

Araştırma Makalesi/ Research Article

Determination of Nursing Students' Fear of COVID-19, Intolerance of Uncertainty and Coronavirus Anxiety: A Cross-Sectional Study

Hemşirelik Öğrencilerinin COVID-19 Korkusu, Belirsizliğe Tahammülsüzlük ve Koronavirüs Kaygısının Belirlenmesi: Kesitsel Bir Çalışma

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ABSTRACT

Objective: This study aimed to determine the fear of COVID-19, intolerance of uncertainty, and coronavirus anxiety in nursing students who switched from online education to face-to-face education.

Methods: It is a descriptive cross-sectional study. Demographic information form, fear of COVID-19 scale, intolerance of uncertainty scale, and coronavirus anxiety scale were used. This research was carried out at a university at the Faculty of Health Science Nursing Department and Health School Nursing Department in the 2021-2022 academic year. Our study was completed with a total of 788 students who agreed to participate in the study. The data obtained from our study were evaluated with the SPSS 25.00 package program. The significance level was accepted as $p<0.05$.

Results: The average age of the students was 20.38 ± 1.75 . 32.6% of the students were in the first grade, and 79.4% were female. The mean score of the students' fear of COVID-19 scale was 17.44 ± 5.94 , the mean score of intolerance to uncertainty scale was 38.78 ± 8.50 , the mean score of coronavirus anxiety was 1.63 ± 3.46 . There was a statistically significant difference between some demographic data of the students and the scale score averages ($p<0.05$). The conducted correlation analysis revealed a positive relationship between COVID-19 fear, intolerance of uncertainty, and coronavirus anxieties ($p<0.05$).

Conclusions: Results of this research show a moderate fear of COVID-19 and a high level of intolerance of uncertainty during the pandemic.

Keywords: Intolerance of uncertainty, fear of COVID-19, nursing student, coronavirus anxiety

ÖZ

Amaç: Bu çalışmada çevrimiçi eğitimden yüz yüze eğitime geçiş yapan hemşirelik öğrencilerinde COVID-19 korkusu, belirsizliğe tahammülsüzlük ve koronavirüs kaygısının belirlenmesi amaçlanmıştır.

Yöntem: Çalışma, tanımlayıcı kesitsel bir çalışmadır. Bu çalışmada, kişisel bilgi formu, COVID-19 korkusu ölçeği, belirsizliğe tahammülsüzlük ölçeği, koronavirüs kaygı ölçeği kullanıldı. Bu araştırma, 2021-2022 eğitim öğretim yılında bir üniversitenin Sağlık Bilimleri Fakültesi Hemşirelik Bölümü ve Sağlık Yüksekokulu Hemşirelik bölümünde yapıldı. Araştırmaya katılmayı kabul eden toplam 788 öğrenci ile çalışmamız tamamlandı. Çalışmamızdan elde edilen veriler SPSS 25.00 paket programı ile değerlendirildi. Anlamlılık düzeyi $p<0.05$ olarak kabul edildi.

Bulgular: Öğrencilerin yaş ortalaması 20.38 ± 1.75 idi. Öğrencilerin %32.6'sı birinci sınıf, %79.4'ü kadındı. Öğrencilerin COVID-19 korkusu ölçek puan ortalaması 17.44 ± 5.94 , belirsizliğe tahammülsüzlük ölçek puan ortalaması 38.78 ± 8.50 koronavirüs kaygısı puan ortalaması 1.63 ± 3.46 idi. Öğrencilerin bazı demografik verileri ile ölçek puan ortalamaları arasında istatistiksel olarak farklılık olduğu saptandı ($p<0.05$). Yapılan korelasyon analizinde COVID-19 korku, belirsizliğe tahammülsüzlük ve koronavirüs kaygıları arasında pozitif yönde ilişki olduğu belirlendi ($p<0.05$).

Sonuç: Bu araştırmanın sonuçları, pandemi sırasında orta düzeyde bir COVID-19 korkusu ve yüksek düzeyde belirsizliğe tahammülsüzlük olduğunu göstermektedir.

Anahtar Kelimeler: Belirsizliğe tahammülsüzlük, COVID-19 korkusu, hemşirelik öğrencisi, koronavirüs kaygısı

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Introduction

We have been facing a global health crisis since March 2020, which has put health systems to the test. Throughout this crisis, it has been emphasized in the media that nurses are the front-line health professionals in both the private and public health sectors (Rosenbaum, 2020; Salari et al., 2020). This situation has once again demonstrated to the entire world the importance of nursing students' education and the employment of nurses.

The COVID-19 pandemic has presented complex challenges to healthcare systems and the training of healthcare professionals to ensure the same quality of clinical education and ensure the safety of patients, professionals, and the community. In line with the pandemic measures, various restrictions have been implemented in Turkey, such as stopping intercity travels, closing shopping malls, cinemas, theaters, sports centers, restaurants, barbershops, hairdressers, and coffee shops, and enforcing a nationwide curfew for certain periods (BBC News Turkish, 2022). To address the challenges caused by the pandemic, higher education institutions responsible for nursing professionals' education had to adapt their curricula and utilize different learning methods for theoretical, theoretical-practical, and laboratory practice courses. As active elements of the teaching-learning process in higher education institutions, online education was introduced as a new experience for students and academics, and this system continued for more than a year. In Turkey, in the 2021-2022 academic year, a hybrid system of in-person and online education was implemented. In nursing education, theoretical courses and clinical practice are crucial to gaining the necessary skills in health services. However, during the pandemic period, students refrained from clinical practice until in-person training resumed, considering personal and patient safety. Nevertheless, clinical internships in both hospitals and primary health care services were conducted in the in-person regimen, adapting to the conditions imposed by the pandemic situation. Students, especially those with chronic or oncological diseases, were confronted with a dilemma where they had to choose between their safety and their families' safety and continuing their education and professional careers. These and similar challenges caused fear, uncertainty, and anxiety in nursing students and placed an unbearable psychological burden on them (Fowler and Wholeben, 2020).

A study (Miller et al., 2020) reveals that during the COVID-19 pandemic, students are exposed to not only the risk of COVID transmission but also psychological and emotional changes. It is also noted that they face a dilemma between fulfilling the requirements of their profession and experiencing fear (Baixinho and Ferreira, 2021). Some recent studies report that nursing students and internship practitioners experience feelings of anxiety and vulnerability, along with the desire and commitment to care for COVID-19 patients (Gallagher and Schleyer, 2020; Swift et al., 2020).

The COVID-19 pandemic has had a negative impact on subjective well-being, causing fear of COVID-19 in many individuals (Ahorsu et al., 2020). This fear has been linked to various psychological problems, including depression, anxiety, and stress in almost everyone (Lin et al., 2021). The root cause of these psychological issues lies in the uncertainty associated with COVID-19 (Li et al., 2020). Additionally, the uncertainty surrounding when life will return to normal after the pandemic further adds to individuals' anxiety. Consequently, increased fear and anxiety can alter individuals' tolerance of uncertainty. Intolerance of uncertainty has been identified as a predictor of psychological well-being (Tang, 2019), and it is associated with various conditions, such as academic performance, professional burnout, and social isolation (Bicer et al., 2020; Cooke et al., 2013). Descriptive studies are needed to develop and support effective treatments and policies that address pandemic-related anxiety, which is a global problem today. This necessity highlights the importance of examining the effects of the COVID-19 pandemic on nursing students, who will become nurses in hospitals in the future, especially under pandemic conditions, and taking necessary precautions accordingly. The significance of competent nurses in the field has been underscored once again during the COVID-19 pandemic. Therefore, it is crucial to determine the effects of the COVID-19 pandemic on nursing students and raise awareness about it to implement the required precautions. This study was conducted to determine the levels of fear of COVID-19, intolerance of uncertainty, and coronavirus anxiety in nursing students transitioning from online education to in-person regimen education.

Research Questions:

1. What are the levels of fear of COVID-19, intolerance of uncertainty, and coronavirus anxiety among nursing students?

2. Is there a relationship between the fear of COVID-19, intolerance of uncertainty, and coronavirus anxiety levels among nursing students?

Method

Design, Participant and Setting

It is a descriptive, cross-sectional and relational study. The study was carried out in Sivas Cumhuriyet University Faculty of Health Sciences and Suşehri Health School Nursing Departments between 10 January - 10 March 2022 June 2022. The study population consisted of a total of 1427 students studying at the Nursing Department of the Faculty of Health Sciences and the Nursing Department of the Suşehri Health School during the 2021-2022 academic year. Since the number of people in the population is known, the number of samples was found to be 264 using the formula " $n=N.t^2.p.q/d^2(N-1)+t^2.(p.q)$ " ($t=1.96$, $p=0.70$, $q=0.30$, $d=0.05$). Our study was completed with a total of 788 students who agreed to participate in the study.

Instrument and Procedure

In the study, four forms were used. The students who accepted to participate in the study were given the forms by the researchers and they were expected to answer the questions on the forms within approximately 30 minutes. Before the forms were given to the students, it was stated that the survey study would not have any effect on the success of the course.

Questionnaire Form

The form was created by the researchers in line with the literature (Carleton et al., 2007; Duman, 2020; Saricam et al., 2014; Satici et al., 2020). It consists of a total of 19 questions including age, gender, class, place of residence at the university, family type, presence of chronic disease, alcohol and smoking status, and the problems experienced during the COVID-19 pandemic.

The Fear of COVID-19 Scale

The Fear of COVID-19 Scale (FCS), was developed by Ahorsu et al (2020). Its Turkish validity and reliability was done by Satici et al (2020). The applicable age scale of FCS is wide and can be used on university students and adults. All items of FCS consisting of 7 questions are scored positively. The questions are in 5-point Likert type. There is no reverse scored item in FCS. A score between 7 and 35 is taken from FCS. A high score indicates that the FCS is 'high'. In the Turkish validity and reliability study of FCS, the Cronbach Alpha value was found to be 0.82. In the present

study, the Cronbach's alpha coefficient of the scale was found to be 0.90.

Intolerance of Uncertainty Scale-12

Intolerance of Uncertainty Scale-12 (IUS-12), short form was developed by Carleton, Norton, and Asmundson,¹⁸ and its Turkish validity and reliability study was completed by Saricam et al. (2014). The scale consists of 12 items. The form is in 5-point Likert type. Only the first item is reverse coded. A score between 12 and 60 can be obtained from IUS-12. High scores from IUS-12 indicate intolerance to uncertainty. IUS-12 also has two subscales. The first seven questions include the "prospective anxiety" subscale; the other questions show the subscale of "inhibitory anxiety". The Cronbach Alpha coefficient of the Turkish version of IUS-12 is 0.88. The Cronbach's alpha coefficient was found to be 0.84 for the prospective anxiety subscale and 0.77 for the inhibitory anxiety subscale. In the present study, the Cronbach's alpha coefficient of the scale was found to be 0.83.

Coronavirus Anxiety Scale Short Form

Coronavirus Anxiety Scale Short Form (CAS) was developed by Lee (2020) to identify possible causes of dysfunctional anxiety associated with the COVID-19 crisis. The Turkish validity and reliability of the CAS was done by Bicer et al. (2020). The scale is in 5-point Likert type. CAS consists of 5 questions and one dimension. The Cronbach α value of the scale, which was adapted into Turkish, was reported as 0.832. The cut-off point of CAS is 9. If the CAS score is ≥ 9 , it is interpreted as high coronavirus anxiety. In the present study, the Cronbach's alpha coefficient of the scale was found to be 0.95.

Statistical analysis

The data obtained from our study were evaluated with the SPSS 25.00 package program. The normality test of the data was evaluated with Kolmogorov-Smirnov (K-S). In the normality test, the data on extracurricular internet use, type of chronic disease, willingness to choose nursing, and how COVID-19 affected the course success grade showed normal distribution, the data other than these did not show a normal distribution. Parametric tests were used for normally distributed data and analyzed by independent sample t-test for two independent groups and F-test (ANOVA) for more than two groups. ANOVA was used for comparisons with more than two groups, Tukey was used to determine which group was different from the others, and Tamhane's T2 test was used for those who did not provide the homogeneity assumption.

Nonparametric tests were used for data that did not show normal distribution. It was evaluated with the Mann Whitney U test for two independent groups and with the Kruskal Wallis test for more than two independent groups. Since the scales used in the research did not show a normal distribution, in order to reveal the relationship between the scales; Spearman correlation analysis was performed. The significance level was accepted as $p < 0.05$.

Ethical Considerations

Before starting the study, approval was obtained from the Sivas Cumhuriyet University Non-interventional Clinical Research Ethics Committee on 17.11.2019 with the decision no 2019-11/08. This study was conducted in compliance with the Helsinki Declaration Principles and written permission to use the scale was obtained by e-mail from authors were obtained. The participation of the students was voluntary and written consent from the students was obtained.

Results

The average age of the students is 20.38 ± 1.75 . 32.6% of the students are first-year students, 79.4% are girls, 84.1% are primary school graduates, and 77.7% live in dormitories. It was determined that 90.9% of the students participating in the study do not smoke, and 15.2% quit smoking during the pandemic period. While the rate of alcohol use was 7.9 percent, it was determined that 17.4 percent of those who used alcohol during the pandemic period quit alcohol. During the pandemic process, it was determined that 70.4% of the students lost the time they spent on the internet outside of the classroom, 4.3% had chronic diseases, and 2.8% of these diseases were asthma (Table 1). Other information about the changes caused by COVID-19 in students and the changes in the education process is also included in Table 1.

The total score average of the FCS of participants in the study was 17.44 ± 5.94 . The IUS-12 total score average was 38.78 ± 8.50 , the mean of prospective anxiety subscale score was 23.00 ± 4.26 , and the mean of inhibitory anxiety subscale score was 15.78 ± 4.99 . The mean of CAS total score of the students was found to be 1.63 ± 3.46 (Table 2).

Table 1. Demographic characteristics of students (n=788)

Characteristics	Mean±SD	
The average age	20.38±1.75	
Grade level	n	%
1 st grade	257	32.5
2 nd grade	248	31.5
3 rd grade	151	19.2
4 th grade	132	16.8
Gender		
Female	626	79.4
Male	162	20.6
Family structure		
Elementary	663	84.2
Extended	105	13.3
Broken	20	2.5
Place of residence at the University		
Student dormitory	612	77.7
Own family home	154	19.5
Student house with friends	14	1.8
With his relative	4	0.5
Other	4	0.5
Smoking		
Yes	72	9.1
No	716	90.9
Changing in smoking status during the COVID-19 pandemic (n=238)		
The pandemic made me start smoking.	23	2.9
I started smoking more during the pandemic process.	35	4.4
During the pandemic process, my smoking rate decreased.	60	7.6
I stopped smoking during the pandemic.	120	15.1
Drinking alcohol		
Yes	62	7.9
No	726	92.1
Changing in alcohol drinking during the COVID-19 pandemic (n=200)		
The pandemic made me start drinking alcohol.	20	2.4
I started drinking more alcohol during the pandemic process.	10	1.2
During the pandemic process, my alcohol consumption rate decreased.	33	4.1
I stopped drinking alcohol during the pandemic.	137	17.3
Changing in internet use outside of school lessons		
The time on the Internet outside of lessons has not changed	184	23.4
Increased time spent online outside of lessons	555	70.4
Less time spent on the Internet outside of lessons	49	6.2

Table 1. (continue) Demographic characteristics of students (n=788)

Characteristics	n	%
State of have a chronic disease		
Yes	34	4.3
No	754	95.7
Type of chronic disease		
Asthma	22	2.8
Type 1 diabetes	4	0.4
Migraine	3	0.3
Celiac disease	2	0.2
Mediterranean anemia	3	0.3
Choosing the nursing department willingly		
Yes	606	76.9
No	182	23.1
Participating in social activities at the university during the pandemic		
Yes	244	31.0
No	544	69.0
Isolation due to COVID-19		
Yes	422	53.6
No	366	46.4
Losing a loved someone due to COVID 19		
Yes	206	26.1
No	582	73.9
Beneficial of which education during the pandemic		
In the in-person regimen education	464	58.9
Online education	224	41.1
Fear of doing clinical internship		
Yes	352	44.7
No	436	55.3
Fear of transmitting viruses between environments		
Yes	304	38.6
No	484	61.4
Change in academic success in the COVID-19 pandemic		
Increase of academic success	140	17.8
No changing academic success	464	58.9
Decrease of academic success	184	23.3

The correlation analysis between the data collection scales is given in Table 3. According to the table; positively and weakly significant relationship ($p < 0.001$) was found between IUS-12 total score average of IUS-12, “prospective anxiety” subscale, “inhibitory anxiety” subscale and FCS and CAS.

Comparisons of some demographic data of students and their FCS, IUS-12 and CAS mean scores are given in Table 4. When the table is examined, there was a statistically significant difference between FCS and students' grade level ($p < 0.05$), gender ($p < 0.05$), changes in smoking status during the pandemic ($p < 0.05$), changes in internet use outside of school lessons ($p < 0.05$), presence of a chronic disease ($p < 0.05$), and willingly choosing the nursing department ($p < 0.05$). Furthermore, a significant relationship was found between FCS and participating in social activities at the university during the pandemic ($p < 0.05$), experiencing the loss of a loved one due to COVID-19 ($p < 0.05$), benefiting from education during the pandemic ($p < 0.001$), fear of doing a clinical internship ($p < 0.001$), and fear of transmitting viruses between environments ($p < 0.001$). CAS showed a statistically significant difference with the presence of a chronic disease ($p < 0.001$), willingly choosing the nursing department ($p < 0.05$), participating in social activities at the university during the pandemic ($p < 0.05$), experiencing the loss of a loved one due to COVID-19 ($p < 0.001$), fear of doing a clinical internship ($p < 0.001$), and fear of transmitting viruses between environments ($p < 0.001$). In the study, statistically significant relationships were found between the grade level of the students ($p < 0.05$), family structure ($p < 0.05$), participating in social activities at the university during the pandemic ($p < 0.05$), fear of doing a clinical internship ($p < 0.001$), fear of transmitting viruses between environments ($p < 0.05$), and IUS-12 (Table 4).

Discussion

The presented study was conducted to determine the levels of fear of COVID-19, intolerance of uncertainty, and coronavirus anxiety among nursing students at a university. The students' fear of COVID-19 was moderate, their intolerance of uncertainty was high, and their coronavirus anxiety was low. Additionally, a relationship was found between these scales.

In this study, students were found to have a moderate fear of COVID-19 and a high level of intolerance to uncertainty. However, coronavirus anxiety is low. In the studies conducted at the beginning of the pandemic (Ahorsu et al., 2020; Satici et al., 2020; Perz et al., 2020), the total score averages of the COVID-19 fear scale were found to be higher than the score in our study. This can be explained as the fear of COVID-19 diminishes as the process progresses, despite the continuing uncertainty. In this respect, our study offers new contributions to the literature. The finding in the correlation analysis that there is a positive and weakly significant relationship between the IUS-12 scale and its subscale, FCS and CAS also supports this result. In the literature, no study was found in which fear of COVID-19, intolerance of uncertainty, and coronavirus anxiety were determined. However, in a study conducted with nursing students (Savitsky et al., 2020), it was found that there is a relationship between fear of COVID-19 and anxiety.

During the COVID-19 pandemic, as of the beginning of March 2020, all learning institutions were forced to suspend in-person regimen education and a policy of isolation was introduced by the government. Employees of all academic institutions were faced with a new reality and had to turn to online teaching in order to continue the academic year and pass the success assessment exams. Therefore, in Turkey, university education was conducted online for 1 year. At the time of this study, 1st and 2nd grade students who received online education experienced in-person regimen education for the first time. In this study, it was determined that 1st and 2nd grade students had a significantly higher fear of COVID-19 than 3rd and 4th grade students. Another finding in this study, that students who receive online education have a higher fear of COVID-19 and anxiety about coronavirus, supports the previous result. At the same time, it was found that online education increased the IUS-12 scale total score average, but the difference was not statistically significant. This may be due to the fact that students receive face-to-face training for the first time after online education. This result can be said that online education increases uncertainty on students and triggers COVID-related fear and anxiety. Some studies (Rodríguez-Hidalgo et al., 2020; Huang and Zhao, 2020) have also found that students' fear of COVID-19 is associated with psychological problems such as stress, anxiety and depression. Undergraduate students are at a stage where they plan the future of

their lives, try to find a job, try to create conditions where they can become independent from their parents and take care of themselves. Undergraduate students are at a stage where they plan the future of their lives, try to find a job, try to create conditions where they can become independent from their parents and take care of themselves. This explains the significant increase in the IUS-12 total score as we approach graduation, in line with the data obtained from our study. In this study, it was found that female students had a significantly higher fear of COVID-19 than male students. In other studies (Rodríguez-Hidalgo et al. 2020; Huang and Zhao, 2020; Sandin et al., 2020) it has been determined that female undergraduate students have a higher level of fear of COVID-19 than men. In a study conducted with nursing students (Alici and Copur, 2021) it was found that female students had a higher fear of COVID-19 than males. At the same time, no significant relationship was found between gender and IUS-12 and CAS score averages in this study. However, contrary to studies showing that female students are more vulnerable to anxiety and depression during the pandemic period (Huang and Zhao, 2020; Sandin et al., 2020; Savitsky et al., 2020), the results of Rodríguez-Hidalgo et al. (2020) support our study. In this case, this result can be thought to be related to the fact that women's coping mechanisms are higher than men's. Uncertainty may have caused students to experience fear of COVID-19 due to the sudden and unexpected change in the education system during the pandemic period, the increase in the number of deaths, the rapid spread of the disease, and the lack of a specific treatment. In this study, it was determined that the FCS and CAS scale mean scores of the students who unintentionally chose the nursing department were significantly higher. Nurses are in the position of soldiers fighting on the front line during the pandemic process. At the same time, it is considered as a group that works one-on-one with patients and has a high risk of exposure to pathogens. There is evidence in the literature (Lahner et al., 2020; Nguyen et al., 2020; Pala and Metindas; 2020) that healthcare workers are more likely to catch COVID-19 and many healthcare workers have lost their lives because of this. The unwillingness of students to choose this profession will of course have a negative impact on their fear and anxiety. In addition, the uncertainty of when the COVID-19 process will end may also have caused fear and anxiety in students.

In our study, a statistically significant difference was found between the mean scores of FCS, IUS-12

and CAS scales and the level of students' participation in social activities. It was determined that students with high FCS, IUS-12 and CAS scale scores did not participate in social activities at the university. It was determined that students with high FCS, IUS-12 and CAS scale scores did not participate in social activities at the university.

It was found that the FCS and CAS scale total score averages were higher in students who lost a loved someone due to COVID-19. These losses experienced by the students may have caused an increase in fear and anxiety. The loss of a loved someone due to COVID-19 causes stress disorder in people because they cannot say goodbye to their loved ones for the last time (Han et al., 2021). Compared to the natural loss, the loss due to COVID-19 can be interpreted as causing more fear and anxiety in students.

Clinical applied learning is a central element of nursing education, which is considered one of the most important factors for the development of skills (Jamshidi et al., 2016). Students participating in this study made a clinical practice for the first time in the COVID-19 pandemic. The results of this study showed that there was a statistically significant

difference in the FCS, IUS-12 and CAS scale mean scores of clinical practice. This situation may have increased the level of fear, anxiety and intolerance to uncertainty due to the possibility of being infected and infecting others -especially their relatives- in nursing students who are in close contact with patients during clinical practice. As a matter of fact, in our study, a statistically significant difference was found between students' fear of transmitting viruses between environments and FCS, IUS-12 and CAS. It can be thought that this situation arises from the students' fear of harming other people due to the fear of carrying viruses between environments. Because nursing students receive training in line with the principle of "do no harm - provide benefit" at the base of their education.

Limitations

This study was carried out with students enrolled in different nursing schools of a state university in Turkey. For this reason, the generalizability of the results can be increased by conducting similar studies with different cultural characteristics from different cultures and countries.

Table 2. Total score averages of fear of COVID 19, intolerance of uncertainty, and coronavirus anxiety scales (n=788)

Scales and Subscales	Mean ±SD	Min-Max
FCS	17.44±5.94	7-35
IUS-12	38.78±8.50	18-56
<i>Prospective anxiety</i>	23.00±4.26	12-32
<i>Inhibitory anxiety</i>	15.78±4.99	5-25
CAS	1.63±3.46	0-20

FCS: the fear of COVID 19 scale, CAS: coronavirus anxiety scale, IUS-12: intolerance of uncertainty scale - 12

Table 3. Spearman correlation analysis between students' fear of COVID 19, intolerance of uncertainty, and coronavirus anxiety (n=788)

IUS-12 Subscale	FCS		CAS	
	r	p	r	p
<i>Prospective anxiety</i>	.192**	0.000	.162**	0.000
<i>Inhibitory anxiety</i>	.222**	0.000	.211**	0.000
Total score of IUS-12	.227**	0.000	.205**	0.000

**p≤0.001; *FCS: the fear of COVID 19 scale, CAS: coronavirus anxiety scale, IUS-12: intolerance of uncertainty scale - 12*

Table 4. Comparison of the mean scores of fear of COVID 19, intolerance of uncertainty and coronavirus anxiety according to the demographic characteristics of the students (n=788)

Characteristics	FCS		CAS		IUS-12 Subscale				Total Score of IUS-12	
	Mean ±SD	Test	Mean ±SD	Test	prospective anxiety		inhibitory anxiety		Mean ±SD	Test
					Mean ±SD	Test	Mean ±SD	Test		
Grade level										
1 st grade	17.96±6.03	KW=10.828 p=0.01*	1.86±4.13	KW=2.619 p=0.45	22.57±4.61	KW=4.189 p=0.24	14.89±5.34	KW=12.872 p=0.005*	37.46±9.12	KW=9.749 p=0.02*
2 nd grade	17.64±5.43		1.91±3.70		23.17±4.17		16.40±4.70		39.51±8.04	
3 rd grade	16.89±6.44		1.03±2.18		23.28±3.36		15.83±4.85		39.60±7.56	
4 th grade	16.65±5.94		1.33±2.56		23.30±4.62		16.30±4.82		39.60±8.86	
Gender										
Female	17.66±5.55	Z= -3.194 p=0.001**	1.36±2.72	Z=-1.274 p=0.20	22.84±4.21	Z= -2.003 p=0.04*	15.72±4.87	Z=-.657 p=0.51	38.56±8.29	Z=-.046 p=0.96
Male	16.56±7.21		2.67±5.32		23.64±4.41		16.02±5.48		39.66±9.21	
Family structure										
Elementary	17.58±6.06	KW=3.149 p=0.21	1.69±3.59	KW=4.637 p=0.10	23.18±4.26	KW=13.717 p=0.001**	15.95±5.03	KW=5.800 p=0.06	39.12±8.53	KW=10.957 p=0.004*
Extended	16.81±5.52		1.28±2.75		22.44±4.37		14.93±4.92		34.95±8.49	
Broken	16.00±3.20		1.35±2.21		20.25±2.40		14.70±4.03		38.78±5.22	
Changing in smoking status during the COVID-19 pandemic (n=238)										
The pandemic made me start smoking.	20.13±6.99	KW=11.851 p=0.01*	4.35±6.35	KW=1.779 p=0.62	22.30±5.03	KW=9.320 p=0.03*	15.57±4.85	KW=4.204 p=0.24	37.87±9.22	KW=7.073 p=0.07
I started smoking more during the pandemic process.	15.34±6.40		1.77±2.83		21.77±4.75		15.09±5.57		36.86±9.51	
During the pandemic process, my smoking rate decreased.	16.72±5.34		1.98±3.53		24.53±4.20		16.75±5.08		41.28±8.45	
I stopped smoking during the pandemic.	18.99±6.75		2.88±5.38		23.90±4.59		17.06±5.50		40.95±9.41	
Changing in internet use outside of school lessons										
The time on the Internet outside of lessons has not changed	17.37±5.49	F=7.348 p=0.001**	1.53±3.27	F=1.155 p=0.32	22.91±4.29	F=1.284 p=0.28	15.76±5.09	F=.952 p=0.37	38.67±8.55	F=1.213 p=0.30
Increased time spent online outside of lessons	16.82±6.66		1.97±4.16		23.05±4.28		15.59±4.93		38.64±8.63	
Less time spent on the Internet outside of lessons	20.43±7.13		1.51±2.43		23.92±3.79		16.69±4.08		40.61±7.12	
State of have a chronic disease										
Yes	19.94±6.60	Z=-2.343 p=0.02*	4.35±5.55	Z=-5.022 p=0.000	23.18±4.01	Z=-.095 p=.092	15.35±5.22	Z=-.771 p=0.44	38.53±8.38	Z=-.715 p=0.47
No	17.32±5.89		1.51±3.29		22.44±4.28		15.80±4.99		38.79±8.51	
Choosing the nursing department willingly										
Yes	17.20±6.10	F=15.046 p=0.03*	1.39±3.20	F=11.776 p=0.002	22.74±4.27	F=.335 p=0.56	15.74±5.06	F=.372 p=0.54	38.48±8.63	F=2.827 p=0.09
No	18.23±5.32		2.41±4.13		23.87±4.12		15.91±4.80		39.78±7.99	

Table 4. (continue) Comparison of the mean scores of fear of COVID 19, intolerance of uncertainty and coronavirus anxiety according to the demographic characteristics of the students (n=788)

	FCS		CAS		IUS-12 Subscale				Total Score of IUS-12	
	Mean ±SD	Test	Mean ±SD	Test	<i>prospective anxiety</i>		<i>inhibitory anxiety</i>		Mean ±SD	Test
Participating in social activities at the university during the pandemic										
Yes	16.69±5.17	Z=-2.636	1.28±3.09	Z=-2.249	22.20±4.24	Z=-2.301	15.24±4.75	Z=-3.501	37.44±8.22	Z=-2.917
No	17.77±6.23	p=0.01*	1.78±3.60	p=0.03	23.36±4.23	p=0.02*	16.02±5.09	p=0.000**	39.39±8.56	p=0.004*
Losing a loved someone due to COVID-19										
Yes	18.68±7.04	Z=-2.819	2.55±4.73	Z=-4.152	23.07±4.09	Z=-.230	15.82±4.83	Z=-.040	38.89±8.41	Z=-.264
No	16.99±5.44	p=0.005*	1.30±2.80	p=0.000	22.98±4.32	p=0.82	15.77±5.06	p=0.97	38.74±8.53	p=0.79
Beneficial of which education during the pandemic										
In the in-person regimen education	16.35±4.98	Z=-5.591	1.14±2.50	Z=-4.217	22.79±4.42	Z=-1.947	15.66±5.00	Z=-.757	38.45±8.67	Z=-1.489
Online education	18.99±6.81	p=0.000**	2.32±4.40	p=0.000	23.31±4.01	p=0.05	15.95±4.99	p=0.45	39.25±8.23	p=0.14
Fear of doing clinical internship										
Yes	20.07±5.96	Z=-11.709	2.08±3.94	Z=-4.299	23.58±4.09	Z=-3.699	16.39±4.69	Z=-2.795	39.97±8.03	Z=-3.536
No	15.31±5.01	p=0.000	1.26±2.99	p=0.000	22.53±4.34	p=0.000**	15.29±5.18	p=0.005*	37.82±8.75	p=0.000**
Fear of transmitting viruses between environments										
Yes	19.66±5.87	Z=-8.545	2.32±4.29	Z=-5.545	23.72±4.39	Z=-3.333	16.95±4.93	Z=-5.159	40.66±8.59	Z=-4.794
No	16.04±5.56	p=0.000	1.20±2.73	p=0.000	22.55±4.12	p=0.001**	15.05±4.91	p=0.000**	37.60±8.23	p=0.000**

* $p < 0.05$, ** $p \leq 0.001$; FCS: the fear of COVID 19 scale, CAS: coronavirus anxiety scale, IUS-12: intolerance of uncertainty scale - 12

Conclusions

The COVID-19 pandemic reminded the whole world of the reality of pandemics. There is also a possibility of facing various pandemics throughout our future lives. In this context, the results of this study are important as they reveal the situations of nursing students when exposed to a potential pandemic. Students have been deeply affected during the COVID-19 process due to factors such as worrying about the health of their families, the closure of universities and the transition to online education, the inability to perform their routines and the restriction of their social relationships. Our findings show a moderate fear of COVID-19 and a high level of intolerance of uncertainty during the pandemic. Despite the limitations of this study regarding the cross-sectional design, these findings add new evidence for fear of COVID-19, intolerance to uncertainty, and coronavirus anxiety among nursing students during the COVID-19 pandemic. The long-standing difficulties with the COVID-19 pandemic have left their mark on nursing education as in all fields. The data of our study also supports this situation. In addition, this study data reveals that the fear of COVID-19 has decreased over time, but the intolerance to uncertainty still continues. In addition, it is thought that the psychological aspects of nursing students who will work one-on-one with the patient in the field of health should be given more value. Due to the uncertainty about when the pandemic will end, in order for nursing students to cope with fear, anxiety and intolerance of uncertainty both in their future working life and in their current education life, and to become psychologically stronger nurses; It is recommended to make curriculum adjustments that will change students' perspectives, such as planning appropriate training, ensuring proper implementation, and addressing coping methods with the pandemic, psychosocial counseling, and increasing awareness related to the pandemic during nursing education.

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What did the study add to the literature?

- In this study, COVID-19 serves as a representation. It is essential to support nursing students in reducing their anxieties and fears related to the pandemic.
- Instilling a positive attitude towards the nursing profession in nursing students not only positively influences their professional outlook but also encourages them to take on their professional responsibilities.
- This is crucial because the current media signals the continuation of different pandemic processes. The COVID-19 pandemic, which has become a plague of our time, should be considered as a foresight for potential future outbreaks, and these findings should be utilized for practical preplanning.

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