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## Research Article

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# Nursing Students' Views on Distance Education During The Covid-19 Pandemic: A Cross-Sectional Study



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### Abstract

**Objective:** This research was conducted to evaluate nursing students' views on distance education during the COVID-19 pandemic.

**Methods:** This study was conducted with 415 nursing students who volunteered to participate in the study between December 25, 2020 and February 25, 2021. The data were collected with the information form developed for the study.

**Results:** As a result of this study, it was reported that nursing students may be inadequate in the field when they graduate due to distance education (M=4.12) and that distance education during the pandemic will not contribute enough to their professional knowledge and skills (M=3.96). They stated that they want a pandemic and disaster management course to be added to nursing education (M=3.84) and that simulation laboratories should be established for clinical practices during the pandemic (M=4.05), that their safety should be ensured during clinical nursing practices (M=4.07) and that they want to use personal protective equipment while performing these practices (M=4.13).

**Conclusion:** As a result of this study, it was concluded that distance education negatively affected nursing students' professional knowledge and skills, and they felt inadequate in terms of their profession. A hybrid education model can address challenges in nursing education during the pandemic, with theoretical courses conducted remotely and practical skills taught through face-to-face or virtual simulations. An effective infrastructure should support educational materials, videos, interactive content, and simulations. Individual mentoring can be provided for challenging theoretical topics. Additionally, collaborations with international nursing schools can help share educational content on various cultures and healthcare systems.

### Keywords

Pandemic · nursing education · education · nursing · COVID-19



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## INTRODUCTION

The COVID-19 pandemic was first detected in December 2019 in Wuhan, Hubei province, China, and the World Health Organisation (WHO) declared it a pandemic on March 11, 2020 (1). The COVID-19 pandemic had a significant impact on many regions of the world (2). As the number of COVID-19 cases increased globally, countries implemented measures such as social isolation and curfews to cope with the pandemic (3,4). The rapid spread of the pandemic, along with high morbidity and mortality rates, led to a major global crisis (5).

The COVID-19 pandemic also posed significant challenges in the field of education (6). During the pandemic, the safety and sustainability of education became a priority for all countries (7). During this period, the world had to transition to remote education, and this rapid transition led to the initiation of education without adequate planning.

Many universities around the world switched to online platforms during the pandemic. Among the widely used tools were Zoom, Google Meet, Microsoft Teams, Moodle, Blackboard Collaborate, and Skype. These platforms allowed instructors to deliver lectures online, enabled students to access course materials, and facilitated participation in exams (8). Virtual simulations have helped students gain skills in health education programs, especially in areas requiring practical training (9).

After the detection of the first case of COVID-19 in Turkey on March 11, 2020, the Council of Higher Education (YÖK) decided to suspend face-to-face education for three weeks starting from March 16, 2020 (10). Following the first reported case, YÖK announced on March 26, 2020, that the spring semester of the 2019-2020 academic year would continue with remote education (11).

Subsequent to this decision, YÖK stated that face-to-face education could be conducted in universities with strict measures for practical training during the 2020-2021 spring semester; however, theoretical courses would continue through remote learning methods as much as possible, and the final decision would be left to individual universities (12). While students have been concerned about the course of COVID-19 and how long the pandemic will last, they have also encountered the challenges of remote learning (13).

With the transition to remote education in Turkey, universities began using online platforms such as Zoom, Moodle, Microsoft Teams, Perculus, Adobe Connect, BigBlueButton, Google Meet, Blackboard Collaborate, Microsoft Skype, and Canvas. While universities conducted live classes with synchronous education, they also offered video lectures, reading materials, and exams through asynchronous

education (14). In fields requiring clinical and practical training, alternative methods such as virtual simulations, video lessons, and interactive applications have been used to help students gain practical experience (15).

For nursing students, who receive a large portion of their education through practical training, the inability to conduct face-to-face education and the suspension of clinical practices, which form a significant part of nursing education, created challenges (13). Clinical practice is a critical orientation phase for nursing students, where they learn nursing care techniques and acquire professional skills before graduation (16). The uncertainties surrounding the pandemic led to the cessation of direct patient care practices (17). Despite all these challenges, the emergence of the COVID-19 pandemic necessitated that nursing faculties act flexibly, innovatively, and swiftly in education (7).

The pandemic period brought many challenges to education, but it also accelerated the digital transformation of education systems. Issues such as technological infrastructure gaps, student interaction, practical training requirements, and exam security were among the most common problems faced during this process (8, 9). In response to these challenges, solutions such as virtual simulations, interactive teaching methods, online guidance, and psychological support services were implemented. Additionally, software to enhance online exam security and project-based assessment methods were also proposed as solutions (9, 18).

In this context, this research identifies the challenges faced by nursing students during the remote education process and to develop solutions for these issues. It seeks to provide insight into the steps to be taken to offer better and higher-quality nursing education to students during extraordinary situations and potential future pandemic periods.

## METHODS

### Study Design

The data for this descriptive research were collected through a survey of nursing students at a university located in the Inner Aegean region of Turkey. The questionnaire in the study was prepared by the researchers because of examining the relevant literature (2,3,5-7,13,16,18,20-22,29). The research data were collected from nursing students who volunteered to participate in the study between December 25, 2020, and February 25, 2021. The online questionnaire for the study was sent to students using Google Forms. The survey form contains an informed volunteer form explaining the purpose of the research.



## Procedure

The study involved 415 students, and all responses provided by the participants were incorporated into the research. The completion of the survey questions took an average of 10-15 minutes. Electronic consent was obtained from the students for their participation in the study.

## Sample

There are 532 students studying in the Department of Nursing at the university where the study was conducted. Sample size was calculated using the formula for descriptive studies:  $n = \frac{DEFF * Np(1-p)}{[(d2/Z21-\alpha/2*(N-1)+p*(1-p)]}$ . The minimum number of samples to be taken was calculated as 224 with 0.95 confidence and 0.05 margin of error with the sample formula whose universe is known. In order to increase the efficiency of the study and the reliability of its results, 415 volunteer students were reached and research data were collected.

## Data Collection

### Information Form

In the data collection form used in the study, a 24-question questionnaire prepared by the researchers was applied to evaluate the experiences of nursing students regarding distance education during the COVID-19 pandemic process. The 5-point Likert-type 19-item questionnaire, which evaluates the descriptive characteristics of nursing students such as age, gender, class, and their views on distance education, was scored as follows: strongly disagree:1, disagree:2 undecided:3, agree:4, strongly agree:5.

## Data Analysis

Data regarding the demographic characteristics of students and their views on distance education during the COVID-19 pandemic period are given as a number, percentage, mean, standard deviation, and mode.

## Ethics Committee Approval

Institutional permission was obtained from the university where the research was conducted. (Institutional Permission Date: 17.11.2020, Number: E.34528) Written consent were obtained by explaining the purpose of the study to all nursing students included in the study. This study was approved by the Ethics Committee of Usak University Faculty of Medicine (Ethics Board Permission Date: 09.12.2020, Number: 108-02-04). We conducted this study in accordance with the ethical rules set out in the Declaration of Helsinki.

## Limitations

Due to the limited sample size and time constraints in this study, the results cannot be generalised to all nursing students. The unique conditions created by the COVID-19 pandemic are a factor that directly influenced the distance education experience. However, the results obtained from similar studies conducted in the post-pandemic period may differ. Furthermore, since students' digital skills and internet connection quality may vary, the technological infrastructure deficiencies and challenges faced by students may not have been identified in detail in this study.

## RESULTS

The average age of the students participating in the research is  $20.67 \pm 1.73$ . 78.6% of all students are female, 53.49% of all students are between the ages of 20-21 and 40.0% are in the second year of nursing school (Table 1).

Table 1. Socio-demographic characteristics of nursing students

	Frequency (N=415)	Percentage (%)
<b>Gender</b>		
Female	326	78.6
Male	89	21.4
<b>Age</b>		
18-19	96	23.13
20-21	222	53.49
22-23	72	17.34
24 and above	25	6.02
<b>Class</b>		
1	84	20.2
2	166	40.0
3	93	22.4
4	72	17.3

Nursing students stated that 53.2% of them were afraid of the future during the pandemic, 60.5% of them stated that the COVID-19 process did not change their thoughts about the nursing profession, and despite all the challenges, they believed they could still practice the nursing profession with pleasure. The arithmetic average of the answers given by the students to the questionnaire statements is presented in Table 3. Within the scope of the research, the statement "Using protective equipment, sterilisation, and disinfection processes during clinical applications, making it easier for me to cope with stress" (M=4.13) was the statement with the highest participation by the students. The students participating in the study stated that they wanted to receive training for psychological relief (M=3.84) during the pandemic process (Table 3).

**Table 2.** Nursing students' views on the COVID-19 pandemic

	Frequency (N=415)	Percentage (%)
If you had a fear during the pandemic, how would you describe this situation?		
Fear of the future	216	53.2
The fear of death	96	23.6
Fear of contagion	207	51.0
The fear of being a carrier of COVID-19	214	52.7
Other	13	2.8
How has the COVID-19 process affected your thoughts about the nursing profession?		
I considered quitting my school.	16	3.9
I considered switching to another profession.	8	1.9
I considered changing my job.	11	2.7
I thought the nursing profession was more difficult than I expected.	139	33.5
In terms of communicable diseases (as in the current pandemic period), I hesitate to perform this profession as I may put my family and loved ones at risk.	65	15.7
Despite all the difficulties of the nursing profession, there has been no change in my thoughts compared to the past, and I think that I can do my profession with pleasure.	251	60.5
I did not choose this profession willingly and lovingly, but I realised how important the nursing profession was during the pandemic period. The pandemic period made me believe that I can do this profession lovingly and willingly.	68	16.4
Other	12	2.6

The participants stated that distance education did not contribute enough to their professional knowledge and skills during the pandemic ( $M=3.96$ ). It has been determined that nursing students have a high desire to work in units specific to COVID-19 when they start their profession ( $M=3.47$ ).

Students reported that finding treatments or vaccines for the COVID-19 pandemic may increase their willingness to participate and work in future pandemics ( $M=3.81$ ) and reported that they felt their clinical practice skills were weakened because they could not perform clinical practice during the pandemic ( $M=4.12$ ), (Table 3).

## DISCUSSION

The COVID-19 pandemic has revealed that both distance education and the sustainability of distance education are necessary for the current education system (19). It has

also encouraged many academic institutions to offer online education without well-thought out learning programs (7). The pandemic period has increased the existing responsibilities of nursing faculties, and as a result, the transition to distance education has become a necessity for teachers and students. In this study, the views of nursing students regarding distance education during the COVID-19 pandemic were evaluated.

Nursing includes professional care practices that value human life and adopt interdisciplinary work as a principle (20). Patient care practices, which have long existed in nursing, are considered the basic practice of the profession (21). Nursing care practices have been an indispensable part of nursing education (19). The pandemic has significantly affected the nursing training process (22). While COVID-19 pandemic measures and suspension of academic activities have created very serious, problems, uncertainty about students' clinical practices and future has resulted in a loss of time, as well as a loss of self-esteem and skills (18). Besides the advantages of distance education such as social isolation, time, money, energy-saving, and easy learning methods, there are some disadvantages of it such as internet infrastructure problems and the inability to perform face-to-face clinical applications (7).

Fear of transmission and fear of infection during a pandemic are among the additional stressful factors for nursing students. The negative effects of anxiety also significantly affect physical health (17). As a result of this study, it was determined that nursing students experienced the most fear of the future (%53.2), fear of being a carrier (%52.7), and fear of transmission (%51). In the study conducted by Casafont and his colleagues (2021) to investigate the health care experiences of nursing students during the COVID-19 pandemic, it was reported that there was a high level of fear of infection and transmission among the participants. It has been emphasised that students are afraid of infecting their relatives (23).

The COVID-19 pandemic has seriously affected the education and social lives of nursing students (6). This pandemic threatens to reduce the number of future nurses (2). As a result of this study, when nursing students were asked whether they had a change of opinion regarding their future profession, it was reported that the students did not experience any change according to their old thoughts and they believed that they could do their profession with pleasure despite all the difficulties of the profession (%60.5). According to the data of the study in which the relationship between the COVID-19 epidemic and the sense of belonging of nursing students was investigated by Santos (2020), it was observed that none of the participants experienced a change



**Table 3.** Nursing Students' Views on Distance Education during the COVID-19 Pandemic

	Mean	SD	Mod
The use of protective equipment, sterilisation and disinfection processes make it easier for me to cope with stress.	4.13	0.68	4
I have technical problems during distance learning.	3.85	0.96	4
Distance learning makes it difficult to understand the lessons.	3.91	1.02	4
In distance, learning, I want to get training for psychological relaxation.	3.84	0.87	4
I think that when I graduate due to distance education, I may be inadequate in my field of work.	4.12	1.05	5
I am concerned that distance education can adequately improve my professional knowledge and skills.	3.96	0.94	4
During the COVID-19 pandemic process, I want to take a pandemic and disaster management course in nursing education.	3.84	0.81	4
When I start my profession, I want to work in the clinic at the forefront in the case of the COVID-19 pandemic or a different pandemic.	3.47	0.94	3
When I started my profession, I did not want to work in the pandemic service.	2.77	1.11	3
During the pandemic process, I want a simulation laboratory to be established for clinical applications.	4.05	0.87	4
Finding a cure or vaccine for the COVID-19 pandemic increases my willingness to participate and work in future outbreaks.	3.81	0.81	4
During the COVID-19 pandemic, graduating as a nurse after distance education made me feel under pressure and worthless.	3.19	1.24	4
I would like a separate platform to be created outside the classroom where we can discuss current news and our professional values in distance education.	3.78	0.85	4
My family and friends are concerned that I will do this job in the future due to the COVID-19 pandemic.	2.93	1.20	2
I think that nursing departments must ensure the safety of students more than other academic departments during the COVID-19 pandemic period, during clinical nursing practices.	4.07	0.78	4
In the COVID-19 pandemic process, I think that distance education is more advantageous than face-to-face education in terms of situations where nursing students face ethical dilemmas during their clinical practice.	2.37	1.07	2
I think that my clinical skill level has weakened because I could not go to clinical practice during the pandemic.	4.12	1.00	5
During the COVID-19 pandemic, I would like to go to clinical practices, strengthen my commitment to my profession and my sense of belonging, and take my place in teamwork.	3.89	0.95	4
Being away from the clinical practice field in the distance education process poses a risk in terms of improving myself in evidence-based nursing practices.	3.92	0.89	4

of opinion about becoming a nurse after graduation due to the pandemic and its effects (24). Eweida et al. (2020) conducted a study to determine the mental tension and psychological changes of intern nursing students in paediatrics and medical-surgery units in the COVID-19 epidemic environment. During this period, it was determined that nursing students thought of leaving the nursing profession ( $M=2.29 \pm 0.99$ ) (16).

Patient care needs will not be met as long as qualified nurses who can meet the needs of the age are not trained (25). It is of great importance that nursing students, who are seen as future clinical leader candidates, are fully prepared for their roles in academic, clinical practice, and nursing, and that their deficiencies are eliminated (26). The internet infrastructure, the proficiency of the student in computer and internet use, and the availability of a private area at home to attend online classes have been significantly effective in terms of the applicability of distance education. As a result of the findings of this study, it was determined that a high rate of students ( $M= 3.85$ ) had technical problems in distance education.

According to the results of the study by Singh et al. (2021), in which they evaluated online nursing and medical education during the COVID-19 outbreak in India; It was reported that %30.6 of the students frequently experienced problems with the internet, and it was emphasised that unexpected system errors occurred (27). To increase the quality and efficiency of education, it is necessary to ensure the active participation of students in the distance education system (7).

Suspension of academic activities along with COVID-19 control measures, including social distancing and travel restrictions, poses a risk for loneliness and psychological problems among students (18). The students who participated in this study stated that they wanted to receive a high rate of education ( $M=3.84$ ) for psychological relaxation in nursing departments in distance education during the pandemic process. Based on this finding, it may be beneficial to provide nursing students with training on methods of coping with stress to increase their academic and social success.



Nursing students who participated in the study stated that they may be inadequate in the field when they graduate due to distance education ( $M=4.12$ ) and that distance education cannot contribute enough to their professional knowledge and skills during the pandemic ( $M=3.96$ ). In a qualitative study conducted by Bdair (2021) to assess their perspectives on online learning during the COVID-19 pandemic, all faculty members and students stated that the delivery of professional skills and clinical practical instruction through distance education does not create a suitable learning environment (28). Similarly, it was determined by Terzi et al. (2021) that distance education is not sufficient for nursing education and clinical skills ( $2.23 \pm 1.31$ ). The findings of the study and the studies in the literature show that distance education is not sufficient in terms of gaining professional knowledge and skills (29).

As a result of this study, it was determined that nursing students had a high desire to work in units specific to COVID-19 when they started their profession ( $M=3.47$ ). In the study of Nie et al. (2020), in which they evaluated nursing students' thoughts of leaving the profession during the pandemic period, it was found that the pandemic had no effect on the perception of clinical nursing and that a certain number of students were more willing (30.7%) to fight the disease (30). Gómez-Ibáñez et al. (2020) In their qualitative study with nursing senior students in Spain, it was determined that the students volunteered to work as nurses and had a high desire to fight COVID-19 (31).

As a result of this study, the participants reported that the use of protective equipment, sterilisation and disinfection processes during clinical applications can facilitate students' coping with stress ( $M=4.13$ ). They stated that finding a cure or vaccine for the COVID-19 pandemic could increase their willingness to participate and work in future outbreaks ( $M=3.81$ ). In the study conducted by Ulenaers et al. (2021) to evaluate the clinical practice experiences of nursing students during the COVID-19 pandemic, the presence and use of personal protective equipment was evaluated as a stress factor by nursing students, and 54% of the students stated that there is a need for training related to the use of these equipment (32). In the study of Ewidea et al. (2020), it is emphasised that the use of personal protective equipment reduces stress ( $2.51 \pm 0.87$  and  $2.48 \pm 0.87$ ), and the availability of treatment and vaccine ( $2.64 \pm 0.77$ ) will encourage nursing students in terms of their willingness to participate in future pandemics.

During the COVID-19 pandemic, nursing students faced ethical dilemmas about whether to prioritise their own safety and the safety of their patients. Nursing students should be

given training on the use of personal protective equipment, self-safety, patient safety and on providing safe care. Thus, the safety of nursing students in clinical practice will be ensured in the current pandemic and other pandemics that may be encountered in the future (16).

As a result of the study, nursing students stated that they wanted to strengthen their sense of commitment and belonging to the profession and take their place in teamwork by going to clinical practice during the COVID-19 pandemic ( $M=3.89$ ). In research conducted by Ulenaers et al. (2021), while more experienced nursing students wanted to have an opportunity to work in places specific to COVID-19, many other students stated that not allowing some nursing schools to work in these departments made students feel safer (32). According to the results of the Cervera-Gasch et al. (2020) study with Spanish medical students and nursing students, it was determined that 65.3% of the students did not feel ready to participate in the COVID-19 cases, and 74.2% of them stated that they would be willing if the conditions required (33).

When all these study results in our study and in the literature are evaluated, it is seen that the problems experienced in distance education applied in nursing departments during the COVID-19 pandemic period are similar (13). In many studies, it has been stated that staying away from the clinical practice areas of nursing students reduces their professional knowledge and skills. At the same time, ignorance about the use of personal protective equipment, lack of self-confidence created by the pandemic period, fear of the future, fear of contamination and feelings of uncertainty about continuing the profession were expressed as common problems (13, 16, 18, 23, 32).

## CONCLUSION

The COVID-19 pandemic negatively affected the education processes of nursing students, and it was observed that being away from the clinical practice environment led to weakening in professional knowledge and skills. This finding, in parallel with other studies in the literature, shows that the lack of clinical experience during the pandemic period negatively affects students' professional competencies and safety perceptions. Technical problems in distance education and difficulties in understanding the courses, in line with previous studies, led to an increase in the difficulties experienced by students during the education process. As emphasised in many studies, students stated that they needed courses such as pandemic and disaster management and requested the establishment of simulation laboratories for clinical applications. In addition, it was concluded that students maintained their professional commitment during



the pandemic process, but felt under psychological pressure due to the concerns of their families.

In conclusion, these findings reveal that nursing education programmes should be better structured for extraordinary situations such as pandemics. The most important result obtained from this study is that more training should be given to students about the use of personal protective equipment, safety and ethical values, and simulation and virtual applications should be expanded in education. Considering these findings, it is concluded that nursing education programmes should be structured in extraordinary situations such as pandemics.



Ethics Committee Approval	This study was approved by the ethics committee of Uşak University Faculty of Medicine (09.12.2020 / 108-02-04).
Informed Consent	Written consent was obtained from the participants.
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