



ORIGINAL ARTICLE

The Perceptions of Nursing Students About the COVID-19 Pandemic

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Abstract

Objective: This study was conducted to assess the perceptions of nursing students about coronavirus disease 2019.

Method: The study was conducted in a cross-sectional descriptive method. The sample group consisted of 209 students who were available online, volunteered to participate in the study, and filled out the questionnaire. Data were collected with a questionnaire and the Pandemic Scale. The data were evaluated using Statistical Package for the Social Sciences software 21.0 with descriptive statistics, chi-square, t-test, analysis of variance, and Bonferroni test in further analysis, while p < .05 was the CI.

Results: In this study, 81.8% of the students were girls and 97.6% were single. The rate of students who or whose relative was diagnosed with coronavirus disease 2019 was 7.2%, the rate of students who wore a mask to avoid coronavirus disease 2019 contamination was 98.1%, the rate of students who paid attention to social distancing was 96.7%, and the rate of students who used hand disinfectant was 77%. It was determined that the students' average scores from the Pandemic Scale were 172.55 \pm 21.90. A significant difference was found in the conspiracy and environment sub-dimensions of the coronavirus disease 2019 causes dimension in the comparison of the students' mean scores from the sub-dimensions of the Pandemic Scale by their grade. A positive significant correlation was found between age and conspiracy sub-dimensions (p < .01).

Conclusion: It was observed that some of the sub-dimensions of the Pandemic Scale had positive and negative relationships with each other. This shows that students should be supported with accurate information about coronavirus disease 2019 and in complying with personal avoidance measures.

Keywords: COVID-19, nursing students, pandemic perception

Introduction

Coronavirus (CoV), one of the important viral pathogens of humans and animals, was first specified in the 1960s (Ay, 2019). Coronavirus disease 2019 (COVID-19) was added to the CoV family, including severe acute respiratory syndrome and Middle East respiratory syndrome, known to cause a pandemic in China and the world on December 31, 2019 (Til, 2020).

It is known that COVID-19, the new type of CoV, is transmitted by respiration and droplets. The COVID-19 epidemic, described as a severe acute respiratory syndrome, causes serious respiratory diseases (Gupta, 2020; Zhai, et al., 2020). The source of the COVID-19 epidemic is not yet known (European Center for Disease Prevention and Control, 2020). However, it is also documented that the South China wholesale market is linked to the first 27 cases determined in Wuhan, China, and bats sold in these markets are the main host of COVID-19 (Cascella et al., 2020).

It is reported that the incubation period is 2-14 days after contamination of the disease. Conditions ranging from cough, fever, mild respiratory symptoms to acute respiratory distress syndrome, which may result in death, have been reported among the symptoms observed in infected individuals. Both symptomatic and asymptomatic infected individuals can transmit the virus (Bhagavathula et al., 2020; WHO, 2020). Although COVID-19 is a highly contagious disease and great progress has been made in vaccine studies, an antiviral drug to cure the disease is yet to be developed. Thus, World Health Organization (2020) recommends measures such as hygiene practices, social distancing measures, self-quarantines, and closing unnecessary workplaces to control the spread of the COVID-19 pandemic existent in many countries.

Educational activities were transformed into a distanced education method on March 16, 2020, within the scope of measures in Turkey. It was thought that it would be more

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Received: 22.09.2021 Accepted: 01.12.2021

Cite this article as: Turkmen AS, Canbulat Sahiner N, Pekesen M. (2022). The Perceptions of Nursing Students About the COVID-19 Pandemic. Mediterranean Nursing and Midwifery, 1(3), 113-119.



beneficial for students to stay at home and continue their education online (Council of Higher Education, 2020; Turkish Ministry of Health, 2020). Therefore, students studying nursing had to continue their education in this way. It has been observed that the students of the nursing department experience different anxieties than other occupational groups. On the one hand, going into clinical practice created discomfort, while being unable to experience clinical practice caused professional skills concerns.

Coronavirus disease 2019 has become one of the most impactful pandemics that every individual has grasped an idea about it. The accuracy and reliability of these ideas must be assessed. Nurses are primary healthcare professionals in restoring and protecting human health. These individuals must be aware of their profession from the training period and have sufficient and accurate information in case of pandemics. Health/illness perceptions play an important role in people's ability to acquire information. Although there are studies assessing the anxiety of nursing students due to the pandemic in the literature, no studies were found regarding the perceptions (Arslan & Pekince, 2020). Hence, this study was conducted to assess the perceptions of nursing students about COVID-19.

Material and Methods

Ethics Committee approval for the study was obtained from the Karamanoğlu Mehmetbey University Non-Interventional Ethics Committee and from the online participants (07-2020/38). Written informed consent was obtained from all individual participants included in the study.

The study was conducted in a cross-sectional descriptive method. The population of the study was composed of students studying at the X University's Nursing Department. The number of students studying within the specified universe was 420. The sample group included all students who were accessible online, volunteered to participate in the study, and completed the questionnaire. A total of 209 people volunteered. The data were collected between 1 and 30 May 2020, when restrictions due to pandemics began and the number of patients started to increase in our country.

Main Points

- The coronavirus disease 2019 pandemic is a disease that puts healthcare workers at risk. The perceptions of the nurse students, who are at the beginning of the profession, about the disease are a factor that can increase their professional concerns. Professional coping methods of student nurses are important for the development of this profession.
- It has been determined that nursing students show a very high rate of avoidance behavior toward the epidemic. Also, it has been observed that first-year students at the beginning of the profession believe more in conspiracy theories about the epidemic.
- It was found that the students who were most affected by environmental factors were second-year students.
- It has been observed that as the knowledge and experience of the students in vocational education increase, their scientific motivation gets higher.

A questionnaire created in line with the literature and the Pandemic Scale was used as data collection tools. Question form consisted of 13 questions examining the demographic characteristics of the participants and their behaviors while encountering and preventing COVID-19.

Pandemic Scale was developed by Çırakoğlu in 2011. The scale included 55 questions in total and has 5 dimensions and 13 sub-dimensions (Çırakoğlu, 2011). The sub-dimensions are as follows:

- Pandemic perception: dangerousness (five questions) and contagiousness (three questions),
- Perception of causes of pandemic: conspiracy (six questions), environment (eight questions), and belief (four questions),
- Pandemic control perception: macro control (five questions), personal control (five questions), and inevitableness (four questions),
- Attitudes toward vaccination: positive attitude (four questions) and negative attitude (five questions),
- Avoiding behaviors: cognitive avoidance (seven questions), avoiding common areas (five questions), and avoiding personal contact (three questions).

The lack of a vaccine for COVID-19 is the reason why attitudes toward the vaccine were not assessed in this study. Moreover, the item "Trying to stay at home and applying social isolation to avoid COVID-19" was added to the subdimension of avoiding common areas. All items have been revised according to COVID-19. The scale was in a five-point Likert type and the participants were asked to mark between 1 and 5 based on how much they agreed with each item (1=strongly disagree and 5=strongly agree). Increasing scores in the scales show that the participant's belief in the related item increases. The 1st, 2nd, 3rd, 4th, 6th, 37th, 38th, 39th, and 40th items of the scale were reverse coded.

The data were evaluated using Statistical Package for the Social Sciences software 21.0 (IBM SPSS Corp.; Armonk, NY, USA) with descriptive statistics such as nominal values, percentage, average, minimum and maximum value, chisquare, Cronbach's alpha value, t-test, analysis of variance, and Bonferroni test in further analysis, while p < .05 was the CI.

Results

It was found that the average age of the participants was 21.05 ± 1.86 (min=18, max=33) years. The findings of the demographic characteristics of the participants are presented in Table 1.

As 81.8% of the students were female, 97.6% were single and 29.2% were first graders. An analysis of particular COVID-19-related features of the students indicated that the rate of students who or whose relative was diagnosed with COVID-19 was 7.2%, the rate of students who wore a mask to

Table 1
Findings Regarding Demographics and Other COVID19-Related Features of the Participants (N = 209)

Demographic/	or the Furticipu	1113 (14 – 207)
COVID-19-Related		
Features	Number (n)	Doroontogo (%)
	Number (n)	Percentage (%)
Gender	171	81.8
Female	38	18.2
Male		
Marital status	5	2.4
Married	204	97.6
Single		
Grade	61	29.2
1	39	18.7
2	54	25.8
3	55	26.3
4		
I have or one of my	15	7.2
relatives been	194	92.8
diagnosed with		
COVID-19		
Yes		
No		
I wear a mask to	205	98.1
prevent COVID-19	4	1.9
contamination		
Yes		
No		
I frequently wash	209	100
my hands with soap	0	0
and water for 20		
seconds to avoid		
COVID-19		
contamination		
Yes		
No		
I am cautious about	202	96.7
social distancing to	7	3.3
avoid COVID-19		
contamination		
Yes		
No		
I use hand sanitizer	161	77
to avoid COVID-19	48	23
contamination		
Yes		
No		
	1	

Note: COVID-19 = coronavirus disease 2019

avoid COVID-19 contamination was 98.1%, the rate of students who washed their hands with water and soap for 20 seconds was 100%, the rate of students who paid attention to social distance was 96.7% and the rate of students who used hand disinfectant was 77% (Table 1).

It was determined that the students' average scores from the Pandemic Scale were 172.55 \pm 21.90 (min = 91, max = 224), and Cronbach's alpha value was 0.87. The mean scores and

the min and max values of the students from the Pandemic Scale are summarized in Table 2.

A significant difference was found in the conspiracy for first graders and in environment sub-dimension for second graders regarding the COVID-19 causes dimension in the comparison of the students' average scores with p < .05. It was observed that first graders scored lower in the conspiracy sub-dimension as second graders presented the same situation in the environment sub-dimension (Table 3).

The correlations between the scores of the students' age and the sub-dimensions of the Pandemic Scale are shown in Table 4. A positive significant correlation was found between age and conspiracy sub-dimensions (p < .01). It was found that some of the sub-dimensions of the Pandemic Scale had positive and negative relationships with each other (Table 4).

No statistically significant difference was found among the students' average sub-dimension scores of the Pandemic Scale by their gender or the status of a relative diagnosed with COVID-19 (p > .05).

Discussion

The COVID-19 pandemic affected people as well as nursing students around the world in various ways. Nursing students with knowledge of the disease and hospital experience had to endure new experiences with the pandemic process. Some of these new experiences were online education, the inability to perform the applications effectively, and the fear of contamination or falling ill. The study was conducted to determine the perception of nursing students regarding COVID-19. It was observed that the rate of students who have been diagnosed with COVID-19 was 7.2%, the rate of students who wore a mask to prevent COVID-19 was 98.1%, the rate of students who washed their hands with soap and water for 20 seconds was 100%, the rate of students who paid attention to social distancing was 96.7%, and the rate of students using hand sanitizer was 77%. In the literature, they stated that 37.5% of the nursing students applied the measures taken by the Ministry of Health to protect against the COVID-19 epidemic (mask, social distancing, hand hygiene) at a moderate level, 39.3% at a high level, and 23.2% at an excessive level (Apaydın Cırık et al., 2021). Aslan and Pekince's (2020) study with nursing students also determined that 68.1% of the students were worried about being infected, and 78.9% thought they took adequate precautions against contamination. Regarding the measures taken to prevent contamination, 97% of them reported that they washed their hands frequently, 92.9% applied social distancing, and 91.1% were cautious about good ventilation in their environment. In addition, 23.6% of the students stated that they knew people who were diagnosed with the disease. The findings aligned with the literature.

No statistically significant difference was found among the students' average sub-dimension scores of the Pandemic Scale by their gender or the status of a relative diagnosed

Table 2
Students' Average Scores from the Pandemic Scale, Min–Max Values

Pandemic Scale	Average ± SD	Min-Max Values	Number of Items
COVID-19 perception	20.09 ± 2.61	12–25	5
Dangerousness	9.75 ± 1.41	6–13	3
Contagiousness			
Causes of COVID-19	15.85 ± 6.14	6–30	6
Conspiracy	22.93 ± 6.70	8–38	8
Environment	10.94 ± 3.97	4–20	4
Belief			
Control of COVID-19	15.00 ± 4.18	5–25	5
Macro control	16.12 ± 4.49	5–25	5
Personal control	13.98 ± 3.63	4–20	4
Inevitableness			
Avoidance behaviors	15.36 ± 5.77	7–35	7
Cognitive avoidance	19.91 ± 4.96	5–25	5
Avoiding common areas	12.57 ± 3.02	3–15	3
Avoiding personal contact			

Table 3

Average Score Comparison of the Students Regarding the Sub-Dimensions of the Pandemic Scale by Their Grade

	1st Grade		3rd Grade	4th Grade	
	(n=61)	2nd Grade (n = 39)	(n=54)	(n=55)	
Pandemic Scale	Average \pm SD	Average \pm SD	Average \pm SD	Average \pm SD	F/p
COVID-19 perception	20.32 ± 2.46	20.23 ± 2.62	20.18 ± 2.80	19.65 ± 2.61	0.733/.533
Dangerousness	9.67 ± 1.42	9.74 ± 1.42	9.85 ± 1.39	9.76 ± 1.46	0.153/.928
Contagiousness					
Causes of COVID-19	13.54 ± 5.89**	16.05 ± 6.10	17.09 ± 5.39	17.07 ± 6.55	4.565/ .004
Conspiracy	23.18 ± 7.44	20.33 ± 5.33**	24.40 ± 6.24	23.05 ± 6.77	2.942/ .034
Environment	11.13 ± 3.87	10.35 ± 3.34	11.64 ± 4.59	10.47 ± 3.79	1.154/.328
Belief					
Control of COVID-19	15.39 ± 4.03	14.53 ± 4.12	15.20 ± 4.20	14.72 ± 4.41	0.455/.714
Macro control	16.62 ± 4.27	15.10 ± 4.57	16.16±4.89	16.25±4.26	0.938/.423
Personal control	13.70 ± 3.05	14.33 ± 3.89	13.96±3.58	14.05±4.11	0.245/.865
Inevitableness					
Avoidance behaviors	15.27 ± 6.11	15.69 ± 5.71	14.72 ± 5.34	15.87 ± 5.92	0.408/.748
Cognitive avoidance	20.11 ± 5.18	20.74 ± 4.67	19.88 ± 5.01	19.12 ± 4.88	0.855/.465
Avoiding common areas	12.47 ± 2.94	13.02 ± 2.86	12.87 ± 3.10	12.07 ± 3.13	0.990/.399
Avoiding personal contact					

^{*}Since p < .05, it is statistically significant.

with COVID-19 (p > .05). It has been reported that female students had higher stress levels than males in Aslan and Pekince's (2020) study on nursing students. Apaydın Cırık et al (2021) as a result of their study also stated that the psychological resilience levels of male nursing students were higher (p < .01). There are similar studies in the literature (Çelebi, 2020; Karaşar ve Canlı, 2020). On the other hand, there are also studies stating that gender has no effect on psychological health (Çetin & Anuk, 2020) and that women are more resilient (Demir & Çiftçi, 2020; Tönbül, 2020). When it comes to the reason behind it, it is not possible to give clear information about the change in the psychological effects of COVID-19 according to the gender variable. It is thought that this situation is caused by the cultural and social differences in which the mentioned studies are conducted.

A significant difference was found in the conspiracy for first graders and in environment sub-dimension for second graders regarding the COVID-19 causes dimension in the student's Pandemic Scale scores when p < .05. It was observed that first graders scored lower in the conspiracy sub-dimension as second graders presented the same situation in the environment sub-dimension. It was determined that the first and fourth graders had higher stress levels in Aslan and Pekince's (2020) study on nursing students but there was no statistically significant difference. Labrague (2020) also stated that stress due to COVID-19 is associated with job readiness and willingness. In this case, it can be said that the problems related to COVID-19 are related to professional readiness rather than age and education years.

Q3

^{**}The group possesses a difference in the Bonferroni test.

Correlation Among the Students' Sub-Dimension Scores of the Pandemic Scale with Each Other and Age Table 4

	COVID-19 I	COVID-19 Percention	Calle	Causes of COVID-19			Control of COVID-19	0VID-10	Avoida	Avoidance Rehaviore	iore
			5								
										Avoiding	Avoiding
						Macro	Personal		Cognitive	Common	Personal
	Dangerousness	Contagiousness	Conspiracy	Environment	Belief	Control	Control	Inevitableness	Avoidance	Areas	Contact
	_		r	_	7	_	_	_		_	r
	ď	ď	d	ď	d	d	d	d	р	d	Q
Age	102	.010	.280	022	081	.029	004	.021	.100	033	.049
	.140	.882	*000°	.756	.245	8/9.	.952	99/.	.148	.638	.479
Dangerousness		171.	-148	024	127	.047	760.	-104	244	.292	.209
		.013*	.032*	727.	.067	.500	.161	.132	*000°	.000°	.00 2 *
Contagiousness			.078	111.	.011	.143	.251	067	.042	.324	.265
			.261	.109	.870	.039 [*]	·000°	.334	.550	.000°	,000°
Conspiracy				.297	.235	.087	.085	072	.134	017	890.
				,000°	.00 1	.213	.219	.300	.053	808	.327
Environment					.342	.219	-267	248	.187	179	179
					.000 .	.001	.000 .	.000°	.00 7 *	.000 _*	.00 0
Belief						.229	.330	094	.189	101.	.151
						.00 1	,000°	.176	.900°	144	.029 [*]
Macro control							.541	172	.109	308	.291
							,000°	.013 [*]	.116	.000°	,000°
Personal control								038	.217	.380	.377
								.589	.00 2 *	.000°	,000°
Inevitableness									0332	-204	-196
									.000°	.003*	.00 4 *
Cognitive										.088	.089
avoidance										.205	.202
Avoiding											968.
common Areas											*000°

According to the correlation among students' sub-dimension scores of the Pandemic Scale and age, there was a positive significant relationship between age and conspiracy (p < .01). With older age, the perception of conspiracy as the cause of COVID-19 became more dominant. It has been reported in Aslan and Pekince's (2020) study that students aged 18-20 have higher stress levels than students aged 21 and over. In another study, Savitsky et al. (2020) found that the prevalence of moderate and severe anxiety of nursing students during the COVID-19 pandemic was 43% and 13%, respectively, while this rate was 12.4% in the study of Sun et al. (2020). There are other studies in the literature indicating that disease perception increases with age (Bostan et al., 2020; Ekiz et al., 2020; Kwok et al., 2020). Studies comparing the age of students with their psychological states have also found studies stating that age is not effective (Apaydın Cırık et al., 2021). More studies are needed to give clear information on this subject.

It was found that some of the sub-dimensions of the Pandemic Scale had positive and negative relationships with each other. It was observed that especially the environment sub-dimension had a significant correlation with all other sub-dimensions. As the environment perception for the cause of COVID-19 increased, perceptions of personal control and inevitability decreased. The students' thinking that the disease is caused by the environment decreased both their disease-control behaviors and their avoidance behaviors. Moreover, inevitableness sub-dimension was found to have a significant negative correlation with all three sub-dimensions of avoidance behaviors dimension (cognitive avoidance, avoiding common areas, and avoiding personal contact). Accordingly, as the inevitableness perception increased, the avoidance behavior perception decreased. Students who thought that COVID-19 was inevitable possessed fewer avoidance behaviors. No study has been found in the literature evaluating the pandemic perception of university students with the Pandemic Scale.

This study was limited to nursing students studying at only one university. The fact that the data were collected online suggests that the students gave more unbiased answers. However, this may also reduce the response rate to surveys. Students who did not have internet connection or who had limited internet connection were not included in the scope of the study. On the other hand, it is assumed that the answers given by the participants reflect their views.

In this study conducted to determine the perceptions of nursing students regarding COVID-19, it was found that avoidance behaviors were applied at a very high rate, first grades had higher conspiracy perception, second graders had higher environmental perception than the others, and conspiracy was perceived more as the age got older. In particular, it was concluded that the environment affects all other sub-dimensions among the causes of COVID-19.

As a result of the study, it was seen that nursing students did not pay enough attention to some of the methods of

protection from COVID-19. For this reason, it is recommended to re-explain the importance of ways to prevent the disease. There are studies reporting different results about the change in nursing students' perception of illness according to some variables such as gender and class. In addition, no study has been found that evaluates nursing students' perception of pandemic. Therefore, it is recommended to repeat the study with a larger sample. It is also suggested that nursing education institutions should provide psychological counseling services for their students as well as should improve the teaching of COVID-19 prevention strategies.

Ethics Committee Approval: Ethics Committee approval for the study was obtained from the Karamanoğlu Mehmetbey University Non-Interventional Ethics Committee and from the online participants (07-2020/38).

Informed Consent: Written informed consent was obtained from all individual participants included in the study.

Peer-review: Externally peer-reviewed.

Author Contributions: The authors contributed equally to the preparation of the article.

Conflict of Interest: The authors have no conflicts of interest to declare

Financial Disclosure: The authors declared that this study has received no financial support.

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