What Indians Think of the COVID-19 vaccine: A qualitative study comprising focus group discussions and thematic analysis

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ABSTRACT

Background and aims: The study aims to interpret current knowledge, attitude, perceptions and concerns regarding COVID-19 vaccine in the Indian population.
Methods: Eight focus group discussions were conducted. Participants were recruited via purposive sampling. Discussions were recorded and transcribed verbatim. Key themes were extracted using thematic analysis method.
Results: There were 19 males and 24 females, with a mean age of 36 ± 11 years. Sub-themes identified were knowledge, attitude, perception and concerns regarding COVID-19 vaccine, leading to the main theme, i.e., views about the COVID-19 vaccine.
Conclusion: People have mixed perceptions regarding COVID-19 vaccine. Channelling correct messages may improve people's willingness to get vaccinated.

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1. Introduction

The unprecedented COVID-19 disease spread has infected millions, causing deaths of hundreds of thousands [1]. One of the strategies to curb its spread was the development of COVID-19 vaccine [2].

The COVID-19 vaccine was launched in India on 16th January 2021 for healthcare and frontline workers in Phase 1 [3]. The healthcare and frontline workers were initially not found to be very accepting of the vaccine and were hesitant to receive the vaccine due to several reasons [4]. Currently, the phase-2 vaccination drive includes senior citizens over 60 years of age and persons between 45 and 59 years with comorbid conditions [3].

The success of any immunization drive depends on its coverage and acceptance rate [5] but there might be various concerns among people regarding the vaccine [6]. In order to have a wide coverage

of the population by vaccination and shun hesitancy towards the vaccine, it is critical to comprehend peoples' views regarding the vaccine [5]. Therefore, this study aims to interpret current knowledge, attitude, perceptions, concerns and acceptance of COVID-19 vaccine among Indians.

2. Methods

An exploratory descriptive study was carried out using focus group discussion (FGD) after seeking approval from the Institutional Ethics Committee of All India Institute of Medical Sciences, New Delhi with reference number (IECPG-194/24.02.2021). A diverse sample was selected using the principle of maximum diversity on the basis of different socio-demographic parameters such as age, gender, socio-economic and education status. Purposive sampling technique was used to identify the participants. Indian residents above 18 years, who could speak and understand Hindi and/or English were enrolled in the discussion. Informed consent was taken from the participants which was audio-recorded as the part of the discussion. A moderator guide was used to direct the discussion given in supplementary table 1. Detailed

Identification of participants through purposive sampling
↓
Data collection using video conferencing via Google Meet
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Discussions guided by a moderator guide
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In-verbatim transcription of discussions
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Identification of initial codes through an inductive process
↓
Condensation of codes into sub-themes
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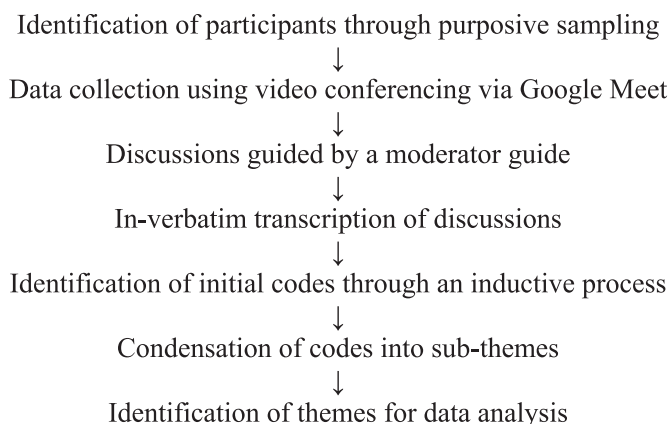Identification of themes for data analysis

Fig. 1. Methodology.

methodology [7–9] has been depicted in Fig. 1.

3. Results

3.1. Socio-demographic characteristics

Eight FGDs were conducted comprising 43 participants with the mean age of 36 ± 11 years, including 19 males and 24 females. Participant characteristics of each group are given in Supplementary table 2.

3.2. Views about COVID-19 vaccine

A comprehensive analysis of Indians' knowledge, attitude, practice and concerns about COVID-19 vaccine was done in two ways: (i) collective analysis and (ii) group wise analysis. The responses for both the groups were assessed via generation of various codes and sub-themes. The following themes were knowledge, attitude, perception and concerns regarding COVID-19 vaccine. The details of the themes and sub-themes are given in Table 1.

3.3. Group wise analysis of views on COVID-19 vaccine

The key highlights of different views on knowledge, attitude, practice and concerns regarding COVID-19 vaccine amongst participants in the eight focus group discussions is presented in Table 2 and excerpts for the same are given in Supplementary table 3.

4. Discussion

COVID-19 has made an impact on various aspects of people's life [7–10]. Currently, one of the prevalent discussions is prevention of COVID-19 infection through COVID-19 vaccine. There are diverse sources of information ranging from scientific evidence to social media providing contradictory information leading to confusion amongst the general public [11]. Similarly, in our FGDs we found that some groups such as senior citizens, working professionals, young adults and housewives depend on social media, local news and discussion amongst friends and family as platforms for getting informed about COVID-19 vaccines. Besides, these groups ranked lower in interest and correct information regarding COVID-19 vaccine, which may be due to dependency on less reliable information sources. Contrary to this, hospital based groups (doctors, paramedics etc) had slightly better understanding regarding the COVID-19 vaccine. The development of proper Information, Education and Communication (IEC) channels to spread awareness about the availability, procedure and benefits of the vaccine through mainstream media and social media, in order to build a positive attitude towards the vaccine becomes essential for its acceptance.

We also found that the level of knowledge did not correlate with a positive attitude towards COVID-19 vaccine as both hospital-based groups and groups from the general population had mixed perceptions. The identified drivers for positive attitude amongst

Table 1
Themes and sub-themes.

Theme	Views about the COVID-19 vaccine	
Sub-themes	Knowledge	Attitude
Codes	Awareness about vaccines launched for COVID-19.	Mixed views regarding acceptance of the vaccine. Some accepting readily while others being skeptical.
	Awareness about names of vaccines rolled out in India.	Trust/mistrust in the safety and efficacy of the vaccine.
	Awareness about the number of vaccine shots to be administered.	Trust/mistrust in scientists and healthcare professionals.
		Willing/Unwilling to recommend it to their family and friends.
Sub-Themes Codes	**Perception**	**Concerns/Barriers/Opinion)**
	Mixed views regarding government approach towards the vaccine. The phased manner of vaccination is the right approach.	Concerns regarding side effects.
	People have become careless after the introduction of COVID vaccine. They are showing a casual attitude towards COVID precautions.	Concerns regarding the rapid development and approval of COVID vaccine.
		Concerns regarding the unforeseen future effects of the vaccine on the comorbid and immunocompromised patients.
		Concerns regarding the duration of protection from the vaccine.
		Concerns about availability of the vaccine in the entire nation.
		Concerns regarding the price of the vaccine.
		Concerned about the piracy/authenticity of the vaccine.
		Concerned about the politics that might affect the vaccination drive.

Table 2
Group wise analysis of views on COVID-19 vaccine.

<!–Col Count:2–>Group	Views on COVID-19 vaccine
Doctors	*Knowledge:* Updated with the current research and government policies[a]
	Attitude: Positive outlook towards the vaccine[b]
	Perception: Acceptability of COVID-19 vaccine amongst doctors will impact overall acceptability in the general population[c]
	Concerns: The gap in Information, Education and Communication for the acceptance of the vaccine[d]
Subject experts	*Knowledge:* Updated with the current research and government policies[e]
	Attitude: Mixed views, some willing to promote it while others being skeptical[f,g]
	Perception: Vaccine should be taken and/or promoted for correct reasons[h]
	Concerns: Misinformation spread from social media about the vaccine and limited direction given by the government[i]
Paramedics	*Knowledge:* Information obtained from scientific data and news channels[j]
	Attitude: Mixed views, some supporting while others being skeptical[k]
	Perception: Vaccine has been launched without adequate data as compared to other vaccines being used worldwide[l]
	Concerns: Safety and efficacy of the vaccine for elderly and comorbid individuals[m]
Other hospital staff	*Knowledge:* Obtained knowledge/information from doctors and paramedics[n]
	Attitude: Positive outlook[o]
	Perception: Vaccine is crucial to curb COVID-19 spread[p]
	Concerns: Initiation of the process of vaccination for other family members especially pregnant women, children and elderly[q]; rumours spread on social media[r]
Middle-aged and elderly	*Knowledge:* Obtained information from news channels and by discussing it with family and friends[s]
	Attitude: Many were skeptical[t]
	Perception: Found the vaccine important but doubtful for its safe use on them[u]
	Concerns: Concerned about the safety and efficacy[u]; authenticity[v]; rumours[w]
Working professionals	*Knowledge:* Limited interest and knowledge[x]
	Attitude: Casual attitude towards the vaccine[x]
	Perception: People of this age do not need any vaccine[y]
	Concerns: About the efficacy[z]; rapid development and approval of the vaccine[aa]
Young adults	*Knowledge:* Lacked complete information as were dependent on google and news applications installed on their phones[ab]
	Attitude: Mixed outlooks, some were positive[ac] while others being skeptical[ad]
	Perception: The vaccine should be made available to college students and teachers[ae]
	Concerns: Unforeseen future effects of the vaccine[af]
Housewives	*Knowledge:* Obtained through news channels, youtube videos and discussions with neighbours, family and relatives[ag]
	Attitude: Most were skeptical[ah, ai]
	Perception: Introduction of the vaccine has made people careless[aj]
	Concerns: About the safety and efficacy, use for children and elderly[ah], price of the vaccine[ai]

participants towards vaccine acceptance were trust in the perceived safety of vaccines, free access to vaccines (healthcare and first line workers), national duty towards eradicating COVID-19, perceived limited/no risk in vaccination, access to reliable sources of information on COVID-19 vaccine and easy availability of vaccine (hospital staff). The concerns contributing to negative attitudes related to vaccine hesitancy were lower number of active COVID-19 cases, preference to natural immunity, misinformation regarding the vaccine, lack of perceived safety, fear of having side-effects, fear of faulty/fake vaccine, government conspiracies etc. Current literature also reported perceived safety of the vaccine as a prime contributing factor to vaccine intention [12].

The public willingness to accept the vaccine (*practice*) is not static and is highly dependent upon the information and sentiment regarding the COVID-19 vaccine [13]. In the FGD with subject experts, it was distinctly mentioned that government should take initiative in engaging social media to provide correct and accurate information in order to alleviate any concerns on vaccine related issues (safety, efficacy, availability etc), individual/community based issues (beliefs, knowledge, health related behaviours and mistrust etc.) and contextual issues (historical influences, conspiracy theories and non-transparency etc) [14]. Besides, channelling correct messages via local community leaders, celebrities can also prove beneficial in improving people's willingness and motivation to get vaccinated in the near future [14].

4.1. Strengths and limitations

To our knowledge, this qualitative study is the first attempt to understand the knowledge, attitude, practice and concerns regarding the COVID-19 vaccine in different population groups in India. This information can be used by the healthcare professionals and government agencies to tailor make their communications to channel appropriate messages as a part of the vaccination campaign for strengthening positive attitude in masses regarding COVID-19 vaccine. The findings of this study can be further used in development of a survey tool for conducting pan-India cross sectional surveys to gauge the opinion of the public on COVID-19 vaccine.

The limitations of the study are as follows: findings are derived only from one discussion in each group and qualitative analysis was not performed by any statistical software.

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Declaration of competing interest

The Author(s) declare(s) that there is no conflict of interest.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.dsx.2021.03.021.

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