



COVID-19 Vaccine Hesitancy Rapid Survey

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Introduction

In December 2019, a novel coronavirus named SARS-CoV-2 caused a series of acute atypical respiratory diseases in Wuhan, Hubei Province, China. The virus is transmissible between humans and has caused pandemics worldwide. According to the World Health Organization (WHO), in India, there have been a total of 29,183,121 confirmed cases of COVID-19 with 3,59,676 deaths, as of 7th June 2021.¹ Maharashtra is one of the leading contributors to daily new cases which have reported a total of 59,34,880 cases and 1,15,390 deaths as of Mid-June 2021.² Behaviour changes like wearing masks, hand washing and maintaining social distancing help reduce the chance of getting exposed to the virus or spreading it to others. However, vaccines are game changers and it has contributed to the global health apart from clean water and sanitation.³ Unlike other medicines, vaccines work at both individual level and community levels. Vaccine at the individual level works with the immune system so it will be ready to fight the virus if one gets exposed and at the community level it creates herd immunity. While no vaccine is 100% effective, when used broadly in communities, several vaccine-preventable diseases could be eliminated and some may be eradicated.

Vaccines for COVID-19 have been developed within a short span and India started its largest COVID-19 vaccination drive on January 16, 2021. The participation of people in the vaccination drive is completely voluntary and one can get the vaccine through payment at private hospitals or get it free of cost from government facilities. One needs to register on the Co-WIN application and schedule a vaccination appointment or local government health workers at Corona Vaccination Centres (CVCs) can help the beneficiary get the vaccine on spot. The central government first vaccinated the health workers and the frontline workers. Those over 45 years with comorbidities and people over 60 years were vaccinated from 1 March 2021 onwards. Phase three of the vaccination drive started from 1 April 2021, covered all people more than 45 years of age, and currently, it is open for those in the ages of 18-44 years. Despite the efforts taken by the government, during the first phase of the drive which was until 28 Feb 2021, only 11 million were able to get vaccinated against a target of 30 million.⁴ As of June 15, 2021, 25% of the Indian population had received their first doses and only 6% had received their second doses.⁵

¹ India: WHO Coronavirus Disease (COVID-19) Dashboard with Vaccination Data [Internet]. Covid19.who.int. 2021 [cited 11 June 2021]. Available from: <https://covid19.who.int/region/searo/country/in>

² Covid 19 status. 2021 [cited 17 June 2021]. Available from: <https://www.aarogyasetu.gov.in/>

³ Greenwood B. The contribution of vaccination to global health: past, present and future. Philosophical Transactions of the Royal Society B: Biological Sciences. 2014;369(1645):20130433.

⁴ India Covid-19 vaccine hesitancy: Trends across states, over time [Internet]. Ideas For India. 2021 [cited 11 June 2021]. Available from: <https://www.ideasforindia.in/topics/governance/covid-19-vaccine-hesitancy-trends-across-states-over-time.html>

⁵ Economic times. Corona meter. 2021;8.

Vaccine hesitancy in many countries poses a major challenge to the achievement of coverage and population immunity.⁶ The WHO defines vaccine hesitancy as ‘delay in approval or denial of vaccination despite the availability of vaccine services’ and it is considered one of the top ten global health risks.⁷ Various media reports and evidence says that lack of confidence and trust in health services, concerns regarding safety and efficacy of vaccines, and complacency of not being infected so far, were the major objections in the COVID-19 Vaccination drive.^{3,8} Misinformation sent across multiple networks may have an effect on the approval of a COVID-19 vaccine as well.⁹ It is necessary to understand the factors related to low acceptance rates among people so that vaccination strategies can be designed based on perceived threats, barriers or misinformation.

The main objective of this survey was to assess the COVID-19 vaccine hesitancy and understand its reason among urban slum households of Mumbai

Materials and Methods

This was a rapid cross-sectional phone survey conducted between 28th May and 6th June 2021. The respondents were people aged 18 years and above who voluntarily agreed to participate in the survey without any remuneration. The survey covered a total of 1058 men and women from five slums of the Mumbai Corporation of Greater Mumbai namely Malvani, Mankhurd, Kurla, Dharavi, and Wadala covering a minimum of 200 respondents from each slum. The questionnaire was designed based on the WHO's Strategic Advisory Group of Experts (SAGE) Immunization matrix of hesitancy determinants.¹⁰ The questionnaire included questions on demographic characteristics of the respondent, vaccination or registration status of self and family members, willingness to take the vaccine and if not willing then reasons for the same were asked. Additionally, data was captured on support needed to get registered or vaccinated and trusted sources of information on the vaccine. The analysis was conducted using STATA version 14.1.

⁶ Larson H, Jarrett C, Eckersberger E, Smith D, Paterson P. Understanding vaccine hesitancy around vaccines and vaccination from a global perspective: A systematic review of published literature, 2007–2012. *Vaccine*. 2014;32(19):2150-2159.

⁷ MacDonald N. Vaccine hesitancy: Definition, scope and determinants. *Vaccine*. 2015;33(34):4161-4164.

⁸ Bhattacharjee S, Dasgupta P, Mukherjee A, Dasgupta S. Vaccine hesitancy for childhood vaccinations in slum areas of Siliguri, India. *Indian Journal of Public Health*. 2018;62(4):253.

⁹ Cornwall W. Officials gird for a war on vaccine misinformation. *Science*. 2020;369(6499):14-15.

¹⁰ SAGE working group on vaccine hesitancy: [Internet]. 2021 [cited 15 June 2021]. Available from: http://www.who.int/immunization/sage/sage_wg_vaccine_hesitancy_apr12/en/, accessed May 2021

Each respondent was called and explained the purpose of the survey. Verbal consent was taken and the questionnaire was administered. If the respondent and all of his/her household members were already registered or vaccinated for at least a single dose, the survey ended assuming that they were not hesitant. Not willing or not sure of getting the vaccines and its reason were explored if at least one of their household members was not registered or vaccinated. Each respondent could have more than one reason for not taking the vaccine and the interview lasted for about 10-15 minutes.

Results

Survey area

The survey covered a total of **1058** respondents and figure 1 presents the distribution across the 5 slums of Mumbai.

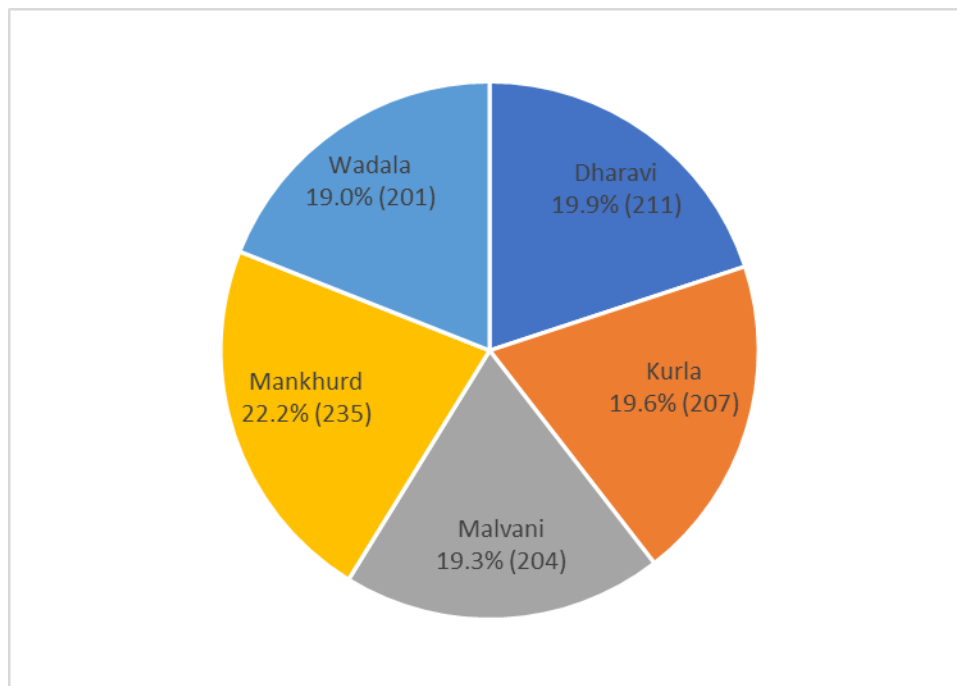


Figure 1: Site wise distribution of respondents

Demographic Information

Table 1 presents the demographic information of the respondents. The majority of the respondents were between the age group 18-44 years (85%). Male respondents were slightly higher (52.5%) compared to females (47.5%). 14.0% had no formal education and 26.4% had 12 or more years of education. The majority were found to have been involved either in unskilled work (40.6%) or were unemployed (39.3%).

Table 1: Demographic information of the respondents (N=1058)

Demographic information	n	Percent
Age		
18-44 years	899	85.0
45-59 years	146	13.8
60 plus	13	1.2
Gender		
Female	502	47.5
Male	555	52.5
Other	1	0.1
Years of education completed		
No schooling	146	13.8
Less than 5 years	34	3.2
5 to 7 years	201	19.0
8 to 9 years	187	17.7
10-11 years	211	19.9
12 or more years	279	26.4
Occupation		
Unemployed	416	39.3
Professional & service sector	186	17.6
Unskilled work	430	40.6
Student	26	2.5
Total	1,058	100.0

Vaccine intension and hesitancy

It was found that 17.4% (n=184) of the respondents had eligible household members who were either registered or already vaccinated. When asked about their willingness to get vaccinated, the majority (44.9%, n=475) answered that they and their family members were willing to take up the vaccine in the future, while (37.7%, n=399) were either not willing or not sure of getting the vaccine.

Reason for vaccine hesitancy

There were many reasons for the low acceptance of vaccines. The top three reasons among those who are not willing to take the vaccines were worries about side effects (42.7%), lack of trust in vaccines (39.4%), and fear of vaccines (33.2%). Lack of family support (31.5%) and vaccine safety (23.7%) also featured in their responses. Similarly, the top three reasons for not sure of getting the vaccines were lack of trust in vaccines (63.3%), worries about side effects (55.1%), and vaccine safety (29.1%). This group also had the fear of vaccines (26.0%) and did not feel that there was family support (23.4%) for taking the vaccines.

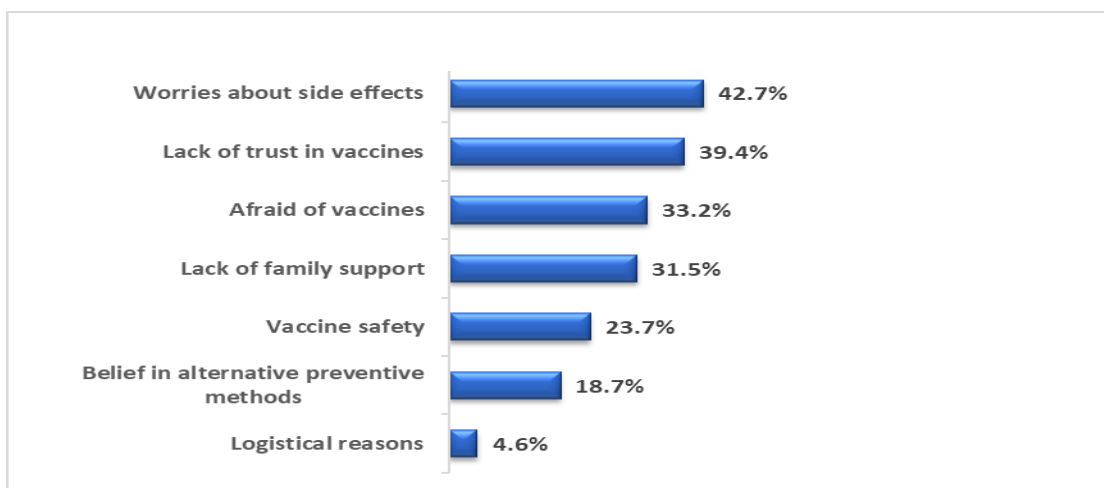


Figure 2: Reasons for not willing to take the vaccine, n=241

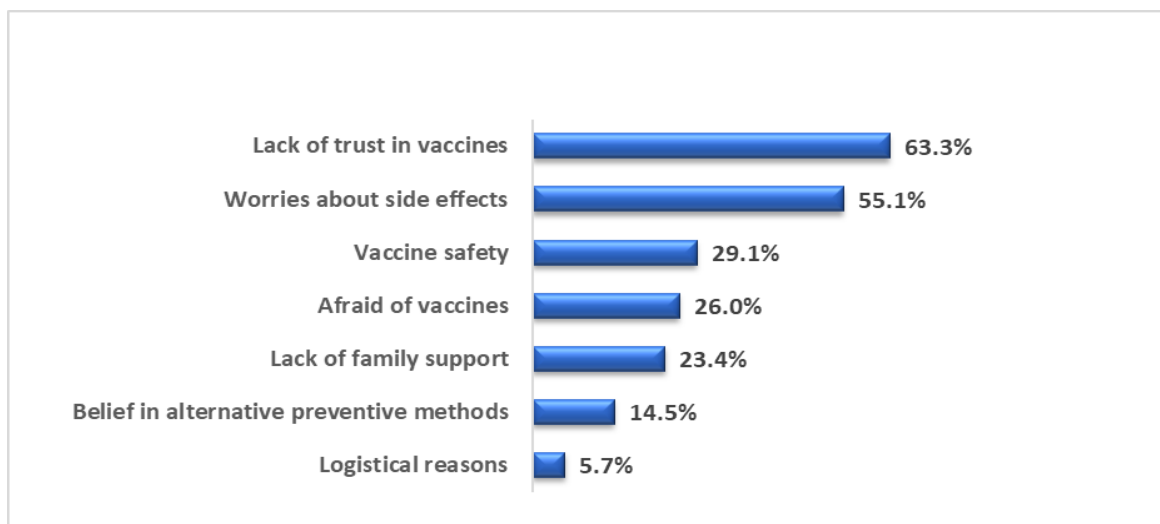


Figure 3: Reasons for not sure of getting the vaccine, n=158

Vaccine specific issues

Questions related to the process of getting the vaccination like registering on Co-WIN application and the need for support were asked to the respondents. Among those who were willing to get vaccinated (n=475), half of them (50.3%) felt that the process is not difficult, 18.3% felt that it is difficult, while 31.4% were not aware of the process (table not shown here). Among those who were willing to get vaccinated, close to three-fifth did not want any support, a quarter needed information on the registration process, and 14.3% needed assistance in the registration process.

Table 2: Support needed to get registered or vaccinated

Support needed among those willing to take the vaccine, n=475	n	%
Child/ Elderly care- Need to take care of dependent family members	4	0.8
Need financial support in getting vaccinated (travel cost to the centre, getting vaccinated in a private hospital)	37	7.8
Need assistance in the registration process	68	14.3
Need to know about the registration process	117	24.6
None	277	58.3
Other	38	8.0

Trusted source of information

Over two-fifths, (42.6%) of the respondents trusted health care/frontline workers 34.1% of them trusted their friends and family members and almost 22.5% told that they trust nobody.

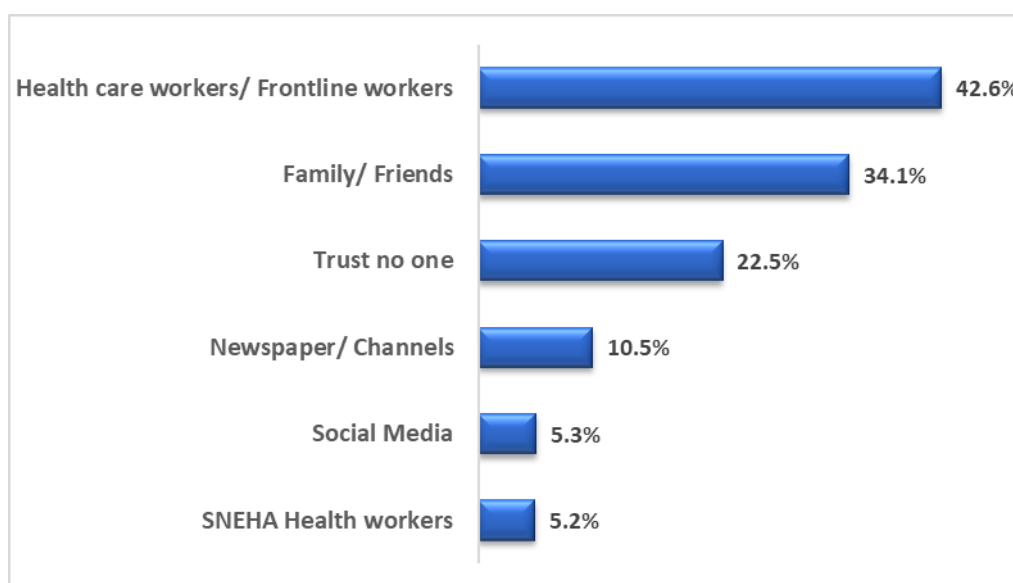


Figure 4: The most trusted source of information

Conclusion

It was found that though the majority of the people dwelling in slums are willing to get vaccinated (44.9%) and the hesitancy is still 37.7% which is more than the country's average which is 29%⁴. A considerable number of respondents were apprehensive about the vaccines, its side effects, and their safety. The survey also captured vaccine specific issues like the process of getting the vaccine and it was found that out of those who were willing to take the vaccine, many were not even aware of the process to be followed to get vaccinated and wanted help in getting information and carrying out the registration process.

To foster vaccine confidence, a strong public health communication strategy has to be in place to convince people to take the vaccine, to provide counter-arguments to misinformation, and to make people aware of the registration process. This can also be done by newspaper and television which is most accessed and trusted by many. There is a need to have an open discussion about vaccine safety and address concerns about side effects and adverse events. People have confidence in any information that comes from health professionals who can also spread information about the usefulness of vaccines and encourage community members to take it. Community health workers can support in reiterating these messages in the community. Positive vaccine stories of community members could encourage others to opt for it as well. This could be one way of garnering community support as they see people in their communities get it. Simultaneously, the process of receiving the vaccine should be simplified. Registration on the Co-WIN application is a deterrent for those who do not have access to android phones and not familiar with using online portals.

The success of the vaccination drive will depend on how anxieties of people are tackled and they look forward to better times. The good news is that 75% of the survey participants are open to taking the vaccine if adequately supported by helping them to register on Co-WIN app and by giving reliable information on vaccine safety and effectiveness.

Acknowledgement

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