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RESEARCH ARTICLE

IDENTIFYING HEALTHCARE PROFESSIONALS' FEAR OF COVID-19 AND THEIR ATTITUDES TOWARDS BEING VACCINATED

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Abstract

Background: This study was conducted to determine healthcare professionals' fear of COVID-19 in and their attitudes towards being vaccinated against COVID-19.

Method and Material: The sample of this descriptive study was composed of 302 healthcare professionals working in a university research and training hospital. The data were collected with the help of an online survey method created with the help of Google Forms using the "Form for Determining Healthcare Professionals' Attitudes towards Being Vaccinated" and "The Fear of COVID-19 Scale" between December 28, 2020 and January 13, 2021.

Results: The mean total Fear of COVID-19 Scale score of the healthcare professionals participating in the study was found to be 17.20 ± 6.015. A significant relationship was found between the Fear of COVID-19 Scale total score and participating healthcare professionals' gender, status of education, status of flu vaccination and status of being diagnosed with COVID-19 ($p < 0.005$).

Conclusion: According to research results, it was found that healthcare professionals experienced moderate fear, almost half of them were undecided about the COVID-19 vaccine, their thoughts about vaccination were positive and they were mostly concerned about the side effects of the vaccine.

Keywords: COVID-19, vaccine, healthcare professional.

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INTRODUCTION

Coronavirus disease 2019 (COVID-19) first originated on December 31 2019 in the city of Wuhan, located in the Hubei province of China. It was declared a global pandemic by the World Health Organization (WHO) on March 11, 2020 due to its rapid spread from the first case and its global effect on the whole world.[1] It is known that healthcare professionals were previously affected by Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS) epidemics.[2] The psychological and well-being of healthcare professionals are seriously affected by the increased workload due to the COVID-19 epidemic, having to undertake new duties in addition to their regular responsibilities' and the anxiety of their relatives or themselves being infected by the disease.[3,4]

Reports sent to WHO declared that 22,073 healthcare professionals from 52 countries tested positive for COVID-19 as of 8 April 2020.[5] A meta-analysis study determined that 10% of 119,216 COVID-19 positive cases were healthcare professionals with a mortality rate of 0.3%.[6] In Turkey, 29,865 healthcare professionals were reported to be positive for COVID-19 and 52 died as a result of COVID-19 as of September 2, 2020.[7] Lengthy working hours, exposure to psychological and physical violence and lack of protective equipment are known to make healthcare professionals vulnerable to infection by suppressing their immune systems.[1] Previous studies demonstrated that vaccines saved more lives compared to studies conducted in the field of health. The history of modern vaccination starts with the invention of smallpox vaccine in 1789.[8] Although work for vaccination and treatment for COVID-19 disease continues, an effective method has not been found yet. The targeted substances in vaccine studies were determined in relation to the following criteria: the vaccine will be used in people older than 60 years of age and with chronic diseases, the vaccine will not develop undesired immune responses and it will be suitable for storage.[9]

A study conducted with an overseas sample found that healthcare professionals would experience the same reservations against COVID-19 vaccine when it became available just like the reservations they experienced against seasonal influenza vaccine.[10] In Turkey, the COVID-19 vaccination program started on January 13, 2021 with the CoronaVac inactive vaccine produced in China by the company named Sinovac. Healthcare professionals, being in the high risk group, were included in the vaccination program in the first phase.[11] The literature offers limited studies on healthcare professionals' attitudes towards the COVID-19 vaccine. Therefore, this study aimed to determine healthcare professionals' fear of COVID-19 and their attitudes towards vaccination before the COVID-19 vaccination program started in Turkey.

METHODS

This descriptive research was conducted on healthcare professionals over 18 to determine healthcare professionals' fear of COVID-19 and their attitudes towards vaccination in a university hospital between the dates of December 28 2020- January 13, 2021, at a period when COVID-19 vaccination was not yet being implemented in Turkey. The questionnaire form prepared by using Google Forms the link to the Google survey via WhatsApp groups and delivered online to participants was used to collect data (https://docs.google.com/forms/d/e/1FAIpQLSeCv0OWcEL6kp77yUUwt8SkSwe06KPBnjdZFWFj0pw3crk3_g/viewform?usp=sf_link).

The population of the study consisted of 858 health professionals working in the university hospital. Two of the 304 healthcare professionals who accepted to participate in the study were excluded because they did not meet the research criteria and hence, the study sample consisted of 302 healthcare professionals. Sample size was calculated as 305 persons with the help of Epi-Info Statcalc Program with 50% expected prevalence, 97% confidence limit, 5% deviation, however, only 302 persons were reached.

Data Collection Tools

"Form for Determining Healthcare Professionals' Attitudes towards Being Vaccinated" and "The Fear of COVID-19 Scale" were used to collect research data.

Form for Determining Healthcare Professionals' Attitudes towards Being Vaccinated

The questionnaire consists of a total of 16 multiple-choice questions asking about demographic factors including age, gender, marital status and educational status of healthcare professionals and the views of healthcare professionals on coronavirus.

The Fear of COVID-19 Scale

The scale developed by Ahorsu et al. (2020) was adapted to Turkish by Bakioğlu et al. (2020). the scale consists of one dimension and 7 items.[12] There is no reverse item in the scale. Each statement in the scale has a Likert-type scoring ranging from 1(strongly disagree) to 5 (strongly agree). The total score obtained from all items of the scale reflects the level of fear of coronavirus (COVID-19) experienced by the individual. The scores that can be obtained from the scale range between 7 and 35. A high score indicates "high" level of COVID-19 fear. The Cronbach alpha internal consistency coefficient of the scale was found to be .88 [12]. In this study, the Cronbach alpha internal consistency coefficient was found to be .87.

Ethical Aspect of the Research

Written permission was obtained to conduct the study from the institution (93559075-900- E.10989) where the study was conducted and from İzmir Bakırçay University ethics committee on 11.12.2020 (E-93802310-050.01.04-10007). An application was made to the Ministry of Health General Directorate of Health Services Scientific Research Platform and the approval of the Ministry of Health (2020-12-30T01_16_45) was obtained. Before the participants filled in the data forms, they were provided with information about the study on the first page of the online link and they were asked to check the statement "I agree to participate in the study" if they volunteered to participate in the study.

Data Analysis

SPSS (Statistical Package for Social Science) 21.0 package program was used to analyze the data. Numerical and percentage distribution were employed in data analysis. Since the data did not conform to normal distribution, Kruskal-Wallis Test was used and mean standard deviation values and median values were provided for comparison with independent variables.

RESULTS

Of the healthcare professionals included in the study, 59.9% (n: 181) were female, 60.6% (n: 183) were single, 36.1% (n: 109) were high school graduates, 42.4% (n: 128) had a seniority of 4-10 years, 72.5% (n: 219) were working as nurses, 87.7% (n: 265) were not vaccinated against influenza, 91.9% (n: 275) were not vaccinated against influenza the previous year and 55% reported that they or one of their relatives had COVID-19. The total mean Fear of COVID-19 Scale score was found to be 17.20 ± 6.015 (Table 1).

A significant correlation was found between participating healthcare professionals' total Fear of COVID-19 Scale score and their gender, education status, their flu vaccination status and their COVID diagnosis ($p<0.005$). No significant relationship was found between the Fear of COVID-19 Scale total score and marital status, year of employment, seniority and previous year's flu vaccination status ($p>0.005$).

Analysis of participating healthcare professionals' views about the coronavirus vaccine showed that 47% (n: 142) opted for the following options "The discovery of the coronavirus vaccine reduces my fears" and "I may be willing to administer the coronavirus vaccine" while 43.4% (n: 131) expressed that they were undecided (Table 2).

Comparison of healthcare professionals' views on the coronavirus vaccine with the Fear of COVID-19 Scale mean scores pointed to a significant difference between the Fear of COVID-19 Scale mean scores and the following statement: "The discovery of the coronavirus vaccine alleviates my fears" and "I may be willing to administer the coronavirus vaccine" ($p <0.05$) (Table 2).

DISCUSSION

This study examined healthcare professionals' attitudes towards vaccination and their fears in regard to COVID-19 in the period before the COVID-19 vaccination program was available in Turkey. It was found that healthcare professionals experienced moderate levels of COVID-19 fear and that fear of COVID-19 was significantly higher in women. This finding is consistent with the results of various studies reporting that women have higher levels of anxiety and risk perception.[10,13–15] In early May 2020, more than 150,000 healthcare professionals were infected with

COVID-19, and more than 1,400 people died worldwide [16]. This is believed to be the most important cause of COVID-19 fear among healthcare professionals.

This study found a significant relationship between the fear of COVID-19 among healthcare professionals and the status of being vaccinated with influenza vaccine and it was concluded that those who received the influenza vaccine had higher COVID-19 fear. Another study determined that the disease progressed more severely in cases where an individual is exposed to COVID-19 virus at the same time he/she contracts the influenza virus. The same study emphasized that the immunization rate against influenza virus is 55-60% in individuals who have been vaccinated and underlined the importance of influenza vaccination in order not to be infected with both coronavirus and influenza virus at the same time [18]. In Turkey, it was detected that 6.7% of health care workers are having regular flu vaccine every year, while 55% of them never had before in their life. The biggest obstacle to vaccination has been determined as not believing the necessity of vaccination.[19]

In their compilation of 2017 in regards to vaccination rates in health care professionals in Turkey, Özışık et al. reported that the rate of influenza vaccine varied between 12.3%-35.3% [20]. The increasing demand for influenza vaccine is likely due to the increased awareness of respiratory viral disease.[21] However, prior research indicated that vaccine uptake rate among nurses was low, with influenza vaccine uptake rate slightly greater than 30% among nurses in Hong Kong.[22] Identifying the importance of COVID-19 vaccination and its relationship with the influenza vaccine is believed to shed light on future vaccination campaigns. A significant relationship was found between the educational status of the healthcare professionals participating in the study and the Fear of COVID-19 Scale total score. A study conducted by Mertens et al. found that the fear of COVID-19 decreased when the education level increased.[10]

Understanding health professionals' reservations about vaccination has important implications for public health administrations during outbreaks. Due to the uncertainty of vaccine features such as efficacy, side effects and duration of immunity, 43.4% of healthcare professionals in this study reported that they were undecided about getting the COVID-19 vaccine. Low vaccine acceptance rates were reported in other countries as well (53.7% in Italy and 58.9% in France) which supports this finding.[23,24] Low COVID-19 vaccine acceptance rates (52.0%) were reported among healthcare professionals in Malta (18). There was a surge of interest in estimating the intention to be vaccinated against COVID-19 around the world.[25–29] A recent survey of almost 20,000 adults in 27 countries conducted in July and August 2020 showed that 74% of adults intended to receive COVID-19 vaccine when available, with the highest rates in China (97%), Brazil (88%), Australia (88%), and India (87%) and the lowest in Russia (54%), Poland (56%), Hungary (56%), and France (59%).[30]Two studies based on the early stages of the outbreak (February and March) among nurses in Hong Kong reported low COVID-19 acceptance rates (40.0% and 63.0%).[15,31] Contrary to the findings in this study, a study examining the views of physicians, nurses and normal individuals found that 78% of physicians, 61% of nurses and 75% of individuals stated that they wanted to be vaccinated against COVID-19 and it was determined that 60% of physicians, 55% of nurses and 70% of individuals in the general population wanted their children to be vaccinated.[32] It was concluded that healthcare professionals' reservations about vaccination was related to lack of sufficient information about the side effects of the vaccine and that increased the level of anxiety in 68.2% of healthcare professionals. Healthcare authorities can organize a vaccination program for healthcare professionals to vaccinate them against COVID-19. Future research is also needed to explore potential strategies for raising awareness and changing attitudes towards vaccination.

CONCLUSION

Based on the findings of this research, it was concluded that healthcare professionals experienced moderate fear and that fear of COVID-19 was significantly higher in female healthcare professionals, in healthcare professionals who had the influenza vaccine, and in healthcare professionals who were not diagnosed with COVID-19. It was determined that almost half of the healthcare professionals were undecided regarding the coronavirus vaccine, they had positive views about vaccination and they were mostly concerned about the side effects of the vaccine.

To prevent the prevalence of COVID-19 vaccine hesitancy, it is suggested to build trust in COVID-19 vaccination among healthcare professionals and the public via timely and clear messages advocating for the safety and efficacy of COVID-19 vaccines through trusted channels.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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ANNEX

TABLE 1. Comparison of Healthcare Professionals' Demographic Characteristics and their Fear of COVID-19 Scale Mean Scores (n: 302).

	n	%	Mean±sd	Median (IQR)	
Gender					
Female	181	59,9	18,46± 5,83	18,00(8,00)	Z= -4,433
Male	121	40,1	15,30±5,80	14,00(8,00)	**P= ,000***
Marital Status					
Single	183	60,6	17,46±5,86	17,00(8,00)	Z=-,969
Married	119	39,4	16,78± 6,24	15,00(8,00)	P= ,333
Status of Education					
High School	109	36,1	15,88± 5,83	15,00(8,00)	X^2=11,243
Two-year Degree	61	20,2	19,13±6,05	18,00(10,00)	**p=,024***
Undergraduate Degree (Faculty/College)	99	32,8	17,31±5,93	16,00(8,00)	
Graduate Degree	31	10,3	17,87±5,93	18,00(6,00)	
Secondary School or lower	2	,7	14,50±7,77	14,00(8,00)	
Seniority as a Healthcare Professional					
0-3 years	113	37,4	17,49± 5,23	18,00(7,00)	X^2= 1,972
4-10 years	128	42,4	17,31±6,13	15,50(8,00)	p= ,373
More than 10 years	61	20,2	16,42±7,06	14,00(11,50)	
Title					
Nurse	219	72,5	17,21± 5,83	16,00(8,00)	X^2= 7,020
Doctor	19	6,3	17,10±5,62	18,00(10,00)	p= ,319
Administrative staff	6	2,0	20,00±7,74	19,00(15,00)	
Cleaning staff	8	2,6	17,00±6,97	17,00(12,00)	
Technician	38	12,6	17,28±6,76	18,50(10,25)	
Other	12	4,0	14,25±4,37	13,50(4,75)	
Have you received influenza vaccination before?					
Yes	37	12,3	20,89± 6,19	22,00(9,00)	Z=-4,013
No	265	87,7	16,68±5,81	15,00(7,00)	**P= ,000**
Were you vaccinated against influenza last year?					
Yes	27	8,9	19,59± 7,73	19,00(14,00)	Z= -1,496
No	275	91,1	16,96± 5,78	16,00(8,00)	P= ,135
Have you or your relatives been diagnosed with COVID-19?					
Yes	166	55,0	16,60± 5,77	15,00(7,00)	Z= -2,061
No	136	45,0	17,93± 6,23	18,00(9,00)	**P= ,039**
TOTAL	302	100	17,20±6,01		

p<0,05, IQR: interquartile range, X^2: Kruskal-Wallis Test Z: Mann-Whitney Test

TABLE 2. Comparison of healthcare professionals' views on coronavirus vaccine with the Fear of COVID-19 Scale mean scores (n = 302).

	n	%	Mean±ss	Median (IQR)	X^2/p
The discovery of the coronavirus vaccine reduces my fears.					
Disagree	39	12,9	15,23±1,19	14,00(6,00)	7,814/,020*
Undecided	142	47,0	17,48±,44	18,00 (8,00)	
Agree	121	40,1	17,50±,56	17,00(8,00)	
I may be willing to administer the coronavirus vaccine.					
Disagree	65	21,5	15,16±,86	14,00 (8,50)	15,912/,000*
Undecided	131	43,4	17,20±,47	16,00 (8,00)	
Agree	106	35,1	18,44±,55	**18,00 (8,00)****	
I think healthcare professionals should have priority in coronavirus vaccination.					
Disagree	31	10,3	16,51±1,25	14,00 (8,00)	2,038/,361
Undecided	80	26,5	16,72±,63	15,50 (8,00)	
Agree	191	63,2	17,51±,43	18,00 (8,00)	
I think the coronavirus vaccine will reduce the epidemic.					
Disagree	24	7,9	15,33±1,62	14,00(3,00)	5,483/,064
Undecided	128	42,4	17,26±,52	17,00(8,00)	
Agree	150	49,7	17,44±,46	17,00(8,00)	
I think vaccination is necessary.					
Disagree	13	4,3	15,38±2,36	14,00(13,00)	2,207/,332
Undecided	103	34,1	17,12±,58	16,00 (8,00)	
Agree	186	61,6	17,37±,43	17,50 (8,00)	
The coronavirus vaccine can be effective in protecting my health.					
Disagree	24	7,9	14,95±1,51	14,00(6,25)	5,834/,054*
Undecided	135	44,7	17,16±,51	16,00 (8,00)	
Agree	143	47,4	17,61±,47	18,00 (8,00)	
The discovery of coronavirus vaccine reduces my anxiety level					
Disagree	51	16,9	16,19±,99	14,00(7,00)	3,735/,155
Undecided	113	37,4	17,25±,48	17,00(7,00)	
Agree	138	45,7	17,52±,52	18,00 (9,00)	

The side effects of the coronavirus vaccine worry me.					
Disagree	19	6,3	17,73±1,74	18,00 (10,00)	,217/,897
Undecided	77	25,5	16,88±,57	16,00 (7,00)	
Agree	206	68,2	17,27±,43	16,50 (9,00)	

*p<0,05, IQR: interquartile range, X^2: Kruskal-Wallis Test. **Games-Howell