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Attitudes towards the COVID-19 vaccine: What do healthcare students think about the COVID-19 vaccine?

Gülsüm KAYA[1,*], Şeyma TRABZON[2], Seda GOGER[3]

[1]Department of Infection Control Commitee, Sakarya University Training and Research Hospital, Sakarya, Turkey
[2]Department of First and Emergency Aid, Vocational School of Healty Services, Sakarya University, Sakarya, Turkey
[3]Department of Elderly Care Program, Vocational School of Healty Services, Sakarya University, Sakarya, Turkey

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Abstract

Vaccination is the most effective method in preventing infections and decreasing infection-related morbidity and mortality. In this study, health students' attitudes and thoughts about COVID-19 vaccines were evaluated. The study was conducted between January 18 and February 1, 2021. Ethics committee approval was obtained before starting study. Students who accepted to participate in study were asked to fill in the interview form via google questionnaire. Data were analyzed in SPSS 21 program, $p < 0.05$ was considered significant. 637 of participants were women and mean age was 20.74±7.32 years. 13.78% of students reported that they had disease and 34.02% of them had a family history of the disease. 71.83% of students had confusion about vaccine, 37.44% stated that they trusted vaccine, and 48.29% reported that they thought it was effective. If vaccine will protect themselves, their family, and friends (86.70%); if vaccine will protect community (86.95%), and stated that they would be vaccinated if vaccine would bring the people back to normalization (88.90%). There were 346 (42.20%) students who wanted to be vaccinated against COVID-19. In the study, although students reported that they want to be vaccinated if COVID-19 vaccine will protect themselves, their family, friends and society, and return public to normalization; It was concluded that level of confidence in the vaccine and desire to be vaccinated were low. Multidisciplinary studies are needed to increase COVID-19 vaccination rates.

Keywords: vaccination, COVID-19 vaccine, knowledge and attitude, health students

1. Introduction

In the last days of 2019, cases of pneumonia of unknown etiology were reported in Wuhan, the capital of the Chinese Hubei region (1). The rapidly spreading coronavirus disease was declared as a pandemic and emergency by the World Health Organization (WHO) on March 11, 2020, and recommendations were made to the world community to control the epidemic (2). Despite the quarantine measures taken, the disease spread rapidly outside the country and as of 16 May 2020, new coronavirus cases were recorded in 213 countries globally (3).

As well as the common cold, coronaviruses were caused various diseases known as Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS). Although it is claimed that the new type of coronavirus is similar to SARS, it has been determined that it is largely different from SARS-CoV as a result of genetic analyzes (4). This virus was named 2019-nCoV when it first appeared and was named SARS-CoV-2 in the later stages of the epidemic, and the clinical disease caused by the virus was named Coronavirus disease 2019 (COVID-19) (5).

Coronaviruses are transmitted from person to person by droplets, as well as by contact of other individuals with the droplets shed by sick people through sneezing and coughing, and then by taking their hands to the mouth, nose and eye mucosa. The easy transmission of the disease in this way causes its rapid spread in a short time (6). For this reason, individual and social measures to prevent disease transmission all over the world and in our country come to the fore. Control of foodstuffs, disinfection processes, early diagnosis and reporting, isolation of sick individuals, travel restriction, health education, healthy nutrition, exercise, use of individual protective equipment and vaccination are among the practices that should be done to prevent contamination (7). In particular, vaccines, which are among the preventive measures, have proven to be the most effective and economical way to prevent and control infectious diseases (8).

Today, although the treatment protocols with proven effectiveness for coronavirus infections are limited, vaccine development studies continue. The aim of vaccination is to protect human health through the prevention of death, permanent disability, severe illness and disease. Vaccination is an extremely safe, effective and inexpensive method of preventing infectious diseases (9,10). One of the most important components in controlling the COVID-19 pandemic is to provide the highest level of immunity of the

*Correspondence: gulsum_5441@hotmail.com

population with an effective and safe vaccine. However, the ongoing discussions about the pandemic and vaccines all over the world have increased the hesitations against vaccines. In order for vaccination campaigns to be successful, in addition to providing the public with access to the vaccine, it is necessary to inform the public about the effectiveness and safety of the vaccine in a transparent manner, and to carry out convincing studies on education, media and Internet platforms (9). Especially in a crisis environment such as an epidemic, people who use the media more believe that the information given by the media about taking conscious measures against infection is up-to-date and accurate. In this context, it is thought that if accurate information about the pandemic and vaccines is effectively communicated to the public through the media, people's risk perceptions about the issue will be healthier (11). Determining the attitudes of future healthcare professionals about vaccines and adding this to the literature will guide future studies. This study was conducted to evaluate the thoughts and attitudes of health students about the COVID-19 vaccine.

2. Materials and Methods

2.1. Study design

This study is a descriptive cross-sectional study

2.2. Place and time of the study

The study was carried out at Sakarya University (SAU) Vocational School of Health Services (SYHMYO) between 18 January-1 February 2021. There are a total of 8 different programs that provide associate degree education at SAU SHMYO.

2.3. Data collection tools

Demographic data and descriptive features form consists of 39 questions including demographic data of students, information about COVID-19 disease and vaccines.

2.4. Data collection

There were 1118 female and 510 male students in total studying at SAU SHMYO. The interview form was delivered to 1628 students. 820 students participated in the survey. Students who accepted to participate in the study and met the inclusion criteria were asked to fill in the interview form via google survey after obtaining the necessary ethical and institutional permissions. The School Interview form consists of “Demographic data and descriptive characteristics Form” and “Information on COVID-19 disease and vaccines”. Before starting data collection, consent was obtained from the participants and they were informed that the data obtained would not be shared anywhere else and that they could leave the study at any time. Data collection took approximately 8 minutes for each participant

2.5. Evaluation of data

Data were analyzed using the IBM SPSS 22 (Armonk, NY: IBM Corp) package program (12). Categorical variables were expressed as frequency and percentage values, discrete variables as arithmetic mean and standard deviation. Statistical significance level was taken as $p<0.05$.

3. Results

Of the students participating in the study, 637 (77.69%) were female and the mean age was 20.31±2.41 (18.00-36.00) years. When the distribution of students according to the program they are studying is examined; 41 (5.00%) anesthesia programs, 46 (5.61%) child development programs, 145 (17.68%) physiotherapy programs, 188 (22.93%) first and emergency aid programs, 60 (7.32%) optics program, 92 (11.22%) medical documentation and secretarial program, 92 (11.22%) medical laboratory technician program and 156 (19.02%) elderly care program students. Of the students, 450 (54.88%) were in the first year, 370 (45.12%) were in the second year; 451 (55.00%) were graduated from general high school and 369 (45.00%) were graduated from health vocational high school.

While 785 (95.73%) of the students lived with their families, 21 (2.57%) stayed with their friends and 14 (1.70%) were alone. 368 (44.88%) of the students lived in the city center, 322 (39.27%) lived in the district and 130 (15.85%) lived in the village.

Table 1. The answers given by the students to the questions about the COVID-19 vaccine

Information on the COVID-19 vaccine	n %
COVID-19 vaccine is effective	396 (48.29)
COVID-19 vaccine is safe	307 (37.44)
I reviewed the results of the COVID-19 vaccine study	382 (46.85)
I find the COVID-19 vaccine studies sufficient	221 (26.95)
I find the explanations about COVID-19 vaccines sufficient	120 (14,63)
According to the information I got from the TV, I will be vaccinated for COVID-19	123 (15.00)
According to the information I got from the internet, I will be vaccinated for COVID-19	138 (16.83)
I will be vaccinated because my family thinks I should be vaccinated.	116 (14.15)
I will be vaccinated because my friends asked me to vaccinate	42 (5.12)
If the COVID-19 vaccine will protect me, my family and friends, I will get vaccinated.	711 (86.70)
If the COVID-19 vaccine is going to protect society, I will be vaccinated.	713 (86.95)
If the COVID-19 vaccine will bring the public back to normalcy, I will be vaccinated.	729 (88.90)
I'm afraid of vaccines or injections.	197 (20.02)
I believe in natural and traditional solutions to prevent infections.	291 (35.49)
I will not be vaccinated because of my religious beliefs.	12 (1.46)
I will be vaccinated in case there is a travel restriction for those who are not vaccinated for COVID-19.	112 (13.66)

When their income status is evaluated, 509 (62.07%) students stated that their income is equal to their expenses, 204 (24.88%) their income is less than their expenses, and 107 (13.05%) their income is more than their expenses. While 732 (89.27%) of the students did not have any chronic disease, 88 (10.73%) had at least one chronic disease. The sociodemographic information of the students and their attitudes towards the acceptance of COVID-19 vaccines are shown in Table 1.

When the students' status of having COVID-19 disease is questioned; 113 (13.78%) reported that they had COVID-19 disease, 279 (34.02%) had a family history of the disease, and 465 (56.70%) had lost their lives in their immediate surroundings due to this disease. 279 (34.02%) of the students were taking medication/vitamin supplements to prevent COVID-19 disease. While 35.61% of the students who received vitamin/drug supplementation took vitamin C, 27.12% vitamin D and 6.83% zinc; 29.20% of the students were taking herbal tea and 1.24% were taking omega-3 and propolis.

331 (40.37%) of the students thought that they were exposed to questions about COVID-19 disease and 719 (87.69%) thought that there was information pollution about COVID-19 disease. When the sources of information about the COVID-19 disease were questioned, 441 (53.78%) of the students were from the statements of the ministry of health, 511 (62.31%) from the internet, 484 (59.02%) from television programs/news, 447 (54.51%)' of them were getting information from social media (facebook, instagram, twitter, linkedin etc.) and 180 (21.95%) from the statements of infection specialist doctors/microbiologists. Of the students, 598 (71.83%) had confusion about the COVID-19 vaccine, and 252 (30.73%) believed in conspiracy theories. There were 346 (42.20%) students who wanted to be vaccinated against COVID-19 and the answers given by the students to the information about the COVID-19 vaccine according to the acceptance of the COVID-19 vaccines are presented in Table 2. The students were asked “Which vaccine would you like to get from the COVID-19 vaccines?” their answers to the question are shown in Fig. 1.

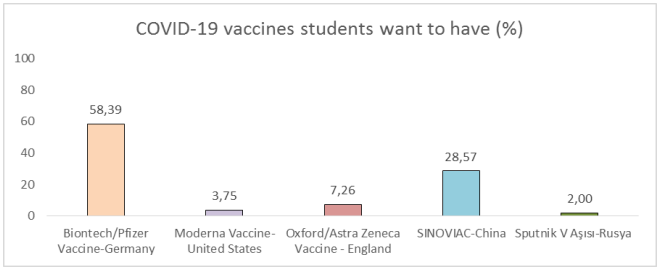

Fig. 1. Distribution of COVID-19 vaccines that students want to receive

4. Discussion

In this study, health students' attitudes towards COVID-19 vaccines and their willingness to be vaccinated were examined. The findings showed that approximately 42.20% of healthcare students wanted to be vaccinated against COVID-19. It has been reported that the immunization rate among individuals can be between 55% and 82%, depending on the prevention and mitigation strategies of COVID-19 disease in a population (13). This rate may vary between regions and even countries depending on the socioeconomic status, regional differences and the sensitivity of the society. In a study whose data were collected in September 2020 in our country, 68.6% of healthcare professionals stated that they could be vaccinated against COVID-19, and it was stated that students were eager for the vaccine (14). Again, in a study conducted in our country and the data were collected in December 2020, it was reported that 84.6% of healthcare professionals were willing to accept the COVID-19 vaccine (15). In a study conducted with 2678 healthcare workers in France, Belgium, and Canada, it was stated that 48.6% had high acceptance, 23.0% moderate acceptance, and 28.4% hesitation/reluctance (16). In the study conducted by Lucia et al. in the USA, it was stated that 23% of health students were reluctant to receive the COVID-19 vaccine, even if FDA approved it (17). In a study conducted with university students in Italy, which was heavily affected by the pandemic, it was reported that the rate of students who wanted to be vaccinated was 86.1% (18). The World Health Organization states that COVID-19 vaccines are still very effective in preventing serious illness and death against all current alarming variants (19). At the time of the study, it was thought that students' willingness to be vaccinated was low because the effect of vaccines in practice against COVID-19 variants was unclear.

In a study of healthcare workers, it was reported that approximately two-fifths of healthcare workers (n=92, 39.3%) agreed to receive the COVID-19 vaccine (20). In the study conducted by Askarina et al., 64.3% of the participants reported that they wanted to accept any COVID-19 vaccine, while Ochollo et al. in their study, reported that 52.4% of the individuals were willing to have the COVID-19 vaccine (21,22). Roy et al. (23), in their study on healthcare workers, reported that only 63% of healthcare workers would receive a COVID-19 vaccine. In our study, the willingness of health students to be vaccinated against COVID-19 was found to be 42.20%. The results of our study were found to be partially low in the desire to be vaccinated compared to the literature. This result was thought to be due to the fact that the COVID-19 vaccine application had just started in our country at the time of the study and the students' lack of knowledge about COVID-19 vaccines.

As information sharing regarding the spread of COVID-19 disease and control measures is updated, there is still uncertainty about the safety of vaccines. Roy et al. in their study; stated that the vast majority of healthcare workers were willing to be vaccinated against COVID-19 in the first wave of the COVID-19 pandemic, but 1 out of 6 healthcare

professionals stated that they were reluctant to be vaccinated due to concerns about the lack of information about the efficacy and safety of the vaccine. In the same study, healthcare workers reported very strong negative feelings about post-vaccine allergies, indicating their distrust of the vaccine (23). Agyekum et al. reported in their study that the majority of healthcare professionals (64.5%) were reluctant to accept COVID-19 vaccines due to their concerns about the safety of vaccines (20). Ochollo et al. stated in their study that the majority of those who did not want to be vaccinated were worried about the side effects of the vaccine, so they did not want to be vaccinated (22). In our study, the rate of confidence against COVID-19 vaccines was 37.44% and the rate of finding the vaccine effective was 48.29%. It was thought that these low rates might be due to the fact that health students did not find the explanations of the COVID-19 vaccine (14.63%) and the vaccine studies (26.95%) sufficient. In order to reverse the perception of insecurity towards the COVID-19 vaccine, programs should be organized through television programs and social media, especially the ministry of health, and the society should be informed about the importance of immunization in protection from COVID-19 infection. The society should be sensitized to vaccines and the community should be encouraged by training on vaccines.

Understanding the underlying causes of community vaccine reluctance is important for successful immunization intervention. Studies have shown that healthcare professionals are hesitant about or delaying the COVID-19 vaccine (23,24). Askarian et al. (21), explained that the main reasons for vaccine rejection were due to misunderstandings about vaccine efficacy and vaccine-related side effects. Roy et al. (23) explained the most important reasons for the reluctance of healthcare workers to be vaccinated as long and medium-term safety concerns, but in the study, healthcare workers stated that nothing would make them comfortable. In addition, healthcare workers with underlying health problems and religious concerns reported very strong negative feelings about being forced to get vaccinated. Ochollo et al. (22) reported in their study that the majority of those who did not want to be vaccinated were worried about the side effects of the vaccine, so they did not want to be vaccinated. In our study, students stated that they would like to be vaccinated if the COVID-19 vaccine would return the public to normalization (88.90%), if the vaccine would protect the society (86.95%), and if the vaccine would protect themselves, their family and friends (86.70%). In line with these results, education and information campaigns about COVID-19 vaccines should be organized, and the public should be informed about the importance of vaccines in protecting against COVID-19 infection and preventing disease-related deaths. The trust of the society should be gained by carrying out multidisciplinary studies on the protection of individual and public health and the acceleration of the return of the people to normalization with vaccination.

In a study conducted with nursing students, three-quarters of the students stated that the university provided information about COVID-19, and in the same study, it was stated that 95% of Indian students used social media as a source of information (25). In another study conducted with university students, it was reported that the most common source of information for COVID-19 was social media (77.1%), and that 24.2% of students used scientific articles as a source of information (26).

In the study conducted in Kenya, it was reported that most Kenyans received basic and important information about SARS-CoV-2 from television or social media (22). In our study, the information of health students about COVID-19 disease and vaccines, respectively; Internet (62.32%), television programs/news (59.02%), social media (54.51%), ministry of health (53.78%) and infectious diseases and microbiology experts (21.95%) In line with these results, effective use of television, internet and social media should be used effectively in vaccine acceptance. The society should be informed about COVID-19 vaccines (safety, effectiveness, side effects, etc.) by organizing programs about COVID-19 disease and vaccines on the internet, social media and television programs with the participation of infectious diseases, public health and microbiology specialists and other relevant sciences. Thus, it can be ensured that misunderstandings are eliminated and society's incentives for vaccination are increased. In addition, organizing vaccination campaigns on social media and television can be effective in the acceptance of the COVID-19 vaccine in the society.

As a result of, ın order 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 in order to successfully combat the epidemic (27). The concerns of both health students and the society about the safety and side effects of COVID-19 vaccines should be taken into account as early as possible and multidisciplinary education and information programs should be developed to address these concerns. Thus, it is thought that the vaccination rates in the society will increase even more.

Conflict of interest

No conflict of interest was declared by the authors

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Ethical Approval

The ethics committee of the research was obtained from the ethics committee of SAU Faculty of Medicine (the number E-71522473-050.01.04-608765).

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