9)	5 (71.4)	17 (10.8)	
		Total n (%)	151 (100.0)	7 (100.0)	158 (100.0)	
Q 2 (Transmission ways)		Correct n (%)	121 (87.1)	6 (31.6)	127 (80.4)	0.023*
		Wrong n (%)	18 (12.9)	13 (68.4)	31 (19.6)	
		Total n (%)	139 (100.0)	19 (100.0)	158 (100.0)	
Q 3 (Follow-up at home)		Correct n (%)	146 (94.8)	3 (75.0)	149 (94.3)	0.227
		Wrong n (%)	8 (5.2)	1 (25.0)	9 (5.7)	
		Total n (%)	154 (100.0)	4 (100.0)	158 (100.0)	
Q 4 (Home care)		Correct n (%)	106 (89.1)	0 (0.0)	106 (67.1)	<0.001**
		Wrong n (%)	13 (10.9)	39 (100.0)	52 (32.9)	
		Total n (%)	119 (100.0)	39 (100.0)	158 (100.0)	
Q 5 (COVID-19 contacted persons)		Correct n (%)	120 (81.6)	1 (9.1)	121 (76.6)	<0.001**
		Wrong n (%)	27 (18.4)	10 (90.9)	37 (23.4)	
		Total n (%)	147 (100.0)	11 (100.0)	158 (100.0)	
Q 6 (COVID-19 contacted persons)		Correct n (%)	137 (93.8)	2 (16.7)	139 (88.0)	0.065
		Wrong n (%)	9 (6.2)	10 (83.3)	19 (12.0)	
		Total n (%)	146 (100.0)	12 (100.0)	158 (100.0)	
Q 7 (Follow-up at home)		Correct n (%)	97 (74.6)	9 (32.1)	106 (67.1)	<0.001**
		Wrong n (%)	33 (25.4)	19 (67.9)	52 (32.9)	
		Total n (%)	130 (100.0)	28 (100.0)	158 (100.0)	
Q 8 (Home care)		Correct n (%)	119 (79.9)	1 (11.1)	120 (75.9)	<0.001**
		Wrong n (%)	30 (20.1)	8 (88.9)	38 (24.1)	
		Total n (%)	149 (100.0)	9 (100.0)	158 (100.0)	
Q 9 (Home care)		Correct n (%)	152 (96.8)	(100.0)	153 (96.8)	0.219
		Wrong n (%)	5 (3.2)	(0.0)	5 (3.2)	
		Total n (%)	157 (100.0)	(100.0)	158 (100.0)	
Q 10 (Transmission ways)		Correct n (%)	96 (64.9)	1 (10.0)	97 (61.4)	<0.001**
		Wrong n (%)	52 (35.1)	9 (90.0)	61 (38.6)	
		Total n (%)	148 (100.0)	10 (100.0)	158 (100.0)	

KCHCT: Knowledge of COVID-19 home care test. \*Mc NEMAR test. \*P<0.05, \*\*P<0.001

programs may be planned and integrated to nursing curriculum.

Medina Fernández *et al.*<sup>[28]</sup> analyzed the levels of fear, stress, and knowledge regarding COVID-19 in nursing students and recent graduates in Mexico and found that the participants, who received training on COVID-19, had lower levels of fear and stress and higher level of knowledge. In our case, education on home care of infected or suspected COVID-19 patients improved the knowledge of the participants on transmission ways and home care. Other studies on this subject had conflicting findings. Cross-sectional study of Kochuvilayil *et al.*<sup>[29]</sup> on the knowledge, anxiety, academic concerns, and preventative behaviors among Australian and Indian nursing students found that although Indian students had higher level of knowledge on COVID-19, there were no significant differences relating to protecting themselves, handwashing, and social distancing between the two groups. Another study on disease prevention knowledge, anxiety, and professional identity during COVID-19 pandemic found that the general knowledge level of Chinese nursing students was high but the level of compliance with protective guidelines and protective tools was low.<sup>[30]</sup> The study of Ayed and Zabn<sup>[31]</sup> on knowledge and attitudes of Palestinian nursing students towards COVID-19 found that 46.8% of the respondents showed moderate and 38.5% had high level of knowledge on COVID-19. Besides, 58.7% of the Palestinian nursing students had moderate knowledge on transmission of disease. Other studies reported that more than half of the university students had knowledge on COVID-19 and its ways of transmission.<sup>[32,33]</sup>

Cross-sectional study of Mena-Tudela *et al.*<sup>[34]</sup> on the knowledge, confidence, and willingness of Spanish nursing and medical students about COVID-19 reported that a higher percentage of nursing students correctly answered the questions about prevention measures during the treatment of COVID-19 patients. Fakhri *et al.*<sup>[35]</sup> analyzed the knowledge, attitudes, and practices of Moroccan nursing students and found that the respondents had high level of knowledge and 60% received specific training on COVID-19. Cross-sectional survey of Aksu *et al.*<sup>[36]</sup> on the knowledge and practices of Turkish nursing students found that the students had sufficient level of knowledge about COVID-19. Similar to the literature, our study found that the level of knowledge increased after receiving the education on home care of infected or suspected COVID-19 patients. The review of the literature revealed that various studies have been conducted to evaluate nursing students' level of knowledge in different countries. However, most of these studies were about the level of knowledge on transmission ways and treatment methods. We have not found any study that measured the level of knowledge

on home care, isolation, and the rules of quarantine during the COVID-19 pandemic. Therefore, our study may contribute to the literature by providing information about the level of knowledge on these neglected dimensions of COVID-19 pandemic.

### Limitations and recommendation

This study evaluated the effectiveness of the education on home care of infected or suspected COVID-19 patients. Although existing studies recommend a 14-day period between the pre-test and post-test, we performed post-test only seven days after the pre-test since it was not possible to perform the post-test with the students from all classes students at another date. Besides, the findings of this study may not be generalizable as it was conducted at a single center.

### Conclusions

This study found that the education on home care of infected or suspected COVID-19 patients was effective as it reduced anxiety and increased knowledge and awareness levels of nursing students. Participants gave correct answers to the questions on general knowledge of COVID-19, transmission ways, COVID-19 contacted persons, follow-up at home, and home care of infected or suspected COVID-19 patients. Most of the studies in the literature analyzed the level of knowledge on transmission ways and treatment of COVID-19. Within this context, the findings of this study may contribute to the literature. COVID-19 has been affected individuals psychologically as well as physiologically. It is a state of anxiety and fear. This fear and anxiety can be experienced by the sick individual as well as their relatives. The reason for this fear is usually due to ignorance and lack of knowledge. In this context, the aim of nursing care; Reducing the anxiety of the patient and their relatives, ensuring the adaptation of the patients and their relatives in accordance with the treatment plan, and helping them to develop effective coping methods. In order to achieve this easily, the training of nurses, especially during their student years, is of great importance. Based on these things, we may suggest that education programs may be planned and integrated into nursing curriculum to reduce anxiety, increase awareness, and access correct information during the pandemics, such as the COVID-19 pandemic. Besides, in order to contribute to community health, the education on home care of infected or suspected COVID-19 patients may be given to other people, who receive home care or provide home care for COVID-19 patients.

### Acknowledgement

The authors would like to thank all the nursing students for their participation in the study. The authors would also like to thank MD Emrah Atay for contributing to the data analyses.

## Financial support and sponsorship

Nil.

## Conflicts of interest

There are no conflicts of interest.

## References

1. Çelebi C. Covid-19 Tanılı Hastalarda Hemşirelik Bakımı. *Ege Klinik Tıp Dergisi* 2020;58:35-40.
2. Zhou F, Yu T, Du R, Fan G, Liu Y, Liu Z, *et al.* Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: A retrospective cohort study. *Lancet* 2020;395:1054-62.
3. COVID-19 Nedir ?. Available from: <https://covid19.saglik.gov.tr/TR-66300/covid-19-nedir-.html>. [Last accessed on 2023 Oct 14].
4. Türk Toraks Derneği COVID-19 E-Kitapları. 2020. Available from: [www.toraks.org.tr](http://www.toraks.org.tr). [Last accessed on 2023 Oct 14].
5. Republic of Turkey Ministry of Health (02.10.2021). COVID-19 Contact Follow-up, Outbreak Management, Home Patient Monitoring and Filiation, <https://covid19.saglik.gov.tr/>. Date of access: 10.03.2022.
6. Republic of Turkey Ministry of Health. COVID-19 Related Isolation and Quarantine Practices in the Current Period. Available from: <https://covid19.saglik.gov.tr/Eklenti/42333/0/covid-19gunceldonemdecovid19iliskiliiizolasyonvekarantinauygulamaları-2pdf.pdf>. [Last accessed on 2022 Jan 14].
7. Hafiz TA, D'Sa JL, Zamzam S, Dionaldo MLV, Aldawood E, Madkhali N, *et al.* The effectiveness of an educational intervention on helicobacter pylori for university students: A quasi-experimental study. *J Multidiscip Healthc* 2023;16:1979-88.
8. Gutiérrez-Puertas L, Márquez-Hernández VV, Gutiérrez-Puertas V, Granados-Gámez G, Aguilera-Manrique G. Educational interventions for nursing students to develop communication skills with patients: A systematic review. *Int J Environ Res Public Health* 2020;17:2241. doi: 10.3390/ijerph17072241
9. Sadafi M, Bahmanpour K, Nouri B, Valiee S. Effect of multimodal intervention on nursing students' adherence to hand hygiene: An experimental study. *Creat Nurs* 2021;27:209-15.
10. Cırık, V. A.; Aksoy, B.; Gül, U. Psychological resilience levels of nursing students and coping strategies in the COVID-19 process: descriptive study. *Türkiye Klinikleri Journal of Nursing Sciences*, 2021, 13.3: 693-703.
11. Birimoglu Okuyan C, Karasu F, Polat F. Hemşirelik öğrencilerinin Covid-19'a maruz kalma korkularının sağlık kaygısı düzeyleri üzerine etkisi: Bir üniversite örneği. *Van Sağlık Bilimleri Dergisi* 2020, 13.COVID-19 Özel Sayı: 45-52.
12. Cohen J. *Statistical Power Analysis for the Behavioral Sciences*. 2013. e-book, -2<sup>nd</sup> ed. ISBN: 0-8058-0283-5. DOI: 10.4324/9780203771587
13. Lakens D. Calculating and reporting effect sizes to facilitate cumulative science: A practical primer for t-tests and ANOVAs. *Front Psychol* 2013;4:863. doi: 10.3389/fpsyg.2013.00863.
14. Faul F, Erdfelder E, Lang AG, Buchner A. G\*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. *Behav Res Methods* 2007;39:175-91.
15. Lee SA. Coronavirus anxiety scale: A brief mental health screener for COVID-19 related anxiety. *Death Stud* 2020;44:393-401.
16. Biçer İ, Çakmak C, Demir H, Kurt ME. Koronavirüs Anksiyete Ölçeği Kısa Formu: Türkçe Geçerlik ve Güvenirlik Çalışması. *Anadolu Klin* 2020;25(Special Issue on COVID 19):216-25.
17. Bilgin, O. Koronavirüs (Covid-19) Farkındalık Ölçeği Geliştirilmesi: Geçerlik ve Güvenirlik Çalışması. *Electronic Turkish Studies*, 2020, 15.6.
18. Coronavirus disease (COVID-19): Home care for families and caregivers. Available from: <https://www.who.int/news-room/questions-and-answers/item/coronavirus-disease-covid-19-home-care-for-families-and-caregivers>. [Last accessed on 2023 Oct 14].
19. Home care for patients with suspected or confirmed COVID-19 and management of their contacts. Available from: [https://www.who.int/publications/i/item/home-care-for-patients-with-suspected-novel-coronavirus-\(ncov\)-infection-presenting-with-mild-symptoms-and-management-of-contacts](https://www.who.int/publications/i/item/home-care-for-patients-with-suspected-novel-coronavirus-(ncov)-infection-presenting-with-mild-symptoms-and-management-of-contacts). [Last accessed on 2023 Oct 14].
20. Üçgün, AB; Yavuz, C. COVID-19 Pandemisinin hatırlattıkları: temizlik ve dezenfeksiyon. *Sürekli Tıp Eğitimi Dergisi*, 2021, 30.5: 351-357.
21. Barazzoni R, Bischoff SC, Breda J, Wickramasinghe K, Krznaric Z, Nitzan D, *et al.* ESPEN expert statements and practical guidance for nutritional management of individuals with SARS-CoV-2 infection. *Clin Nutr* 2020;39:1631-8.
22. İkhlaq A, Bint-E-riaz H, Bashir I, Ijaz F. Awareness and Attitude of Undergraduate Medical Students towards 2019-novel Corona virus. *Pak J Med Sci* 2020;36(COVID19-S4):S32. doi: 10.12669/pjms.36.COVID19-S4.2636.
23. Hossain MA, Jahid MIK, Amran Hossain KM, Walton LM, Uddin Z, Haque MO, *et al.* Knowledge, attitudes, and fear of COVID-19 during the Rapid Rise Period in Bangladesh. *PLoS One* 2020;15:e0239646.
24. Liu Y, Li P, Lv Y, Hou X, Rao Q, Tan J, *et al.* Public awareness and anxiety during COVID-19 epidemic in China: A cross-sectional study. *Compr Psychiatry* 2021;107:152235. doi: 10.1016/j.comppsy.2021.152235.
25. Çavuşoğlu E, Yurtsever S. The relationship between health perceptions and health anxiety levels of nursing department students: A descriptive study. *Türkiye Klinikleri J Nurs Sci* 2022;14:171-8.
26. Akman Ö, Yildirim D, Sarikaya A, Akman Ö, Yildirim D, Sarikaya A. The effect of COVID-19 pandemic on nursing students' anxiety levels. *IGUSABDER* 2020;12:379-97.
27. Albaqawi HM, Alquwez N, Balay-odao E, Bajet JB, Alabdulaziz H, Alsolami F, *et al.* Nursing students' perceptions, knowledge, and preventative behaviors toward COVID-19: A multi-university study. *Front Public Health* 2020;8:573390. doi: 10.3389/fpubh.2020.573390.
28. Fernández IAM, Moreno SC, Díaz LC, Gallegos-Torres RM, Fernández JAM, Martínez EKH. Fear, stress, and knowledge regarding COVID-19 in nursing students and recent graduates in Mexico. *Invest Educ Enferm* 2021;39:1-12. doi: 10.17533/udea.iee.v39n1e05.
29. Kochuvilayil T, Fernandez RS, Moxham LJ, Lord H, Alomari A, Hunt L, *et al.* COVID-19: Knowledge, anxiety, academic concerns and preventative behaviours among Australian and Indian undergraduate nursing students: A cross-sectional study. *J Clin Nurs* 2021;30:882-91.
30. Sun Y, Wang D, Han Z, Gao J, Zhu S, Zhang H. Disease prevention knowledge, anxiety, and professional identity during COVID-19 pandemic in nursing students in Zhengzhou, China. *J Korean Acad Nurs* 2020;50:533-40.
31. Ayed A, Zaban K. Knowledge and attitude towards COVID-19 among nursing students: Palestinian perspective. *SAGE Open Nurs* 2021;7:237796082111015150. doi: 10.1177/237796082111015150.
32. Olaimat AN, Aolymat I, Shahbaz HM, Holley RA. Knowledge and information sources about COVID-19 among university students in Jordan: A cross-sectional study. *Front Public Health* 2020;8:254.
33. Gohel KH, Patel PB, Shah PM, Patel JR, Pandit N, Raut A. Knowledge and perceptions about COVID-19 among the medical and allied health science students in India: An online cross-sectional survey. *Clin Epidemiol Glob Health* 2021;9:104-9.

34. Mena-Tudela D, González-Chordá VM, Andreu-Pejó L, Mouzo-Bellés VM, Cervera-Gasch Á. Spanish nursing and medical students' knowledge, confidence and willingness about COVID-19: A cross-sectional study. *Nurse Educ Today* 2021;103:104957. doi: 10.1016/j.nedt.2021.104957.
35. Fakhri N, Jallal M, Belabbes S, Khudur K, Kaddar R, Oubaasri A, *et al.* COVID-19 and Moroccan nursing students: A multicentre cross-sectional survey on their related knowledge, attitudes and practices. *Nurs Open* 2021;8:1634-41.
36. Aksu A, Buldum A, G. Emül T, Çelebioğlu A. Nursing students' knowledge and practices about COVID-19: A cross-sectional survey. *Nurs Forum (Auckl)* 2022;57:615-23.