

The effectiveness of education provided to university students on COVID-19 phobia: A quasi-experimental study

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Abstract

This study aimed to determine the effectiveness of education provided to university students on COVID-19 phobia. The study was structured as a pre-test, post-test single-group study, a quasi-experimental research design, conducted on 122 students at a university located in Eastern Anatolia. Pre-test forms (Information Form, COVID-19 Phobia Scale) were sent to the students via email, filled out, and returned to the researcher. Subsequently, online training was provided to the participating students, and post-test (COVID-19 Phobia Scale) data were collected. A statistically significant difference was found between the pre-test and post-test COVID-19 Phobia Scale values ($p < .001$). This difference was in favor of the pre-test, indicating a reduction in COVID-19 phobia levels after the intervention. The results of this study highlight the importance of pandemic phobia and education. It provides data support for pandemic and COVID-19 phobia for policymakers, healthcare administrators, and the literature.

Keywords: COVID-19 phobia, education, healthcare students, nurse

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Introduction

Coronavirus disease-2019 (COVID-19) has become a new pandemic and a public health problem all around the world. Although it was first reported in Wuhan, China, it was not limited to this country and spread all over the world. The increase in cases and the level of geographic spread led to significant concerns about the situation, which was declared as an “International Health Emergency” on January, 2020 [1]. The epidemic has been reported to have caused millions of deaths worldwide [2]. In Türkiye, as well as all over the world, the pandemic has been influential rapidly and the whole society has been subjected to negative effects of the pandemic [3]. COVID-19 causes many psychological, physical and social health problems and deaths [4-6]. The COVID-19 pandemic has severe effects especially on human psychology. This situation has become a source of fear all around the world. People are anxious and think negatively about the effects of coronavirus for themselves and their families. It is indicated that COVID-19 has created some types of phobia in people all over the world due to its long-term and fatal nature [7]. Pre-existing mental disorders may become much worse with the intense contracting fear of COVID-19 infection (corona-phobia) and may also increase the risk of suicide [8]. Studies on psychological responses to previous epidemics and pandemics suggests that psychological vulnerability factors such as indefiniteness intolerance, perceived distrust towards the disease, and tendency to anxiety may also play a role in corona-phobia [9-12]. Similarly, it is stated that wrong and incomplete information published in the media triggers health-related fears and phobias, which plays a significant role in the emergence of corona-phobia [13]. Health care professionals are the most at risk group in terms of COVID-19 and have psychosomatic problems such as high levels of stress, anxiety, fear and depression due to COVID-19 [4,14-16]. Therefore, phobia may also occur among health care professionals with the influence of negative information and beliefs. Nursing students also go to internships in practice every day, especially during the internship period, and work as the staff of

the clinics they are in. They are affected by all problems that apply to health care professionals. Moreover, the risk may be higher since they do not have as much experience and knowledge as the staff of hospitals. The awareness and readiness of health care professionals and students who will perform practices in the management of COVID-19 infection are very important in terms of preventing the further spread of the disease and protecting themselves [17]. The importance of the education to be provided on the issues such as the ways of transmission of COVID-19, the ways of protection, and the measures to be taken during practices is obvious. It is considered that the education to be provided will provide self-confidence and reduce coronavirus phobia by positively affecting the knowledge and attitudes of individuals.

This study was planned to provide nursing students with education on the ways of transmission of COVID-19, the ways of protection, and the measures to be taken and to examine the effectiveness of this education on COVID-19 phobia.

Hypotheses of the Study

H1: Education provided to students will lead to a significant decrease in the total score of COVID-19 phobia.

H2: Education provided to students will lead to a significant decrease in the psychological sub-dimension score of COVID-19 phobia.

H3: Education provided to students will lead to a significant decrease in the somatic sub-dimension score of COVID-19 phobia.

H4: Education provided to students will lead to a significant decrease in the social sub-dimension score of COVID-19 phobia.

H5: Education provided to students will lead to a significant decrease in the economic sub-dimension score of COVID-19 phobia.

Materials and Methods

Population and Sample

This study was conducted as a pre-test, post-test single-group study, one of the quasi-experimental research designs. 150 (interns) students enrolled in the final year of the Fırat University, Faculty

of Health Sciences, Department of Nursing constituted the population of the study. The minimum sample size was calculated as 109 with a confidence interval of 95% and a margin of error of 0.5 with the G Power program. The whole population was reached without sample selection, and the research was finished with 122 people who agreed to attend in the study.

Data Collection Tools

The data of the study were obtained using the Information Form and the Coronavirus-19 Phobia Scale (C19P-S).

Introductory Information Form: This form, which was structured by the researchers, involves 8 questions including personal characteristics and information about coronavirus. (Age, gender, income status, infection with COVID-19, information about COVID-19, etc.).

Coronavirus-19 Phobia Scale (C19P-S): C19P-S, developed by Arpacı et al., was prepared to measure phobia against coronavirus [18]. The Scale is a 5-point Likert type and The Scale items are scored between 1-5 points as "Strongly Disagree" and "Strongly Agree". The sub-dimensions of this scale are; Social (items 3-7-11-15 and 19), Psychological (items 1-5-9-13-17 and 20), Somatic (items 2-6-10-14 and 18) and the Economic (items 4-8-12 and 16).

The total Scale score is obtained between 20 and 100 points. Higher scores mean higher sub-dimensions and total corona-phobia. The total Cronbach's alpha value of the scale is 0.926 [18]. The Cronbach's alpha for this research was determined as 0.904.

Data Collection

The data of the study was collected digitally between January 2021 and May 2021. The pre-test forms ("Introductory Information Form", "C19P-S") sent to the students via e-mail were filled out and sent to the researcher. Then, online education was provided to the students who attend in the study. Education was provided on issues such as information on COVID-19, the ways of transmission, the ways of protection, and the measures to be taken during practices. The duration of the education was 90 minutes. After the education, 3 months of follow-up was

performed, and at the end of the 3 months, the post-test data (C19P-S) were collected again via mail from the students who participated in education.

Data Analysis

The data obtained in the study were analyzed using the licensed Statistical Package for Social Science 22.00 (SPSS 22) Package Program. While evaluating the data of the research, using statistical methods. (Minimum, Maximum, Mean, Standard deviation, Ratio, Frequency). Since the data whose normality was evaluated with *Kolmogorov-Smirnov* were not normally distributed, the difference between the two dependent groups was evaluated using the *Wilcoxon* test. Significance was considered as $p < 0.05$.

Ethical Dimension of the Study

Permission was obtained from Firat University Social and Human Sciences Scientific Research Ethics Committee (Protocol No: 6267) in order to conduct the study. All participating students were told they were free to participate and could withdraw from the study at any time without prejudice. All of the involved students gave written and oral informed consent before participating in the research. The research was conducted in accordance with the Declaration of Helsinki.

Results

The mean age of the students who attend in the study was 21.79 ± 1.31 . 73.8% of the students included in the study were female. The monthly income of 68% of them was equal to their expenses. It was determined that 35.2% of the mothers and 43% of the fathers of the students included in the study were primary school graduates. It was determined that 8.2% of the students, the families of 14.8% of them, the relatives of 47.5% of them, and the friends and neighbors of 45.1% of them were infected with COVID-19. It was determined that 51.6% of the students who attend in the study received education on COVID-19 and that 32% of them received this education from social media. The distribution of students' mean scores of socio-demographic characteristics is presented in Table 1.

Table 1. Distribution of students' socio-demographic characteristics.

| Descriptive Variables | | n | % |
|--|------------------------------|----|------|
| Sex | <i>Female</i> | 90 | 73.8 |
| | <i>Male</i> | 32 | 26.2 |
| Mother Education Level | <i>Literate</i> | 65 | 53.3 |
| | <i>Primary education</i> | 43 | 35.2 |
| | <i>High school and above</i> | 14 | 11.5 |
| Father Education Level | <i>Literate</i> | 30 | 24.6 |
| | <i>Primary education</i> | 53 | 43.4 |
| | <i>High school and above</i> | 39 | 32 |
| Family Income | <i>Lower</i> | 28 | 23 |
| | <i>Equal</i> | 83 | 68 |
| | <i>Higher</i> | 11 | 9 |
| *Status of Infection with Corona | <i>Own</i> | 10 | 8.2 |
| | <i>Family</i> | 18 | 14.8 |
| | <i>Relatives</i> | 58 | 47.5 |
| Getting Education About Corona | <i>Friend/Neighbor</i> | 55 | 45.1 |
| | <i>Yes</i> | 63 | 51.6 |
| | <i>No</i> | 59 | 48.4 |
| *Knowledge perceived from reference | <i>Social media</i> | 39 | 32 |
| | <i>Seminars and meetings</i> | 3 | 2.5 |
| | <i>Books and articles</i> | 17 | 13.9 |
| | <i>Radio, television</i> | 28 | 23 |
| | <i>Health worker</i> | 11 | 9 |
| | <i>Friend/Neighbor</i> | 11 | 9 |

* Multiple options are marked.

Table 2. Significance of the difference between pre-test and post-test scores of the Coronavirus-19 Phobia Scale.

| C19P-S Scale and Sub-Dimensions | Scores | Ranks | N | M.R. | Testing and significance |
|------------------------------------|-----------------------------------|----------------|-----|-------|-----------------------------------|
| Psychological Sub-Dimension | Post-Test Score Pre-Test Score | Negative Ranks | 66 | 66.08 | Z=-2.867 p=0.004 |
| | | Positive Ranks | 49 | 47.12 | |
| | | Equal | 7 | | |
| | | Total | 122 | | |
| Somatic Sub-dimension | Post-Test Score Pre-Test Score | Negative Ranks | 66 | 59.45 | Z=-2.603 p=0.009 |
| | | Positive Ranks | 44 | 49.58 | |
| | | Equal | 12 | | |
| | | Total | 122 | | |
| Social Sub-dimension | Post-Test Score Pre-Test Score | Negative Ranks | 75 | 60.57 | Z=-3.792 p=0.000 |
| | | Positive Ranks | 38 | 49.96 | |
| | | Equal | 9 | | |
| | | Total | 122 | | |
| Economic Sub-dimension | Post-Test Score Pre-Test Score | Negative Ranks | 79 | 60.02 | Z=-4.367 p=0.000 |
| | | Positive Ranks | 34 | 49.99 | |
| | | Equal | 9 | | |
| | | Total | 122 | | |
| Total | Post-Test Score Pre-Test Score | Negative Ranks | 81 | 63.38 | Z=-3.938 p=0.000 |
| | | Positive Ranks | 39 | 54.53 | |
| | | Equal | 2 | | |
| | | Total | 122 | | |

M.R: Mean Rank.

As a result of the *Wilcoxon* test performed to test whether there was a significant difference between the pre-test and post-test values of the nursing students in the experimental group from the Total Dimension of the **C19P-S**, the difference between the values was found to be statistically significant by $p < .001$. This difference was in favor of the pre-test. In other words, the coronavirus-19 Phobia levels of the students who constituted the experimental group at the end of the group education significantly decreased. (The fact that the **C19P-S** post-test values were lower than the **C19P-S** pre-test values) (Table 2).

Discussion

The world is witnessing epidemiological and psychological problems due to the spread of the COVID-19 pandemic. The number of people infected with COVID-19, the poor prognosis of the disease, and the increasing number of deaths significantly affect human psychology [7]. These new psychological problems may cause people to develop phobia by thinking negatively about themselves and their families [7,18]. As a result of the literature review, no study investigating the relationship between coronavirus-19 phobia and education, and its effects was found. This study, which was conducted to examine the effectiveness of the education provided to students on Coronavirus-19 Phobia, was discussed in accordance with the literature in this section.

It is very important for health workers and health students to have accurate and up-to-date information about COVID-19. When the students who attend in the study were asked whether they had previously received a planned education, 51.6% of the students stated that they had previously received information about COVID-19. When students' sources of information were examined, it was determined that social media ranked first, followed by radio/television. In a study conducted by Alzoubi et al., with university students in Medicine and other fields in Jordan, it was determined that students' main sources of information on COVID-19 were social media, internet and television [19]. In their study conducted with dentists in Türkiye, Duruk et al., reported that 96.27% of doctors obtained information about COVID-19 from personal

websites and the internet [20].

The study conducted by Mahmud et al., on COVID-19 phobia and career anxiety in Bangladesh revealed that the participants used social media as the dominant platform for information gathering, followed by local television channels and newspapers [7]. The studies similar to this study indicate that mass media such as social media are preferred to obtain information about COVID-19. In this study, when coronavirus phobia values of students before and after the education were examined, it was determined that coronavirus-19 phobia significantly decreased after the education and that the education negatively affected the total and all sub-dimensions of Coronavirus Phobia, and hypotheses H1, H2, H3, H4 and H5 were accepted. No study examining the effectiveness of education on Coronavirus-19 Phobia was found in the literature. This study was discussed in comparison with other studies on phobia. In the study conducted by Baloğlu et al., on the psychological effects of coronavirus in the general population in Türkiye, the coronavirus-19 phobia level of the society decreased as the level of education increased [21]. Although this study result did not directly reveal the effectiveness of education on coronavirus phobia, it partially supported it. This result indicates that the high level of education was effective in reducing coronavirus phobia by making individuals more conscious about protection from COVID-19 [21].

In a randomized controlled clinical study in which Choi et al. examined the effectiveness of education in reducing topical steroid phobia, it was determined that the phobia level decreased significantly in the experimental group [22]. In their study on whether education could reduce fever anxiety, O'Neill-Murphy et al., emphasized the importance of education in phobias by stating that appropriate education may reduce fever phobia in caregivers [23]. These studies conducted with different phobias reveal that education has a positive effect on reducing phobias. It was determined that nearly half of the nursing students who participated in this study had not received planned education on COVID-19 before and used social media as a source of information. Social media offers

important opportunities to improve health and increase people's knowledge of health, however, since the information spreads rapidly and it is difficult to control, it does not always provide the correct health information and may pose a risk in terms of health protection [24]. Inaccurate and exaggerated information originating from social media may lead to phobia related to coronavirus-19, which has already become a source of fear all around the world. From this point of view, it is considered that education which is correct and up-to-date and includes the measures to be taken for COVID-19 reduce nursing students' level of COVID-19 phobia.

This research emphasizes on safeguarding the, nursing students during pandemics. We believe that the proposed methods will facilitate nurses to better manage crises during the pandemic. The programs prepared using this study as a guide are beneficial in terms of reducing epidemic phobias of nurses, nursing students and health workers working in every field. The lack of a control group in the study is a limitation.

Conclusion

As a result of this study, it was determined that the coronavirus-19 phobia levels of the students provided with education on coronavirus decreased. In accordance with this result, it is recommended to provide students who actively participate in health practices in internship programs with the relevant planned education programs periodically in order to reduce COVID-19 phobia. Education planning is recommended for the populations in need of public health education by determining the level of COVID-19 phobia in different populations. Furthermore, it is also recommended to repeat similar interventional studies in different groups. The result of this study, it will give an opportunity to compare the subject and contribute to the literature.

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Conflict of interest

The authors report no actual or potential conflicts of interest.

Data availability statement

Data sets generated and/or analyzed during the study will be made available by the corresponding author upon request.

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