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Abbreviations: COVID-19, coronavirus disease; HBM, health belief model; MSA, multi-sectoral approach; HCW, health care workers; GPs, general physicians

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Attitudes of Islamic Clerics to Receiving COVID-19 Vaccine in Iraqi Kurdistan: A Focus Group Study

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Abstract

Objectives: Religious beliefs may play a role in the rejection and acceptance of coronavirus disease (COVID-19) vaccines. We aimed to explore attitudes of Islamic clerics toward receiving the COVID-19 vaccines in a semi-structured qualitative focus group study.

Methods: The clerics of members of the Union of Muslim Scholars of the Erbil branch were included through their representative in Iraqi Kurdistan in 2021.

Results: This study found that both acceptance and non-acceptance focus groups approved of the existence and importance of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The acceptance group intended to receive COVID-19 to protect themselves and tried to convince people to receive the vaccine. However, the non-acceptance focus group did not believe in the COVID-19 vaccine due to different reasons: (1) COVID-19 vaccines have been commercialized and politicized by the governments; (2) the government makes limitations for the people due to COVID-19; (3) making fake vaccine cards; and (4) several serious side effects of COVID-19 (death, etc.) and not receiving by health care workers. The acceptance group reported that some rumors are spread in our community and impact the public to not receive COVID-19 vaccines.

Conclusions: This study showed that some Islamic clerics have serious concerns about the side effects of COVID-19 vaccines.

Introduction

The coronavirus disease (COVID-19) has been spread to several countries across the world since its onset in December 2019 in China, including Iraqi Kurdistan. In this regard, Kurdistan Regional Government applied several preventive measures, curfew, and complete lockdowns, but the virus is endemic in this region.¹ Globally, by November 11, 2021, 251 266 207 persons were diagnosed with COVID-19. Of them, 5 070 244 patients died from COVID-19.²

According to the latest statistics on the COVID-19 vaccines, 51.5% of the world population has received at least 1 dose. The number of COVID-19 vaccine doses received globally is 7.41 billion. The number of doses received each day is 28.85 million across the world. However, only 4.5% of people in low-income countries have received at least 1 dose.³ In Iraq, since starting the COVID-19 vaccination on January 3, 2020, till November 11, 2021, the number of confirmed cases of COVID-19 and deaths were 2 066 042 and 23 415, respectively. By November 2, 2021, 9 632 835 persons have received the COVID-19 vaccine.² By November 3, 2021, 14.72% of the total population have received the COVID-19 vaccine, including 6.05% partially vaccinated and 8.67% fully vaccinated.³

Low vaccine uptake is a major threat to the impact of vaccination in the prevention of disease and mortality from COVID-19. Populations across the world are concerned about the safety of the COVID-19 vaccines and the potential side effects.^{4–6} The current status of the COVID-19 infection in Iraqi Kurdistan⁷ calls for urgent strategies in increasing vaccination coverage and examination of contributing factors to vaccine hesitancy.

Immunization is one of the most significant achievements in protecting children from life-threatening illnesses. The lives of millions are saved by the vaccine globally. In both high-income^{8,9} and low- and middle-income countries,¹⁰ low acceptance of vaccines or vaccination programs in the public is a main barrier to vaccination coverage. Factors related to low vaccine acceptance are cultural and environmental ones.^{11,12} The low vaccine is influenced by some aspects such as complacency, convenience, confidence, and sociodemographic contexts.¹³ A recent study conducted in this region reported that 83.5% of the public has not received and 51.4% do not intend to receive the COVID-19 vaccine. The low acceptance rate of the COVID-19 vaccine was reported to associate with lower education and concerns about side effects.¹¹

Religious beliefs may play a role in the rejection and acceptance of the COVID-19 vaccines. Religious beliefs or religious leaders affect antivaccine decisions.¹⁴ In this regard, some religious

leaders try to convince their congregations to not receive the COVID-19 vaccines. Their reason for not receiving the vaccine is that the COVID-19 vaccine “can cause homosexual tendencies” and it “controls the mind.”¹⁵

We need appropriate strategies to change the public’s mind to increase the vaccination coverage of the COVID-19 vaccine as low acceptance is a serious risk to outbreak control. These strategies should be sensitive to religious or philosophical beliefs.¹⁶ These strategies need deliberate collaboration among different stakeholders such as the government, religious leaders, and civil society.¹⁷ The Islamic clerics are among those followers of one of the main religions in the world that has the utmost importance. Therefore, we aimed to examine the attitudes of the Islamic clerics toward receiving the COVID-19 vaccine in Iraqi Kurdistan, using a qualitative method.

Methods

Study design

We applied a semi-structured qualitative focus group study on Islamic clerics with various socio-demographic characteristics. The clerics who were members of the Union of Muslim Scholars of the Erbil branch were invited personally through their representative in 2021 August. The clerics were invited to 2 focus groups for study purposes. The purposes of this study were explained to the representative of the union before performing the focus groups. Clerics with different socio-demographic aspects and beliefs and levels of education were eligible to participate in this study.

Participants, setting, and sampling techniques

We asked the representative of the union to invite the participants based on our study criteria to obtain a more representative sample of the Islamic clerics in the region. To obtain a representative sample of the population, the second author of this study contacted the representative clerics of the Erbil branch. We asked the representative of the union to invite clerics from both who agree and do not agree to receive COVID-19 to explore the attitudes of both sides of Islamic clerics. In addition, we asked to invite clerics from diverse socio-demographic aspects. The target population of this study was the Islamic clerics who are members of the union of the Erbil governorate branch. We included 9 clerics in this study. They were selected from those who attended a special event in Erbil city in August 2021. The selection criteria for including the clerics in this study were being a member of the Islamic Union and being willing to participate in the interview. The clerics who believe or do not believe in the COVID-19 vaccines were eligible for the study. The sample included in this study was selected from clerics with various levels of education: secondary school, high school diploma, and master’s and PhD degrees. The persons who completed 2 years studying at a university receive the diploma or so-called institute degree in this region. The participants had education in different fields of Islam, and religion, including history, hadith, and theology.

Based on the local guidelines of this region, each governorate has its union of Muslim scholars. These branches work under the Kurdistan Union of Muslim Scholars in Iraqi Kurdistan. We obtained permission from the Union of Muslim Scholars of the Erbil branch and verbal consent from the clerics for the interview.

Techniques of bias reduction

In this study, we performed 2 focus groups to avoid reporting bias. We felt that clerics’ attitudes who do not agree to receive the COVID-19 vaccines may be affected by the attitudes of another group who do agree to receive the vaccine, or vice versa. Therefore, the second author of this study performed 2 focus groups with the participants on different dates. In addition, we did not announce to the group that your attitudes are compared with another group of your colleagues in the union. In this regard, the representative cleric of this union asked the clerics whether they agree to receive the COVID-19 vaccine. In addition, the entire focus groups were performed by the second author to avoid measurement bias. The representative of the clerics asked them who accepts or does not accept the COVID-19 vaccines. Therefore, the clerics who accepted the COVID-19 vaccines were included in the acceptance group and others in the non-acceptance group. However, participation in the interviews was voluntary for the clerics. Also, we do not know how many clerics have not participated in the event.

Sample of the study

In this regard, of the total 9 persons who agreed to receive the COVID-19 vaccine and were invited to this study, only 5 participated in the focus group. Two of them rejected to participate due to personal aspects and 2 of them did not participate due to unknown reasons. However, we have covered the category of their socio-demographics such as age group and educational level. Of the 5 clerics who participated in the focus group, 2 had a master’s degree and the remaining 3 persons had a diploma. The participants were between 35 and 60 years of age.

The clerics who did not agree to receive the COVID-19 vaccines were included in another focus group. Of the total 6 clerics who were invited to participate in the focus group, 4 were included in this analysis. Two of them did not participate in the interview due to familial reasons. The participants were between 32 and 56 years old. They had a secondary certificate ($n = 1$), high school diploma ($n = 1$), master’s degree ($n = 1$), and PhD degree ($n = 1$). Those who did not accept to participate in the focus group were between 39 and 43 years old and had a diploma and secondary school certificate.

Data collection

The required information of the clerics was arranged in 2 parts, including general and specific categories. The general information of the participants was age, gender, marital status, number of family members, education, and occupation. The second part of the questionnaire was designed based on the health belief model (HBM). The questions of this part were designed based on the 4 criteria of the HBM as follows:

Perceived susceptibility to the virus

- In your view, do you think you are at risk of getting the COVID-19 virus? What makes you think this way?
- Are your family members at risk for getting the COVID-19 virus? What makes you think this way?
- Do you believe there is a coronavirus in the region? What makes you think this way?
- In your view, how do people get COVID-19?

Perceived severity of the virus

- What do you think about this statement: If you get the COVID-19 virus, you will get sick. Please tell me more about why you think this way.
- What do you think about this statement: If you get the COVID-19 virus, you will get sick, but you do not expect to die. Please tell me more about why you think this way.
- What do you think about this statement: If you get the COVID-19 virus, you will die. Please tell me more why you think this way.
- If you get the COVID-19 virus, will other members in your home also get sick? Please tell me more why you think this way.

Perceived clinical barriers to vaccination

In your view, once you receive the vaccine, will you have side effects from the COVID-19 vaccine? Please tell me more why you think this way. What side effects might you get?

Will you get sick from the COVID-19 vaccine? Please tell me more why you think this way.

In your view, will you die from the COVID-19 vaccine? Please tell me more why you think this way.

Do you think that the COVID-19 vaccine will be painful? Please tell me more why you think this way.

Did your friends/family ask you to not take the COVID-19 vaccine? What did you do when they gave you this advice? Please tell me more why you did this way.

Perceived access barriers to vaccination

In your view, how long will it take to receive the COVID-19 vaccine? Please tell me more why you think this way.

Do you think that if you receive the COVID-19 vaccine, you will not get sick again? Please tell me more why you think this way.

Perceived general vaccine benefits

In your view, can vaccines prevent disease? Please tell me more why you think this way.

Do you think that the vaccines are safe? Please tell me more why you think this way.

What advice will you give other people about the COVID-19 vaccination?

Interviews

We performed 2 focus groups with clerics between September 23, 2021, and September 25, 2021. The second author performed all focus groups on the clerics. The interviews were recorded on a smartphone to be used for data analysis. We preferred to do the interviews with clerics according to the requests of the union since the clerics were not aware of the technology of interviews through the Internet or phone call. However, the required preventive and protective measures were considered in the interviews to avoid the virus spreading. The questions were presented to the clerics one by one and were asked to respond as they intend to present their attitudes. The interviewer asked the clerics to explain the questions in detail as required.

The interviewer called the representative cleric of the union to determine the appropriate time and date for an interview. The consent to conduct the interview was obtained from all clerics before and during performing the interviews. Each focus group lasted for between 20 and 35 minutes. The questions were developed as open-ended to collect as much as suitable

information from the clerics. The same pre-set questions were asked in each focus group by the second author. The interviewer used the probes and was prompted for clarification. We gave sufficient time to the participants to respond to the questions.

Ethical approval

The protocol of this study was approved by the College of Nursing at the University of Duhok in Duhok city. In addition, consent to do this study was obtained from the Union of Islamic Scholars of Erbil branch in Erbil city. In this study, we did not apply any intervention to the clerics, neither psychological nor physical. The confidentiality of the personal information of the patients was protected throughout the study steps. In addition, sufficient information (purpose of the study) was given to the clerics about the study's purposes before performing the interviews.

Data analysis

The information recorded on phone calls was listened to by the first author. The first author translated the interviews from Kurdish into English verbatim. The information was checked several times to obtain the relevant themes and sub-themes. Suitable codes were given to the themes and sub-themes for the arrangement of the information. The information on each theme was joined together with aftermath. The information was analyzed using a thematic analysis method. To realize the findings, the interviews were read several times. The themes of the study were extracted from the significant statements of each interview. The translation and generated themes were checked and confirmed by the second author. In the next step, the developed concepts were carefully studied and clustered based on the similarity of the information. In the discussion, the themes were studied carefully to make the connection between the themes. The connection of the themes was analyzed based on the current information in the literature.

Results

The groups of Islamic clerics who accepted and did not accept receiving the COVID-19 vaccine had different age groups, educational levels, and the number of family members. But all of them were imams and speakers at a mosque (Table 1).

We developed the following 5 themes from the focus groups. The themes are described in the following.

The Group that Accepted the COVID-19 Vaccines (Acceptance Group)

1: Existence of COVID-19 and the importance of protection

Concerning the existence of the COVID-19 virus and disease, the participants reported that they believe there is a coronavirus in this region since many persons have been infected or died. In addition, they advised the people to protect themselves, their community, and their families against the infection. They reported that:

Undoubtedly, there is COVID-19 disease and virus in the world as several persons have been infected, admitted to hospitals, or died of this virus. I had some relatives who died due to this virus. Moreover, I was infected by this virus. COVID-19 is a dangerous disease and still, there is a risk of this disease in Iraqi Kurdistan.

Additionally, they added that:

Table 1. General information of Islamic clerics

Age	The group that accepted the COVID-19 vaccine		
	No. of a family member	Education	Occupation
41	9	MSc	Imam and speaker
40	6	MSc	Imam and speaker
60	6	Diploma (institute)	Imam and speaker
51	14	Diploma (institute)	Imam and speaker
35	6	Diploma (institute)	Imam and speaker
The group that did not accept the COVID-19 vaccine			
56	7	PhD	Imam and speaker
38	5	Diploma (institute)	Imam and speaker
42	4	Secondary school	Imam and speaker
32	5	MSc	Imam and speaker

Note: All participants were males and married.

People have to protect themselves against the virus. The people have to follow the instructions of the Ministry of Health [of Kurdistan Regional Government] and WHO to protect themselves; such as social distancing and using a mask. There must be a virus in the world, so whether it is handmade or not is another topic.

2: Disease and Islam perspective

The Islamic clerics mentioned that the Prophet of Islam has emphasized that there is a treatment for each disease created by God. Thus, we do not need to be concerned too much about this virus since God helps us find the treatment for this disease:

We believe that there is no disease without treatment. We say that God has made the treatment for every disease. It is the speech of Prophet Mohammed that God has created the treatment for every disease. The Prophet Mohammed has said that there is a treatment for every disease.

3: Trust and belief in the COVID-19 vaccine

The clerics who participated in this focus group had a consensus that people have to receive the COVID-19 vaccine to protect themselves. In addition, they tried to convince people to receive the COVID-19 vaccine. In addition, they advised people to receive the vaccine when they speak at a mosque:

People have to receive the COVID-19 vaccine. We trust the knowledge of our doctors about the COVID-19 disease. People have to follow the instructions of doctors and preventive measures. Some of them reported that they and their families have received the first dose of the COVID-19 vaccine and intended to receive the second dose as well. The remaining participants reported that they believe the COVID-19 and we have plan to receive the vaccine. We have registered for the vaccine.

In terms of advising people, they mentioned that:

If someone asks us about the vaccine, we ask them to receive the vaccine. Moreover, as employees of the Ministry of Religious Affairs, if the government asks us to advise people to receive the vaccine, we do that.

At the beginning, I did not believe in the COVID-19 vaccine. Until a doctor explained the effectiveness of each type of these vaccines. At that time we were

infected by the virus. After that, I said that it is not logical that all of these people receive the vaccine to kill themselves, especially the leaders of the courtiers. It is not logical to create a vaccine to kill all of these people in the world. This is impossible. Therefore, I concluded that it is better to receive the vaccine.

Concerning family members receiving the COVID-19 vaccine, they mentioned some persons have some concerns about the side effects of the vaccine. Therefore, they are a little scared to receive the vaccine.

One of them mentioned that:

I asked my wife to receive the vaccine, but she said that I did not receive it. She is scared a little of the vaccine. Some people may die after receiving this vaccine because they have other diseases. In addition, several persons get recover from the disease after receiving the vaccine.

4: Side effects of the COVID-19 vaccines

The Islamic clerics mentioned that there are some side effects of the COVID-19 vaccines, but these side effects are mild. Therefore, it is worthwhile to receive the vaccine:

Possibly there are some side effects when you receive the vaccine. But the disease is worse than the vaccine. The vaccine has been tested elsewhere. Few people have died of the COVID-19 vaccine and few people have been infected by the side effects. Therefore, we advise people to receive it.

One of the clerics mentioned that:

The COVID-19 vaccine is a beneficial vaccine for this disease. Each chemical material has advantages and disadvantages. This vaccine is under testing currently and the researchers have not concluded the benefits and disadvantages of this vaccine. However, I believe that this vaccine has some side effects as well. I know that some persons have received this vaccine and died after a few days.

In terms of a religious perspective, one of them mentioned that death is in the control of God. You will die only when your time arrives:

The persons who are infected by the virus may die because of infection. Many of our relatives died because of this infection. Even five of our colleagues died of the infection. I believe in the act of God. If it is not the time for a person to die, it does not die.

5: Access to COVID-19 vaccines

In terms of access to the COVID-19 vaccine, all of them mentioned that we have not seen any obstacles in receiving the COVID-19 vaccine. Anyone can receive the vaccine.

6: Community and health care providers' influence

The Islamic clerics mentioned that some rumors are spread in our community. These rumors impact the public to not receive the COVID-19 vaccine.

One cleric mentioned that:

I advised many persons to receive the vaccine despite some rumors being spread about the vaccine. For example, some physicians did not believe in the vaccine. I asked a doctor at our mosque about the vaccine, he said that I do not believe this vaccine. He said that I do not believe that this vaccine is useful. I asked a doctor why you do not believe the vaccine, he said that, for example, the Pfizer should be stored in a fridge. The Pfizer must not be outside the fridge even for one minute. But Pfizer is stored eight hours outside the fridge, but they administer it to people. Therefore, he said that I do not receive the vaccine and do not advise people to receive the vaccine.

The Group Who Did Not Accept to Receive the COVID-19 Vaccine (Non-Acceptance Group)

1: Existence of COVID-19 virus and disease

The clerics who did not believe in receiving the COVID-19 vaccine and participated in this focus group had the same opinion as the other group mentioned that there is a coronavirus in the world and in our community. But they had different stories compared to the acceptance group. They believe in the presence of the COVID-19 vaccine, but they believe the virus is a handmade one:

There is a COVID-19 disease in the community. But this virus is a handmade one. In addition, every disease occurring in a community will be disappeared as well. There is a COVID-19 disease that has a risk to people. Many people have died because of this virus. Even our family members were infected by this virus.

One of them mentioned that healthy persons are more likely to be infected by this virus compared to persons who do not follow preventive measures:

There is COVID-19 disease in our community. We have seen that persons with healthy lungs were more likely infected in this community. The persons who lived in contaminated areas were protected from the disease. I did not see any person who smokes hookah or cigarettes was infected by the COVID-19.

2: COVID-19 vaccine trust and beliefs

The Islamic clerics who participated in this focus group did not believe in the COVID-19 vaccine. They mentioned that they do not intend to receive the vaccine. They had different reasons for their opinions:

They believed that there is a coronavirus in the community. But they mentioned that the vaccine has been commercialized and politicized by the governments. Currently, the COVID-19 is a commercial vaccine. The COVID-19 vaccine has been used as a means to avoid some actions among people. We have seen limitations from the government due to the COVID-19 disease. For example, they blocked the routes of people not go to other locations for their daily missions.

Another cleric mentioned that:

A COVID-19 vaccine is a commercial tool. I believe that the COVID-19 vaccine is a virus as well and infects other persons. The vaccines are British, German, American, and Chinese. This is the trade, not medicine. If the vaccine is medical, why, there is strong competition between countries about the vaccine now. The Americans do not believe in the British vaccine, why? What is the difference between their scientists? The governments make the trade on this vaccine and virus.

One cleric mentioned a different reason for not receiving the COVID-19 vaccine. The cleric said that:

I do not believe in this vaccine. Because some persons died after receiving the COVID-19 vaccine. Recently, my neighbor showed me a video from Europe. That video showed the vaccine has many side effects. There is a COVID-19 disease but it is manmade. Some persons have died due to this virus.

All clerics who participated in this focus group were cautious about their advice. They did not advise whether to receive the COVID-19 vaccine:

We do not advise people to receive or not receive the vaccine. If anyone asks us about the vaccine, we say that as you prefer, but we do not believe in the vaccine and do not intend to receive it.

My mother and brother have received the vaccine, but I do not receive the vaccine except for travel.

One of them had a different reason for not receiving the COVID-19 vaccine. He mentioned that:

I do not believe in the vaccines of Iraq. If the vaccines come from a country like Germany, I receive the vaccine but not from Iraq. Moreover, Kurdistan is part of Iraq, so I do not receive the vaccine. All my sisters and brothers received the vaccine, just I did not receive it. The main reason is that I do not believe in the drugs of Iraq. Even I do not use the influenza drug here. We have seen several bad stories, so I do not believe it. Because they have not shown a good perspective to the people in Iraq.

3: Community and health care providers' influence

The Islamic clerics mentioned some reasons from the community and health care providers to justify their action against the COVID-19 vaccine. One of them mentioned: *One of the old assistant nurses said to me that I do not believe the vaccine and did not receive the vaccine.*

Another one mentioned:

One doctor asked me to receive the vaccine, but I said that I do not believe in the vaccine. This vaccine is a virus to infect you and is known for the infection. Therefore, they enter the virus in the vaccine, so why I should inject the vaccine into my body? I was infected by the COVID-19 disease and recovered.

Three of them mentioned that we do not intend to receive the vaccine despite our family members (mother, brothers, and sisters) having received the COVID-19 vaccine. Even one of them mentioned that my family has registered for me to receive the vaccine, but I did not receive the vaccine.

4: Side effects of the COVID-19 vaccines

The clerics mentioned that the COVID-19 vaccine has many side effects: *We are concerned to receive the vaccine due to adverse side effects.*

They mentioned that: *I do not want to receive the vaccine due to concerns about side effects. I see some news that the vaccine has more disadvantages than advantages. Even one of them mentioned that I prefer to die due to the virus not being concerned by the side effects of the vaccine.*

Discussion

This study showed that both acceptance and non-acceptance focus groups approved of the existence and importance of the COVID-19 vaccine. They emphasized the importance of the protection of the public against the virus. The clerics who accepted the COVID-19 vaccine had a consensus that people have to receive the vaccine to protect themselves. They tried to convince people to receive the COVID-19 vaccine at a mosque. However, the Islamic clerics of the non-acceptance focus group did not believe in the COVID-19 vaccine. They mentioned that they do not intend to receive the vaccine. They had different reasons for their opinions. The reasons were: (1) The COVID-19 vaccines have been commercialized and politicized by the governments; (2) the Iraqi Kurdistan Government makes limitations for the public due to the COVID-19 outbreak; (3) someone makes fake vaccine cards; and (4) several persons died after receiving the vaccine. Both study groups had no technical challenges regarding receiving the COVID-19 vaccine.

The acceptance group reported that there are some side effects of the COVID-19 vaccines but that these side effects are mild and it is worthwhile to receive the vaccine. On the other hand, the non-acceptance focus group mentioned that the COVID-19 vaccine has many serious side effects. They were concerned to receive the vaccine due to adverse side effects. A study conducted in Nigeria found that most Islamic scholars dispose negatively of the COVID-19 vaccines owing to ambiguous safe status. They recommend that the government should ask health professionals to perform more

investigations on the content and safety of the COVID-19 vaccines. In addition, they suggest that Islamic scholars should arrange workshops to analyze the permissibility of COVID-19 vaccines from the point of Islam. If the government found them safe and *halal*, Islamic scholars should change their minds and perceptions regarding vaccination and foster people to receive the COVID-19 vaccines.¹⁸

The acceptance group reported that some rumors are spread in our community. These rumors impact the public to not receive the COVID-19 vaccines. The non-acceptance group reported that they do not intend to receive the COVID-19 vaccines since the health care providers (nurses and doctors) do not intend to receive them. Religious leaders can assist the health sector in establishing public trust in the COVID-19 vaccines. However, there is the main issue here. Some health care providers spread rumors among the public. We found out that the non-acceptance focus group has a negative opinion of the COVID-19 vaccines, as some health care providers discourage them from not receiving the vaccines.

One of the most important contributing factors to vaccine hesitancy is holding a negative sentiment toward vaccine safety. The findings of a study conducted in 67 countries showed that the public has overall positive attitudes toward vaccination, but they have a negative opinion about the safety of the vaccine.¹⁹ Health care providers have a main role in addressing vaccine hesitancy. Their recommendations are considered the main driver of vaccine acceptance in vaccine-hesitant patients.²⁰ But it seems that some health care workers (HCWs), including nurses and doctors, have a negative role in addressing the vaccine hesitancy in this region. It is well recognized that health care providers' knowledge and attitudes about vaccines are significant contributors to their vaccine uptake, their intention to recommend the vaccine to their patients, and the vaccine uptake of their patients.²¹ A review study of influenza vaccination among HCWs showed 2 major reasons for the lack of vaccine uptake. They reported that general physicians (GPs) who did not have their children vaccinated with a specific vaccine did not recommend it to their patients. The HCWs' knowledge and attitude about vaccines are significant contributing factors to their vaccine uptake, their intention to suggest the vaccine to their patients, and the vaccine uptake of their patients. Some GPs may be reluctant to discuss vaccination issues with vaccine-hesitant patients. Possibly they are concerned about extra appointments required to accommodate patients who wish to spread out the vaccines over multiple visits. Moreover, they may not have sufficient information to answer the patients' questions about the vaccines. Misconceptions about the COVID-19 virus and vaccines would be improved by health education.²¹

The rumors and conspiracy theories about the COVID-19 vaccine¹¹ or disease²² can be observed in both HCWs and the public. Rumors and conspiracy theories are related to vaccine hesitancy. Islam et al. (2021) explored the rumors and conspiracy theories about the COVID-19 circulating on online platforms and their related contexts. They determined 637 COVID-19 vaccine-related items, including rumors (91.0%) and conspiracy theories (9.0%). They added that of the 578 rumors, 36% were about vaccine development, availability, and access, 20% about morbidity and mortality, and 8% about safety, efficacy, and acceptance. Only 5% (n = 30) of 637 items were true, 83% were false, 10% were misleading, and 2% were exaggerated.²³

A novel approach called *multi-sectoral approach (MSA)* has been proposed recently as a solution to low vaccination coverage. MSA is defined as the deliberate collaboration among different stakeholders, groups (eg, civil society, private and religious groups,

and government), and sectors (eg, health, economy, and environment). The governments enable them to leverage knowledge, expertise, reach, and resources. They can get benefit from the strengths of different sectors to work together to achieve the shared goal of building trust in the COVID-19 vaccines.²⁴

Recommendations

On March 25, 2014, at the Dakar Conference in Senegal, a network of prominent African Muslim scholars and medical professionals performed an international conference on childhood vaccination. They announced a declaration after the completion of an intensive series of deliberations and consultative sessions at the International Conference on Vaccination and Religion in Dakar. They announced that vaccination remains the most effective method of protection against several illnesses and epidemics and safeguarding children,²⁵ despite Australian National Imams Council having announced "Coronavirus (COVID-19) Vaccine Fatwa (Islamic Verdict)." They announced that the Muslim doctors and medical experts scientifically confirmed that the vaccines (specifically: Pfizer and AstraZeneca) do not have any prohibited substances or ingredients. These vaccines have met the clinical standards of the Therapeutic Goods Administration and are considered safe.²⁶ However, we suggest that a similar conference to Senegal could be held in one of the Islamic countries in the Middle East. The international conference could invite deputies of other religions, including Christianity, Jewish, Yazidi, Buddhism, Hindu, and others. They can perform an intensive series of consultative meetings and panels to make a final decision about the COVID-19 vaccines. The conference can remove the current religious beliefs that are barriers to the rate of vaccination coverage.

A verdict by the Australian Fatwa Council does not have any effect on the Islamic clerics in the Middle East countries. The Muslim communities of Australia and European countries have a strong connection with the Australian community. Therefore, we do not expect that a religious verdict in Australia or a European country affects the Islamic clerics in Iraq, Egypt, and Saudi Arabia.

Limitations and Generalizability

The findings reported in this study may not be representative of all Islamic clerics in this region, because we included the participants from 1 region. Therefore, the attitudes of some of the Islamic clerics of this region may have been excluded. In addition, we couldn't make the individual interviews with the participants due to technical issues (eg, time). We could have obtained more details and information on the perceptions of the clerics to the COVID-19 vaccines. This study presents the real attitudes of a fraction of this population.

Conclusions

This study showed that some Islamic clerics have serious concerns about the side effects of COVID-19 vaccines. One of the reasons for these concerns is listening to the instructions of some HCWs in this region.

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Data availability statement. The audio files of interviews with both focus groups are available.

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