Original Article

Perceptions of nursing image of nursing students and affecting factors in the COVID-19 pandemic: A cross-sectional study

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Abstract

Objectives: This study investigated the perceptions of nursing image and the affecting factors in the COVID-19 pandemic of nursing students.

Methods: A cross-sectional study was conducted at two public universities in Türkiye that provide undergraduate nursing. The study sample consisted of 355 undergraduate nursing students. Data were collected between April and July 2020 using an online questionnaire, student information form, and image scale for the nursing profession.

Results: The majority of the participants were women (78.6%). Participants had a mean age of 21.23±2.049. More than half the participants chose to pursue a career in nursing willingly (63.4%). Most participants were proud of being nursing students (85.4%). The majority of the participants stated that the COVID-19 pandemic had positively affected the image of nursing. Most participants noted that they were happy about the posts shared on social media platforms about nursing. Participants had a mean "Scale for the Image of Nursing Profession" score of 148.51±16.5. Gender and conscious choice of the nursing profession explained 6% of the total variance. Taking pride in being a nursing student explained 10% of the total variance (p<0.05).

Conclusion: Nursing has a positive image in the eyes of nursing students during the COVID-19 pandemic. Some variables (gender, conscious choice of the profession, and taking pride in being a nursing student) are significant predictors of the image of nursing in the eyes of nursing students.

Keywords: COVID-19 pandemic; cross-sectional; nursing students; professional image.

Nurses constitute the largest group of health-care professionals (59%) and play a key role in effective and safe health-care provision.[1] How health-care professionals and society perceive nursing determine how much potential the profession has for improvement.[2] The image of the profession is affected by numerous social and environmental factors, such as gender,[3,4] misconceptions and stereotypes,[4] and family, individual experiences, and media.[5]

The COVID-19 pandemic is one of the most urgent public health crises in generations. Nurses worldwide have been fighting it tirelessly since its early days.[6] Therefore, the World Health Organization[7] has designated 2020 the International Year of the Nurse and the Midwife. Although all health-care professionals faced many negative situations such as lack of protective equipment (N95 masks, gowns, glows, etc.), having to work hours up to 24 h shifts, and risk of contamination[8] by the virus in the early days of the pandemic, their commitment to providing care to people with COVID-19 had affected to public.[9]

Despite all these challenges, nurses have become more visible than ever since the onset of the pandemic.[6] The media has portrayed them in a much more positive and accurate light, describing them as strong and selfless heroes. This portrayal has affected the public image of nursing positively.[10] The image of nursing is a collection of thoughts and attitudes toward the profession.[11] Perceived nursing image is important for student nurses to start the profession, maintain the profession, and adapt and develop the profession. Messages about nursing during the COVID-19 pandemic affect how nursing students perceive the profession.[12] Nursing students who view nursing in a more positive light are more likely to pursue a career in it, remain in it, and promote it. Although research suggests that nursing students had a moderate view of the profession before the pandemic,[11] there is no research investigating their perceptions during the pandemic.

Nursing students are the nurses of tomorrow who will have to deal with critical public health problems (e.g., pandemics). Social turmoils can lead to change. Therefore, the COVID-19 pandemic has helped boost the image of the nursing profession in the eyes of the public. This study provides an important perspective to understand how the image of the nursing profession is perceived by future nursing professionals who will have to deal with these problems.[8] Therefore, this study investigated the perceptions of nursing image and the affecting factors in the COVID-19 pandemic of nursing students. The research questions are as follows:

• What are their perceptions about nursing and images of the profession mean scores of the nursing students during the COVID-19 pandemic?

• Is there a difference in the image of the nursing profession according to the demographic characteristics of nursing students and their perceptions about nursing during the COVID-19 pandemic?

• What are the factors affecting the image of nursing students toward the profession during the COVID-19 pandemic?

Materials and Method

Ethical Considerations

The study was approved by the Republic of Türkiye Ministry of Health (2020-05-11T14_06_06) and the Non-Interventional Research Ethics Committee of İnönü University (2020/749). The study was conducted in accordance with the principles of the Declaration of Helsinki. The first page of the survey informed participants about the research purpose, procedure, and confidentiality. Students who disagreed with the terms of the informed consent were not allowed to fill out the survey.

Study Design

This was a cross-sectional study, and it was conducted in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology guidelines.[13]

Participants and Setting

The study population consisted of 1500 students of the nurs-

> **What is presently known on this subject?**
> • The perceived image of the profession by nursing students were a moderate level before the pandemic.
>
> **What does this article add to the existing knowledge?**
> • The COVID-19 pandemic has made the role and impact of nurses in the healthcare system more visible.
> • The perceived image of the nursing profession has become more positive in the COVID-19 pandemic.
>
> **What are the implications for practice?**
> • This research provides evidence about the importance and value of the nursing profession in challenging times.
> • In order to improve the image perception of the profession, it may be important to know the influencing factors and to take initiatives for this.

ing departments of two public universities in the east and west of Türkiye. Both universities provide undergraduate nursing education. The study was conducted with nursing students from April to July 2020 regarding the first wave of COVID-19. Participants were recruited using purposive sampling. We assumed that the students from those universities would have different sociodemographic characteristics. The inclusion criteria were (a) being a nursing student and (b) agreeing to participate. The exclusion criterion was (a) failing to complete the e-survey.

A power analysis was performed using G*Power (3.1.9.7) to determine the sample size. The power analysis was based on the scale mean and standard deviation (142.2±10.4) effect size (0.2), power (95%), an alpha error rate (0.05), and a 10% dropout rate reported by Kizilcik-Özkan et al.[11] The power analysis revealed that a sample size of 359 would be large enough to detect significant differences. Three hundred and fifty-nine students agreed to participate. However, four students failed to complete the e-survey. Therefore, the sample consisted of 355 nursing students. According to the results of post hoc power analysis, the power of the study was 0.96.

Data Collection Tools

The demographic characteristics questionnaire

The questionnaire was based on a literature review conducted by the researchers.[11,12,14] The questionnaire consisted of two parts. The first part had five items on sociodemographic characteristics (age, gender, and grade level), conscious choice of the profession, and having a family member working as a nurse during the pandemic were asked. The second part had eight items on nursing students' perceptions of the nursing profession (willingness to practice the profession during the pandemic, being happy about the major, public image of the profession, etc.).

The scale for the image of nursing profession

The scale was developed by Dost and Bahçecik.[15] It consists of 42 items scored on a 5-point Likert-type scale. The scale comprises six subscales (professional qualification, working conditions, gender, education, professional status, and appearance), as well as a total scale score. The total score ranges from

42 to 210 (42–75= very poor; 76–109= poor; 110–143= moderate; 144–177= good; and 178–210= very good). A higher total score indicates greater image of the nursing profession. The scale has a Cronbach's alpha of 0.88. The subscales have a Cronbach's alpha of 0.82–0.96. In the present study, the scale had a Cronbach's alpha of 0.97. Permission was obtained from the author to use the scale in this study.

Data Collection

The data were collected online between April 30 and July 15, 2020, within the first 6 months of the COVID-19 pandemic in Türkiye. The time was a very special period when the uncertainties and restrictions of the pandemic were experienced most intensely. The online survey was prepared using the Google Docs. The link to the survey was sent to participants through WhatsApp. Snowball sampling was used. The academics and nursing students at the two universities were asked to forward the link to the nursing students they knew. Informed consent was obtained from participants before data collection.

Statistical Analysis

The data were analyzed using the Statistical Package for the Social Sciences.[16] Descriptive statistics were used for sociodemographic and categorical variables. One-way ANOVA and independent-sample t-test were used to evaluate the difference in scale scores depending on sociodemographic characteristics.

A multiple linear regression analysis was conducted to determine the effect of sociodemographic characteristics on scale scores. Scale scores (dependent variable) and all statistically significant independent variables were run in two steps in the hierarchical regression model. First, sociodemographic variables and then scale scores were entered into the hierarchical regression model. All dichotomous variables were coded as dummy variables (e.g., 0 or 1). The model results were presented as B (95%CI), standard error, estimated β, adjusted $R2$, F-test, and p-value for each variable. The significance level was accepted as $p<0.05$.

Results

Demographic Characteristics

Participants had a mean age of 21.23±2.049 years. The majority of the participants were women (78.6%). More than half the participants were 3rd-year students (54.1%). More than half the participants chose to pursue a career in nursing willingly (63.4%). Less than half the participants had a family member working as a nurse during the pandemic (45.9%) (Table 1).

Participants had a mean scale score of 148.51±16.5. They had a mean "professional qualification," "working conditions," "gender," "education," "professional status," and "appearance" subscale scores of 45.58±8.8, 27.6±3.48, 27.74±5.01, 19.35±3.36, 16.63±5.41, and 11.61±3.35, respectively (Table 1).

The Perceptions about the Nursing Profession of the Participants during the COVID-19 Pandemic

Table 2 shows the image of nursing in the eyes of the participants during the COVID-19 pandemic. Participants stated that they wanted to support nurses during the pandemic

Table 1. Sociodemographic characteristics and mean scale scores (n=355)		
Variable	**Group**	**n (%)**
Age, mean±SD, years		21.23±2.049
Gender	Woman	279 (78.6)
	Man	76 (21.4)
Grade level	1st grade	69 (19.4)
	2nd grade	48 (13.5)
	3rd grade	192 (54.1)
	4th grade	46 (13)
Conscious choice of the profession	Yes	225 (63.4)
	No	130 (36.6)
Having a family member working as a nurse during the pandemic	Yes	163 (45.9)
	No	192 (54.1)
The Scale for the Image of Nursing Profession Score, mean±sd		148.51±16.5
Professional Qualification		45.58±8.8
Working Conditions		27.6±3.48
Gender		27.74±5.01
Education		19.35±3.36
Professional Status		16.63±5.41
Appearance		11.61±3.35

SD: Standard deviation.

Table 2. The Perceptions about the Nursing Profession of the Participants during the COVID-19 Pandemic (n=355)

Variable	Group	n (%)
I would love to support nurses during the COVID-19 pandemic.	Yes	302 (85.1)
	No	17 (4.8)
	Do not know	36 (10.1)
I will be more willing to practice my profession after the COVID-19 pandemic.	Yes	257 (72.4)
	No	39 (11)
	Do not know	59 (16.6)
I am proud to be a nursing student during the COVID-19 pandemic.	Yes	303 (85.4)
	No	21 (5.9)
	Do not know	31 (8.7)
The COVID-19 pandemic helped boost the image of the nursing profession in the eyes of the public.	Yes	312 (87.9)
	No	20 (5.6)
	Do not know	23 (6.5)
I am happy about the posts on nursing shared on visual and social media.	Yes	329 (92.7)
	No	16 (4.5)
	Do not know	10 (2.8)
I have loved my major more since the COVID-19 pandemic.	Yes	278 (78.3)
	No	37 (10.4)
	Do not know	40 (11.3)
I am happy about professional associations playing an active role in this process.	Yes	320 (90.1)
	No	11 (3.1)
	Do not know	24 (6.8)
I have viewed the nursing profession in a more positive light since the COVID-19 pandemic.	Yes	278 (78.3)
	No	35 (9.9)
	Do not know	42 (11.8)

(85.1%), would be more eager to start working as nurses after the pandemic (72.4%), were proud of being nursing students (85.4%), believed that the nursing profession achieved high visibility and recognition during the pandemic (87.9%), were happy about the posts shared on social media about their profession (92.7%), loved their major (78.3%), were happy about professional associations playing an active role in this process (90.1%), and believed that the pandemic positively affected the public image of nursing (78.3%) (Table 2).

Table 3 shows the distribution of scale scores by sociodemographic characteristics. Participants' scale scores did not significantly differ by grade levels (p>0.05). There was no significant difference in scale scores between participants who had a family member working as a nurse during the pandemic and those who did not (p>0.05). Female participants had a significantly higher mean scale score than male participants (p<0.05). Participants who chose to pursue a career in nursing willingly had a significantly higher mean scale score than those who did not (p<0.05). The results showed that some sociodemographic characteristics affected the image of nursing in the eyes of the participants (Table 3).

Hierarchical Linear Regression Analysis Results

Table 4 shows the regression analysis results. The results showed that the variance inflation factors (VIF) were within the acceptable range (VIF range from 1 to 1.9), suggesting no multicollinearity in the research model.

The regression model showed that sociodemographic variables affected scale scores (F (2,352) =12.475, p<0.001). Sociodemographic variables explained 6% of the total variance (Adj. R2= 0.061) (Table 4).

The regression model created with the variables of nursing students' views of the nursing profession during the COVID-19 pandemic was statistically significant (F (10, 344)=4.997, p<0.001). The model explained 10% of the participants' scale scores (Adjusted R2=0.101). Consequently, "being a woman" (β=.172; p<0.01) and "choosing to pursue a career in nursing willingly" (β=0.148; p<0.01) were significant explanatory variables that increased participants' scale scores. The variable "being proud to be a nursing student during the COVID-19 pandemic" (β=0.151; p<0.05) was a significant explanatory variable that increased participants' scale scores. The variable "being a woman" increased the scale score by 6.894. The variable "choosing to pursue a career in nursing willingly" increased the scale score by 5.073. The variable "being proud to be a nursing student during the COVID-19 pandemic" increased the scale score by 7.036 (Table 4).

Table 3. Distribution of scale scores by sociodemographic characteristics (n=355)

Variable	Group	Mean (SD)	Test statistic	p-value
Sociodemographic				
Gender	Woman	150.02 (14.72)	t= 2.740	0.007
	Man	142.97 (21.06)		
Grade level	1st grade	148.48 (15.99)	F= 1.415	
	2nd grade	149.19 (17.25)		0.238
	3rd grade	147.32 (17.43)		
	4th grade	152.83 (11.45)		
Choosing to pursue a career in nursing willingly	Yes	150.61 (15.94)	t=3.193	0.002
	No	144.88 (16.89)		
Having a family member working as a nurse during the COVID-19 pandemic	Yes	147.45 (18.04)	t=−1.101	0.272
	No	149.41 (15.07)		
Image of nursing during the COVID-19 pandemic				
I would love to support nurses during the COVID-19 pandemic.	Yes[a]	149.35 (16.4)	F= 8.613	<0.001
	No[b]	132.65 (16.83)		b<a
	Do not know[c]	148.92 (13.54)		b<c
I will be more willing to practice my profession after the COVID-19 pandemic.	Yes[a]	150.19 (16.13)	F=8.595	<0.001
	No[b]	138.74 (19.1)		b<a
	Do not know[c]	147.64 (14.08)		b<c
I am proud to be a nursing student during the COVID-19 pandemic.	Yes[a]	150.24 (15.64)	F=13.378	<0.001
	No[b]	134.19 (20.64)		a>c
	Do not know[c]	141.32 (15.5)		a>b
The COVID-19 pandemic helped boost the image of the nursing profession in the eyes of the public.	Yes[a]	149.51 (16.31)	F=6.865	0.001
	No[b]	135.95 (18.37)		a>b
	Do not know	145.91 (12.95)		
I am happy about the posts on nursing shared on visual and social media.	Yes[a]	149.41 (16.03)	F= 9.579	<0.001
	No[b]	131.44 (19.77)		a>b
	Do not know	146.3 (12.03)		
I have loved my major more since the COVID-19 pandemic.	Yes[a]	150.14 (15.97)	F=11.393	<0.001
	No[b]	136.76 (17.4)		a>b
	Do not know[c]	148.03 (15.21)		c>b
I am happy about professional associations playing an active role in this process.	Yes[a]	149.35 (16.06)	F=5.422	0.005
	No[b]	134.82 (23.75)		a>b
	Do not know	143.54 (15.62)		
I have viewed the nursing profession in a more positive light since the COVID-19 pandemic.	Yes[a]	150.34 (16.38)	F=10.343	<0.001
	No[b]	137.83 (17.74)		a>b
	Do not know	145.31 (12.15)		

SD: Standard deviation.

Discussion

This study investigated the impact of the COVID-19 pandemic on the image of nursing in the eyes of nursing students. Participants had relatively high scale scores in the early days of the pandemic. Our results provide a perspective that could help us better understand how nursing students view the nursing profession.

Research shows that nursing students had moderate levels of the nursing image before the COVID-19 pandemic.[11,17] However, nursing students have viewed the nursing profession more favorably since the pandemic for two reasons: First, the media has portrayed nurses in a more positive light and acknowledged their efforts in the fight against the coronavirus.[18] Second, people all around the world undertook "Clap for Our Carers" campaigns and clapped and cheered to thank health-care professionals for their role during the pandemic. Such crises as the COVID-19 pandemic help promote the image of nursing. This is similar to the case in which Florence Nightingale was revered as the founder of modern nursing during the Crimean War.

Table 4. Hierarchical regression analysis for scale scores (n=355)

Variable	B (95% CI)	SE	β¹	t	p	Adj. R²	F	p-value	VIF
Model 1						.061	12.475	<0.001	
(Constant)	138.197 (133.768–142.627)	2.252		61.357	<0.001				
Gender (1 female, 0 male)	7.894 (3.798–11.99)	2.083	0.196	3.791	<0.001				1.013
Choosing to pursue a career in nursing willingly (1 yes, 0 no)	6.482 (2.995–9.969)	1.773	0.189	3.656	<0.001				1.013
Model 2						.101	4.997	<0.001	
(Constant)	125.011 (116.537–133.485)	4.308		29.017	<0.001				
Gender (1 female, 0 male)	6.894 (2.793–10.996)	2.085	0.172	3.306	0.001				1.061
Choosing to pursue a career in nursing willingly (1 yes 0 no)	5.073 (1.452–8.693)	1.841	0.148	2.756	0.006				1.141
I would love to support nurses during the COVID-19 pandemic. (1 yes 0 other)	2.021 (−3.110–7.152)	2.608	0.044	0.775	0.439				1.253
I will be more willing to practice my profession after the COVID-19 pandemic. (1 yes 0 other)	0.397 (−4.610–5.403)	2.545	0.011	0.156	0.876				1.878
I am proud to be a nursing student during the COVID-19 pandemic. (1 yes 0 other)	7.036 (0.803–13.269)	3.169	0.151	2.220	0.027				1.821
The COVID-19 pandemic helped boost the image of the nursing profession in the eyes of the public. (1 yes 0 other)	2.345 (−3.272–7.962)	2.856	0.046	0.821	0.412				1.259
I am happy about the posts on nursing shared on visual and social media. (1 yes 0 other)	3.428 (−4.317–10.993)	3.846	0.054	0.891	0.373				1.456
I have loved my major more since the COVID-19 pandemic. (1 yes 0 other)	2.776 (−8.830–3.278)	3.078	−0.069	−0.902	0.368				2.334
I am happy about professional associations playing an active role in this process. (1 yes 0 other)	1.191 (−5.031–7.413)	3.163	0.022	0.376	0.707				1.290
I have viewed the nursing profession in a more positive light since the COVID-19 pandemic. (1 yes 0 other)	3.468 (−1.965–8.901)	2.762	0.087	1.256	0.210				1.880

Multiple regression analysis was performed using the hierarchical method. B: Regression coefficient; SE: Standard error of regression coefficient; β: Standard regression coefficient; VIF: Variance inflation factors.

Most participants believed that the COVID-19 pandemic helped boost the image of nursing in the eyes of the public (87.9%). In addition, the majority of the participants were proud to be nursing students during the pandemic (85.9%). Zhang et al.[19] found that almost nine in ten nursing students (86.7%) believed that the COVID-19 pandemic positively impacted the image of nursing. The early days of the pandemic were chaotic and fraught with uncertainty. During that period, nurses constituted the largest group of health-care professionals. In addition, the media and the Ministry of Health portrayed nurses as selfless heroes who put the lives of others ahead of their own. This has made nursing more visible and open to recognition by the public.

The regression model revealed three results. First, female participants had a significantly higher mean scale score than their male counterparts. Second, participants who chose to pursue a career in nursing willingly had a significantly higher mean scale score than those who did not. Third, participants who were proud to be nursing students during the COVID-19 pandemic had a significantly higher mean scale score than those who were not. Karaman et al.[17] also found that female nurs-

ing students viewed nursing in a more positive light than their male counterparts. However, Akan et al.[20] reported that male nursing students viewed nursing in a more positive light than their female counterparts. On the other hand, Kizilcik-Özkan et al.,[11] observed no relationship between gender and the image of nursing. Female nurses have been more visible in the media than male nurses and the news and shows have consistently represented nurses as women since the onset of the pandemic. These factors may have affected our results. Although female nursing students view nursing in a more positive light, we should keep in mind that gender stereotypes tarnish the image of professions. Therefore, nursing students should be aware of the negative repercussions of gender roles and adopt an egalitarian attitude toward gender stereotypes to provide care to their patients from an egalitarian perspective.[3] In a study,[21] it was stated that undergraduate nursing students who choose the profession willingly have higher job satisfaction, positive image perception, and intention to stay in the profession. It is expected that a group that is highly motivated and loves the profession will positively affect the professional development and the image of nursing in society. The pandemic period may have created an environment

for students to feel more valuable in the profession.[22] In addition, the active contribution of the profession to such a crisis period, the positive representation of nursing in the media, and society's giving messages that support the profession are important factors that make students proud of nursing. Being proud of the profession is an effective predictor of increasing the nursing image score. This situation supports this view.

Strengths and Limitations

This is the first study to investigate the impact of the COVID-19 pandemic on the image of nursing in the eyes of nursing students. What is more, there is only a small body of research on this topic. However, this study had some limitations. First, this was a cross-sectional study, and therefore, we could not uncover the causal effect of the COVID-19 pandemic on the image of nursing. Second, the data were collected online due to the pandemic. Moreover, the study was conducted in a two-center, which may limit the generalizability of the findings. Finally, the data were based on self-report.

Conclusion

Nursing students have been holding a relatively positive image of nursing since the pandemic. Female nursing students view nursing in a more positive light than their male counterparts. Nursing students who chose to pursue a career in nursing willingly perceive nursing more favorably than those who did not. Finally, nursing students who are proud of being nursing students place nursing in a more prominent place than those who are not.

Conflict of interest: There are no relevant conflicts of interest to disclose.

Peer-review: Externally peer-reviewed.

Authorship contributions: Concept – R.Ç., S.K., E.H.Y., A.A.Ö.; Design – R.Ç., S.K., E.H.Y., A.A.Ö.; Supervision – R.Ç., S.K., E.H.Y., A.A.Ö.; Data collection &/or processing – S.K., E.H.Y., A.A.Ö.; Analysis and/or interpretation – R.Ç.; Literature search – S.K., E.H.Y., A.A.Ö.; Writing – R.Ç., S.K., E.H.Y., A.A.Ö.; Critical review – R.Ç., S.K., E.H.Y., A.A.Ö.

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