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Original Article

Experiences of Covid-19 Early Vaccination: A Survey-Based Study from the Community Healthcare Setup in India

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ABSTRACT

Introduction: Vaccination is one of the important solution to control the COVID-19 pandemic. Considering the vaccine hesitancy in India, a study about an experience of COVID-19 vaccination is planned. Materials and Methods: A cross-sectional, self-administered interview-based study was performed at a vaccination centre in Mumbai. Individuals who have taken at least one vaccine dose were interviewed at the vaccination centre between August 2021 and December 2021. The self-administered questionnaire consists of 23 items which include questions about demographic details, history of COVID-19 infection and the details of the vaccine, followed their beliefs and confidence regarding the vaccine, their experience with the vaccination centre, and the side effects of the vaccine if any. Results: A total of 400 individuals responded to the survey. Among them, 50.3% were males. About 77% of participants depended on digital media for the vaccination program awareness. Only 19.3% of respondents expressed hesitancy regarding vaccine side effects and felt difficulty taking a vaccine. A majority (94.5%) of the responders were in favor of recommending vaccination to their peers. Most of the participants were satisfied with the services at the vaccination centre. The Adverse Events Following Immunization (AEFI) reported by individuals were minor. Conclusion: Side effects of the vaccination, trust, risk perception, personal experience, and earlier vaccine experiences are some factors that reduce people's willingness to vaccination. The current study reports an overall high willingness for vaccination. It also reflects the acceptance of booster doses with the organized vaccination drives and awareness among the people.

Keywords: COVID-19 vaccination, Community health, Vaccination experiences, Adverse events following immunization.

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INTRODUCTION

COVID-19 changed the world with significant differences in life before and after the pandemic. The government of India has imposed various guidelines to restrict the COVID-19 pandemic spread like lockdown, social distancing, and public health measures in all possible ways. Despite these 6.2 million fatalities, half a billion infections worldwide happened due to the COVID-19 pandemic.[1] Since the onset of the COVID-19 infection, researchers have been busy developing a preventive vaccine that can effectively generate and establish the required antibodies in healthy individuals. In such a challenging situation, preventive vaccine discovery was the ultimate solution to controlling COVID-19 spread, restricting the severity and reducing the fatalities. The modelling study published in the United States has predicted the overall reduction in attack rate by SARS-CoV2 with the use of an effective COVID-19 vaccine.[2] The World Health Organization (WHO) has validated a total of nine COVID-19 vaccines. At least 60% of the population is vaccinated globally.[3]

As per the latest available statistic, India reported around 43.15 million COVID-19 cases with around 5 lakh deaths.[4] In India, pandemic situation was more challenging during the second wave, as a higher number of infections and proportionately higher fatalities among all age groups just in the period of two months were observed. The Government of India (GOI) has started the vaccination program in a phased manner from January 16, 2021. Initially, the vaccination program was launched for health care workers and extended to frontline workers, followed by high-risk populations.[5] The next phase of vaccination covered all elderly populations over 60 years or older, followed by individuals with comorbidities of 45 to 60 years. Further from May 1, 2021, vaccination was open for all individuals with age 18 years or more.

In India, vaccination is provided exclusively through government centres free of cost, while very few private hospitals or centres are

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authorised to provide vaccination with regulated charges. Two options of vaccines were available in India, either Covishield or COVAXIN. At the initiation of the vaccination program, a meagre turnout to avail of vaccination was observed. This low turnout can be attributed to various things like hesitancy due to vaccine safety, efficacy, side effects, enrolment modalities, technical issues of software, and misinformation. So far, the country has monitored 193.19 Cr doses of the COVID-19 vaccine, and around 60% of the eligible population is fully vaccinated.[6] Although the situation, in the beginning, was challenging and regionally varying rates of vaccination coverages.

Considering the vaccine hesitancy in India, we decided to study the related aspects. We planned a study which will cover an experience of COVID-19 vaccination. Collecting the community's experiences after vaccination can motivate people to get fully vaccinated and even to get the booster dose. This study will also cover the past differences in experiences among individuals with and without COVID-19 infection. It will help alleviate the fear and hesitancy by encouraging people to vaccinate.

MATERIALS AND METHODS

A cross-sectional, self-administered interview-based study was performed at a vaccination centre attached to the community healthcare setup in Mumbai. This facility was open for all on an appointment and a walk-in basis without any costs. This centre was a part of the community healthcare setup in Mumbai. All the staff was educated and professionally trained as per the standard norms of WHO. Individuals were either supposed to take a token for the vaccination or need to book an appointment in the system. Records were updated in the central application system as per the government guidelines. Considering the baseline population of 50000 residents near community healthcare setup and 95% confidence interval and 5% margin of error, we decided to include the sample of 385 individual representative participants for this study.[7] Individuals who came for vaccination and had taken at least one dose of either of the COVID-19 vaccine and who could read and write English, Hindi, or Marathi questionnaire were eligible to participate in this study. Data were collected during the period starting from August 2021 to December 2021. Those who visited the vaccination centre for vaccination or were accompanied with other individuals aged more than 18 years were potentially eligible for this study.

The intention and purpose of this study were briefed to all the participants and informed written consent was taken before the survey. Those who agreed were requested for a signed consent form and to respond to the self-administered questionnaire. The self-administered questionnaire consisting of 23 items was approved by the scientific and ethics committee board of the Medical Division, Bhabha Atomic Research Centre, Mumbai. The question was designed based on the various aspects. The self-explanatory, unbiased, non-intentional nature of questions was considered in the questionnaire after the piloting and internal validation. The first eleven questions included demographic details, history of COVID-19 infection, and the details of the vaccine followed their beliefs and confidence regarding the vaccine. They were asked about their experience with the vaccination centre and the vaccine's side effects, if any.

All the data collected through a pre-printed questionnaire were tabulated on a Microsoft Office Excel spreadsheet. Data analysis was carried out using SPSS version 25.0 (SPSS Inc., Chicago, IL, USA) for windows and Microsoft Excel 2019. Descriptive details of the participants were presented in the form of absolute numbers and percentages. Study responses were grouped among individuals with and without COVID-19 infections. The Chi-

Table 1: Responder's characteristics.

Description	No COVID History	With COVID History	Total	p-value
Total	284 (71.0)	116 (29.0)	400	
Beneficiary of Healthcare System				
No	97 (69.3)	43 (30.7)	140 (35.0)	0.58
Yes	187 (71.9)	73 (28.1)	260 (65.0)	
Gender				
Male	169 (71.3)	68 (28.7)	237 (59.3)	0.87
Female	115 (70.6)	48 (29.4)	163 (40.8)	
Age Group				
18-45Yrs	154 (71.3)	62 (28.7)	216 (54.0)	0.87
46-60Yrs	99 (69.7)	43 (30.3)	142 (35.5)	
>60Yrs	31 (73.8)	11 (26.2)	42 (10.5)	
Education Level				
Primary	38 (77.6)	11 (22.4)	49 (12.3)	0.62
Secondary	94 (72.3)	36 (27.7)	130 (32.5)	
Graduate	111 (68.1)	52 (31.9)	163 (40.8)	
Post-Graduate	41 (70.7)	17 (29.3)	58 (14.5)	
Employment Status				
Student	29 (69.0)	13 (31.0)	42 (10.5)	0.44
Unemployed	66 (76.7)	20 (23.3)	86 (21.5)	
Employed	163 (68.5)	75 (31.5)	238 (59.5)	
Retired	26 (76.5)	8 (23.5)	34 (8.5)	
Existing Comorbid Conditions				
DM	42 (64.6)	23 (35.4)	65 (16.3)	0.00
HTN	50 (62.5)	30 (37.5)	80 (20.0)	
IHD	10 (45.5)	12 (54.5)	22 (5.5)	
CKD	6 (60.0)	4 (40.0)	10 (2.5)	
Number of vaccines taken				
Both doses	243 (70.6)	101 (29.4)	344 (86.0)	0.69
First dose	41 (73.2)	15 (26.8)	56 (14.0)	
Vaccine name				
COVAXIN	81 (76.4)	25 (23.6)	106 (26.5)	0.15
COVISHIELD	203 (69.0)	91 (31.0)	294 (73.5)	

Figures indicates n (%).

square test of significance was used to see whether differences were statistically significant. A p-value below 0.05 was considered statistically significant.

RESULTS

Among 400 participants in the survey, males were 237 (59.3%). We found that 284 (71%) survey responders have never been diagnosed with COVID-19 infections. While, Age-sex, academic accomplishment, and employment status wise, no difference was observed in responders with and without COVID-19 infection history. Among survey responders, two-thirds were beneficiaries of the healthcare scheme (CHSS) Table 1. Among responders, 344 (86%) received both doses of the vaccine, with the majority (73.5%) opted for the COVIDSHIELD vaccine.

The majority of the responders were dependent on digital media 308 (77.0%) for the advertisement and awareness of the vaccination program, 168 (42.0%) referred to social media updates to gain information, followed by television 230 (57.5%) and other sources 255 (63.8%). A higher number of responders choose to book vaccination online. As high as 86.0% of responders had received both doses of vaccination, and we found no differences in the prior status of COVID-19 infection.

We found that 77(19.3%) responders expressed hesitancy regarding vaccine side effects, and approximately the same number, 70 (17.1%), felt difficulty taking a vaccine. However, 378 (94.5%) responders were in favor of recommending vaccination to their peers. Further, one-third of responders need to spend more than 30 min in the vaccination centre for their turn. In contrast, two-thirds of responders were called into the vaccination centre immediately or within 30 min. Very high responders, 376 (94.0%), were found to be satisfied with the social distancing protocols maintained at the vaccination centre. An approximately equal number of responders, 381 (95.1%), felt that the vaccination staff was adequately trained. There 238 (59.5%) found the vaccination centre excellent, followed by 161 (40.3%). There were 326 (81.5%) responders who felt that the centre could handle any side effects if they arise due to vaccination Table 2.

While discussing the side effects of vaccination, 161 (40.3%) of responders experienced body aches; approximately half of that, 85 (21.3%), felt tired. 112 (28%) and 231 (57.7%) of the responders shared the feeling of headache and pain at the injection site, respectively. Very negligible responders felt nausea and vomiting. Side effect-related symptoms were temporary and lasted up to three days in most 364 (91.0%) responders. while a minimal number of individuals, 36 (9.0%), felt it beyond three days after vaccination Table 3.

Table 2: Vaccination centre-related aspects.

Narration	n (%)
Feeling before getting vaccinated	
The vaccine will have too many side-effects	77 (19.3)
COVID-19 is a mild disease and vaccination is unnecessary	10 (2.5)
COVID-19 vaccination will be expensive	24 (6.0)
None of the above	288 (72.0)
Do you recommend the vaccine to others?	
No	102 (25.5)
Yes	298 (74.5)
How likely are you to recommend the COVID-19 vaccine to others?	
Extremely likely	238 (59.5)
Somewhat likely	140 (35.0)
Not at all	22 (5.5)
How easy do you feel it was easy to get the COVID-19 vaccination done?	
Very difficult	15 (3.8)
Somewhat difficult	55 (13.8)
Somewhat easy	71 (17.8)
Very easy	259 (64.8)
How long was your waiting period at the Vaccination centre?	
Less than 30 min	193 (48.3)
More than 30 min	149 (37.3)
Nil / Was called in immediately	58 (14.5)
Was social distancing and mask hygiene maintained?	
No	3 (0.8)
Yes	376 (94)
Inadequate	21 (5.3)
Did the staff at the centre give you adequate information?	
No	19 (4.8)
Yes	381 (95.3)
Was the centre adequately equipped to handle immediate post-vaccine side effects?	
No	74 (18.5)
Yes	326 (81.5)
The overall experience of the vaccination centre?	
Bad	1 (0.3)
Good	161 (40.3)
Excellent	238 (59.5)

DISCUSSION

Vaccination programs are always helpful in controlling the spread of communicable diseases, especially highly infectious diseases.[8,9] However, vaccine hesitancy is always there during the initial phase of the vaccination.[8,10,11] In the current study, most respondents felt that COVID-19 vaccination is valuable and effective. They are confident to recommend it to others. This matches the earlier studies published in Odisha, India, and China.[12] In our study, 64.8% of participants feel that COVID-19 vaccination can be done easily.

Despite of urban population, more males (59.3%) have taken benefit of vaccine than females (40.8%). A systematic review of sex and gender in COVID-19 vaccination found that randomized

Table 3: Side effects experiences after vaccination.

Description	n (%)
Side Effects	
Tiredness	85 (21.3)
Body Ache	161 (40.3)
Fever with Chills	116 (29.0)
Headache	112 (28.0)
Pain at the injection site	231 (57.8)
Nausea Vomiting	4 (1.0)
Giddiness	2 (0.5)
Symptom Duration	
Less than 1 day	186 (46.5)
2- 3 days	178 (44.5)
More than 3 days	36 (9.0)

control trials have recruited an equal number of women and men. However, more women participants are found in observational studies.[13] The vaccination process is based on modern technology, for which women are not used. To make an appointment for the vaccine, one must log in through the Co-WIN portal developed by the Ministry of Health and Family Welfare of India. Women, especially the elder age group, are found to depend upon their counterparts or children for the same.[14] Other than this, women may be scared more about the vaccine's side effects. This may be in result of a low number of women in vaccination centres.

In the current study, all the persons who have ever or never been infected with COVID-19. A total of 29% of participants who were ever infected with COVID-19 in the past have taken the vaccine. As per the criteria defined by The World Health Organization (WHO), a person can be vaccinated even if they had a COVID-19 infection in the past. It gives more extended protection against the virus. The vaccination provides consistently stronger immunity than having a natural infection.[3,15] Respondent praised the vaccination centre for following COVID-related protocol of social distancing and providing services in time as high as less than 30 min. The waiting time for getting vaccinated is less than 30 min for almost 62% of participants. They also said that the staff was trained and qualified for the job. The study reveals that respondents found vaccination centres comply with social distancing protocols and could handle vaccine-related side effects.

Respondents reported side effects of vaccination which were headache (19.2%), body ache (40%), and fever with chills (21%). However, among those who experienced side effects, 91% reported that these issues were resolved within three days. And 9% experienced more than three days of vaccination. All the Adverse Events Following Immunization (AEFI) are minor. AEFI is usually defined in three categories, minor, severe, and serious. There were no significant anaphylactic reactions in our vaccination centre. The minor category involves common events like pain and swelling at injection site, fever, irritability, etc., which do not lead to long-term problems and non-hospitalized cases.[16] Studies from Bangalore, Kerala, India, and United States have highlighted that the severity of the vaccine's side effects are no worse than mild and are more common after the second dose of the vaccine.[17-19] The experience of pain and anxiety during the vaccination process is a common phenomenon.[20] The study conducted in Italy revealed that 40.7% and 32.7% of participants felt nervous when receiving the first and second doses of the vaccine, respectively. Whereas 26.4% and 21.8% of participants were scared when receiving the first and second dose, respectively.[21]

This survey was carried out in a close community health care environment. A survey with a more representative sample would be helpful in studying the vaccination willingness at the national level.

We also would like to highlight some limitations of this study. Data were collected during the second wave of the pandemic in the country; at that time, the vaccination demand was very high. Also, relatively vaccine-eligible individuals were restricted and declared in a phase-wise manner by the government. Available vaccines were at a very restricted number of centres with limited stock. So, the willingness was high among the eligible people. So overall less hesitancy was reported. The scenario at government-organized vaccination centres or private setups may be different.

CONCLUSION

In our vaccination centre, the people were well aware of the vaccine. Side effects of the vaccination, trust, risk perception, personal experience, and earlier vaccine experiences are some factors that reduce people's willingness to vaccinate. However, being fully vaccinated will increase the immunity against the virus, and it also helps to reduce the likelihood of new variants emerging. The current study reports an overall high willingness for vaccination. It also reflects the acceptance of booster doses with the organized vaccination drives and awareness among the people.

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