

COVID-19 Fear Levels and Health Behaviors of Nursing Students During the Pandemic Process: A Comparative Study Conducted in Turkey

Hemşirelik Öğrencilerinin Pandemi Sürecinde COVID-19 Korku Düzeyleri ve Sağlık Davranışları: Türkiye'de Karşılaştırmalı Bir Çalışma

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ABSTRACT

The purpose of the present study was to determine the COVID-19 fear levels and health behaviors of nursing students studying in two regions of Turkey during the pandemic process and to develop solutions in this regard. The population of this cross-sectional and descriptive study consisted of nursing students studying at state universities in Diyarbakır, Mardin, Trabzon, and Gümüşhane between January 2021 and May 2021. Based on the province with the minimum number of students from each class (Mardin n=75/class), 1200 students from universities in 4 provinces who agreed to participate in the research were included. The questions on the data of the study and the "Coronavirus (COVID-19) Fear Scale" and the "Healthy Lifestyle Behaviors Scale II" were administered under direct supervision for approximately 20 minutes. The mean score on the Fear of Coronavirus Scale of nursing students who did not apply to any health institution in the last 1-2 months, who had any psychological disease, and who thought that they did not do regular diet and regular exercise was found to be high. The mean Healthy Lifestyle Behaviors Scale II scores of nursing students who did not have any psychological diseases, who thought that they had a regular diet and regular exercise, and who did not have sleep problems were found to be high. In the study, The nursing students with the greatest fear of COVID-19 were in Diyarbakır, and the nursing students with the highest healthy lifestyle behaviors were in Trabzon.

Keywords: Nursing students, COVID-19 fear, Health behaviors, Pandemic

ÖZ

Bu çalışmanın amacı, Türkiye'nin iki bölgesinde eğitim gören hemşirelik öğrencilerinin pandemi sürecinde COVID-19 korku düzeylerini ve sağlık davranışlarını belirlemek ve bu konuda çözüm önerileri geliştirmektir. Kesitsel ve tanımlayıcı nitelikteki bu araştırmanın evrenini Ocak 2021-Mayıs 2021 tarihleri arasında Diyarbakır, Mardin, Trabzon ve Gümüşhane'deki devlet üniversitelerinde öğrenim gören hemşirelik öğrencileri oluşturmuştur. Her sınıftan minimum öğrenci sayısı olan il baz alınarak (Mardin n=75/sınıf), 4 ildeki üniversitelerden araştırmaya katılmayı kabul eden 1200 öğrenci dahil edilmiştir. Araştırmanın verilerine ilişkin sorular ile "Koronavirüs (COVID-19) Korku Ölçeği" ve "Sağlıklı Yaşam Tarzı Davranışları Ölçeği II" doğrudan gözetim altında yaklaşık 20 dakika süreyle uygulandı. 1-2 ay içerisinde herhangi bir sağlık kuruluşuna başvurmayan, herhangi bir psikolojik rahatsızlığı bulunan, düzenli diyet ve düzenli egzersiz yapmadığını düşünen hemşirelik öğrencilerinin Koronavirüs Korku Ölçeği puan ortalaması yüksekti. Herhangi bir psikolojik hastalığı olmayan, düzenli beslenme ve düzenli egzersiz yaptığını düşünen, uyku problemi olmayan hemşirelik öğrencilerinin Sağlıklı Yaşam Tarzı Davranışları Ölçeği II puan ortalamaları yüksek bulunmuştur. COVID-19 korkusunun en fazla olduğu hemşirelik öğrencileri Diyarbakır'da, sağlıklı yaşam tarzı davranışlarının en yüksek olduğu hemşirelik öğrencileri ise Trabzon'daydı.

Anahtar Kelimeler: Hemşirelik öğrencileri, COVID-19 korkusu, Sağlık davranışları, Pandemi

Before starting the study, permission was obtained from the R.T. Ministry of Health, General Directorate of Healthcare Services (2020-07-18T22_52_01), University Ethics Committee (Date: 09.11.2020, No: 2020/08-10), and relevant institutions.

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INTRODUCTION

COVID-19, which is an infectious disease caused by the SARS-CoV-2 virus, defined as Severe Acute Respiratory Syndrome, was declared a global pandemic by WHO on 11 March 2020. COVID-19 was first seen in Turkey on March 11, 2020, and some restrictions were introduced because of the pandemic.^{1,2} Pandemics are not only an important public healthcare problem but also a social phenomenon affecting society in many ways causing social deterioration.

The physical consequences of the virus received more attention in the first days of the pandemic and the mental health consequences were not emphasized. However, it was observed that individuals perceived their fear, anxiety, and stress levels to increase, especially during the outbreak and the increase in the number of cases.³ The psychological reactions of people during the pandemic period vary. Although some individuals were reluctant to take the necessary precautions without being worried, this manifested itself in the form of excessive anxiety and negative professional or academic effects in some individuals. Individuals might be particularly prone to anxiety and mood disorders during the pandemic processes.⁴ There were increased discourses that the world would no longer be the same after the pandemic, that many things would change in humanity and that the world would enter a new era. For this reason, it will be inevitable that this situation, which affected the whole world, would have deep-rooted political, economic, and social consequences.⁵ The psychology and behavior of individuals affect their response to the disease during the COVID-19 pandemic, and their behavior plays a role in the spread of the pandemic and loss of life. For this reason, knowing the psychology and health behaviors of individuals and managing them correctly have great importance in terms of combating the pandemic.⁶ To manage the process healthily during pandemic periods, planned and organized psychosocial and healthy life activities and support services are

needed as well as a medical intervention for the mental health of society.⁷

The coronavirus, which was a novel virus, caused a lot of information pollution in the press and social media since its first days, and this increased the anxiety of individuals. Official institutions and organizations in Turkey provided information on the Coronavirus to healthcare employees and the public over their web pages. The only way to be successful in the fight against the pandemic is through the active participation of society in this process. Young or old, every individual must fulfill their responsibilities. In this respect, the health and psychology of the individual, family, and society may improve. The living conditions during the COVID-19 pandemic had to change because of the pandemic and the isolation of individuals in their homes, the effects of their social relations, and the uncertainty in the course of the process also affected their quality of life.⁸

No doubt, education was caught in the COVID-19 pandemic storm and changed the way we viewed and interpreted Education.⁹ Unlike other academic programs, nursing and midwifery clinical education faces the challenge of ensuring the safety of students during COVID-19. Some educational institutions produced different alternatives by switching clinical practices to virtual teaching, especially for trainee nursing and midwifery students.¹⁰ Providing education and training over distance education, which gives freedom to the student in terms of time and place, became a necessity for many countries in Turkey and the world. Educational practices during the pandemic process in Turkey must be examined by considering the living conditions in the process.¹¹

It is already known that public health emergencies such as the COVID-19 pandemic have enormous psychological impacts on university students.¹² Negative emotions (e.g., anxiety, anxiety, and fear) during the pandemic may cause students to

move away from their profession.¹³ This negative situation affects the perspectives of future health professionals towards the profession negatively. The purpose of the present paper was to determine the COVID-

19 fear levels and health behaviors of nursing students studying at 4 state universities in 2 regions of Turkey during the pandemic process and to develop solutions in this regard.

METHODS

Type, Population, and Sample of Study

The population of this cross-sectional and descriptive study consisted of nursing students studying in 4 state universities in two regions of Turkey between January 2021 and May 2021 during the pandemic process in Diyarbakır and Mardin from the Southeastern Anatolia Region, and Trabzon and Gümüşhane from the Black Sea Region. The minimum number of students from each class was 75 students and all of the 1200 students who agreed to participate in the study from the universities in these 4 cities based on Mardin were included in the study.

Measuring Tools

The data of the study were collected online with the socio-demographic characteristics form created by the researchers by examining the literature with questions on coronavirus information, being affected by the coronavirus, vaccination, questions about healthy living, and the “Coronavirus (COVID-19) Fear Scale (CFS)” and “Healthy Lifestyle Behaviors Scale II (HLBS II)” online with a google form.

Coronavirus (COVID-19) Fear Scale (CCO)

The scale that was developed by Ahorsu et al. (2020) consisted of 7 items in one single dimension. Each item in the scale is designed in a 5-point Likert type. For each item, the participant is expected to mark between “1-Strongly Disagree” and “5-I Strongly Agree”. Rising scores on the scale indicate that the participant’s level of fear about COVID-19 increased. The Cronbach’s Alpha Internal Consistency Coefficient of the scale was found to be 0.82. It was determined that there is a positive correlation between CFS, perceived vulnerability, hospital

anxiety, and depression. The Turkish adaptation of the CFS was conducted by other researchers.¹⁴⁻¹⁷

Healthy Lifestyle Behaviors Scale II (HLBS II)

The scale was developed by Walker et al. (1987) and was revised again in 1996. The scale measures health-promoting behaviors in relation to an individual’s healthy lifestyle and consists of a total of 52 items and 6 sub-factors. Subgroups are spiritual growth, health responsibility, physical activity, nutrition, interpersonal relationships, and stress management. The overall score of the scale gives the healthy lifestyle behaviors score. All items on the scale are positive. The rating is in the form of a 4-point Likert style (Never (1), sometimes (2), often (3), regularly (4)). The lowest score for the whole scale is 52, and the highest score is 208. The Alpha Reliability Coefficient of the scale is 0.94. The Alpha Coefficient Reliability Value of the sub-factors of the scale varies between 0.79-0.87.^{18,19} The content validity and reliability of the scale were evaluated by Bahar et al. (2008). Kendal W concordance test was performed for content validity. As a result of the test, it was found that there was a consensus among the experts and it was determined that the expressions in the scale were suitable for our culture and represented the field to be measured. It was reported in the study of Bahar et al. that the Cronbach Alpha coefficient of HLBS II was 0.92 and it had a high-reliability degree.²⁰

Ethical Approval and Consent

The study adhered to the principles of the Declaration of Helsinki. Before starting the study, permission was obtained from the R.T. Ministry of Health, General Directorate of Healthcare Services (2020-07-18T22_52_01), University Ethics Committee

(Date: 09.11.2020, No: 2020/08-10), and relevant institutions. Informed consent was

obtained from the participants.

RESULTS AND DISCUSSION

A total of 62.8% (754 people) of the nursing students were female, and the mean age was 21.46 ± 2.57 (min=18, max=35). Also, 4.2% of the nursing department

students were married and 71.8% said that they perceived their socioeconomic status as moderate.

Table 1. The CFS and HLBS II score distributions of nursing students according to their health status

Health Status		n (%)	CFS Score Mean±SD	p Value	HLBS II Score Mean±SD	p Value
Have you applied to any health institution in the last 1-2 month?	Yes	541 (45.1)	17.53±6.09	t= 3.039	20.60±18.83	t= -0.686
	No	659 (54.9)	18.58±5.74	p= 0.002	21.41±21.22	p= 0.493
The status of having a chronic disease	Yes	541 (45.1)	18.70±5.80	t= 1.355	118.48±20.85	t= -1.469
	No	659 (54.9)	17.93±5.97	p= 0.176	21.33±20.08	p= 0.142
The status of having a psychological disease	Yes	14 (1.2)	22.14±7.95	U= 2.618	18.64±14.61	U= -0.449
	No	1186 (98.8)	17.96±5.91	p= 0.009	21.07±20.23	p= 0.041
Thinking of performing regular diet	Yes	432 (36.0)	17.46±5.70	t= -2.366	32.26±20.00	t= 15.886
	No	768 (64.0)	18.31±6.08	p= 0.018	14.73±17.34	p= 0.0001
The status of performing regular exercise	Yes	277 (23.1)	15.85±6.26	t= -6.983	38.97±20.14	t= 19.289
	No	923 (76.9)	18.65±5.71	p= 0.0001	15.67±16.80	p= 0.0001
Sleeping problems	Yes	505 (42.1)	18.14±6.12	t= 0.651	14.12±18.63	t= -10.587
	No	695 (57.9)	17.91±5.83	p= 0.005	26.07±19.77	p= 0.0001

CFS: Coronavirus Fear Scale, HLBS II: Healthy Lifestyle Behaviors Scale, SD: Standard Deviation

The nursing students who did not apply to any health institution in the last 1-2 months, had any psychological disease, did not think that they did not do a regular diet and regular exercise, and had sleep problems had high CFS scores ($p < 0.05$). The mean HLBS II score of the nursing students who did not have any psychological disease, who thought

they had a regular diet and exercise, and who did not have sleep problems was high ($p < 0.05$) (Table 1). Table 2 shows the distribution of CFS and HLBS II score averages according to the variables experienced by nursing students during the pandemic period.

Table 2. The distribution of CFS and HLBS II scores by the variables experienced by nursing students the pandemic period

COVID-19 Variables		n (%)	CFS Score Mean±SD	p Value	HLBS II Score Mean±SD	p Value
Catching COVID-19	Yes	163 (%13.6)	18.05 ± 6.28	t= 0.106	123.85±191.22	t= 1.915
	No	1037 (%86.4)	18.00 ± 5.90	p= 0.916	120.60±20.29	p= 0.046
Individuals in family and/or family circle catching COVID-19	Yes	989 (%82.4)	18.29 ± 6.52	t= -2.601	122.26±16.61	t= -0.874
	No	211 (%17.6)	16.67 ± 5.60	p= 0.010	120.58±20.15	p= 0.011
Having relatives dying of COVID-19	Yes	460 (%38.3)	19.11 ± 5.97	t= 5.103	121.31±20.09	t= 0.360
	No	740 (%61.7)	17.32 ± 5.85	p= 0.0001	120.88±20.23	p= 0.0001
Getting vaccinated against coronavirus (COVID-19)	Yes	174 (%14.5)	17.85 ± 5.52	t= -0.380	124.72±20.54	t= 2.609
	No	1026 (%85.5)	18.03 ± 6.03	p= 0.687	120.42±20.05	p= 0.009
Psychological impact from the epidemic	Yes	85 (%7.1)	19.51 ± 6.15	t= 6.719	115.41±17.88	t= -8.957
	No	1115 (%92.9)	17.19 ± 5.36	p= 0.0001	125.76±20.60	p= 0.0001
Having a relative at the age of 65 and above at home	Yes	229 (%13.6)	18.19 ± 5.59	t= 0.529	119.04±21.02	t= -1.673
	No	971 (%86.4)	17.96 ± 6.04	p= 0.004	121.52±19.95	p= 0.095

CFS: Coronavirus Fear Scale, HLBS II: Healthy Lifestyle Behaviors Scale, SD: Standard Deviation

The nursing students, who had COVID-19 in their family and/or family circle, had relatives who died from COVID-19, were psychologically affected by the pandemic, and had a relative aged 65 and over at home, had higher mean scores in CFS ($p < 0.05$). The mean scores of the nursing students, who were infected with COVID-19, who had COVID-19 in their family and/or family

circle, who had relatives who died from COVID-19, who were vaccinated against COVID-19, and who were not psychologically affected by the pandemic, were found to be high ($p < 0.05$) (Table 2). Table 3 shows the distribution of the mean scores of CFS and HLBS II scores of the nursing students.

Table 3. The average of The CFS and HLBS II scores of nursing students

	N	CFS Mean±SD	HLBS Mean±SD	p
Mardin Nursing Student	300	17.92±6.04	121.55±20.65	
Diyarbakır Nursing Student	300	18.25±5.71	119.41±18.72	F= 8.762
Trabzon Nursing Student	300	17.93±6.04	121.61±20.63	p= 0.001
Gümüşhane Nursing Students	300	17.81±6.01	120.54±20.47	
Total CFS	1200	18.00±5.95		
Total HLBS II	1200		121.04±20.17	

CFS: Coronavirus Fear Scale, HLBS II: Healthy Lifestyle Behaviors Scale, Min: Minimum, Max: Maximum, SD: Standard Deviation

The nursing students' fears of COVID-19 and SYDB were found to be high. The

nursing students with the greatest fear of COVID-19 were in Diyarbakır and the

nursing students with the highest HLBS were in Trabzon ($p < 0.05$) (Table 3). Table 4 shows the relationship between the mean scores of CFS and HLBS II scores according to age and class of nursing students performing clinical practice in Southeastern Anatolia and the Black Sea Region.

Table 4. The relationship between the mean scores of the nursing students working in the Southeastern Anatolia and Black Sea Region, according to the age, and class

	Age		Class	
	r	p	r	p
CFS	0.487	0.0001	0.438	0.001
HLBS II	0.441	0.001	0.433	0.0001

CFS: Coronavirus Fear Scale, HLBS II: Healthy Lifestyle Behaviors Scale

A statistically significant and positive relationship was detected between the age and class of nursing students and their CFS and HLBS II scores (Table 4).

Table 5. The relationship between CFS and HLBS mean scores of the nursing students

	r	HLBSII	P
CFS	-0.109		0.0001

CFS: Coronavirus Fear Scale, HLBS II: Healthy Lifestyle Behaviors Scale

A statistically significant and negative relation was detected between the CFS and HLBS II scores of the nursing students (Table 5).

Determining the fears and healthy lifestyle behaviors of nursing students, who will be the healthcare professionals of the future, and offering solutions for these will ensure the effectiveness of the service to be provided in another possible pandemic in the future and the person's approach to the process correctly. For this reason, it is important to determine the fears and healthy living behaviors of nursing students towards the pandemic.

The female nursing students experienced more fear of COVID-19 during the pandemic process in the present study. Similar to the study finding, it was reported that women experienced higher fear and anxiety than men during the pandemic process.^{3,6,21-27} Contrary to the present study, male students' fear level of COVID-19 was found to be higher.^{28,29} There are also studies in the literature reporting that gender does not affect fear of COVID-19.³⁰⁻³² This may be because women are more sensitive and detail-oriented by nature.

It was determined in the study that nursing students' perception of their socioeconomic level did not affect their fear of COVID-19. Contrary to the study findings, it was reported in another study that the students who stated that their economic situation was bad were more afraid of COVID-19 than those who stated that their economic situation was good.^{30,32} The socioeconomic level may not affect nursing students' fear of COVID-19.

The nursing students who thought that they did not eat regularly during the pandemic process had more fear of COVID-19. Flanagan et al. reported that participants who were obese experienced more anxiety and had an average weight gain of 27.5%.³³ Not paying attention to adequate and balanced nutrition during the pandemic process may increase the fear of students regarding COVID-19.

The nursing students who thought that they did not exercise regularly during the pandemic process had more fear of COVID-19. In the study conducted by Flanagan et al., it was reported that the sedentary leisure time behaviors of the participants increased and the time spent in physical activity decreased.³³ The effect of regular exercise in reducing anxiety and fear is already known. For this reason, it is an expected finding that the fear of COVID-19 will increase in students who do not exercise regularly.

In the present study, nursing students who had sleep problems during the pandemic process had more fear of COVID-19. Similar studies were found in the literature.^{6,34-38} The

COVID-19 pandemic process may affect the sleep quality of students.

The nursing students who thought that they ate regularly during the pandemic process were higher in HLFS. In the study of Ünal et al., students said that they increased their daily consumption of spices and herbs such as vitamin C, legumes, prebiotics, probiotics, turmeric, and ginger, and reduced unhealthy foods such as acidic/carbonated drinks and junk food to strengthen their immunity during the COVID-19 process.³⁹ In a study that was conducted in Italy, participants increased their homemade recipes (i.e., dessert, pizza, and bread), cereals, legumes, white meat, fresh fish, and hot drinks during the COVID-19 when compared to the pre-pandemic period. It was also determined that packaged ready-made sweets and baked goods and alcohol intake decreased. It was found that Chinese adults changed their dietary habits by increasing their intake of vegetables, fruits, and water and reducing sugary drinks and snacks with the COVID-19 outbreak.⁴⁰

The HLFS scores of the nursing students who thought that they exercised regularly during the pandemic process were high. Considering that exercise is an important component of HLBS, it is possible to argue that this relationship is an expected finding.

The nursing students who had COVID-19 in their family and/or family circle, had relatives who died from COVID-19, were psychologically affected by the pandemic, and had a relative aged 65 and over at home had a greater fear of COVID-19. In a study that was conducted in China, it was reported that the level of anxiety increased when a relative or an acquaintance of people had COVID-19.³² In the study of Çalışkan et al., it was reported that the level of fear of COVID-19 was higher in students who had contact with someone with a diagnosis or suspected COVID-19 in the last 2 months when compared to the students who did not.²² In the study that was conducted by Aslan and Pekince with nursing students during the pandemic process, it was determined that the COVID-19 stress levels

of students who knew people who had a positive Coronavirus test were higher.⁶ Contrary to the study results, it was found in the study of Ahi et al. that people with a close relative with a diagnosis of COVID-19 had a lower fear of COVID-19.³⁰ This may be because of the student's fear of being sick and dying.

In the present paper, nursing students' fears of COVID-19 (mean CFS score of 18.00 ± 5.95) and healthy lifestyle behaviors (mean score of HLBS 121.04 ± 20.17) were found to be high. The nursing students with the greatest fear of COVID-19 were in Diyarbakır and the nursing students with the highest healthy lifestyle behaviors were in Trabzon ($p = 0.001$). Similar to the study findings, the average scores of students' fear of COVID-19 were high in the literature.^{14,28,31} According to a study by the Mental Health Association, it was reported that 61% of the participants increased the precautions related to the pandemic.²⁶ It was reported that students who said that they needed psychological support in the study of Büyükbayraktar et al. experienced significantly higher levels of fear than the others.²⁴ It can be argued that nursing students were afraid of the effects of the pandemic, but they paid more attention to healthy living habits.

As the age and grade of nursing students increased, fear of COVID-19 and healthy lifestyle behaviors also increased. Contrary to the study findings, there are also studies reporting that there were no significant relationships between the students' ages and grades and anxiety levels.^{14,22,23} In this context, it can be considered that as the age and education level of the students increase, their awareness based on theoretical knowledge also increases.

As the fear of COVID-19 of the nursing students increased, HLBS decreased. Similar to this study finding, as the COVID-19 fear scale score decreased, the quality-of-life scale scores increased in the study of Temur et al.³⁴ It can be argued that the fear of COVID-19 negatively affected the quality of life.

CONCLUSIONS

The fears of COVID-19 and HLBD of nursing students who did clinical practice in Diyarbakır and Mardin from the Southeastern Anatolia Region of Turkey, and Trabzon and Gümüşhane from the Black Sea Region, where the study was conducted, were high. The nursing students with the greatest fear of COVID-19 were in Diyarbakır and the nursing students with the highest HLBS were in Trabzon.

Female and single nursing students compared to male and married students, those who did not apply to any health institution in the last 1-2 months compared to those who applied, those who did not have any psychological disease, those who thought that they did not have a regular diet and regular exercise compared to those who thought that they did, those who had COVID-19 in their family and/or family circle compared to those who did not, those who had relatives who died from COVID-19 compared to those who did not have any such relatives, those who were psychologically affected by the pandemic compared to those who were not affected, and those who had a relative aged 65 compared to those who did not have such a relative at home had higher fear of COVID-19.

The nursing students who perceived their socioeconomic level as good, who were married, who were male compared to those who were female, single and perceived their socioeconomic level as poor, those who did not have any psychological disease compared to those who had such a disease, those who thought they had a regular diet and regular exercise compared to those who did not think so, those who did not have sleep problems compared to those who had sleep problems,

those who had COVID-19 in their family and/or family circle compared to those who did not have such people, those who had relatives who died from COVID-19 compared to those who did not, those who were vaccinated against COVID-19 compared to those who were not, and those who were not psychologically affected by the pandemic compared to those who were affected had higher HLBS scores.

In the present paper, as the age and grade of nursing students increased, the fear of COVID-19 and HLBS also increased.

In line with these results, the following recommendations were made.

- COVID-19 prevention training must be provided to female, single and elderly nursing students,
- Nursing students must be directed to healthcare institutions to have regular health checks,
- Nursing students who do not receive OHS training must be provided with occupational health and safety training at regular intervals,
- Nursing students who have any psychological illness must be directed to a psychologist or psychiatrist to receive professional psychological support,
- Collaboration must be established with the cafeterias of the hospitals where clinical education is provided to provide adequate and balanced nutrition for nursing students,
- Sports activities must be organized so that nursing students can do regular exercise.

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