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Considering the Attitudes toward the COVID-19 Vaccine, the Levels of Vaccine Hesitancy among Family Healthcare Center (FHC) Employees: A Cross-Sectional Study

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Abstract— *Aim*. The primary objective of this study was to investigate the attitudes towards the COVID-19 vaccine, the extent of vaccine hesitancy, and the factors influencing the Family Healthcare Center staf who are responsible for delivering primary healthcare services. *Methods*. The research, which employed a cross-sectional design, was carried out with a sample of 102 healthcare professionals employed at family healthcare centers located in the city center. The study data were collected using three in- struments: the "Personal Information Form," the "Vaccination Hesitancy in Pandemic Scale," and the "Attitudes towards COVID-19 Vaccine Scale." *Results*. A total of 13.7% of the participants said that they were hesitant about having themselves

vaccinated. The mean total score of vaccine hesitancy in the pandemic was found to be 22.760 ± 8.323, and the attitude towards the COVID-19 vaccine was 3.640 ± 0.831. A negative and weak relation was detected between the total score of vaccine hesitancy and the total score of attitude towards the COVID-19 vaccine in the pandemic. It was also found that the situation of considering the

vaccine as partially necessary increases the vaccine hesitancy in the pandemic and the decrease in the degree of considering the childhood vaccines as necessary decreases the attitude towards the COVID-19 vaccine. *Discussion*. Despite the relatively low prevalence of vaccination hesitancy among healthcare workers, it remains a noteworthy concern. It is imperative to conducta thorough investigation into the various factors that contribute to vaccine hesitancy and the attitudes held by healthcare professionals, with a particular focus on those factors having a negative impact.

1. Introduction

Ever since it first emerged in 2019, the new coronavirus—officially known as coronavirus disease 2019 (COVID-19)—has been causing a worldwide epidemic [1]. Worldwide, there have been a total of 5,91,683,619 cases and 6,443,306 fatalities as of August 19, 2022 [2], according to the World Health Organisation (WHO) report. Vaccination is a well-known and effective method for fighting the COVID-19 pandemic. The disease's mortality and morbidity rates have been significantly reduced because to this preventative strategy [3]. Because of their long history of reliable use and outstanding effectiveness, vaccines have come to represent preventative health care in the public eye [4]. Vaccines have been used effectively for a long time to prevent illnesses that can be vaccinated against. Vaccines are very effective in disease control, yet a large section of the population is still quite hesitant to get them [5, 6]. Vaccine scepticism was named by the World Health Organisation (WHO) as one of the ten most pressing issues in global health in 2019 [7].

The phrase "vaccine hesitancy" encompasses a wide variety of responses to any and all recommended vaccinations, including waiting, refusing, or accepting each and every COVID-19 vaccine. Vaccine reluctance is a complex phenomenon with several levels. This one-of-a-kind ailment might manifest differently in different eras and due to different immunisation programmes [8]. People who work in healthcare also have reservations regarding vaccinations, just as the general public. Healthcare personnel are at a higher risk of contracting COVID-19 due to the increased probability that they will come into touch with the illness and transmit it to both their surroundings and patients [9]. Due to [10], healthcare professionals are one of the people who

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should get an immunisation first. Health care providers deliberately impact vaccination uptake [11]. As a result, disapproval of the COVID-19 vaccine and other signs of vaccination reluctance may reduce the efficacy of ongoing global immunisation programmes [12, 13]. There is a heavy burden on primary healthcare workers like those who work for Family Healthcare Centres (FHCs) to increase public trust in vaccinations and decrease vaccination hesitancy [14]. An essential part of healthcare prevention is family healthcare centres (FHCs). They are in a unique position to provide continuous, affordably priced, and readily available services to all parts of society, and they are also trustworthy resources for knowledge on vaccines and the people who need them [15]. The existence of geographical differences in medical staff's views and hesitations about the COVID-19 vaccine vaccination. As an example, a review research indicated that healthcare professionals throughout the globe were hesitant to get the COVID-19 vaccination, with rates ranging from 4.3% to 72.0% [12]. Also, pro-vaccine sentiments decreased COVID-19 vaccination hesitation in the UK, while around 25% of healthcare workers were hesitant to get the vaccine [16]. Vaccinations are a topic that healthcare personnel in Turkey often raise questions about [17, 18]. Half of the primary care providers surveyed expressed a willingness to get the COVID-19 vaccination, while a third were uncertain and a quarter were against it [19]. Many factors have been identified in prior research as contributing to the general public's negative perception of and unwillingness to get the COVID-19 vaccination. Most notably, there is a general distrust about immunisations [20, 21].

People working in healthcare made up the bulk of the subjects in the first research on this topic. Employees at FHCs, who are the primary points of contact for vaccination services in Turkey, have been the subject of little research. Furthermore, no research has been published that addresses vaccination reluctance during the pandemic and opinions on the COVID-19 vaccine at the same time. Our hope is that this study will contribute to existing literature, inspire further research, and provide the groundwork for important policy developments in this field. A cross-sectional research was carried out in the city centre of Mardin to better understand the attitudes towards the COVID-19 vaccination, levels of vaccine hesitancy, and influencing variables among FHC staff delivering primary healthcare.

Methods

Research Methods and Subjects 1.1. From January 1, 2022, to May 1, 2022, researchers conducted the cross-sectional investigation. Healthcare workers from Mardin's Family Health Centres (FHCs) in the heart of the city, in Turkey's Southeastern Anatolia Region, took part. Around 186,622 people are served by the 20 Family Health Centres (FHCs) located in the heart of Mardin. Of the 110 healthcare workers surveyed, 20 worked in Family Health Centres (FHCs) in Mardin's central business district. Instead of picking a random sample, we tried to get in touch with every single healthcare worker at the FHCs. Five people did not want to be a part of the research, and three others were not included in the assessments because their questionnaires were not fully filled out. An extensive survey was filled out by 102 medical experts. The percentage of those who took part in the research was 92.7%. Direct one-on-one interviews were the means of data collection. The researchers sent out the questionnaire and then got it back from the subjects in an envelope. At the beginning of the questionnaire, we included some clarification on the study objective, confidentiality, and anonymity. In addition, participants were told orally that taking part in the study was completely optional, that they may stop at any moment, and that their data would only be used for research reasons. The questionnaire was filled out and returned by the participants who happily agreed to participate in the study. No compensation or other benefits were offered to participants in the research. We did not do a pilot study of this topic. Data collecting took 10–15 minutes.1.2. Those who take part. People who are willing to give their time, work as healthcare employees, and are employed by one of the Family Health Centres (FHCs) in the heart of Mardin are eligible to participate in this research.No one will be considered for inclusion in this research if they do not meet the following criteria: they are not healthcare employees, they are not volunteers, they have not finished the questionnaire, or they work for the FHC but live outside of Mardin's city centre.

Part 1.3: The Methods Used to Gather Information. Researchers used three different measures to

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compile their findings: the "Personal In-formation Form," the "Vaccination Hesitancy in Pandemic Scale," and the "Attitudes Towards COVID-19 Vaccine Scale." Researchers prepared the Personal Information Form after scouring the current literature. Participants' age, gender, marital status, and socioeconomic position were among the eight items measured by the survey's demographic information form. The survey also included 9 questions designed to elicit responses on the participants' views on vaccination [22].

After some tweaks, the "Vaccination Hesitance Scale in Pandemic" was born out of the Vaccine Hesitancy Scale that Larson et al. had previously created. This modification was made after a research in Turkey was carried out by Çapar and Çınar, which evaluated the reliability and validity of the scale [23, 24]. A 5-point Likert-style scale is used as a measuring instrument in this investigation. In this research, a scoring system was used, where a score of 1 signifies total disagreement and a score of 5 full agreement. A high score on the scale indicates that there was a considerable amount of vaccination reluctance during the epidemic. Every one of the 10 components that make up the scale is further subdivided into two. Eight components make up the first subdimension, "Lack of Confidence," and they are M1-T, M2-T, M3-T, M4-T, M5-T, M6-T, M7-T, and M8. This method has been reversed for the items that have the letter "T" next to them. Scores that are higher during the epidemic indicate a greater degree of scepticism against vaccinations on this specific dimension. Included in the second sub-dimension, "Risk," are two items: M9 and M10. During the pandemic, a high score on this subscale indicates a high likelihood of receiving a vaccine. The scale has a Cronbach's alpha score of 0.901. The reliability of the scale was determined to be 0.914 in this research.4. Analyses based on statistics. The statistical software programme SPSS 22.0 was used to analyse the data acquired in this research. Mean and standard deviation statistics were used to examine the scale, while frequency and percentage analyses were used to determine the participants' descriptive features. In order to determine whether the research variables followed a normal distribution, the Kurtosis and Skewness values were examined. The research variables were found to follow a normal distribution, which supported the use of parametric analytic methods. In order to learn more about the connections between the dimensions that decide the participants' scale levels, this research used regression and correlation analysis. This study makes use of dependent variables. What this means is that people's attitudes and levels of vaccination reluctance towards the COVID-19 vaccine are at a pandemic level. Every other variable is considered an independent variable. The first step in analysing the scale variations based on their descriptive qualities was to use the T-test and one-way analysis of variance (ANOVA). We next included in the regression analysis the variables that showed statistical significance in the T-test and ANOVA. For the dependent variable of vaccine hesitancy in the pandemic, these analyses found the following variables: vaccination opinion, vaccination opinion regarding childhood, vaccination necessary, vaccination having negative information about vaccination, thinking that not having vaccine is a parent's right, and opinion about vaccines in general. Opinions about vaccines, views on childhood vaccines, hesitancy about getting vaccinated, seeing vaccine as necessary, having negative information about vaccination, and thinking that not having vaccine is a parent's right were all factors that made up the dependent variable of attitude towards the COVID-19 vaccine. Researchers used a set of independent factors in multiple linear regression analysis to predict how vaccine hesitant people would be and how they would feel about the COVID-19 vaccine during the epidemic. When we were looking at the scales' internal consistency, we calculated Cronbach's alpha. A slant analysis was used for every single analysis. A significance threshold of $p < 0.05$ was determined for all results.

2. Results

The percentage of those who took part in the research was 92.7%. The current research included 45.1% males, 61.8% females, and 39.2% with 10

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Table 1: The distribution of the employees according to descriptive characteristics (n = 102).

Characteristics	n	%
Age		
20–25 years	15	14.7
26–30 years	25	24.5
31–40 years	46	45.1
<40 years	16	15.7
Gender		
Female	63	61.8
Male	39	38.2
Marital status		
Married	69	67.6
Single	33	32.4
Income level		
Income more than expenses	27	26.5
Income equal to expenses	33	32.4
Income less than expenses	42	41.1
Duty		
Doctor	45	44.1
Nurse	31	30.4
Midwife	20	19.6
Emergency medical technician (EMT)	6	5.9
Professional years		
<1 year	4	3.9
1–5 years	24	23.5
6–10 years	34	33.3
>10 years	40	39.3
Time spent at first-step healthcare institution		
<1 year	6	5.9
1–5 years	40	39.2
6–10 years	29	28.4
>10 years	27	26.5
Educational status		
High school	15	14.7
Associate degree	6	5.9
Undergraduate/medicine	75	73.5
Postgraduate	6	5.9
Opinions about vaccines		
Very necessary	63	61.8
Necessary	34	33.3
I have no idea/I do not know	5	4.9
Opinions about children's age vaccines		
Very necessary	76	74.5
Necessary	26	25.5
Thinking that not having vaccine is the right of parents		
Yes	20	19.6
No	61	59.8
I am indecisive	21	20.6
Having received in-service training about vaccine rejection		
Yes	37	36.3

Table 2: The mean scores of vaccine hesitancy and attitude towards COVID-19 vaccine in pandemics.

Significant results were obtained from the regression analysis that sought to establish a cause-and-effect relationship between various factors related to vaccines, including thoughts about childhood vaccines, the belief that it is a parent's right not to get vaccinated, the belief that the

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vaccine is necessary, the presence of negative information about vaccination, and the overall score of vaccine hesitancy during the pandemic (F 6.898; $p \leq 0.001$). Consideration of the vaccine as essential, receiving negative information about vaccination, thinking about childhood vaccines, thinking that not being vaccinated is a parent's right, and thinking about vaccines in general accounted for 22.6% of the total change in vaccination hesitancy during the pandemic (R2 0.226). According to Table 4, vaccination hesitation during the pandemic is increased when people see the vaccine as somewhat required (β 3.894).

We found a significant cause-and-effect relationship (F 4.396; $p \leq 0.001$) in our regression analysis of the following variables: overall vaccine thinking, vaccine thinking about childhood, belief that parents should be able to choose not to vaccinate their children, hesitations about previous vaccinations, necessaryness of vaccine, negative information about vaccination, and attitude towards the COVID-19 vaccine. Factors such as considering the vaccine necessary, thinking negatively about vaccination, hesitating to get vaccinated, believing that not getting vaccinated is a parent's right, and thinking about vaccines in general accounted for 16.8% of the total change in attitude towards the COVID-19 vaccine (R2 0.168). According to Table 5, there is a decline in the level of agreement that children immunisations are important, which in turn affects the attitude towards the COVID-19 vaccine (β −0.453).

3. Discussion

Getting healthcare providers to vaccinate against COVID-19 as intended requires research on vaccine hesitancy and their perspectives on the vaccine, as well as the variables that shape these perspectives [26]. The present research set out to examine how people feel about the COVID-19 vaccination, how hesitant people are to get the vaccine, and what variables are affecting the primary healthcare providers at the Family Health Centre (FHC). Only a few of people who took part in the study had concerns about getting immunisations. Previous studies found conflicting results. A study found that healthcare workers throughout the world showed a range of vaccination reluctance for COVID-19, from 4.3% to 72.0%, which is in line with our findings [27–29]. The COVID-19 vaccination was reportedly a source of anxiety for 41.0 percent of South African healthcare staff [30]. While earlier studies had a more optimistic view of vaccinations, the current study takes a more cautious approach, recognising that data obtained after the global and national distribution of COVID-19 vaccines may reveal different degrees of vaccine reluctance.

Results showed that participants had a high degree of risk perception, with a risk subscore above the mean, and overall scores for vaccination hesitancy and lack of confidence below the mean in the context of the pandemic. Prior study has recorded the attitudes voiced by healthcare workers towards new vaccinations, and our discovery adds to that body of evidence. Healthcare professionals in Italy were hesitant to get the COVID-19 vaccination because they didn't believe it would protect them against the virus [31]. A large percentage of healthcare personnel in Ethiopia were hesitant to get the COVID-19 vaccination, according to a recent research [22]. Vaccine reluctance in China is mostly due to healthcare providers' mistrust of the COVID-19 vaccine [32]. Healthcare providers in Turkey were hesitant to use the COVID-19 vaccination for a variety of reasons, including scepticism over the vaccine's effectiveness [33, 34]. The rarity of vaccination scepticism and low levels of distrust

4. Conclusion

In conclusion, FHC employees had low vaccine hesitancy andhigh COVID-19 vaccine attitudes. As FHC employees be- come more hesitant about the COVID-19 vaccine, their at- titudes change. Considering the vaccine as partially necessary increases vaccine hesitancy in the pandemic and decreases theattitude towards the COVID-19 vaccine as the degree of needing childhood vaccines decreases. The present study found low vaccination hesitancy and a

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positive attitude to- ward the COVID-19 vaccine, but the rate of 13.7% is still important for FHC employees, who are society's role models and the primary application for vaccination. Thus, FHC staf vaccination hesitancy and attitude must be thoroughly ex- amined. Policies must be developed to give them moretransparent information on the COVID-19 vaccine and to combat vaccine hesitancy. Methods must be developed to reduce the lack of confidence and risk perception toward vaccines, and firm steps must be taken in this regard.

Data Availability

The datasets used and/or analyzed during the study are available from the corresponding author upon reasonable request.

Ethical Approval

The study adhered to the Declaration of Helsinki principles. The study was approved by the Noninvasive Clinical Research Ethics Committee of a university (13.12.2021/36846).

Consent

Informed consent was obtained from all participants beforetheir participation.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

Authors' Contributions

VBD and GY conceptualized the study; VBD and GY supervised the study; VBD and GY were responsible for materials; VBD and GY were responsible for data collection and/or processing; VBD and GY performed analysis and/or interpretation; VBD and GY wrote the original manuscript; VBD initiated the draft of the article and approved thefinal draft.

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