




Effect of Anxiety Levels of Nursing Students on Their Attitudes Towards Vaccines During the Coronavirus Pandemic/ *Koronavirüs Pandemisinde Hemşirelik Öğrencilerinin Anksiyete Düzeylerinin Aşıya Yönelik Tutumlarına Etkisi*

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Abstract

Introduction: Vaccination is one of the most effective and cost-efficient measures to prevent COVID-19. The introduction of COVID-19 vaccines has led to varying attitudes among individuals; some have positive attitudes, while others have developed anxiety. Misinformation and incomplete information about vaccines have contributed to vaccine hesitancy. **Aim:** This study aims to determine the effect of nursing students' anxiety levels on their attitudes towards vaccines during the coronavirus pandemic. **Methods:** This descriptive, cross-sectional study included nursing students from a university between August - December 2021. Data were collected using the "Personal Information Form", the "Coronavirus Anxiety Scale", and the "Attitudes Towards the COVID-19 Vaccine Scale". Descriptive statistics, T-tests/Mann-Whitney U tests, and correlation tests were used to analyze the data. **Results:** The study found that 77.3% of the students were female, 11.5% had been diagnosed with COVID-19, and 38.8% had been vaccinated against COVID-19. Only 33.3% of the students trusted the COVID-19 vaccine, while 68.8% believed it was protective. The Cronbach's alpha coefficients for the reliability of the scales were 0.88 for the "Attitudes Towards the COVID-19 Vaccine Scale" and 0.79 for the "Coronavirus Anxiety Scale". **Conclusions:** The study concluded that the pandemic increased anxiety levels among nursing students, and this anxiety was influenced by the challenges related to their professional choices.

Keywords: *Nursing student, Vaccine, COVID-19, Vaccine attitude, Anxiety*

Öz

Giriş: Aşı, COVID-19'u önlemek için en etkili ve maliyet açısından en uygun önlemlerden biridir. COVID-19 aşılarının uygulanmaya başlanmasıyla birlikte bazı bireylerde aşıya karşı olumlu tutumlar oluşurken, bazı bireylerde endişe ortaya çıkmıştır. Aşılar hakkında yayılan eksik veya yanlış bilgiler aşı karşıtlığına neden olmaktadır. **Amaç:** Bu çalışma, hemşirelik öğrencilerinin kaygı düzeylerinin koronavirüs pandemisi sırasında aşılarla yönelik tutumlarına etkisini belirlemeyi amaçlamaktadır. **Yöntemler:** Tanımlayıcı, kesitsel tipteki bu çalışma, Ağustos-Aralık 2021 tarihleri arasında bir üniversitede öğrenim gören hemşirelik öğrencilerini kapsamaktadır. Veriler "Kişisel Bilgi Formu", "Koronavirüs Kaygı Ölçeği" ve "COVID-19 Aşısına

Yönelik Tutum Ölçeği" kullanılarak toplanmıştır. Verilerin analizinde tanımlayıcı istatistikler, T-testleri/Mann-Whitney U testleri ve korelasyon testleri kullanılmıştır. Bulgular: Çalışmada öğrencilerin %77,3'ünün kadın, %11,5'inin COVID-19 tanısı aldığı ve %38,8'inin COVID-19 aşısı olduğu belirlenmiştir. Öğrencilerin sadece %33,3'ü COVID-19 aşısına güvenmekte, %68,8'i ise aşının koruyucu olduğunu düşünmektedir. Ölçeklerin güvenilirliği için Cronbach alfa katsayıları, "COVID-19 Aşısına Yönelik Tutum Ölçeği" için 0,88 ve "Koronavirüs Kaygı Ölçeği" için 0,79 olarak hesaplanmıştır. Sonuç: Çalışma, pandemi sürecinin hemşirelik öğrencilerinde kaygı seviyelerini artırdığını ve bu kaygının mesleki tercihleriyle ilgili zorluklardan etkilendiğini ortaya koymuştur.

Anahtar Kelimeler: Hemşirelik öğrencisi, Aşı, COVID-19, Aşı Tutumu, Anksiyete

1. Introduction

COVID-19, which was seen in the city of Wuhan in China's Hubei province in December 2019 and affected the whole world, was declared as a global pandemic by the World Health Organization and a highly infectious disease that causes severe pneumonia (She et al., 2020; World Health Organization, 2022a). According to the WHO data, as of February 18, 2022, approximately 418 million cases and more than 5.8 million deaths occurred (World Health Organization, 2022b). In Turkey, as of February 2022, it was reported that there were more than 12 million cases and more than 88 thousand deaths, according to the data of the Ministry of Health (Republic of Turkey Ministry of Health, 2022a).

COVID-19 has affected and continues to affect people in different ways. While mild to moderate symptoms are seen in some infected individuals, it causes severe symptoms in individuals with some chronic diseases (World Health Organization, 2022a). In addition to affecting the physical health of individuals, the virus also affects the psychological health of individuals (Aşkın, Bozkurt, and Zeybek, 2020). The possibility of being infected with COVID-19 in all occupational groups that come into contact with people due to their profession can cause fear, stress, and anxiety in these individuals (Yıldırım Keskin and Molu, 2021). The COVID-19 pandemic, which has emerged in recent years and poses a risk of death, has become a source of anxiety in individuals (Şayık et al., 2021). Healthcare professionals are a professional group that has been in contact with infected individuals and has had to work under difficult conditions since the beginning of the pandemic (Çalışkan, Kargın, and Ersögütçü, 2021). In a study investigating anxiety symptoms and insomnia in healthcare professionals during the Covid-19 pandemic, it was concluded that 52.3% of the healthcare professionals had generalized anxiety disorder (Ataç et al., 2020). In a study on nursing students, who are among health professionals, it was determined that 81.7% of the nursing students experienced stress and anxiety due to COVID-19 (Yıldırım Keskin and Molu, 2021).

There is a possibility of other pandemics in the future due to reasons such as the mutation of the virus, the deterioration of the ecological balance, and the effects of global warming. Considering the historical process, it is seen that vaccines have overcome many diseases and pandemics. For this reason, vaccines and effective vaccination are important in terms of reducing deaths and disabilities that may occur due to current and future pandemics and infectious diseases (Erkekoğlu et al., 2020). Vaccination is one of the most effective and cost-effective measures to prevent Covid-19. According to the WHO data, more than 10 billion doses of COVID-19 vaccine have been administered as of February 14, 2022 (World Health Organization, 2022b). It has been reported that more than 144 million doses of Covid-19 vaccine have been administered in Turkey as of February 18, 2022, according to the data of Ministry of Health (Republic of Turkey Ministry of Health, 2022b). With the introduction of

COVID-19 vaccines in Turkey, although positive attitudes have been formed in individuals, some anxious feelings have also emerged. Incomplete or incorrect information about the vaccines, which have started to be administered, and some accompanying beliefs cause vaccine indecision and rejection (Yıldız et al., 2021).

Nursing program is a program that makes clinical applications in addition to theoretical courses as required by the nursing course curriculum. Due to their clinical practice, nursing students are among those who may come into contact with infected people. Nursing students are at high risk of being exposed to this virus in terms of factors such as the easy and rapid spread of this virus, transmission from asymptomatic individuals, and the reduction of social distance between patients and students in clinical practice (Kim and Choi, 2016). Nursing students, who will play an important role in evidence-based practices as future professionals, need to achieve a high level of COVID-19 vaccine acceptance. In a study, which investigated the factors affecting the decision of nursing students to accept the COVID-19 vaccine and included seven European countries, it was found that nursing students were not willing to be vaccinated with the COVID-19 vaccine because of doubts about its safety and efficacy (Patelarou et al., 2021). Similarly, in a study conducted on nursing students, it was concluded that the reported concerns were related to the speed of the development of the vaccine and to the concerns about the safety and side effects of the vaccine (Manning et al., 2021).

Since nursing students encounter infected individuals during clinical practice, it is extremely important that they should be vaccinated and become immune before starting clinical practice. However, since COVID-19 is a new type of virus and there is limited knowledge about the disease and a lack of information about COVID-19 vaccines, resulting in hesitations about the vaccine, it has been noticed that the perception of uncertainty about the vaccine has increased in nursing students and that nursing students are undecided. In this context, it is thought that determining the anxiety levels of nursing students due to the COVID-19 pandemic, examining their attitudes towards the COVID-19 vaccine, and finding out the relationship between anxiety and attitudes towards the vaccine will contribute to the literature. As a result of the literature review, no study on this subject was found in Turkey. This study was, therefore, conducted to determine the effect of nursing students' anxiety levels on their attitudes towards vaccines during the coronavirus pandemic.

2. Material and Methods

2.1. Design

This is a descriptive, cross-sectional study.

2.2. Place and Time of the Research

The research was conducted in the nursing department of the faculty of health sciences of a university. The research data were collected between August – December 2021.

2.3. Population and Sample of the Research

The population of the research consisted of 1045 students studying in the department of nursing, a state university, Turkey during the 2020-2021 academic year. The study aimed to include the entire population without utilizing a sampling method. However, due to the graduation of 250 fourth-year nursing students during the data collection period, they were excluded from the study, reducing the target population to 795 students. Data were collected

online due to COVID-19 restrictions. To ensure a representative sample, stratified sampling was used based on the academic year (first, second, and third years). All 795 remaining students were invited to participate in the study through emails and online announcements. Despite these efforts, 465 students did not participate, primarily due to personal constraints or lack of interest. Ultimately, the study was completed with a total of 330 students, ensuring a diverse and representative sample from all academic years.

2.4. Data Collection Tools

The data of the study were collected using the "Personal Information Form", "Coronavirus Anxiety Scale", and "Attitudes Towards the COVID-19 Vaccine Scale" created by the researchers.

Personal Information Form: This form, which was developed by the researchers, consists of 18 questions and includes information about COVID-19, vaccine, and characteristics of students.

Coronavirus Anxiety Scale: It is a 5-item scale created by Lee (2020) and adapted into Turkish by Evren et al. (2020). It was prepared in a 5-point Likert format. The total score is calculated by summing each item score. The higher the score is, the greater the anxiety associated with the coronavirus is. Cronbach's alpha coefficients were calculated for the findings regarding the reliability of the scale, and it was found to be 0.80 (Evren et al., 2020). In this study, the Cronbach's alpha coefficient of the scale was calculated as 0.79.

Attitudes Towards the COVID-19 Vaccine Scale: This five likert type scale with two sub-dimensions (positive and negative attitude) has 9 items. The scale items are evaluated as "Strongly disagree (1)", "Disagree (2)", "Undecided (3)", "Agree (4)", and "Strongly agree (5)". The Cronbach's alpha coefficient of the scale was calculated as 0.80 (Geniş et al., 2020). In this study, the Cronbach's alpha coefficient of the scale was calculated as 0.88.

2.5. Data Collection

Between the dates of the study, the data related to the study were collected after consent was obtained from the nursing students who met the acceptance criteria of the study and volunteered to participate in the study. Data were collected online due to COVID-19 restrictions. The informed consent page was opened after the form link sent to the participants was clicked. After the approval was received, the form questions could be displayed. The average time required to complete the survey was approximately 20 minutes.

2.6. Statistical Analysis

The data obtained from the research were evaluated electronically. The SPSS 22 (Statistical Package for Social Science) package program was used in the analysis of the data. Descriptive statistics for the students were obtained using measures such as count, percentage, mean, and standard deviation. The normality of the data was assessed using the Kolmogorov-Smirnov test for sample sizes larger than 50, and the Shapiro-Wilk test for sample sizes smaller than or equal to 50. Metric variables that were determined to be normally distributed were represented in the descriptive statistics as the mean \pm standard deviation (SD). Non-normally distributed metric variables were presented as the median (minimum-maximum).

In order to evaluate the parametric test assumptions such as the homogeneity of group variances, the Levene's test was performed. If the Levene's test result indicated equal variances, parametric tests were used for further analysis; otherwise, non-parametric tests were applied.

The T-test/Mann-Whitney U Test and Spearman correlation analysis were used to examine the relationships between the descriptive features and the total scale scores and scale subdimension scores. Moreover, to evaluate the reliability of the scales, Cronbach's alpha coefficients were calculated to be 0.88 for the "Attitudes Towards the COVID-19 Vaccine Scale" and 0.79 for the "Coronavirus Anxiety Scale".

2.7. Ethical aspects of research

In order to conduct the research, approval was obtained from the Clinical Research Ethics Committee of Gaziantep University (Decision dated: 14/07/2021 and numbered: 2021/253). Institutional permission was obtained from the Nursing Department of the Faculty of Health Sciences of the university where the study was conducted. Permission was obtained from the authors via e-mail for the use of the scales. We conducted according to the ethics guidelines set out in the Declaration of Helsinki

3. Results

It was determined that 77.3% of the student nurses participating in the study were women, that 48.2% were third-year students, that 96.1% did not have a chronic disease, and that 88.5% were not diagnosed with COVID-19. When the situation of the student nurses being vaccinated against COVID-19 was examined, it was seen that 61.2% of them were not vaccinated, and that 32.7% of the vaccinated students received the first dose vaccine. In addition, it was stated that 8.8% of the students, who were vaccinated, had a reaction. Considering the COVID-19 vaccination status of a family member or acquaintance, 92.7% of them stated that they were vaccinated. In addition, it was stated that 29.1% of the students' families or acquaintances developed a reaction after the administration of the COVID-19 vaccine (Table 1).

Table 1. Demographic Characteristics and COVID-19 Vaccination Status (n=330)

Characteristics	n	%
Gender		
Male	75	22.7
Female	255	77.3
what grade are you in?		
1 st year	92	27.9
2 nd year	49	14.8
3 rd year	159	48.2
4 th year	30	9.1
Do you have any chronic diseases?		
Yes	13	3.9
No	317	96.1
Have you been diagnosed with COVID-19?		
Yes	38	11.5
No	292	88.5
Have you had the COVID-19 vaccine?		
Yes	128	38.8
No	202	61.2
How many vaccine doses have been administered in total?		
1.dose	108	32.7
2.dose	17	5.2
3.dose	3	0.9
I'm not vaccinated	202	61.2
Have you had any reaction to the COVID-19 vaccine?		

Yes	29	8.8
No	99	30.9
I'm not vaccinated	202	60.3
Has anyone in your family or acquaintances had the COVID-19 vaccine?		
Yes	306	92.7
No	24	7.3
Has anyone in your family or acquaintances had any reaction to the vaccine?		
Yes	96	29.1
No	209	63.3
I don't know	25	7.6

Table 2 shows the attitudes of the student nurses participating in the study towards the vaccine. 57.3% of the student nurses stated that they would have a vaccine against any disease if there was one. In addition, 58.8% of the student nurses stated that they would recommend vaccination against any disease if there was one. It was determined that 30.6% of the student nurses were affected by the social environment when deciding to have a vaccine, that 66.7% of them would review scientific articles about the vaccine, and that 43.6% were affected by visual and auditory media. In addition, 33.3% stated that they trusted the COVID-19 vaccines, that 42.4% would have the vaccine recommended by the Ministry of Health, and that 57.6% would have the Covid-19 vaccine recommended by the World Health Organization.

Table 2. Attitudes of Student Nurses Towards Vaccination (n=330)

	n	%
If there is a vaccine against any disease, I get vaccinated.		
Yes	189	57.3
No	13	3.9
Undecided	128	38.8
If there is a vaccine against any disease, I recommend it.		
Yes	194	58.8
No	14	4.2
Undecided	122	37
I think that the vaccination against any disease protects me.		
Yes	225	68.2
No	12	3.6
Undecided	93	28.2
I am influenced by my social environment (family, friends, work environment, etc.) when making the decision to have the vaccine.		
Yes	101	30.6
No	75	22.7
Sometimes	154	46.7
I review scientific articles before I get the vaccine.		
Yes	220	66.7
No	18	5.4
Sometimes	92	27.9
I am influenced by visual and audio media when making my decision to have the vaccine.		
Yes	144	43.6
No	43	13.1
Sometimes	143	43.3
I trust vaccines related to COVID-19.		
Yes	110	33.3
No	43	13.1
Undecided	177	53.6
I get the COVID-19 vaccine recommended by the Ministry of Health.		
Yes	140	42.4
No	44	13.3
Undecided	146	44.2
I get the COVID-19 vaccine recommended by the World Health Organization.		
Yes	190	57.6
No	19	5.8
Undecided	121	36.7

According to Table 3, when the attitudes of the student nurses towards the vaccine were examined with the total score average and sub-dimensions of the scale according to gender, a statistically significant relationship was found between the negative attitude and the total score of the Attitudes Towards the COVID-19 Vaccine Scale. When the chronic disease status and the Attitudes Towards the COVID-19 Vaccine Scale were compared, no statistically significant relationship was observed. In addition, when the status of being diagnosed with COVID-19 and the Attitudes Towards the COVID-19 Vaccine Scale were compared, no statistically significant relationship was found. When the student nurses who had the COVID-19 vaccine and their attitudes towards the vaccine were examined, a statistically significant relationship was found between positive attitudes, negative attitudes, and the total score of the scale. When the attitudes of the family members or acquaintances of the student nurses towards the vaccine were compared with the individuals who had the COVID-19 vaccine, a significant relationship was found between positive attitudes, negative attitudes, and the total score of the scale. When the coronavirus anxiety scale was compared with gender, a statistically significant relationship was found. In addition, a statistically significant difference was found between the COVID-19 vaccination status in the family or among acquaintances and the coronavirus scale. When the coronavirus scale and chronic disease, COVID-19 diagnosis status, and COVID-19 vaccination status were compared, no statistically significant relationship was observed.

Table 3. Difference Between Demographic and COVID-19 Characteristics of Student Nurses and Sub-Dimensions of Attitudes Towards the COVID-19 Vaccine Scale

		Attitudes Towards the COVID-19 Vaccine Scale			Coronavirus Anxiety Scale
Characteristics		Positive attitude Mean±SD	Negative attitude Mean±SD	Total score Mean±SD	Total score (Min-Max)
Gender	Male	13.66±3.01	15.93±3.19	29.60±5.43	144.60 (0-10)
	Female	14.42±3.36	16.83±3.32	31.26±6.11	171.65 (0-14)
	t/U	t:1.719	t:2.090	t:2.122	U: 7995.000
	p	0.081	0.037*	0.025*	0.020*
Chronic Disease	Yes	14.23±3.46	15.84±3.13	30.07±5.69	149.19 (0-4)
	No	14.25±3.30	16.66±3.32	30.91±6.01	166.17 (0-14)
	t/U	t:0.023	t:0.873	t:0.495	U: 1848.500
	p	0.982	0.383	0.621	0.498
Have you been diagnosed with COVID-19?	Yes	14.65±2.83	17.02±3.21	31.68±5.59	185.42 (0-10)
	No	14.19±3.36	16.58±3.33	30.78±6.04	162.91 (0-14)
	t/U	t:0.806	t:0.776	t:0.873	U: 4791.000
	p	0.421	0.438	0.383	0.141
Have you had the COVID-19 Vaccine?	Yes	15.95±2.82	17.96±3.00	33.92±5.26	170.04 (0-14)
	No	13.17±3.13	15.78±3.22	28.96±5.63	162.62 (0-14)
	t/U	t:8.154	t:6.139	t:7.992	U: 1247.000
	p	<0.001*	<0.001*	<0.001*	0.4459
Has anyone in your family or acquaintances had the COVID-19 Vaccine?	Yes	14.41±3.21	16.81±3.26	31.23±5.85	163.85 (0-14)
	No	12.12±3.74	14.33±3.19	26.45±6.15	186.50 (0-10)
	t/U	t:3.324	t:3.591	t:3.832	U: 3168.00
	p	0.001*	0.007*	0.001*	0.022*

t: Independent t Test; U: Mann Whitney U Test; SD: Standard Deviation; *p<0.05

According to Table 4, it was determined that there was a significant and positive relationship between the positive attitude and negative attitude scores of the Attitudes Towards the COVID-19 Vaccine Scale ($p<0.001$) ($r=0.643$). A statistically significant and positive correlation was found between the positive sub-dimension of the COVID-19 scale and the total score of the scale ($p<0.001$) ($r=0.889$). There was no statistically significant relationship between the positive attitude sub-dimension of the Attitudes Towards the COVID-19 Vaccine Scale and the total score of the anxiety scale. A statistically significant and positive relationship was observed between the negative attitude sub-dimension and the total score of the Attitudes

Towards the COVID-19 Vaccine Scale ($p < 0.001$) ($r = 0.889$). There was no significant relationship between the negative attitude sub-dimension of the Attitudes Towards the COVID-19 Vaccine Scale and the total score of the coronavirus anxiety scale. There was no statistically significant relationship between the total score of the Attitudes Towards the COVID-19 Vaccine Scale and the total score of the coronavirus anxiety scale.

Table 4. The Relationship between the Sub-Dimensions of the Attitudes Towards the COVID-19 Vaccine Scale and the Total Score of the Coronavirus Anxiety Scale

Scales and sub-dimensions		Positive attitude	Negative attitude	Attitudes towards Covid-19 Vaccine	Coronavirus Anxiety Scale
Positive Attitude	r	1.000	0.643	0.889	0.030
	p	-	<0.001**	<0.001**	0.590
Negative Attitude	r	1.000	0.901	0.901	0.070
	p	-	<0.001**	<0.001**	0.198
Attitudes towards Covid-19 Vaccine	r	1.000	0.060	1.000	0.060
	p	-	-	-	0.259
Coronavirus Anxiety Scale	r	1.000	-	-	1.000
	p	-	-	-	-

**Correlation is significant at the 0.01 level (2-tailed)

4. Discussion

The COVID-19 pandemic, which has created chaos in Turkey and all over the world, has affected all occupational groups, and health professionals have undertaken a great responsibility in this process. Health professionals, who meet the necessary care needs while performing the diagnosis and treatment process of patients who apply to health institutions with the symptoms of COVID-19, are directly at risk. Nurses are the first group in contact with patients and those with suspected disease among healthcare professionals (Mascarenhas et al., 2021). Since the first day of the emergence of COVID-19, nurses have had to deal with problems such as fatigue, fear, depression, and anxiety due to the risk of infection to themselves and their families at the point of the diagnosis and treatment protocols and the vaccination process (Aksu et al., 2022). In this process, students who were away from the field for a certain period of time came back to the field, and the continuation of the pandemic caused similar problems for them. During the COVID-19 pandemic, it was stated that between 25% and 60% of higher education students experienced varying levels of anxiety (Cao et al., 2020; Saddik et al., 2020; Savitsky et al., 2020).

All countries of the world have focused on preventive services in order to survive the pandemic process with the least possible damage, and in this context, priority has been given to vaccination studies. In our study, the effect of anxiety levels of nursing students on their attitudes towards vaccines during the coronavirus pandemic was examined. It was found that an average of three-fifths of the students participating in our study did not have any of the COVID-19 vaccines. In a study conducted by Laitkin et al., 60.6% of individuals aged 18-29 stated that they were not sure about getting vaccinated or that they did not think about getting vaccinated (Yeşil Bayülgen et al., 2021). In two studies conducted with university students, health department students and interns, it was observed that 22% of university students and 18.9% of health students/interns refused to administer the COVID-19 vaccine (Mustapha, Khubchandani, and Biswas, 2021).

In the study of the COVID-19 vaccine refusal of nurses in 36 countries, it is striking that more than one-fifth of active nurses refused to be vaccinated in 2020 (Khubchandani et al., 2022). The vaccination status of the families and relatives of the students participating in the study

was also questioned, and the vaccination rate was found to be 92.7%. While the vaccination rate of their relatives was so high, it is thought that the low rate of vaccination of the students may also be since nursing students were not among the priority groups in the vaccination application strategy of the Ministry of Health. As stated within the scope of the COVID-19 Vaccine National Implementation Strategy, although health professionals and individuals over the age of 65 were in the first place among the groups to be vaccinated, medical faculty and dentistry faculty interns were also included in the detailed information within the scope of health professionals, and nursing students were not, however, included (Republic of Turkey Ministry of Health 2022a). Although the vaccination rate of their relatives was so high, when the reasons for not being vaccinated were investigated, it was stated that an average of one-third of the vaccinated family members or close relatives of the students developed a reaction. This situation is thought to have effects on the vaccination practices of the nursing students who were not present during the primary vaccination.

The attitudes of the students participating in the study towards the vaccine were also examined. As a result of the analysis, most of the students stated that they wanted to be vaccinated and that they would recommend vaccinating to people around them. When it was evaluated why they did not get vaccinated, 30.6% of them stated that they were affected by the social environment, and 43.6% of them were affected by social media. In the study of the acceptability of the COVID-19 vaccine among medical students in Uganda, 53.5% of health students stated that they heard negative information about the vaccine and that 90.6% of this information was from social media, whereas 56.5% stated that this information was from one of their friends (Kanyike et al., 2021). It is seen that false information in social media caused negative results in other countries as well as in our study. It is pleasing that 66.7% of the students who participated in our study stated that they would review scientific articles about the vaccine. When the confidence in the COVID-19 vaccine was questioned, 53.6% of them stated that they were undecided. In the study conducted to investigate the attitudes and hesitations of US dentistry students towards the Covid-19 vaccine, 56% of the students stated that they wanted to have the COVID-19 vaccine after the FDA approval of the vaccine (Mascarenhas et al., 2021).

In our study, it was determined that the negative attitudes of the nursing students towards the vaccine according to their gender were significantly associated with the total score ($p < 0.05$). These findings were similar to other studies, and women's negative attitudes towards the vaccine were determined (Yeşil Bayülgen et al., 2021). In our study, a significant relationship was found between the COVID-19 vaccination status of family and acquaintances and the coronavirus anxiety scale. It is similar to the study by Sharma et al. on COVID-19 vaccine acceptance among university students (Latkin et al., 2021). While the rate of vaccination of acquaintances may be meaningful for students who do not have hesitation, it may be meaningless for those who are hesitant. In this context, public health professionals and educators need to strengthen their strategies in order to ensure trust, minimize anxiety and improve health. Encouraging student nurses to vaccinate and helping them analyze information about potential barriers and myths may increase behavioral confidence.

5. Conclusion and Suggestions

This study examined the effects of student nurses' anxiety levels on their attitudes towards vaccines during the coronavirus pandemic. The pandemic process caused anxiety in student nurses, and the existence of difficulties related to their professional choices caused an increase in anxiety. As with most university students, the protective measures of universities regarding COVID-19 vaccination should encourage students to get vaccinated. Education

curricula should be designed about potential difficulties that students may encounter due to internship and professional difficulties, and trainings should be planned to reduce their anxiety.

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