

# NURSING STUDENTS' WILLINGNESS TO WORK IN COVID-19 PANDEMIC: THE ROLE OF KNOWLEDGE AND PERCEIVED COMPETENCE: AN EXAMPLE FROM TURKEY

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## ABSTRACT

**Introduction:** This study aims to evaluate nursing students' willingness to work voluntarily during the COVID-19 pandemic and related factors.

**Material and Methods:** This descriptive study was conducted with 3rd and 4th year nursing students from March to May 2021. The Competency Inventory of Nursing Students assessment scale and data collection form prepared by researchers were used as data collection tools. Multivariable and univariable binary logistic regression analysis was employed to identify the factors affecting nursing students' willingness to voluntarily work during the COVID-19 pandemic.

**Results:** This study was conducted with 240 nursing students (response rate=69.2%). It was found that the family members of 52.5% and friends of 68.8% of the nursing students participating in this study had and recovered from COVID-19. In this study, 71.7% of the students stated that they were volunteer to work in the COVID-19 pandemic. The students stated that if sufficient personal protective equipment was provided (81.7%), special training was given (80.4%), and transportation and accommodation were provided (80.0%), they would volunteer to work during the pandemic period. And all of the students (98.3%) gave correct answers to the question about the most common symptoms and that asymptomatic people could be contagious, the question regarding the mortality rate of the disease was answered correctly by 10.4% of the students. The findings showed that as the "Nursing Students' Competency Scale" score increased, the probability of volunteering to work during the pandemic period increased [OR = 1,005; 95% CI, 1,001-1,01] (p = .033). Nursing students who used official sources to learn about COVID-19 disease, compared to others [OR = 3,241; 95% CI, 1,494- 7,028], were more likely to be willing to work during the pandemic (p = .003). The level of knowledge was not a significant predictor of students' willingness to work during the pandemic period (p=.326).

**Conclusion:** The findings obtained in this study reflect the significance of directing students to obtain information from the right sources and developing their perceptions of competence in nursing education to create support for the healthcare system by volunteering nursing students during the pandemic period.

**Key Words:** COVID-19, healthcare, nursing students, pandemic, willingness

## INTRODUCTION

The COVID-19 pandemic has placed a heavy burden on the healthcare system and caused a severe surge in hospitalizations. In Turkey, it has been reported that there are 2135 severe COVID-19 patients hospitalized on the same date (1). In addition, it has been reported that the number of COVID-19 patients needing intensive care conditions treatment in many countries in the world exceeded the intensive care capacity (2). On the other hand, in the face of the rapid increase in the number of cases, the number of healthcare professionals struggling with the epidemic was insufficient. Healthcare workers becoming infected and dying have furthered this insufficiency (3). Therefore, in some countries, such as the USA and Singapore, calls have been made for medical and nursing students to provide healthcare services voluntarily (4).

The health crisis caused by the pandemic has significantly increased the need for nurses in the health system. Nurses have played a critical role in combating the pandemic by providing health care, information and support to patients and the community, both in hospitals and institutional settings, such as nursing homes and prisons (5). While performing these critical roles, they have faced many challenges, such as following updated information on many issues, such as transmission route and treatment algorithm related to the disease, lack of personal protective equipment and materials, ethical dilemmas, stigmatization, exposure to violence and difficulty in fulfilling their social roles (6). As a result of all these challenges, it has been determined that nurses working during the pandemic period show symptoms of depression, anxiety, insomnia and stress (7).

Determining the factors affecting the willingness of nursing students, who are the future representatives of the nursing profession, to work during pandemic periods, will provide significant data for both being prepared for future pandemics and making curriculum arrangements in nursing education. In addition, the education period is the years when nursing students gain awareness of their roles and responsibilities in health systems, gain knowledge and develop skills. During this period, evaluation of nursing students' willingness to provide health services under pandemic conditions and the factors affecting them may be beneficial in terms of gaining competence and awareness in the education process of students about their responsibilities in pandemics and other

disasters (8-10). This study aimed to evaluate the willingness of nursing students to work during the COVID-19 pandemic and related factors.

## MATERIAL AND METHODS

### Study Desing

Nursing students from Turkey constituted the population of this descriptive study. Within the scope of combating the COVID-19 infection, this study was conducted online to comply with the social distance rules and avoid the risk of contamination. In this study, the introductory characteristics form developed by the researchers and the Nursing Students' Self-Professional Competence Scale were used as data collection tools. The data collection tools used in this study were prepared in a form suitable for online sharing using the Google forms program. The prepared form was transferred to the students in the department via WhatsApp application by the researchers (GÇ, RA). Before the transfer, the students were informed about this study, and it was stated that participation in this research was voluntary and the participants were informed about their right to refuse to participate or withdraw from this research. In addition, the online form included explanatory information about this study. The participants were asked to declare that they were informed about this study and that they agreed to participate in this study by clicking the "I give consent" button below the explanatory information on the form.

### Participants

This study was conducted between March 10 and May 1, 2021, in the Department of Nursing in the Faculty of Health Sciences of a University in the Eastern Black Sea Region in Turkey. The universe of this study consisted of 3rd and 4th-year students of the nursing department of the university where this study was conducted. In Turkey, basic nursing skills, nursing care and theoretical knowledge regarding internal and surgical diseases in the education curriculum of the Nursing Department are given in the first two years. Since the students' willingness to work as nurses in the COVID-19 pandemic and related factors would be evaluated in this study, it was deemed appropriate to conduct this study with 3rd and 4th-grade students who received basic nursing education. This research was conducted with the participation of 240 nursing students (response rate=69.2%).

### Data Collection Tools

The data was collected using Personal Information Form and The Competency Inventory of Nursing Students (CINS).

### Personal Information Form

The form consisted of two parts and 32 questions. The first part of the form was devoted to questions aiming to specify sociodemographic characteristics. In this section, age, class, gender, marital status, having a chronic disease, the people whom the students live together and whether these people had a chronic disease, the economic status, whether the students had a dependent relative, the presence of the person (s) working as a health worker in the family, questions about the state of contracting COVID-19 disease were included. In the second part of the form, the nursing students' willingness to work as nurses was evaluated with a question with three options (yes, no, undecided). In the second part, 10 multiple-choice (true, false, and do not know) questions were asked about the students' level of knowledge about COVID-19 disease (11), and 11 questions were asked about their opinions about working voluntarily in the COVID-19 pandemic (for these questions the answers were ranked using a 5-point Likert Scale ("Strongly Agree", "Agree", "Neutral", "Disagree" to "Strongly Disagree"). The appropriateness of the form concerning content was evaluated by five faculty members in the Department of Nursing.

In this study, to evaluate the knowledge level of the students about COVID-19 disease, the total knowledge level score was calculated by giving correct answers 10 points for each question asked. Other answers ("I don't know" and incorrect answers) were not included in the scoring. In the logistic regression analysis, "non-volunteers" and "indecisive" ones to work in the pandemic were coded as non-volunteers.

### The Competency Inventory of Nursing Students (CINS)

The Competency Inventory of Nursing Students-CINS was developed by Hsu and Hsiehi (12). The Scale's adaptation to Turkish, validity and reliability analyses were conducted by Ülker et al. (13). Ülker et al. reported that the Cronbach's alpha reliability coefficient of the scale ranged from 0.799 to 0.974 for the sub-dimensions and 0.978 for the whole scale. Thus, the scale had high reliability. Seven Point Likert

type scale; clinical biomedical science (5 items), general clinical skills (7 items), critical thinking and reasoning (4 items), care (6 items), ethics and responsibility (15 items), and lifelong learning (6 items) It consists of six subsections and 43 items. The total score obtained from the scale ranges from 43-301 points. A high score on the scale indicates that the student's competence is at a good level, while a low score indicates that his competence is not at a good level (13).

### Data Collection

The study participants were selected by the voluntary response sampling method. Volunteers were reached through various social networks. The survey link was delivered to students through social networks (WhatsApp). Response collection time interval was determined between 10 March- 1 May 2021.

### Data Assessment

SPSS 22.0 package program was used for statistical analysis of the data. The results were expressed using the mean±standard deviation, median (smallest value-largest value) and number (%) depending on whether the data were parametric or not. Kolmogorov Smirnov test was used to evaluate the suitability of quantitative data for normal distribution. Multivariable and univariable logistic regression analysis was employed to investigate the relationship between predictors and being willing to volunteer. Statistical significance level was accepted as  $p < 0.05$  at a 95% confidence interval.

### Ethical Regulations

For implementation of the research, ethical approval was taken from the Karadeniz Technical University Scientific Research Ethics Committee (Decision No: 24237859-238, Date: March 5, 2021). Before starting the research, institutional permissions were also taken from related university. At the beginning of questionnaire items, students were informed about the aim of the research and volunteering students were asked to fill in the questionnaires.

### RESULTS

There were 240 nursing students who 3rd and 4th-year students of the nursing department and voluntarily participated in this study. The main characteristics of the respondents are presented in Table 1. The average age of the students was  $21.6 \pm 1.9$  (min = 19; max = 38). Among the participant

**Table 1.** Distribution of Descriptive Properties of Nursing Students (n=240)

<b>Demographic Properties</b>	Mean <sup>±SD</sup>	
<b>Age (years)</b>	21.6 ± 1.9 (min = 19; max = 38)	
	n	%
<b>Gender</b>		
Female	203	84.6
Male	37	15.4
<b>Grade</b>		
Third grade	72	30.0
Fourth grade	168	70.0
<b>People with whom they live</b>		
Family	223	92.9
Relatives	3	1.3
Alone	10	4.2
Other	4	1.7
<b>Economical status</b>		
Less than expenses	70	29.2
Greater than expenses	32	13.3
Income is equal to expenses	138	57.5
<b>Having chronic disease*</b>		
Yes	24	10.0
No	216	90.0
<b>Chronic disease in the household</b>		
Yes	143	59.6
No	97	40.4
<b>Care responsibility</b>		
Yes	41	17.1
No	199	82.9
<b>COVID-19 disease in the family</b>		
Yes and recovered	126	52.5
No	114	47.5
<b>COVID-19 disease in the friends</b>		
Yes and recovered	165	68.8
No	75	31.3
<b>Healthcare worker among family members</b>		
Yes/close relative	28	11.7
Yes/Distant relative	42	17.5
No	170	70.8

nursing students, 84.6% were female, and 15.4% were male. Of the participants, 10.0% had a chronic disease and the income level of the majority of the respondents (57.5%) was equal to their expenses.

In this study, 17.1% of the participants stated that they have the responsibility of taking care of the elderly, sick family members or a pet. It was found that the family members of 52.5% and friends of 68.8% of the nursing students participating in this study had and recovered from COVID-19 (Table 1). In this study, 71.7% of nursing students stated that they volunteered to work as nurses in the COVID-19

pandemic. While 16.7% of the students stated that they were undecided about this issue, 11.6% of them stated that they were not voluntary. The students' opinions about working voluntarily in the COVID-19 pandemic are presented in Table 2. The students stated that if sufficient personal protective equipment was provided (81.7%), special training was given (80.4%), and transportation and accommodation were provided (80.0%), they would volunteer to work during the pandemic period. In addition, 82.9% of the students stated that working voluntarily during the pandemic period would put family members at risk in

**Table 2.** Students' Opinions On Volunteering To Work In The COVID-19 Pandemic (n=240)

Opinions	Agree n (%)	Undecided n (%)	Disagree n (%)
Senior nursing students should work voluntarily when it comes to nurse shortages.	172 (71.7)	40 (16.7)	28 (11.7)
Volunteering is a professional responsibility in the event of a pandemic.	184 (76.7)	32 (13.3)	24 (10)
Volunteering is an ethical responsibility in the event of a pandemic.	176 (73.3)	39 (16.3)	25 (10.4)
I volunteer with the condition of receiving specific training in COVID-19 patient care.	193 (80.4)	29 (12.1)	18 (7.5)
I volunteer to work if transportation and accommodation are provided.	192 (80.0)	28 (11.7)	20 (8.3)
I only volunteer to work with the condition of getting vaccinated.	129 (53.8)	64 (26.7)	47 (19.6)
I volunteer to work with the condition of getting a nurse's salary.	172 (71.7)	48 (2.0)	20 (8.3)
I volunteer to work if sufficient personal protective equipment is provided.	196 (81.7)	32 (13.3)	12 (5.0)
Nursing students voluntarily working may put patient safety at risk.	107 (44.6)	67 (27.9)	66 (27.5)
Volunteering may cause my family members to contract the virus.	199 (82.9)	21 (8.8)	20 (8.3)
Volunteering may endanger my own safety.	190 (79.2)	27 (11.3)	23 (9.6)

terms of catching COVID-19 and almost 73.3% said they considered it as a professional and ethical responsibility (Table 2).

The questions to determine the students' level of knowledge about COVID-19 disease are shown in Table 3. While almost all of the students (98.3%) gave correct answers to the question about the most common symptoms and that asymptomatic people could be contagious, the question regarding the mortality rate of the disease was answered correctly by 10.4% of the students.

In this study, it was observed that search engines (82.5%) were the first source of information that nursing students benefited from about COVID-19 disease. The official website of the Ministry of Health (79.6%) was ranked second, while social media tools (70.0%) ranked third (Table 4).

Factors that may affect students' willingness to work during the pandemic period were examined with logistic regression analysis and the analysis results are presented in Table 5. It was observed that as the score the students got from the "Nursing Students' Competency Scale" increased, the probability of volunteering to work during the pandemic period increased [OR=1.005; 95% CI, 1.0 – 1.01] (p=.033). Compared to male students, female students [OR = 2.547; 95% CI, (1.13 - 5.70)] (p = .023), and compared to those not using, those using official

sources on COVID-19 disease [OR = 3.241; 95% CI, 1.494 - 7,028] were more likely to volunteer to work during the pandemic period (p=.003). The correct classification rate was 65.8% with the regression model created. In the univariate logistic regression analysis, as the score of the students from the "Nursing Students' Competency Scale" increased, the probability of volunteering to work during the pandemic period increased 1.005 times [OR = 1.005; 95% CI, 1.001-1.01] and this increase was significant (p=.028). In addition, it was observed that the probability of willingness to work during the pandemic period was higher for those who did not have chronic diseases in those with whom they lived together [OR = 1.688; 95% CI, 1.004 - 2.83]. In the univariate analysis, it was found that other variables examined in the multivariate model did not have a significant effect on students' volunteering to work (Table 5).

## DISCUSSION

Determining the willingness of nursing students, who are the future representatives of the nursing profession, to work voluntarily in the COVID-19 pandemic and the determination of related factors provides important data in terms of conducting nursing services at the desired level during pandemic periods (10). In addition, approximately four-fifths of the students stated that they would be willing to work

**Table 3.** Questions to Determine The Level Of Knowledge About COVID-19 Disease (n=240)

Questions	Correct answer, n(%)
People who do not show any symptoms may also be contagious.	236 (98.3)
The most common symptoms are fever, cough and shortness of breath.	236 (98.3)
To refrain from catching the disease, attention should be paid to hand hygiene and social distancing, and eating raw or undercooked animal products should be avoided.	233 (97.1)
COVID-19 disease is transmitted through infected secretions that are spilled by talking, laughing, sneezing and coughing.	229 (95.4)
Individuals over the age of 65 and those with chronic illnesses are the most susceptible to COVID-19.	224 (93.3)
The general incubation period for COVID-19 disease is 5-14 days.	221 (92.1)
The definitive diagnosis of COVID-19 disease is made by serological tests.	169 (70.4)
The causative agent of New Coronavirus Disease is the SAR-CoV-1 virus.	140 (58.3)
Antibiotics are the most effective drugs in the treatment of COVID-19.	51 (21.3)
Approximately 40% of COVID-19 patients die.	25 (10.4)

**Table 4.** Students' Information Sources To Learn About COVID-19 Disease (n=240)

Information sources	Frequency of use		
	Often	Rarely	Never
Search engines	198 (82.5)	34 (14.2)	8 (3.3)
Ministry of Health official website	191 (79.6)	32 (13.3)	17 (7.1)
Social media tools	168 (70.0)	48 (20)	24 (10)
World Health Organization official website	114 (47.5)	74 (30.8)	52 (21.7)
Academic databases	94 (39.2)	107 (44.6)	39 (16.3)
Courses taught at school	46 (19.2)	91 (37.9)	103 (42.9)

during the pandemic period if sufficient personal protective equipment, special training, transportation and accommodation were provided. In this study, it was observed that as the score the students got from the "Nursing Students' Competency Scale" increased, the probability of volunteering to work increased during the pandemic period. The level of knowledge was not a significant predictor of students' willingness to work during the pandemic period.

Nearly half of the students in this study stated that they volunteered to work in the COVID-19 pandemic, and almost three-quarters said they considered it as a professional and ethical responsibility. In the study which included nursing and medical students in Spain, 74.2% of the participants were willing to work in the COVID-19 pandemic when the situation required it, and 64.4% accepted it as an ethical responsibility (10). To our knowledge, no research was found that provided only data on nursing students' willingness to work voluntarily in the COVID-19 pandemic. However, in the study which conducted by with nurses in Qatar, the rate of those willing to

work in the COVID-19 pandemic was 88.1% (14). It is noteworthy that the rate of nursing students who want to work voluntarily in the COVID-19 pandemic determined in our study is lower than other literature examples. In this study, approximately four-fifths of the students stated that they thought that if they worked voluntarily, they could put their family members and themselves at risk, and almost half of them thought that patient safety could be put at risk. The low rate found in this study seems to be related to these thoughts of the students.

Approximately four-fifths of the students in this study stated that they would be willing to work during the pandemic period if sufficient personal protective equipment was provided. Consistent with the findings we have obtained, there are studies showing that nursing students are willing to work if protective equipment is provided in pandemics (15). For example, in a study about the willingness of nursing students to work in a pandemic in Canada during the influenza pandemic, it was observed that 67.9% of the students volunteered to work and this rate

**Table 5.** Factors Associated With Nursing Students' Willingness To Work In The COVID-19 Pandemic (n=240)

	Multivariable		Univariable	
	OR* (95CI%)	p	OR (95CI%)	p
<b>Scale Score</b>	1,005 (1,0 – 1.01)	<b>.033</b>	1,005 (1,001 – 1,01)	<b>.028</b>
<b>Gender</b>				
Female	Reference			
Male	2,547 (1,137 – 5,708)	<b>.023</b>	1,982 (0,965 – 4,07)	.062
<b>Care responsibility</b>				
Yes	Reference			
No	1,523 (0,718 – 3,23)	.273	1,486 (0,755 – 2,924)	.251
<b>Economic status</b>				
Less than expenses	Reference			
Greater than expenses	1,873 (0,978 – 3,585)	.058	1,542 (0,865 – 2,751)	.142
Income is equal to expenses.	0.838 (0.356 – 1.971)	.685	0,953 (0,439 – ,.069)	.904
<b>People with whom they live have a chronic illness.</b>				
Yes	Reference			
No	1,457 (0,817 – 2,599)	.202	1,688 (1,004 – 2,839)	<b>.048</b>
<b>COVID-19 disease in the friends</b>				
Yes	Reference			
No	1,347 (0,714 – 2,541)	.357	1,483 (0,857 – 2,566)	.159
<b>COVID-19 disease in the family</b>				
Yes	Reference			
No	1,73 (0,964 – 3,105)	.066	1,642 (0,985 – 2,737)	.057
<b>Healthcare worker among family members</b>				
Yes	Reference			
No	3,144 (1,253 – 7,88)	<b>.015</b>	2,111 (0,914 – 4,878)	.080
<b>Knowledge score</b>	1,012 (0,988 – 1,037)	.326	1,018 (0,997 – 1,04)	.095
<b>Knowledge source</b>				
Unofficial sources **	Reference			
Official sources ***	3,241 (1,494 – 7,028)	<b>.003</b>	2,478 (1,220-5,031)	.120
Constant	0,006 (0 - 0)	<b>.000</b>		

\* Odds Ratio, \*\* Search engines, social media tools; \*\*\* Ministry of Health official website, WHO official website, lessons at school. Cox & Snell R Square=0.144; Nagelkerke R Square=0.191; Accuracy=%65.8

increased (77.4%) if protective equipment was provided (9). Personal protective equipment is among the most important means of protection against COVID-19 disease for healthcare professionals. In addition, in the first wave of the pandemic, the lack of personal protective equipment was among the biggest problems faced by healthcare workers and had been an issue on the world agenda for a long time (16). This situation is thought to be related to the

sensitivity of the students regarding the procurement of PPE in volunteering.

In this study, approximately four-fifths of the students stated that they thought that working voluntarily during the pandemic period would put family members at risk in terms of getting sick, and if they were provided with transportation and accommodation, they would be willing to work during the pandemic period. Based on these data, it can be

concluded that students perceive working as a risk for family members during the pandemic period. Similar to these results, in conducted studies, healthcare workers concerned about the health of their relatives (10, 17) and having a vulnerable family with chronic illness (18) were identified as factors that may negatively affect the willingness to work during pandemic and disaster periods. Also, Yonge et al. (2010) determined that almost all the nursing student was not willing to work if their families were not vaccinated (9). In addition, studies conducted with nurses during the influenza pandemic suggest that nurses may reduce the time they spend for care and may be less willing to work due to the fear of contracting the virus and transmitting it to their families and relatives (19). Moreover, the findings showed that most healthcare professionals in Thailand were not willing to admit or care for new patients during the COVID-19 pandemic (20). As a result, ensuring the safety of the people with whom healthcare workers live during the pandemic period draws attention as a significant factor that should be considered concerning the more efficient work of healthcare professionals.

To increase the willingness of all healthcare workers to work under challenging working conditions in the pandemic, the factors that motivate them to work should be determined by their countries, local governments and hospitals (21). One of the factors that increase motivation to work is the additional compensation fees or salary difference. In this study, more than half of the nursing students stated that they would be willing to work in the pandemic if they were paid. In a study conducted during the influenza A (H1N1) pandemic, it is stated that monetary promotion, which encourages nurses to work, increases their willingness to work in the pandemic (22). In the study conducted by Nashwan et al. (2020), the findings showed that there was a relationship between nurses' additional compensation fees and willingness to work in the COVID-19 pandemic (14).

In this study, it was established that the more the students got from the competence scale, the more willing to work during the pandemic period. In the study conducted with medical students in the COVID-19 pandemic, a positive relationship was found between students' perception of professional competence and their willingness to volunteer in the pandemic (17). Similar results were also obtained in the studies who investigated the volunteering position

of medical and nursing students in the COVID-19 pandemic (10, 23). These results suggest that to increase the willingness of nursing students to work in pandemics, it is significant to gain students' competence in working in pandemics during the education process.

The findings obtained in this study suggests that those who have healthcare workers among family members are less likely to be willing to work during the pandemic period. The COVID-19 pandemic has led to many challenges and negative consequences for healthcare workers, including exhaustion, fatigue, illness and death (24). Nursing students whose relatives are healthcare workers seem to be less likely to volunteer to work in the COVID-19 pandemic, which may be attributed to their close witness to all these challenges.

In this study, the findings suggest that male students were more likely to volunteer to work during the pandemic period than female students. Similarly, Charney et al. (2015) found in their study that female healthcare workers were less willing than males in the pandemic (25). In addition, studies have found that although the number of male nursing students is lower than that of females, their rate of willingness to work as a nurse in a pandemic is the same or higher than females (9, 26). On the other hand, there are studies showing that there is no relationship between the willingness to work in the pandemic and socio-demographic data for nursing students and nurses (27, 28). It can be thought that the higher probability of male students willing to work in the pandemic is due to the vulnerability of women to the disease and that men feel strong and protective in the context of gender roles, or that these roles are imposed on them.

In the findings obtained in the study to determine the COVID-19 knowledge level of the students, it was found that the most common symptoms of the disease were fever, cough and shortness of breath for almost all of the students, that it could be contagious in people who did not show any symptoms, and that it could be transmitted as a result of speaking, coughing, and sneezing. Similar to our work, Saadeh et al. (2019) found that in COVID-19, person to person transmission can occur by droplets and transmission can be airborne and most common signs and symptoms include fever, diarrhea and dyspnea (29).

In this study, students who obtained information about COVID-19 disease from official sources



(website of the Ministry of Health, WHO website and courses delivered at school) were more willing to work in the pandemic. Using official sources to obtain information can provide advantages, such as access to systematic and consistent information, avoiding information pollution, and therefore confusion. It can be thought that this situation facilitates a calm attitude towards the pandemic and has a positive effect on volunteering to work in the pandemic. In addition, information and technology terms are included in the 10 competence areas that Sroczynski et al. determined for nurses in 2011 based on the Medical Institute Model and other models. Therefore, it is stated that knowledge is a factor affecting competence (30). In this context, it is thought that facilitating access to evidence-based information from official sources with developing technology may play a role in increasing the perception of competence.

No significant relationship between the knowledge level and the student's willingness to work during the pandemic period was found. Nashwan et al. (2020) found in their study that investigating nurses 'willingness to work with COVID-19 patients, nurses' level of knowledge had a significant and positive relationship with their desire to care for COVID-19 patients (OR 0.874, CI 0.766–0.996) (14). Aoyagi et al. (2015) found in their systematic review and meta-analysis that confidence in knowledge and skills increased willingness to work during the pandemic (14, 31). However, this current study was conducted with nursing students, and the mentioned studies were conducted with nurses and healthcare professionals. Although it is challenging to compare the results of this research with the previous studies in the literature, the findings do not seem to overlap. Therefore, further studies are needed to clearly reveal the relationship between the level of knowledge about the diseases that cause the pandemic and the willingness of student nurses to work.

### Limitations

Research is limited to nursing students studying at the university in the northeast of Turkey.

### CONCLUSION

As a result, there is a significant relationship between nursing students' perceptions of professional competence and their willingness to work during pandemic periods. In addition, obtaining information

about the pandemic from official sources is an element that increases the willingness to work.

In addition, having relatives who have chronic diseases or health professionals in the family reduces the willingness to work. These results reflect the significance of directing students to obtain information from correct sources and developing their perceptions of competence in nursing education. The findings obtained in this study also suggested that practices aimed to ensure the safety of their relatives can make a significant contribution to the efficient work of healthcare professionals.

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