ARAŞTIRMA MAKALESİ / *RESEARCH ARTICLE*

Healthcare Professionals and COVID-19 Vaccine: Approaches of Health Workers to Vaccination in the First Days of Vaccination

Sağlık Çalışanları ve COVID-19 Aşısı: Aşılamanın İlk Günlerinde Sağlık Çalışanlarının Aşıya Yaklaşımları

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ABSTRACT

Aim: *This study aims to determine healthcare professionals' knowledge, attitudes, and behaviors toward COVID-19 disease and vaccine in the first days of vaccination.*

Material and Method: *The study was conducted in Sakarya Yenikent State Hospital between March 1–15, 2021, where the 2nd vaccine should also be completed for healthcare workers. The ethics committee of the study was obtained from the ethics committee of Sakarya University Faculty of Medicine. Healthcare workers who agreed to participate in the study were asked to fill out the interview form. Data were analyzed in SPSS 21 program.*

Results: *Of the health workers participating in the study, 189 were female, and the median age was 37.0 [28.0–44.0]. The distribution of health workers by profession is examined; 115 nurses, 28 doctors, 35 technicians, 32 medical secretaries, 30 cleaning personnel, and 62 other occupational groups. During the last winter season, "Have you had the flu shot?" While 111 health workers answered "yes" to the question, 52 of those vaccinated reported that they had the flu vaccine this winter season as well. One hundred seventy-one healthcare professionals said they were involved in caring for COVID-19 patients. While there are 89 healthcare workers with COVID-19 infection, 34 healthcare professionals did not know whether they had COVID-19 infection. While only 87 participants reported that they had enough knowledge about COVID-19 vaccines, 113 stated that they had no information, and 102 were undecided on this issue. While 141 healthcare professionals are concerned about COVID-19 vaccines, 149 had concerns about vaccine protection. While 49 participants thought that inactivated vaccines were resistant to mutation and 28 thought that they were not resistant, 225 of them did not know about this issue. While 29 healthcare professionals think that mRNA vaccines produce more antibodies than inactivated vaccines, 26 health professionals stated that they disagreed with this, and 247 indicated that they did not know about this issue. While 129 health professionals did not know whether or not breastfeeding women should be vaccinated, 127 thought breastfeeding women should not be vaccinated, and 46 thought they should be vaccinated. While 245 healthcare professionals reported that they had the COVID-19 vaccine, 213 were recommended to their close friends, and 215 recommended the patients be vaccinated for COVID-19. The vaccines most trusted by healthcare professionals are Sinovac/Coronovac (47.7%), Biontech (18.5%), Domestic COVID-19 vaccine (5%), Oxford AZ (4.3%), Moderna (4%), and Sputnik V (3.3%).*

Conclusion: *In our study, it was concluded that in the first days of the application of the COVID-19 vaccine, healthcare professionals do not have enough knowledge about COVID-19 vaccines, they are worried about COVID-19 vaccines, and they are worried about the protection of the vaccine, and the most reliable COVID-19 vaccine is Sinovac/Coronovac vaccine. Multidimensional studies are needed to increase COVID-19 vaccination rates.*

Key words: *COVID-19 disease; COVID-19 vaccines; knowledge level; health workers*

ÖZET

Amaç: *Bu çalışmanın amacı, aşılamanın ilk günlerinde sağlık çalışanlarının COVID-19 hastalığı ve aşısına yönelik bilgi tutum ve davranışlarını belirlemektir.*

Materyal ve Metot: *Çalışma, sağlık çalışanları için 2. aşının da tamamlanmış olması gereken 1–15 Mart 2021 tarihleri arasında Sakarya Yenikent Devlet Hastanesi'nde yapıldı. Çalışmanın etik kurulu Sakarya Üniversitesi Tıp Fakültesi Etik Kurulu'ndan alındı. Araştırmaya katılmayı kabul eden sağlık çalışanlarından görüşme formunu doldurması istendi. Veriler SPSS 21 programında analiz edildi.*

Bulgular: *Sağlık çalışanlarının 189'u kadın ve yaş ortancası 37,0 [28,0–44,0] yıldı. Katılımcıların mesleklere göre dağılımları incelendiğinde; 115'i hemşire, 28'i doktor, 35'i teknisyen, 32'si tıbbi sekreter, 30'u temizlik personeli ve 62'si diğer meslek gruplarındandı. Sağlıkçıların 171'si COVID-19 hasta bakımında görev aldığını bildirdi. COVID-19 enfeksiyonu geçiren 89 sağlık çalışanı varken; 34'ü COVID-19 enfeksiyonu geçirip geçirmediğini bilmemekteydi. Katılımcıların yalnızca 87'si COVID-19 aşılarıyla ilgili yeterince bilgiye sahip olduğunu bildirirken; 113'ü bilgisi olmadığını ve 102'si ise bu konuyla ilgili kararsız olduğunu bildirdi. Sağlıkçıların 141'i COVID-19 aşıları hakkında kaygılanırken; 149'unun aşı koruyuculuğu hakkında endişeleri vardı. Katılımcıların 49'u inaktif aşıların mutasyona dayanıklı olduğunu, 28'i ise dayanıklı olmadığını düşünürken; 225'inin bu konu hakkında bilgisi yoktu. mRNA aşılarının inaktif aşılara göre daha çok antikor ürettiğini düşünen sağlık çalışanı 29 iken; sağlıkçıların 26'sı buna katılmadığını ve 247'si ise bu konu hakkında bilgisi olmadığını bildirdi. Emziren kadınların aşı olup olmaması hakkında sağlıkçıların 129'unun bilgisi yokken; 127'si emziren kadınların aşı olmaması gerektiğini ve 46'sı ise aşı olması gerektiğini düşünmekteydi. Sağlıkçıların 245'i COVID-19 aşısı olduğunu bildirirken; 213'ü yakın arkadaşlarına ve 215'i hastalara COVID-19 aşısı olmasını önermekteydi. Sağlık çalışanlarının en çok güvendikleri aşılar sırasıyla Sinovac/Coronovac (%47,7), Biontech (%18,5), Yerli COVID-19 aşısı (%5), Oxford AZ (%4,3), Moderna (%4) ve Sputnik V (%3,3) idi.*

Sonuç: *Çalışmamızda COVID-19 aşısının uygulandığı ilk günlerde sağlık çalışanlarının COVID-19 aşılarıyla ilgili yeterince bilgisinin olmadığı, COVID-19 aşılarıyla ilgili kaygılı ve aşının koruyuculuğuyla ilgili endişeli olduğu, en güvendikleri COVID-19 aşısının Sinovac/Coronovac olduğu sonuçlarına ulaşılmıştır. COVID-19 aşılama oranlarının arttırılması için çok yönlü çalışmalara ihtiyaç vardır.*

Anahtar kelimeler: *COVID-19 hastalığı; COVID-19 aşıları; bilgi düzeyi; sağlık çalışanları*

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Introduction

Uncertain and deadly pneumonia, which emerged in the Chinese city of Wuhan in late 2019, spread rapidly and affected the world. The World Health Organization (WHO) declared the disease caused by this new coronavirus as Coronavirus Disease-2019 (COVID-19). The International Committee on Taxonomy of Viruses (ICTV) named this new coronavirus SARS-CoV-2[1]. To date, COVID-19 disease has caused more than 213,205,948 infections and more than 4.452.460 deaths worldwide[2]. In COVID-19 patients, the clinic can range from mild clinical symptoms that do not require hospitalization to more severe symptoms that require hospitalization. In severe clinical patients, systemic multi-organ failure may develop, and serious life-threatening complications may occur, including acute respiratory distress syndrome (ARDS)[3].

SARS-CoV-2 can be transmitted rapidly through the respiratory tract, and thus the virus can spread easily[4]. Although it is important to apply standard precautions (mask-distance-cleaning) and restraint measures to control COVID-19 disease, these measures and precautions are insufficient to control the pandemic. Vaccination is the most effective method to prevent infections and reduce morbidity and mortality from infection[5]. With vaccination, life expectancy has increased significantly, society and the economy have begun to reshape fundamentally, and the devastating effects of many infectious diseases have diminished as vaccination becomes more widespread[6]. Although the treatment protocols with proven effectiveness in the treatment of COVID-19 are limited, vaccination and vaccine development studies continue. The aim of vaccine development and vaccine studies is to prevent the severity of the disease, the transmission of the viruses, and future infections[7]. The ongoing discussions about the COVID-19 pandemic and vaccines worldwide have caused hesitations against vaccines to increase. Concerns about the COVID 19 vaccine have been reported to occur due to the novelty and safety of the vaccine and its potential side effects. It is important to identify factors that cause uncertainty about vaccination against COVID 19. Because undecided individuals may be the most realistic targets for vaccination promotion and vaccination campaigns, understanding their concerns is crucial, as these individuals make up a larger proportion of the population than those who are confident they will not be vaccinated[8].

To protect against the COVID-19 epidemic, vaccination with a vaccine will undoubtedly be the best cost-effective way and will ensure the control of the disease. However, today, when there is confusion about vaccines, it is of great importance to use the right information sources to successfully combat the epidemic[9]. In addition to the media, healthcare professionals who set an example for society should inform and support people about vaccines accurately[10]. Thus, it is predicted that the vaccination rates in society will increase even more. This study aims to determine healthcare professionals' knowledge, attitudes, and behaviors about COVID-19 disease and vaccine in the first days of implementing the COVID-19 vaccine.

Material and Method

Study Design

This study is a descriptive cross-sectional study.

Place and Time of the Study

The study was carried out at Sakarya Yenikent State Hospital between 1–15 March 2021, when the 2nd vaccine should also be completed for healthcare workers.

Data Collection Tools

Demographic data and descriptive features form consists of 33 questions, including demographic data of healthcare workers, information about COVID-19 disease, and COVID-19 vaccines.

Ethical Approval of the Study

The ethics committee of the study was obtained from the ethics committee of Sakarya University Faculty of Medicine with the date 01.02.2021 and the number E-71522473-050.01.04-14836-116 and the research permission was obtained from the scientific research studies of the Ministry of Health in the same period.

Data Collection

After obtaining the necessary ethical and institutional permissions, healthcare professionals working at Sakarya Yenikent State Hospital who agreed to participate in the study were asked to fill out the interview form. The interview form consisted of "Demographical data and descriptive features Form" and "Information on COVID-19 vaccines". Before completing the interview form, consent was obtained from the health workers, and the researcher was informed that the information about the study would not be shared anywhere else and that the health workers could leave the study at any time. Filling in the interview form took an average of 5 minutes for each health worker.

Evaluation of Data

Data were analyzed using the IBM SPSS 22 (Armonk, NY: IBM Corp) statistical program11. Categorical

variables were shown as frequency and percentage values, and discrete variables were shown as the arithmetic mean standard deviation or median and interquartile range according to the results of the normal distribution test. The significance level was taken as $p<0.05$.

Results

Of the health workers participating in the study, 189 (62.6%) were female, and the median age was 37.0 [28.0–44.0]. 59 (19.5%) of the participants were high school graduates, 66 (21.9%) associate degree, 135 (44.7%) undergraduate and 42 (13.9%) graduate/doctorate graduates. When their distribution according to occupations is examined; 115 (38.1%) nurses, 28 (9.3%) doctors, 35 (11.6%) technicians, 32 (10.6%) medical secretaries, 30 (9.9%) cleaning staff and 62 (20.5) were from other occupational groups. Of the healthcare professionals, 72 (23.8%) were clinics, 65 (21.5%) were intensive care units, 32 (10.6%) were polyclinics, 24 (7.9%) were administrative units, and 18 (6.0%) were emergency services. 22 (7.3%) were working in the operating room, 16 (5.3%) were working in COVID-19 clinics, and 53 (17.5%) were working in other units. Of the participants, 56 (18.5%) had at least one chronic disease, and 63 (20.8%) had allergies. 67 (22.2%) were using drugs continuously; Seven of them (2.3%) were using immunosuppressive drugs. During the last winter season, "Have you had the flu shot?" While 111 (36.8%) health workers answered "yes" to the question, 52 (46.8%) of those who were vaccinated (n: 111) reported that they had the flu vaccine this winter season as well. While 171 (56.6%) of the healthcare professionals were involved in COVID-19 patient care, 89 (29.5%) healthcare workers stated that they had COVID-19 infection, and 34 (11.3%) healthcare workers did not know whether they had COVID-19 infection. While only 87 (28.8%) of the participants reported that they had enough information about COVID-19 vaccines, 113 (37.4%) stated that they had no knowledge and 102 (33.8%) stated that they were undecided on this issue. While 141 (46.7%) healthcare professionals were concerned about the COVID-19 vaccine, 149 (49.3%) stated that they were concerned about its protection. While 49 (16.2%) of the participants thought that inactivated vaccines were resistant to mutation, 28 (9.3%) thought that they were not resistant; 225 (74.5%) did not know this subject. While 29 (9.6%) healthcare workers thought that mRNA vaccines produced more antibodies than inactivated vaccines, 26 (8.6%) of the healthcare professionals did not agree with this, and 247 (81.8%) reported that they did not know about this issue. While 129 (42%) of the healthcare professionals were not informed about whether or not breastfeeding women should be vaccinated, 127 (42.1%) of the participants thought that breastfeeding women should not be vaccinated, and 46 (15.2%) thought that they should be vaccinated. The answers healthcare professionals give to questions about COVID-19 vaccines are shown in Table 1. While 245 (81.8%) of the healthcare professionals reported that they had the COVID-19 vaccine, 213 (70.5%) recommended it to their close friends, and 215 (71.2%) patients recommended the COVID-19 vaccine. Asked health workers, "Which COVID-19 vaccines do you trust?" Their answers to the question are presented in Fig. 1.

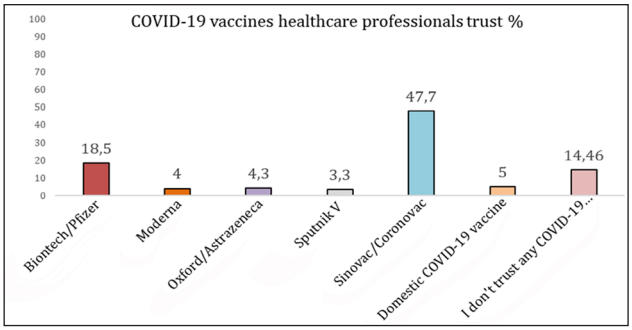

Figure 1. *COVID-19 vaccines healthcare professionals trust.*

Discussion

Vaccination is an effective, safe, and inexpensive method of preventing infectious diseases[12]. One of the most important components in controlling the COVID-19 pandemic is to provide the highest level of immunity with an effective and safe vaccine. In a study conducted in Iran[13], it was reported that 64.3% of the participants were willing to accept any COVID-19 vaccine. In contrast, in another study conducted in Kenya, 52.4% of Kenyans were ready to receive a COVID-19 vaccine[14]. In their study, Roy et al. reported that 63% of healthcare workers would be vaccinated against COVID-1915. In our study, the rate of healthcare workers vaccinated against COVID-19 in the first days of immunization was found to be 81.8%. It can be thought that this high rate of accepting the vaccine in the first days of immunization by healthcare professionals may be due to working in an environment where there is a risk of transmission and caring for a patient infected with COVID-19. In addition, it can be predicted that the cleaning-mask-distance rule alone is insufficient to prevent transmission and that the vaccine's acceptance rate is high due to the necessity of immunization

to prevent the disease. The results of our study were mostly compatible with the literature.

While information and sharing about the prevention of COVID-19 transmission and control measures continue, there is still uncertainty among individuals about the safety of vaccines. In a study, it was reported that health workers stated they were willing to be vaccinated against COVID-19, but 1 out of every six said they were reluctant to be vaccinated due to concerns about the lack of information about the efficacy and safety of the vaccine[15]. In a study conducted in Kenya, it was reported that the majority of those who did not want to be vaccinated were worried about the vaccine's side effects, so they did not want to be vaccinated. In our study, only 28.8% of healthcare professionals reported that their knowledge of COVID-19 vaccines was sufficient in the first days of the introduction of COVID-19 vaccines, 46.7% said that they were concerned about COVID-19 vaccines, and 49.3% reported that they had concerns about the protection of vaccines. . It was thought that healthcare workers were worried about constantly giving care to patients with COVID-19, being at risk for disease transmission, and the thought of infecting their families. To reverse the anxieties and concerns about the COVID-19 vaccine and to increase the level of trust and immunization rates, the ministry of health should organize programs through television programs and social media. Society should be informed about the importance of immunization in protection against COVID-19 infection, the protection rates of vaccines, and the side effects of vaccines.

The COVID-19 infection, which has surrounded the world and brought life to the point of paralysis, continues to negatively affect human life in many areas, especially in physical, social, economic, and psychological dimensions. Immunization with a vaccine will undoubtedly be the best cost-effective way to prevent the COVID-19 outbreak and ensure disease control. Development of vaccines and their implementation as soon as possible; As in other pandemics, it is important to prevent the spread of the disease in the community and serious effects such as severe illness and death in COVID-19 infection. However, in today's World, where there is a lot of confusion, anxiety, and concern about vaccines, it is

Table 1. *Responses of healthcare professionals to questions about COVID-19 vaccines*

Questions	N (%)
Those with COVID-19 infection should get the COVID-19 vaccine	213 (70.5)
Those with COVID-19 infection should have antibodies tested prior to the COVID-19 vaccine	176 (58.3)
Healthcare workers should be vaccinated against COVID-19	233 (77.2)
Individuals under the age of 18 should be vaccinated against COVID-19	77 (25.5)
Individuals with at least one chronic illness should have the COVID-19 vaccine	180 (59.6)
Individuals over the age of 50 should have the COVID-19 vaccine	180 (59.6)
Individuals over 50 years of age and with at least one chronic disease should be vaccinated against COVID-19	188 (62.3)
Individuals over the age of 65 should have the COVID-19 vaccine	199 (65.9)
Individuals over 65 years of age and with at least one chronic disease should be vaccinated against COVID-19	201 (66.6)
Individuals over the age of 80 should have the COVID-19 vaccine	179 (59.3)
Individuals over 80 years of age and with at least one chronic disease should be vaccinated against COVID-19	175 (57.9)
Individuals under the age of 18 should not be vaccinated	168 (55.6)
Those with drug allergies should not get the COVID-19 vaccine	134 (44.4)
Those with vaccine allergies should not get the COVID-19 vaccine	179 (59.3)
1st trimester pregnant women should not be vaccinated	203 (67.2)
2nd trimester pregnant women should not be vaccinated	142 (47.0)
3rd trimester pregnant women should not be vaccinated	138 (45.7)
Patients who had COVID-19 less than 3 months ago should not be vaccinated against COVID-19	59 (19.5)
Patients who had COVID-19 more than 4 months ago should not have the COVID-19 vaccine	31 (10.3)
It is inconvenient to have the influenza vaccine at the same time as the COVID-19 vaccine	45 (14.9)
Re-infection with COVID-19 can occur after contracting a COVID-19 infection	157 (52.0)
Can get COVID-19 infection after getting COVID-19 vaccine	217 (71.9)
After receiving the COVID-19 vaccine, 15-30 minutes should be waited in the institution	247 (81.8)
Get COVID-19 vaccine within 6 months of contracting a COVID-19 infection	148 (49.0)
COVID-19 vaccine does not completely prevent SARS CoV-2 transmission, but prevents severe COVID-19 disease	146 (48.3)

very important to use the right information sources to combat the epidemic successfully. At the end of the pandemic, countries should establish vaccination strategies that will cover all aspects of the society as soon as possible, maintain effective vaccination studies and ensure that the entire society is vaccinated[16].

As a result, In the first days of implementing the COVID-19 vaccine, it is clearly understood that the basic form of protection for healthcare workers is the three-way rule of the mask, distance, and cleanliness, as well as the acceptance of the COVID-19 vaccine. However, the constant risk of COVID-19 contamination brought by the pandemic seems to have caused anxiety, fear, and panic in healthcare workers. Accordingly, it appears to have significantly affected the view of COVID-19 vaccines.

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Conflicts of Interests

The authors report no conflicts of interest.

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