

WHO IS AGAINST COVID-19 VACCINATION AND WHY? THE PERSPECTIVE OF OPPONENTS OF THE COVID-19 VACCINATION IN AN IRANIAN CONTEXT: A QUALITATIVE STUDY

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ABSTRACT

OBJECTIVE

This study was conducted in Iran to explore the hesitancy of COVID-19 vaccinations from the perspective of opponents of the COVID-19 vaccination in Iranian society.

DESIGN

Qualitative design, using the conventional content analysis approach, has been used to collect and analyze data. 29 in-depth and semi-structured interviews were conducted with those individuals who held a stance against receiving the COVID-19 vaccine. Participants were selected using purposive sampling. The data analysis process was based on the Landman and Grenheim method with the aid of MAXQDA (20) software. In addition, Lincoln and Guba's criteria were followed to ensure the trustworthiness of the study findings.

SETTING

The study was conducted in Tehran, Iran from April 2022 to March 2023.

RESULTS

During the data analysis, 16 sub-categories were formed from 1,273 codes and after merging similar sub-categories in terms of similarities, seven main categories including (a. "Distrust", b. "Beliefs", c. "Emotions", d. "Ambiguity", e. "Alternative ways", f. "Attention to people's freedom of choice", and g. "The impact of politics on health") were extracted. These categories cover and reflect the participants' experiences of the phenomenon of opposition to COVID-19 vaccination.

CONCLUSION

To promote vaccine acceptance, comprehensive and accurate information, trust in healthcare, proper information management, effective vaccine selection methods, and guidance from successful experiences should be implemented.

KEYWORDS

Coronavirus, COVID-19 vaccination, vaccination hesitancy

INTRODUCTION

Due to the increase in the incidence of COVID-19 in many countries, on March 11, 2020, the World Health Organization (WHO) announced the pandemic of the century [1]. Currently, 221 countries in the world are affected by the COVID-19 virus. According to the official statistics of WHO, there have been more than 768 million confirmed infections and more than 6 million deaths from COVID-19. In Iran, more than 7 million people have been infected with the COVID-19 virus and about 146,000 individuals have died [2].

Although compliance with public health protocols can prevent the spread of COVID-19, vaccination-related evidence shows that vaccination is the best way to control this virus [3]. Therefore, many countries started to produce the vaccine for COVID-19 and for the first time since the beginning of the pandemic, Russia succeeded in producing and supplying the vaccine for COVID-19 under the name of "Sputnik" [4].

With the increase in people receiving vaccines, the number of infections and deaths caused by COVID-19 decreased significantly, and many studies were conducted on the effectiveness of vaccines and most of them confirmed the positive effect of vaccination [5-7]. However, despite the extensive evidence and documentation supporting these positive effects, misinformation and misunderstanding about the vaccine persist. Some individuals believe that receiving the vaccine can lead to irreversible side effects and harm [8, 9]. This hesitancy is not unique to Iran; it is a global phenomenon that has been documented in various contexts, including low- and middle-income countries [10-12].

Studies indicate that the causes of COVID-19 vaccine hesitancy are multifaceted and not limited to specific factors. A wide range of historical, cultural, individual, and social factors contribute to this phenomenon [10-12]. For instance, Yoosefi Lebni et al. (2022) identified structural barriers such as limited access to healthcare services, and socio-cultural factors, such as distrust in government and health authorities, as key determinants of vaccine hesitancy in Iran [13]. Similarly, Magesh et al. (2021) examined the association between race, ethnicity, COVID-19 outcomes, and socioeconomic determinants, highlighting socioeconomic disparities and health system inefficiencies as significant barriers [14]. These studies provide valuable insights into the broader context of vaccine hesitancy but do not fully address the perspectives of vaccine opponents, particularly their ideological and emotional motivations.

To successfully carry out a COVID-19 vaccination program, it is crucial to address not only the availability of a safe and effective vaccine but also the public's trust and acceptance. The lack of trust and hesitancy towards the vaccine can pose significant challenges and hinder the implementation of the program. Therefore, policymakers understand health system policymakers need to understand the current situation regarding vaccine acceptance and identify the obstacles and challenges. Given the critical role of vaccination in controlling the pandemic and the persistent challenges posed by vaccine hesitancy, this study aims to fill a gap in the literature by exploring the perspectives of vaccine opponents in Iran. While prior research has examined vaccine hesitancy in Iran and other contexts, few studies have focused specifically on the narratives and beliefs of those who actively oppose vaccination. By doing so, this study seeks to provide a more nuanced understanding of the ideological, emotional, and cultural factors that contribute to vaccine opposition, offering insights that can inform targeted interventions and policy decisions. This study was conducted in Iran to explore the COVID-19 vaccination hesitancy factors from the perspective of opponents of the COVID-19 vaccination in Iranian society.

METHODS

STUDY DESIGN

This qualitative study was carried out with a conventional content analysis approach based on the Landman and Grenheim method [15] to explore the COVID-19 vaccination hesitancy factors from the perspective of opponents of the COVID-19 vaccination in Iranian society. Content analysis is a research method commonly used in social and health research. Conventional content analysis is often used to investigate specific events when limited scientific evidence is available on the topic [16].

STUDY SETTING AND PARTICIPANT RECRUITMENT

This study is a joint study between The University of Social Welfare and Rehabilitation Sciences and Baqiyatallah Medical Sciences University, which was conducted in Tehran, Iran, from April 2022 to March 2023.

The study used purposive sampling with maximum variation in terms of age, gender, education degree, and expertise to gather information from participants who are opponents of the COVID-19 vaccination in Iranian society.

In this study, the participants were selected with certain inclusion criteria, such as having the verbal ability to participate in the interview, being over 18 years old, willing to participate in the study, and being fluent in the Farsi language were selected from among those who are opponents of the COVID-19 vaccination. These criteria were used to ensure participants were able to reflect on their experiences during interviews.

DATA COLLECTION AND INTERVIEWS

An in-depth and semi-structured interview was used to explore the COVID-19 vaccination hesitancy factors from the perspective of opponents of the COVID-19 vaccination. In general, 29 face-to-face interviews were conducted with 29 eligible study participants who were selected through purposive sampling. The interviews were conducted in a quiet setting with informed consent and confidentiality guaranteed. None of the participants withdrew from the study. After obtaining written consent, face-to-face interviews were conducted, audio recorded, and transcribed. The interviews lasted between 30 to 60 minutes. Semi-structured interviews, initially with more general open-ended questions such as "What do you think about the injection of the COVID-19 vaccine?" and "What could be the reasons for your opposition to the injection of the COVID-19 vaccine?" started, but the focus of the questions changed following the responses of the participants. Data collection continued until data saturation was achieved, and no new insights have been got with new data.

DATA ANALYSIS

MAXQDA (10) was used to manage data coding and analysis. Conventional content analysis based on Landman and Grenheim's method in 2004 was used [17]. In general, conventional content analysis is used when the objective of a study is to describe a phenomenon based on the experiences and perceptions of study participants [18], and there is limited knowledge [19] or fragmented knowledge about it [20]. Moreover, COVID-19 vaccination hesitancy factors from the perspective of opponents have vague aspects, which should be clarified through content analysis. Therefore, the following steps were taken in this study. In Table 1, an illustrative example of the coding and categorization process is displayed.

1. Transcription of the interviews verbatim and multiple revisions to understand the phenomenon as a whole.
2. Breakdown of text into reasonable and condensing meaning units.
3. Conceptualization of the condensed meaning units and labeling them with codes.
4. Categorization of the codes into subcategories and categories, depending on their similarities and differences.
5. Develop themes and main categories based on the latent content of the text.

TRUSTWORTHINESS OF RESEARCH

Research rigor was provided according to Guba and Lincoln's (1989) criteria [21]. The credibility of the research was ensured through prolonged involvement with the data and member checks. The Confirmability was achieved using an internal panel expert method, and the dependability was ensured through an audit trial. Maximum variation sampling contributed to transferability and credibility. The research team reviewed and discussed the coded and categorized data until a consensus was reached. Interview transcription, Initial data, categories, and themes were preserved until the end of the research process. Summaries of the interviews and primary results were returned to participants for confirmation of views.

TABLE 1- THE PROCESS OF EXTRACTING CATEGORIES

Category	Sub-category	Code
Alternative ways	Emphasis on vaccine alternatives	Prioritizing a healthy lifestyle instead of vaccination
		Believing in the efficacy of mental-psychological self-care in treating Covid-19
		Belief in the body's ability to heal by tolerating disease
	Effectiveness of traditional medicine in disease prevention and control	Belief in nature therapy in the treatment of disease
		Existence of better disease control methods other than vaccination
		The effect of using Iranian traditional medicine in the treatment of Covid-19
		The effect of consuming sea salt before and after each meal

RESULTS

PARTICIPANT CHARACTERISTICS

In general, 29 individuals participate in the study. Demographic characteristics indicated that the mean age of the participants was 54 years; the lowest level of education was a diploma and the highest was a PhD degree. Further information is presented in Table 2.

TABLE 2- DEMOGRAPHIC CHARACTERISTICS OF THE PARTICIPANTS IN THE STUDY

Number of participants	29	
Mean age	54	
Gender	14 Females, 15 Males	
Average interview time	49 minutes	
Level of education	Diploma	6
	Associate	5
	BSc	10
	MSc	4
	PhD	4

CODING STRUCTURE FOR COVID-19 VACCINATION HESITANCY FACTORS

During the data analysis, seven categories emerged as COVID-19 vaccination hesitancy factors, including a. "Distrust", b. "Beliefs", c. "Emotions", d. "Ambiguity", e. "Alternative ways", "Attention to people's freedom of choice", and "The impact of politics on health". These categories included 16 subcategories and 1,273 codes. In the following, each of these factors are described.

1. Distrust

In general, this category highlights the issue of participants lacking confidence or having low confidence at various levels and for various reasons. Within this category, we observe a lack of trust towards managers and officials involved in COVID-19 crisis management, skepticism towards the information provided regarding the pandemic, and fear and mistrust of foreign vaccines. This category can be further divided into 3 sub-categories such as "distrust in health officials," "distrust in the World Health Organization," and "distrust in imported vaccines."

Participant number 12, a 65-year-old man, expresses that: "the Coronavirus was intentionally created to reduce the world's population. According to him, the vaccine is seen as a continuation of this alleged project, leading to his ongoing lack of trust."

2. Beliefs

In this study, the findings revealed a prevailing preference for pre-existing beliefs and personal convictions over scientific evidence and the proven effectiveness of vaccines. In some instances, participants even denied the existence of the disease altogether. These attitudes can be categorized into three sub-categories: "Cultural Beliefs," "Positive Beliefs in Natural Healing," and "Disbelief in Disease."

For instance, participant number 14, a 68-year-old female expressed her belief that life and death are in the hands of God, dismissing the impact of vaccines by stating, "I believe that this kind of work (vaccine) does not change anything."

3. Emotions

This category demonstrates that fear and doubt play a significant role in people's decision to avoid getting vaccinated. Moreover, the experiences of complications and regrets among those who did receive the vaccine only serve to reinforce their belief that it should not be administered. Within this category, there are two subcategories to consider: "fear" and "regret and doubt among vaccinated individuals".

Participant number 7, a 36-year-old woman, shared her perspective, acknowledging that while these side effects are not common and typically short-term, she still had apprehensions regarding potential complications.

4. Ambiguity

This category encompasses discussions on the potential flaws and concerns surrounding certain vaccine production processes. It also involves examining why some complications have arisen and the existence of mortality statistics despite vaccination efforts. This category can be divided into two sub-categories: "Insufficient scientific evidence regarding the vaccine production process" and "Uncertainty regarding the effectiveness of the vaccine."

Participant number 26, a 65-year-old man, raises an important point. He highlights that the vaccine in question has not yet received approval from the WHO. Their cautious approach is rooted in the need to observe the long-term effects, which typically take 3-5 years to ascertain. Consequently, it remains uncertain whether the WHO will ultimately endorse this vaccine.

5. Alternative ways

The findings in this category highlight the strategies employed by individuals who oppose vaccination. These individuals seek alternatives to vaccines, such as traditional medicine, and make lifestyle changes. Two subcategories emerged

within this category, namely "emphasis on vaccine alternatives" and "effectiveness of traditional medicine in disease prevention and control".

Participant number 16, a 38-year-old man, expressed his perspective on vaccines, stating, "Vaccines have no impact on this disease as Corona is not a new phenomenon and is akin to a common cold. Vaccines do not possess the ability to save people. Amidst the current challenges faced by the modern world, including the threat of emerging and incurable diseases, as well as multiple dangers and apocalyptic events in various fields such as biology, cybernetics, neuropsychology, and genetics, Tradition medicine has emerged as a beacon of hope and healing. It serves as a lifeboat, rescuing its people and bringing them to the shore of recovery."

6. Attention to people's freedom of choice

In this category, participants raised concerns about the compulsory vaccine and the importance of respecting people's freedom to choose. Their opposition to mandatory vaccination and the ethical implications of such enforcement were the main topics discussed. This category consists of two sub-categories, including: "Opposition to Compulsory Vaccination" and "Regarding People's Freedom of Choice".

Participant number 19, a 53-year-old man, expressed his concerns regarding the compulsory vaccine. He highlighted the importance of respecting people's freedom of choice when it comes to vaccination. According to him, forcing individuals to receive a vaccine with unknown long-term effects is cruel. The participant emphasized that he diligently follows public health measures to protect himself from infecting by COVID-19. However, he firmly believes that he will not get vaccinated until there is complete and clear information available. The man questioned the insistence of doctors on vaccination and the consideration of social exclusions for those who choose not to get vaccinated. According to him, it is ethically wrong to enforce vaccination on individuals. He labeled mandatory vaccination as cruelty towards people, and he expressed his disappointment in the lack of attention given to people's power of choice.

7. The impact of politics on health

The findings in this category shed light on the complex dynamics surrounding vaccine distribution in our country. Despite the challenges posed by sanctions and limited access to medicines and equipment, the COVID-19 vaccine has been relatively accessible. This has led to concerns about the vaccine's efficacy and safety. Furthermore, the economic incentives associated with vaccine production and sales contribute to the opposition some individuals have toward vaccination. This category can be further explored through two subcategories: "Negative role of sanctions in managing Covid-19" and "Economic war".

Participant number 4, a 47-year-old man, expresses his skepticism, questioning why countries that previously withheld medicines for cancer patients and special needs individuals are now offering vaccines. He wonders how it is possible that our country faced challenges during the sanctions period without widespread COVID-19 cases, yet now these countries are eager to provide vaccines to us.

DISCUSSION

The present study was conducted to explore the COVID-19 vaccination hesitancy factors from the perspective of opponents of the COVID-19 vaccination in Iranian society. Results indicated that distrust, people's beliefs, emotions including fear, ambiguity about the consequences of vaccination, belief in the existence of alternative ways of vaccination, and belief in the impact of politics on health were among the reasons for people's opposition to receiving the vaccine.

While previous studies have examined vaccine hesitancy in Iran and other contexts, this study contributes uniquely by focusing specifically on the perspectives of vaccine opponents, a group that has been underexplored in the literature. For instance, Yoosefi Lebni et al. (2022) identified determinants of non-injection of the COVID-19 vaccine in Iran, emphasizing structural and socio-cultural barriers [13], but did not delve deeply into the ideological and emotional

underpinnings of vaccine opposition as this study does. Similarly, Karimi et al. (2024) explored predictors of vaccine uptake among people who use substances in Tehran, highlighting socio-economic and health system factors [22], but their findings do not address the broader societal and political distrust that our study reveals as a key driver of vaccine opposition. By focusing on the narratives and beliefs of vaccine opponents, this study provides a more nuanced understanding of the psychological and cultural factors that contribute to vaccine hesitancy in Iran.

There is evidence indicating a potential correlation between the level of trust in the government and its associated media outlets, and the acceptance of vaccines as well as compliance with pandemic control guidelines. This suggests that individuals who have a higher level of trust in the government and its affiliated media are more likely to accept vaccines and adhere to public health guidelines during a pandemic [23, 24]. In this study, researchers discovered that one of the main reasons for people's lack of trust in the country's health officials and international health organizations was their skepticism towards the healthcare field. It became crucial to identify the underlying challenges that contribute to this distrust and propose practical solutions. By doing so, the study aimed to promote vaccine acceptance during potential future epidemics.

This finding aligns with prior research, such as that of Yoosefi Lebni et al. (2022), who also identified distrust in government and health authorities as a significant barrier to vaccine uptake in Iran [13]. However, our study extends this understanding by highlighting how distrust is not limited to domestic institutions but also extends to international organizations like the WHO, a dimension that has been less explored in the Iranian context.

Research has consistently shown that information sources, government institutions, and health professionals have a profound impact on individuals' vaccine decisions. To promote greater trust in these entities, reduce vaccine resistance, and enhance pandemic control, it is crucial to prioritize targeted efforts and strategic planning [25, 26]. However, it is important to acknowledge that distrust among vaccine opponents extends beyond governments and the media. There is evidence to suggest that there is also a lack of trust in the WHO. For instance, a study conducted in Ethiopia revealed that one of the primary reasons for opposition to and doubt in receiving vaccines was due to a specific case that eroded trust in the WHO [27].

The findings of the recent research reveal that individuals who oppose receiving the COVID-19 vaccine cite various reasons rooted in their beliefs. One prominent reason mentioned is the belief that the virus was intentionally created and enhanced in laboratories through human activity. Additionally, some vaccine opponents attribute their refusal to conspiracy theories, concerns about death resulting from the vaccine injection, and the perceived clash between science and religion. According to Garcia's observations, many people consider religious practices, such as religious training, prayers, and other rituals, as viable alternatives to medical treatments. This perspective has contributed to a sense of hesitation among individuals when it comes to receiving the COVID-19 vaccine [28]. Cultural and religious prejudices are widely recognized as powerful predictors of anti-vaccine sentiments. Consequently, to foster vaccine acceptance during epidemics, it is crucial to identify influential individuals and arrange informative briefings that delve into the intricacies of scientific research [29, 30]. By doing so, we can create a supportive context for the adoption of vaccines.

These findings resonate with prior studies, such as those by Yoosefi Lebni et al. (2022), Karimi et al. (2024), and Khankeh et al. (2021), which also identified cultural and religious beliefs as significant barriers to vaccine uptake in Iran [13, 22, 31]. However, our study adds to this body of knowledge by uncovering the specific narratives and conspiracy theories that fuel vaccine opposition, such as the belief in laboratory-created viruses and the perceived incompatibility of science and religion. These insights provide a deeper understanding of the ideological resistance to vaccination, which has not been fully explored in earlier research.

Regarding the skepticism surrounding vaccines, some individuals express concern about the lack of scientific evidence and limited information regarding the vaccine production process. These individuals believe that the available information is not adequately disclosed to the public, leading to doubts about the safety and efficacy of vaccines. To address these concerns, vaccine manufacturing companies need to be more transparent and provide accessible

information about the licensing process and vaccine production [32]. This transparency will help build trust and ensure that consumers have the necessary information to make informed decisions about vaccination.

The fear of side effects and death after receiving the vaccine was another issue raised by opponents of vaccination. The study conducted in Turkey also found that many vaccine opponents cited concerns about potential side effects, such as infertility, heart damage, and brain impairment, as their reason for refusing the vaccine [33].

The findings of this study suggest that government mandates and pressure from political and health institutions are correlated with increased resistance from vaccine opponents, leading to a reluctance to receive the vaccine. To effectively encourage individuals to get their vaccine booster shots it is crucial to shift away from policies of coercion and pressure and instead focus on using persuasive techniques.

It is important to note, however, that social pressure from governments does not always have negative effects on vaccine uptake. Numerous studies have demonstrated its positive impact. For instance, in Morales' study, some participants who were initially hesitant about receiving the vaccine ultimately chose to get vaccinated, citing government pressure as a motivating factor [34].

CONCLUSION

The mere production and availability of the COVID-19 vaccine will not suffice in eradicating this disease. Societies must implement and expand their vaccination programs successfully. A key step in this process is identifying the current status of vaccine acceptance and understanding the obstacles and challenges that exist. This study aimed to explore the COVID-19 vaccination hesitancy factors from the perspective of opponents of the COVID-19 vaccine injection in Tehran, the political-economic capital of Iran. The findings revealed that lack of trust, personal beliefs, emotions like fear, uncertainty about the consequences of vaccination, belief in alternative methods of immunization, and the perception of politics' influence on health were among the primary reasons for people's resistance towards receiving the vaccine. To successfully overcome obstacles and challenges in this area, it is crucial to have a thorough understanding of the relevant factors, pay close attention to them, and implement the necessary measures to address these challenges. It's obvious that developing clear and transparent risk communication and facilitating community engagement can improve vaccine acceptance in future biological events.

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COMPETING INTERESTS:

The authors have no relevant financial or non-financial interests to disclose.

AUTHOR CONTRIBUTIONS:

All authors contributed to the study conception and design. Material preparation, data collection and analysis were performed by [Hamid Reza Khankeh], [Mehrdad Farrokhi], [Seyed Tayeb Moradian], [Robabeh Khalili], [Arya Hamedanchi], [Mariye Jenabi Ghods], [Mohammad Saatchi], [Mohammad Pourebrahimi] and [Mohammad javad Hosseinabadi-farahani]. The first draft of the manuscript was written by [Milad Rezaie] and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

DATA AVAILABILITY:

The datasets generated during and/or analysed during the current study are not publicly available due to confidentiality but are available from the corresponding author on reasonable request.

ETHICS APPROVAL:

This study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the Ethics Committee of University of Social Welfare and Rehabilitation Sciences (IR.USWR.REC.1400.278)

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