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Views of Nurse Candidates with COVID-19 Vaccine Rejection: A Phenomenological Study

COVID-19 Aşı Reddi Olan Hemşire Adaylarının Görüşleri: Bir Fenomenolojik Çalışma

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ABSTRACT Objective: The aim of this study is to evaluate the views of nurse candidates who do not want to be vaccinated against coronavirus disease-2019 (COVID-19) on vaccine rejection by using a qualitative approach. **Material and Methods:** This qualitative study is based on Husserlian phenomenological approach. The study was conducted with 12 nurse candidates who did not want to be vaccinated against COVID-19. The data were collected face-to-face. The Consolidated Criteria for Reporting Qualitative Research guideline for qualitative studies was applied. The kappa analysis was conducted to measure the reliability of comparative fit and the value obtained in the analysis was 0.82. **Results:** 83.3% of them or a family member of them were diagnosed with COVID-19, and 16.7% of them lost a relative due to COVID-19. They mostly follow up-to-date information about vaccines from the official website of the Ministry of Health (41.7%), lecture notes (25.0%) and social media/internet (25.0%). Based on the data, participants' views on vaccine rejection were under four themes: 1) Concern, 2) Lack of confidence in COVID-19 vaccines, 3) Doubts about the effectiveness of vaccines and 4) Not considering her/himself in the risk group. **Conclusion:** Nursing candidates with COVID-19 vaccine refusal reported negative views about the uncertain content of these vaccines, their rapid production, and the uncertainty of their side effects. Awareness of health care and nursing students should be increased on infectious diseases and immunization for possible pandemics in the future.

Keywords: Vaccine; vaccine rejection; COVID-19; phenomenological study; nurse

ÖZET Amaç: Bu çalışmanın amacı, hemşire adaylarının koronavirüs hastalığı-2019 [coronavirus disease-2019 (COVID-19)] aşı reddine yönelik görüşlerini kalitatif yaklaşımla değerlendirmektir. **Gereç ve Yöntemler:** Bu kalitatif çalışma, Husserlian fenomenolojik yaklaşımı temelli yürütülmüştür. Çalışma, COVID-19 aşısı yaptırmayı reddeden 12 hemşire adayı ile yürütülmüştür. Veriler yüz yüze toplanmıştır. Bu süreçte, "Consolidated Criteria for Reporting Qualitative Research" kalitatif araştırmalar rehberi uygulanmıştır. Karşılaştırmalı uyumun güvenirliğini ölçmek için kappa analizi yapılmış ve analizde elde edilen değer 0,82 olarak bulunmuştur. **Bulgular:** %83,3'ünün kendisinin veya bir aile üyesinin COVID-19 tanısı aldığı ve %16,7'sinin COVID-19 nedeniyle bir yakınını kaybettiği belirlenmiştir. Aşılarla ilgili güncel bilgileri çoğunlukla Sağlık Bakanlığının resmî internet sitesinden (%41,7), ders notlarından (%25,0) ve sosyal medya/internetten (%25,0) takip etmektedirler. Veriler doğrultusunda katılımcıların aşı reddine ilişkin görüşlerine yönelik 4 tema belirlenmiştir: 1) Endişe, 2) COVID-19 aşılarına güven eksikliği, 3) Aşıların etkinliği hakkında şüpheler ve 4) Kendini risk grubunda görmemek. **Sonuç:** COVID-19 aşı reddi olan hemşire adayları, bu aşıların içeriğinin belirsiz olması, hızlı üretimi ve yan etkilerinin belirsizliğine ilişkin olumsuz görüş bildirmişlerdir. Sağlık bakımı ve hemşirelik öğrencilerinin bulaşıcı hastalıklar ve gelecekte olası pandemilere karşı bağışıklama konusunda farkındalıkları artırılmalıdır.

Anahtar Kelimeler: Aşı; aşı reddi; COVID-19; fenomenolojik çalışma; hemşire

Due to the rapid transmission and prevalence of the new variant of coronavirus, many vaccine development projects have started simultaneously in various countries.[1] They are the vaccines containing attenuated virus (live attenuated vaccines), vaccines containing inactivated virus (inactivated vaccines), protein-based vaccines using protein fragments that mimic the structure of the coronavirus disease-2019 (COVID-19) virus, viral vector vaccines carrying RNA fragments of the COVID-19 virus, and genetically engineered RNA and DNA m-RNA and DNA vaccines using particles.[2] The available reports show that their effectiveness is around 95%.[3,4]

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In particular, the most confusing issue for individuals in society other than scientists is that some vaccine studies have been declared to be safe and effective in a short time.[5,6] Potentially early administration of a vaccine, the preparation and testing process of which is completed quickly, may support the existing fears of vaccines.[7] Therefore, a vaccination program for the new variant of coronavirus may be at risk since the public acceptability of vaccination is at worrying levels.[8] Vaccine hesitance is truly a global issue that needs to be addressed when it comes to vaccinating for the pandemic with global impacts.[1] In a study conducted in Japan in September 2020, it was reported that there were hesitation and rejection of the COVID-19 vaccine in 35% of the participants.[9] Similarly, in a study conducted in India, COVID-19 vaccine hesitancy has been reported to be high.[10]

Vaccine hesitancy is a complex term in the medico-social literature that falls between complete acceptance and total rejection of some or all vaccines.[11,12] Therefore, individuals with vaccine hesitancy form a heterogeneous group in the middle of a continuum ranging from total vaccine acceptors to total rejectionists. The complexity of the reasons behind vaccine hesitancy has been examined agent (vaccine and disease), host factors (individual characteristics), and using the epidemiological environment (contextual factors).[12,13] Based on this tripartite structure, the World Health Organization Strategic Advisory Group of Experts on immunization has drafted a "Model of Determinants of Vaccine Hesitancy". This model has 3 components: 1) Contextual influences-historical, socio-cultural, environmental, health system/institutional, economic or political factors; 2) Individual and group effects-including effects from personal perception and attitude towards the vaccine or social/peer environment; and 3) Vaccine and vaccine-specific issues related to vaccine characteristics or the vaccination process.[13]

In the COVID-19 pandemic, healthcare workers have undoubtedly been the heroes in the front lines. Nursing candidates learn the contents, importance and correct application techniques of vaccines in their vocational education processes, and they are healthcare professionals who will be professional vaccine practitioners in the future. In order for them to be able to advise on vaccines while doing their job, they must first believe in the power and importance of the vaccine. In this direction, our aim in this study is to evaluate the feelings and thoughts of nurse candidates who refused vaccines about COVID-19 vaccines, taking into account these 3 components. It is important to understand which determinants determine vaccination refusal so that targeted interventions can be designed to reduce vaccine rejection and increase vaccine demand.

MATERIAL AND METHODS

STUDY DESIGN

This research is a qualitative study and is based on Husserlian phenomenological approach and the reporting follows the (Consolidated Criteria for Reporting Qualitative Research).[14,15] Phenomenology is a pattern introduced by Husserl, developed by Heidegger, Sartre, and Merleau-Pont, and widely used in the fields of health and social sciences. Phenomenology "describes the common meaning of lived experiences of a few people about a phenomenon or concept" and "aims to reduce individual experiences about a phenomenon to a universal explanation".[16] In this study, "vaccine rejection" is considered as a phenomenon, and it is aimed to reach an explanation through the commonality of different experiences related to this phenomenon.[11,16]

SAMPLE AND SETTING

Although there is no set criterion for sample sizes in qualitative studies, data collection is completed when satisfactory data are collected, new information does not emerge and the same data begin to emerge.[17] There are 60 intern students who are at the graduation stage in the nursing department where the research data were collected. 46 of the intern students had their COVID-19 vaccinations and 14 students did not want to be vaccinated. Two of the students who did not get vaccinated did not want to participate in the study. The study was conducted with 12 students. The researchers realized that the data reached saturation when they encountered repetitions in the statements specified by the participants. Therefore, no

additional sampling was required and data collection was terminated.

Purposive sampling method was used in this study. The inclusion criteria for the study was being a senior student in the nursing department, not getting COVID-19 vaccine, and volunteering to participate in the study.

DATA COLLECTION

The data were collected face-to-face by individual in-depth interview method and introductory information form and semi-structured interview form were used as the data collection tools between July-August 2021. To avoid bias in the study, participants were not contacted prior to data collection. The interview was conducted during the participants' lunch break during their clinical practice days. Only the first researcher and participant were present in the office where the interviews were conducted and was done one interview. While the first researcher performed the transcription of the interviews and audio recordings, the first and second researchers performed coding and theming together. Although both of the researchers are female, they are educated at the doctoral level and have been conducting to practicing in undergraduate nursing education for approximately 10 years. Both researchers have education, training, and expertise on qualitative research.

The introductory information form consists of questions such as age, gender, education, marital status, income status, smoking status, having a child or an elderly person in the place where they live, have any food or drug allergies, status of themselves or a family member being diagnosed with COVID-19, death of a relative due to COVID-19, presence of chronic illness, the vaccine of their choice if they decide to get vaccinated and information sources explored on COVID-19 vaccines. The semi-structured interview guide included four questions such as "Are you concerned that you or a family member may become infected with the coronavirus within the next year?", "Do you think the COVID-19 vaccine is/will be effective in combating coronavirus?", "You did not want to get the COVID-19 vaccine. Can you explain why/the reasons?" and "If you were asked which of the COVID-19 vaccines developed so far, which would you prefer? Why?" Before the study, it was applied to 5 students independent from the sample. During the collection of data, the participants were taken into a quiet room in clinical practice areas where students practice so that privacy would be ensured and reliable answers could be received. The interviews were conducted by getting permission from the participants and using a tape recorder. The length of interview ranged from 20 to 30 minutes. Transcripts were shared and corrected with students in line with the interviewee transcript process.[18]

DATA ANALYSIS

The obtained data were analyzed by descriptive analysis method. In descriptive analysis, the results that individuals say and reveal about the research question come to the fore.[19] First of all, each data from the individual interviews was recorded, and after all the individual interviews were completed, the themes were created. In creating the theme, the researchers first worked independently, and then the themes were compared and common themes were reached. For the reliability of the research, 2 experts who did not have knowledge about the study were asked to code according to the themes. The kappa value among the experts coding the themes was evaluated in the SPSS 25.0 package (IBM SPSS Statistics for Windows, Version 25.0. Armonk, NY: IBM Corp.) program and found to be 0.82.

VALIDITY AND RELIABILITY OF THE STUDY

The coding was performed by 2 independent experts, apart from the researchers, and these codings were matched with the themes created by the researchers. In the codings performed by more than one encoder, the inter-coder reliability should be calculated. A checklist was used in coding and the coders were asked to place the participants' expressions in the appropriate theme. Cohen's kappa coefficient was calculated to evaluate encoder compatibility and a fit value between 0.81-1.00 refers to "very good fit".[20] In this study, the fit ratio was found to be 0.82. This value showed that the agreement between researchers was very good.

ETHICAL APPROVAL

Ministry of Health Scientific Research Platform approval (2021-04-02T12_52_52) and Akdeniz Uni-

versity Faculty of Medicine Clinical Research Ethics Committee approval (Date: July 7, 2021; No: KAEK-494) were get for the study. It was ensured that the participants voluntarily participated in the study, they were informed that they had the right to leave the study for no reason at any time, and their written consent was obtained. The study was conducted in accordance with the principles of the Helsinki Declaration (revised in Brazil in 2013).

RESULTS

After the analysis of the sociodemographic data, it was found that the mean age of the participants was 22.66±0.77, 66.7% of them were female, they lived with children or elderly people, they did not have any food and drug allergies and did not have any chronic illness (100%). Eighty-three percent of them reported that a family member or themselves were diagnosed with COVID-19, and 16.7% of them reported that they lost a relative due to COVID-19. They mostly follow up-to-date information about vaccines from the official website of the Ministry of Health (41.7%), lecture notes (25.0%) and social media/internet (25.0%). In the individual interviews, 4 themes were determined, including 1) Concern, 2) Lack of confidence in COVID-19 vaccines, 3) Doubts about the effectiveness of vaccines, and 4) Not considering her/himself in the risk group (Table 1).

Theme 1: Concern

Sub-theme 1: Never-ending concern

Most of the participants stated that they were concerned about the transmission of the coronavirus to themselves and their family members in the next year:

"Yes, I even have worry now, not anxiety because of both the increasing number of cases and the fact that a few people from my family underwent it" (P1). "Of course there will be concerns as long as this coronavirus exists in the world" (P2). "Yes, I am afraid and concerned about getting infected, especially while working in the hospital or staying in the dormitory" (P5). "Of course I am worried. The fact that it is an infectious disease also increases my anxiety even more" (P6). "I am afraid of getting infected both for my family and myself in the coming years." (P9)

TABLE 1: Themes and subthemes.

Themes	Subthemes
Concern	Never-ending concern
	No concern
Lack of confidence in COVID-19 vaccines	
Doubts about the effectiveness of vaccines	
Not considering her/himself in the risk group	

Sub-theme 2: No concern

Some of the participants indicated that they were not worried about the transmission of the coronavirus to themselves and their family members in the next year:

"Frankly, I have no such concerns. In general, I can say that we are a family with high immunity. Our disease was also mild for all of us. Even if we have a disease again, I think it can be mild for, so I do not have any worries" (P4). "I was worried when COVID-19 first appeared, but now I am not worried" (P11). "I had such a concern initially, but now I do not have such a concern" (P12).

Theme 2: Lack of Confidence in COVID-19 Vaccines

Most of the participants considered COVID-19 vaccines unsafe. They expressed their thoughts as follows:

"As I have mentioned, there is lack of confidence. I also think that I am young, young people can't be vaccinated, of course they can" (P1). "I do not think that the vaccine has much protection after that. Of course, I think natural immunity is more effective than the vaccine. Therefore, I did not want to be vaccinated" (P5). "I have no other reasons. As I said, I do not think that vaccines are effective" (P11). "I did not want to get vaccinated because I did not think that it was effective. And I do not believe in the reliability of a vaccine produced in such a short time" (P12).

Theme 3: Doubts About the Effectiveness of Vaccines

Most of the participants had doubts about the effectiveness of COVID-19 vaccines. They expressed their thoughts as follows:

"Although it is said to be safe, I think this reliability thing is discussed by people. I mean, it can be effective or ineffective" (P2). "Since it is a vaccine that has been developed in a very rapid process, I think that even if it has protection, it is not at a high rate, but at 50%" (P5). "I do not think it is completely effective. If I have to give a rating, I think it is effective by 30%" (P9). "I cannot be sure enough for now. Because the vaccines in the phase study period are administered directly, I cannot be sure" (P10). "I do not think that it is effective, it just relieves the symptoms a little. The person can get covid again. I think it makes disease a little bit milder" (P12).

Theme 4: Not Considering Her/Himself in the Risk Group

Some of the participants did not consider themselves in the risk group for the transmission of coronavirus. They expressed their thoughts as follows:

"First, I think I have acquired immunity since I thought I had COVID-19 previously. Therefore, I do not think I will be sick" (P4). "I think that I have acquired immunity since I thought I had COVID-19 previously, I mean I was exposed to it at least 2-3 times. There is something like this, I think I can spread COVID-19 even if I am vaccinated. In general, I do not have a prejudice against vaccines, I do not personally want to take drugs and similar artificial things into my body unless I need them. Maybe it is related to personality structure, I don't know. I did not want to get vaccinated for nothing because of its side effects" (P7).

DISCUSSION

In this study, the views of nurse candidates who did not want to be vaccinated against COVID-19 were examined using the qualitative approach. The participants' views on not being vaccinated were grouped under 4 themes: concern, lack of confidence in COVID-19 vaccines, doubts about the effectiveness of vaccines, and not considering themselves in the risk group.

Most of the participants indicated that they were worried that they/their family members would be infected with coronavirus in the coming days and that the increasing number of cases triggered this worry. Some of them indicated that they had fears of infecting those around them and their families and clinical practice in the hospital supported this fear. In his study, found that more than half of the participants were worried about getting infected in the next year, which supports our result.[21] In the study conducted with people quarantined during the severe acute respiratory syndrome pandemic, determined that the participants experienced various negative emotions such as anxiety, sadness, fear, loneliness, and guilt during the quarantine period.[22] Nevertheless, it was determined that individuals with diagnosed or suspected COVID-19 may fear the consequences of contracting a new disease, which could be fatal.[23] The fact that the nurse candidates who participated in this study had undergraduate education in the field of health, had knowledge about infectious diseases, and were in constant communication with the healthcare team and patients in the clinical areas they practiced may also have increased their anxiety levels.

Some of the participants in the study reported that they were not worried about being infected with the coronavirus. Similar to our study results, in the study found that those who rejected the COVID-19 vaccine defined COVID-19 as a disease that does not affect young and healthy people.[24] In the same study, it was determined that those who rejected the vaccine did not want to be vaccinated for COVID-19 because they preferred to fight the virus naturally instead of being vaccinated.

In the study, one of the reasons for not getting vaccinated of the participants was the lack of confidence in COVID-19 vaccines. In a study investigating the COVID-19 vaccine hesitancy of nursing students, some of the students stated that these vaccines were not reliable and there was not sufficient evidence for their effectiveness.[25] In a study, university students thought that COVID-19 was a man-made disease, that COVID-19 vaccines implanted microchips to control people, and that COVID-19 vaccines would cause infertility, and they did not want to be vaccinated because of these thoughts.[26] In a study examining the hesitancy of medical students against COVID-19 vaccines, the vaccine hesitancy scale was used, and nearly half of the students stated that they experienced insecurity due to the hasty

preparation of COVID-19 vaccines.[27] Another study found that more than half of the participants were hesitant because the future effects of these vaccines were unknown.[28] In another study, it was found that concerns about the accelerated timeline for vaccine development prevented vaccination.[29] Perceived risks of disease, vaccine efficacy and side effects, concerns about vaccine safety, previous negative experience with vaccination, and social environment are among the cultural reasons for vaccine hesitancy/rejection.[30] Negative views of nurse candidates on the preparation process and protectiveness of vaccines may be due to their knowledge of the phase studies in the development of vaccines, or due to culture.

In the study, one of the reasons for not getting vaccinated of the participants was the presence of doubts about the effectiveness of the vaccines. Some of them indicated that the vaccines were currently in the testing period, their side effects were not yet clear. Similar to our study results, it was found in the studies that one of the main reasons for vaccine hesitancy was concerns about side effects.[24,29] In a study investigating the COVID-19 vaccine hesitancy of nursing students, it was found that more than half of the students were hesitant because of the concern that these vaccines might have side effects.[25] Twenty five percent of healthcare professionals believed that the vaccine would have a partial effect on the incidence, and 16.7% of the healthcare workers believed that the vaccine would not affect the incidence.[30] In other studies, doubts about vaccine efficacy and the possibility of side effects were determined as the most common reasons for vaccine rejection.[31,32] While these results are similar to the literature, they show that there are similar reasons for vaccine rejection such as suspicion of side effects and failure to complete phase stages even in different samples.

In the study, some of the participants did not consider themselves in the risk group in terms of the transmission of COVID-19. They stated that they were not at risk again since they had been infected with the coronavirus. In a study examining the hesitancy of medical students against COVID-19 vaccines, the vaccine hesitancy scale was used and nearly half of the students stated that they did not need this vaccine, considering that the epidemic would not last long.[27] As it was demonstrated, the perception of low disease risk may be an important determinant in decreasing the intention to vaccinate.[33] Coronaviruses mutate frequently, and the emergence of new types is not unexpected.[34] It has been reported that different types of mutations have been observed in many countries around the world since the beginning of the pandemic.[35] Although the level of antibodies in the blood rises to certain levels in case of infection with coronavirus, it is considered that this does not completely prevent secondary infection. Nevertheless, it is also not yet well known how much immunity coronavirus infections confer and whether there is cross immunity between similar types.[34] The fact that an individual infected with COVID-19 can also be infected again after recovery also supports this uncertainty.

LIMITATIONS

The fact that the study was conducted in a higher education institution may limit the effect of the study results.

CONCLUSION

Nurse candidates with COVID-19 vaccine rejection had negative views about the content, effectiveness and protection of these vaccines. There are numerous unanswered questions regarding immunity or possible future side effects of severe acute respiratory syndrome-coronavirus-2 vaccines. Although the decision to be vaccinated is an individual decision, it is a known fact that it is the most important public health intervention in the fight against infectious diseases. It is predicted that the fight against this virus, which has different variants and symptoms, will be weak with insufficient vaccination and will last for a long time.

It is necessary to make an effort to increase the awareness of this group, which takes an active role in each step of basic health services in the fight against COVID-19, about the safety and effectiveness of COVID-19 vaccines. This research is important in terms of demonstrating vaccine rejection despite extensive training in infectious diseases and immunization in undergraduate education. In addition, this pandemic, which affects the whole world, may not be the last pandemic. Awareness of health

care and nursing students should be increased on infectious diseases and immunization for possible pandemics in the future. In addition to these findings reached in a small sample, vaccination rejection/hesitation may be high in the community and people are in constant communication with each other. The joint efforts of governments, health policy makers and media sources are important.

Source of Finance

During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.

Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

All authors contributed equally while this study preparing.

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