Journal of
Babol University of Medical Sciences
JBUMS
e-ISSN: 2251-7170 p-ISSN: 1561-4107

Participants' Social Experiences of COVID-19 Vaccination

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Article Type

Research Paper

Received:
Jun 11st 2024
Revised:
Jul 30th 2024
Accepted:
Aug 26th 2024

ABSTRACT

Background and Objective: The success of the vaccination process depends on coverage and acceptance of the vaccine. In order to promote high vaccine coverage, it is essential to study population's perceptions of vaccines and correct any misinformation. The present study was conducted to explain the social experience of participants in Phase III of the Pastocovac coronavirus disease 2019 (COVID-19) vaccine.

Methods: The present qualitative study was conducted using conventional content analysis. The cases were among the participants in Phase III of the clinical trial for the Pastocovac COVID-19 vaccine, residing in the city of Babol, Northern Iran. Purposive sampling was used for data collection. After completing a written consent form, semi-structured interviews were conducted, and the data were saturated with 13 interviews.

Findings: The analysis of the 13 recorded interviews regarding the experience of the participants yielded 155 codes, 59 sub-categories, 8 categories, and 4 themes, including "social learning", "desire to survive", "patriotism", and "challenges of participation". The present study showed that despite numerous challenges regarding vaccination participation, social learning, the desire to survive, and patriotism motivated people to participate.

Conclusion: The findings showed that social learning, the desire to survive, and patriotism motivated the participants to receive the vaccine.

Keywords: *Clinical Trial, Vaccine, COVID-19, Qualitative Study.*

Cite this article: Behmanesh F, Nikpour M, Omidvar S, Javanian M, Aqatabar Roudbari J. Participants' Social Experiences of COVID-19 Vaccination. *Journal of Babol University of Medical Sciences*. 2025; 27: e26.

[DOI: 10.22088/jbums.27.1.26]

Introduction

The coronavirus disease 2019 (COVID-19) epidemic spread so rapidly that the World Health Organization (WHO) declared it a pandemic on January 30, 2020 (1). It is reported that the COVID-19 pandemic has resulted in 704 million infections and 7 million deaths, with approximately 146000 cases among Iranian patients (2). The production of COVID-19 vaccines has been deemed an urgent need worldwide (3). The clinical trials for a new vaccine are planned in four phases. In Phase III, the vaccine is administered to several thousand target recipients, and its effectiveness and safety are assessed. Participation in Phase III of the clinical trials may differ from the actual vaccination experience (4). The success of the vaccination process depends on coverage and acceptance of the vaccine (5). Doubts regarding the reception of the vaccine pose a serious threat to the success of this intervention method (6). Multiple studies suggest that various factors contribute to the acceptance of vaccines (7, 8). These factors include the safety and reliability of the vaccine, side effects, misinformation about the need for vaccines, distrust toward the medical system, and misinformation about the effects of vaccines on diseases (8). Misinformation can lead to doubts in vaccine reception, leading to a serious threat to public health (9). A study conducted among the Iranian population reported a vaccine acceptance rate of approximately 70% (10). Vaccine acceptance highly dependents on the time, location, and social behavior (9, 11).

In order to promote high vaccine coverage, it is essential to study population's perceptions of vaccines and correct any misinformation (5). A qualitative study on the clinical trials of the Pfizer COVID-19 vaccine in the United States showed that the participants' main motives included an end to the pandemic, return to normal lives, protect themselves and others, and resume their duties (12). Education about the factors affecting the decision to receive vaccine plays a crucial role in managing and controlling the pandemic (13). Qualitative studies conducted during clinical trials could enhance vaccine acceptance (14), as the motivations behind vaccine recipients may be similar, such as being a responsible citizen (15), belonging to a social group (16, 17), and seeking to protect themselves, their families, and society (18). There have been limited qualitative studies investigating the experiences of vaccine recipients during a clinical trial (12, 19). The experiences of the individuals receiving vaccines play a crucial role in vaccine acceptance. The findings of in-depth interviews can elucidate factors influencing vaccine acceptance, and thus inform policy makers regarding vaccine acceptance during critical situations beyond COVID-19. Therefore, the present study was conducted to explain the social experience of participants in Phase III of the Pastocovac COVID-19 vaccine.

Methods

This qualitative study was conducted after approval by the Ethics Committee of Babol University of Medical Sciences with the code IR.MUBABOL.HRI.REC.1400.030. This qualitative study utilized conventional content analysis. The statistical society included the recipients of the vaccine in Phase III of clinical trials residing in the city of Babol. The inclusion criteria were Iranian nationality and the ability to hear and speak. The exclusion criteria were reluctance to participate in the study and known mental illness. Targeted sampling was used to include the highest variance in terms of age, education, occupation, economic status, and residence (Table 1). The study was first explained to recipients and they were then asked to fill out a consent form to participate in the study. The participants were then invited to a comfortable room in the vaccination center for the interview. The semi-structured interviews were conducted individually for each participant. The interview guide questions were as follows: "What is your perspective on vaccination?" "What information do you have about the Pastocovac vaccine?" "Why did you decide to receive this vaccine?" "What do you think of the Pastocovac vaccine?" "What are your fears and concerns

[DOI: 10.22088/jbums.27.1.26]

regarding this vaccine?" "Would you recommend it to your friends and family, why?" The duration of each interview ranged from 20 minutes to one hour, depending on the participant's situation and speech. Probing questions such as "Could you please explain more?" "What do you mean?", "Why and how?" could help clarify any doubts in the interview. After each interview, the written responses were coded. The interviews continued until the data was saturated, resulting in a total of 13 interviews. The interview process concluded within a month, and the data were analyzed concurrently with data collection.

The conventional content analysis method was employed based on the model presented by Graneheim and Lundman (20) to analyze the qualitative data. The interview audio files were initially transcribed. The authors then read the transcriptions to code different apparent and hidden elements in the interviews. In this section, every word and phrase was regarded as an analysis unit. The commentary notes and the transcripts were read simultaneously to extract the primary relationships between the elements and the interviews. The interviews were then recapped to investigate the similarities and differences between the codes in each transcript. This helped classify the codes into groups and subgroups to investigate the relationships, patterns, and meanings behind each group. After further analysis of the data, some of the groups were combined to form new groups and finally, the study themes were generated.

Table 1. Demographic characteristics of the participants

Participant ID	Gender	Age (years)	Education	Occupation	Economic status	Residence
1	Female	50	Middle school	Housewife	Average	City
2	Female	39	M.Sc.	Housewife	Good	City
3	Male	20	B.Sc.	Student	Average	City
4	Male	25	B.Sc.	Shopkeeper	Average	City
5	Male	52	Elementary school	Private	Average	Village
6	Female	38	M.Sc.	Faculty member	Average	City
7	Male	38	PhD	Faculty member	Good	City
8	Male	58	High school	Private	Average	City
9	Male	52	M.Sc.	Clerk	Good	City
10	Female	41	M.Sc.	Clerk	Average	Village
11	Male	55	PhD	Clerk	Good	City
12	Female	44	PhD	Clerk	Good	City
13	Male	47	M.Sc.	Clerk	Good	City

Data validation and quality assessment were performed using the Guba and Lincoln criteria: Credibility, dependability, transferability, and conformability (21).

Credibility: One method to increase credibility is to include a diverse statistical population. We have included participants with different genders, occupations, residential locations, age groups, and economic statuses. Another accepted method for enhancing credibility is peer review. The groups and subgroups, along with their associated codes and their relationships with the codes were validated through peer review by the authors.

Dependability: The dependability of qualitative data can be secured only when they are proven to be reliable. To ensure the reliability of the data, the researchers conducted all interviews in the same domains, asking identical questions from each participant. All the interviews were recorded, and all of the recordings were converted into transcripts.

[DOI: 10.22088/jbums.27.1.26]

Transferability: It refers to the probability of the results being similar in similar but different cases. To ensure the transferability of the results, the steps and processes were written carefully so that similar investigations could be performed in different places. Selective sampling also contributes to the transferability of the results.

Conformability: It was achieved by refraining from expressing researchers' personal opinions during data collection and analysis. The audit trail can also help boost the reliability of the results.

Results

The analysis of the 13 interviews culminated in 155 codes, 59 sub-categories, 8 categories, and finally, 4 themes, including social learning, desire to survive, patriotism, and challenges of participation.

Social Learning: This theme is induced by the categories of "influenceability" and "impressionability" (Table 2). Most of the participants had decided to participate in the clinical trial based on recommendations from their friends, family, and social media. In this regard, P1 remarked, "One of my friends encouraged me to participate in the clinical trial." Regarding the effectiveness of social media, P2 stated, "I read articles about this vaccine on social media, and a TV show presented the benefits of this vaccine." Family doctors were also found to be effective in educating the public, as P5 mentioned, "My family doctor provided information about the vaccine and encouraged me to participate in the trial." Family members were also found to be encouraging, as P9 mentioned, "I was not particularly interested in participation, but my family encouraged me to participate."

Desire to Survive: The two categories of self-love and altruism were related to the theme of "desire to survive" (Table 2). Most of the participants supported the development of vaccines as a means to end the pandemic and return to their normal lives. Achieving peace, being released from quarantine, and the present situation were all motivations for most of the participants. P3 mentioned, "I am tired of staying at home. The pandemic destroyed our peace." P8 mentioned, "Controlling the epidemic depends on vaccine production. I participated to enjoy the benefits of the vaccine and to bring peace to the people around me." As an example, P13 mentioned, "The people had stronger sacrificial feelings during the war to safeguard the country from the enemies. Participation in the trials contributes to safeguarding the people; therefore, it is nothing less than a war. I would participate, even if it leads to the loss of my own life." Motivating the production and reception of vaccines was another reason mentioned by some of the participants. In this regard, P4 stated, "The producers worked day and night to get the vaccines prepared. Participation is the least we could do to motivate them." Being beneficial to oneself and society was also emphasized by most of the participants. P7 mentioned, "I really wanted to do something beneficial for the people in my society. This participation would give me this chance."

Patriotism: The theme of patriotism is derived from the categories of "trust in the country" and "scientific development of the country" (Table 2). Most of the participants mentioned the pride of the country, scientific advancement of the country, progress in research, contribution to vaccine production, and aid to the health economics of the country as reasons behind their participation. In this regard, P12 reported, "We should all have a role in the growth of the country's health system, and participating in clinical trials is the least we can do to facilitate the scientific and economic advancement of the country." P7 stated, "I wanted to have a role in vaccine production. The participation of people in trials, contributes to the scientific advancement of the country." Trust issues with foreign vaccines and greater trust in Iranian vaccines and scientists were other reasons for the majority of participants to take part. P10 commented, "I trust local vaccines more, and if I have a choice, I would prefer the local ones." The great immunity of the vaccines was another motive behind the participants' choice. In this regard, P7 commented, "One of the companies producing this vaccine

[DOI: 10.22088/jbums.27.1.26]

has been operating in Iran for a century, and these vaccines are of the conjugated type, which is the best and safest vaccines. The initial studies also showed great immunity."

Table 2. Extracted subgroups, categories, and themes

Subcategories	Categories	Theme
Following a role model Learning through social media Learning through other media Recommendation of trusted medics Recommendation of friends Gaining information through counseling Recommendation of family	Influence ability Impressionability	Social Learning
Achieving peace Getting free of the present situation Selves' health Faster immunity Family and others' health Countering the pandemic Boosting society's immunity Self-sacrifice and self-devotion Encouraging vaccine manufacturers	Self-love Altruism	Desire to survive
The scientific advancement of the country Research advancement of the country Interest in contributing to vaccine production Contributing to the health economy of the country Trust in Iranian vaccines Trust in Iranian scientists Promising vaccine research results	Scientific development of the country Trust in the country	Patriotism
Fear of infection Fear of mortality rate Striving to survive Fear of vaccine ill-effectiveness Fear of vaccine safety Doubts regarding recommendation due to possible risks Fear of infecting others Fear of being placed in the placebo group	Ambiguous future Concerns	Challenges of participation

Challenges of Participation: The theme of "Challenges of Participation" was extracted from the "Ambiguous future" and "Concerns" classes (Table 2). P2 remarks regarding the fear of infection and dissatisfaction with the situation, "It is possible to get infected, even after getting vaccinated. I cannot hide this fear. This situation is very challenging, and we are all afraid that we will get infected." Some of the participants mentioned not only the ambiguous future but also hope for the vaccine, stating that they did not see another way to safeguard themselves. P8 commented, "We have no choice. If we do not receive this vaccine, is there another vaccine that can be trusted? This vaccination is what keeps us going. It is as if we are all striving to survive." Some participants expressed concerns about the risks associated with vaccinating

[DOI: 10.22088/jbums.27.1.26]

their children, the insufficient effectiveness of the vaccine, and the potential side effects after receiving the first dose of the vaccine. In this regard, P4 reported, "I had no side effects after receiving the first dose, which made me worry about the effectiveness of the vaccine." P2 talked about the fear regarding the side effects for children, "I accepted the risks for myself, but I cannot accept the risk for my child." P3 remarked, "I am not sure about the effectiveness of this vaccine, so I cannot recommend it to others". Finally, one of the participants expressed concern about trusting this vaccine. P3 commented, "I am worried that the trust we put into this vaccine and the producers may lead me to disease. I have decided to get vaccinated nonetheless, and I hope that it was not a wrong decision".

Discussion

Four themes were extracted from the data: "Social learning, desire to survive, patriotism, and challenges of participation". Social learning was one of the factors affecting vaccine acceptance. The theory of social learning involves four main steps, including attention, retention, reproduction, and motivation, two of which are learning mechanisms (22). Controlling epidemics and achieving herd immunity heavily rely on people's decisions regarding vaccine reception (23). Social media is one of the most effective means of social learning (24). A study reported that social media and social life affected the final choice of almost half of the vaccine recipients (25). Presentation of accurate information regarding descriptive norms can significantly increase willingness to participate in COVID-19 vaccination (23).

Desire to survive was one of the extracted themes in the present study. Most of the participants believed that helping to end the pandemic was a social duty. In a study by Wentzell and Racila, it was reported that most of the participants felt that signing up for the clinical trial was a help to society (12). In addition, a study also reported that most participants believed that love for others was a motive to participate in trials (26). A similar theme was perceived in the present study.

Patriotism was another theme extracted from the present study. In a study conducted in Saudi Arabia, it was perceived that patriotism was one of the most important motives behind the voluntary aid of medical students during the pandemic (26). During critical times, the citizens of a country typically exhibit heightened patriotism, demonstrating increased self-sacrifice and self-devotion in moments of danger.

Participation in the third phase of the trials is different from actual vaccination. This is mainly due to the fact that some of the participants receive a placebo. In addition, the fear of side effects is more accented during the actual vaccination. Doubts regarding vaccine reception can rise due to the following reasons: Concerns about the immunity of the vaccine, conspiracy theories regarding political and economic powers and their relationship with the pandemic, misinformation about vaccines, articles against vaccination, and mistrust toward vaccine producers (27). The motives mentioned by the participants show that researchers are faced with myths and trust issues from the people. Furthermore, the concerns mentioned by the participants could lead to fears that might alter the outcomes of clinical trials. On the other hand, the extracted themes were the motives behind participation. Although the participants mentioned having fear regarding vaccine reception, their desire to survive and patriotism led them to get vaccinated.

A key strength of this study was that qualitative interviews with the participants of a clinical trial could help to deeply understand the choice and behavior of the people regarding vaccination. Also, the in-depth interview findings inform policymakers about vaccine acceptance during critical situations beyond COVID-19. Due to the nature of the study, the number of participants was low and may not represent the entire society. Although participants were highly motivated to receive the vaccine, this study may not encompass all motives. Researcher bias and the subjective interpretation of data were other limitations.

[DOI: 10.22088/jbums.27.1.26]

The findings showed that social learning, the desire to survive, and patriotism motivated the participants to receive the vaccine. The challenges of participation were also expressed. The health system's policy-makers could use this information to develop medical interventions for the public to address personal concerns related to vaccine acceptance and this could be beneficial in comparable circumstances moving forward.

Acknowledgment

We would like to thank the Vice Chancellor for Research and Technology of Babol University of Medical Sciences for providing financial support for the research, the Social Determinants of Health Research Center for approving the study protocol, and the project participants.

[DOI: 10.22088/jbums.27.1.26]

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