## **Original Research Article**

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# A cross sectional study on COVID-19 vaccine acceptances and barriers to vaccination in district Jhansi

## Vimal Arya<sup>1\*</sup>, Mahendra Chowksey<sup>2</sup>

<sup>1</sup>Department of Community Medicine, Maharani Laxmi Bai Medical College, Jhansi, Uttar Pradesh, India <sup>2</sup>Department of Community Medicine, Gajara Raja Medical College, Gwalior, Madhya Pradesh, India

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## \*Correspondence: Dr. Vimal Arva.

E-mail: aryadrvimal@gmail.com

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#### **ABSTRACT**

**Background:** The long-term control of the pandemic COVID-19 pandemic hinges on the uptake of vaccine and high immunization uptake is critical. Vaccine hesitancy is one of the top 10 threats to global health. Hesitancy will be a challenge to curbing this pandemic.

**Methods:** A cross-sectional study was done among the population in Jhansi where data was collected through an online questionnaire using Google forms and was distributed using social media platforms. Total of 220 data was collected.

**Results:** 80.2% of the respondents were willing to get vaccinated. 78.9% of the respondents have taken previous vaccinations by the government. 70 of them trust government health care departments and media (82.2%) is the least trusted platform regarding vaccination. Majority agreed to the perceived benefits of COVID-19. 80.3% were willing to take free vaccination. 46.9% were willing to pay for COVID vaccine.

**Conclusions:** The scenario in Jhansi was positive towards the vaccination drive and majority of them were willing to get vaccinated. But strategies must be made effective in terms of elevating the barriers to vaccination.

**Keywords:** Barriers to COVID-19 vaccine, COVID-19 pandemic, Benefits of COVID-19 vaccine, Vaccine acceptance, Vaccine communication

## INTRODUCTION

The globe is at war with the COVID-19 pandemic and it is time to face yet another war with the microbes. For a world which is battered with COVID-19 pandemic, the only hope is vaccination. Wearing mask, sanitization and social distancing were found to be effective in decreasing the spread of the virus, but only the uptake of a preventive vaccine will be the solution for long-term control of the COVID-19 pandemic. The drive for vaccination has begun in some parts of the world. India has also started the daunting task of vaccinating a huge population. The government will have to convince people to opt for the vaccine. The World Health Organization (WHO) describes vaccine hesitation as the refusal or reluctance to vaccinate despite the availability of vaccines

that threatens to reverse progress made in tackling vaccine-preventable diseases. Early studies in various countries pertaining to vaccine acceptance reveals that there is reluctance to accept a new vaccine as there is increasing concern about its safety, adverse effects, base line effectiveness.<sup>1</sup> Prominent politicians and activists claiming that it has been produced too hastily and not been tested enough adds to the chaos.<sup>2</sup> Immunization programs in India began in 1978 as expanded programme on immunization (EPI) and was renamed as universal immunization programme (UIP) in 1985.3 Four decades after EPI and UIP, the immunization programs have matured globally and in India. Vaccination coverage has become higher, availability and sustained vaccination coverage of vaccines has also increased over the decades.<sup>3</sup> According to National Family Health Survey

(NFHS) 5 Indian children between the age of 12-23 months are fully vaccinated based on information from either vaccination card or mother's recall where in the percentages of rural is 78% and urban is 77.6% with a total of 85.2%. Religion had a small impact where Muslim children were less likely to receive all basic vaccinations than Christian or Hindu children but there was not much difference was found in vaccination coverage in terms of other background characteristics.<sup>5</sup> While comparing to the rest of the Indian states has been showing relatively higher coverage of vaccination doses over the years. 6 Acceptance of a COVID-19 vaccine was highly influenced by the baseline effectiveness of the vaccine. Information regarding the efficacy and safety of an upcoming COVID-19 vaccine should be disseminated to ensure its acceptance and coverage.<sup>7</sup>

Present study was done with the objective of knowing about the COVID-19 vaccine acceptance and barriers to it along with factors associated with it in district Jhansi In 2019 vaccine hesitancy was found to be among the top 10 threats to global health. Introduction of more strategies to persuade the population to become vaccinated is important since acceptance is associated with perceived risk for COVID-19, it is also important to increase the perceived risk in communities.<sup>8</sup>

#### **METHODS**

This survey was a cross-sectional study conducted among the population in Jhansi. Data was collected from all blocks in Jhansi through an online anonymous questionnaire during from January 2021 to March 2021. Google form was used to publish the questionnaire and generate the answer. The link containing the questionnaire was circulated using social media platforms like WhatsApp and email. URL link was spread using social software. The interviewees visited the link containing questionnaire on their mobile phones or laptops to answer the questionnaire.

## Inclusion criteria

The inclusion criteria were individuals who: were at least 18 years old; able to read and complete the self-administered questionnaire independently; and voluntarily agreed to participate in this survey.

## Exclusion criteria

The persons to whom the link for the questionnaire was sent and we did not get a response from them they were automatically excluded from our study.

The questionnaire addressed: demographical characteristics (age, chronic conditions), contextual influences, influences arising from personal perception of the vaccine or influences of the social/peer environment, vaccine communication, preference of COVID-19 vaccine, perceived benefits and barriers of COVID-19

vaccine, intention to get vaccinated if a COVID-19 vaccine was available, and cues to action.

Data was collected from a total of 220 participants of which 120 were female and 100 were male and majority of the respondents belonged to the age group of 15 to 45 years. The data was analyzed using statistical package for the social sciences (SPSS).

#### **RESULTS**

Descriptive statistics were conducted to generate summary tables for study variables. 220 respondents answered the survey; women accounted for 43.7% of respondents. 171 of the respondents were willing to get vaccinated while 42 of them were not willing to get vaccinated of which the majority fall in the age category of 30-45 years. 52.40% were Hindus and 28.60% were Christians who showed reluctance in vaccination. Organized sector (40.50%) and students (31%) showed reluctance in vaccine acceptance. The study revealed that the population that belonged to a higher education status of university and above showed more reluctance towards acceptance of vaccination which is 20%. Marital status of the participants showed no specific difference in the acceptance of vaccination. Participants with good health (54.80%) were found to be more reluctant to accept vaccine while 26.90% of them who claimed to have very good health were willing to get vaccinated. Participants who followed allopathic medicine (61.90%) were not accepting vaccination and 19% of Ayurvedic followers and 16.70% homeopathic followers were also reluctant to get vaccinated (Table 1). A majority (75.1%) of them were willing to get their child vaccinated if the school advices them in this regard. 122 of them trust the doctors on information regarding vaccines, while 70 of them trust government health care departments, media (82.2%) was the least trusted platform regarding information on vaccination. 56.3% feel that they were not getting enough information on COVID vaccine safety.

Table 1: Contextual influences.

Contextual influences	Responses	Frequency	Percent
Are you or your children vaccinated	Yes	170	77
	No	50	22
Is your religion	Yes	10	4.5
against vaccine	No	210	95.5
Have you received	Yes	93	42.3
enough information on COVID vaccine safety	No	127	57.7
Hesitancy to take	Yes	17	7.7
vaccine	No	203	92.2
Government	Yes	204	92.7
vaccine is beneficial	No	16	7.3

Table 2: Vaccine communication and preference of COVID-19 vaccine.

Contextual influences	Responses	Frequency	Percent
Negative information about vaccine	Yes	47	21.3
	No	173	78.7
Information on vaccination that I have received is reliable	Yes	181	82.3
	No	39	17.7
Media preferred for information on COVID	Television	131	59.5
	Radio	35	15.9
	Newspaper	27	12.3
	Social media	27	12.3

#### **DISCUSSION**

Government of India has developed a COVID-19 communication strategy which emphasises on Information related to the new COVID-19 vaccine, vaccine hesitancy, vaccine eagerness and COVID appropriate behaviours by using an integrated advocacy, communication and social mobilization strategy nationwide.<sup>9</sup>

Vaccine hesitancy could threaten the efficiency of COVID-19 vaccines worldwide. <sup>10</sup> A study based on a sample from 19 countries involving 13,426 participants showed that the global acceptance of COVID-19 vaccines ranges between as low as 54.8% from Russia to as high as 88.6% from China. <sup>11</sup> Moreover, most western countries report relatively higher public acceptance (59-75). <sup>11</sup>

During the COVID-19 pandemic, people used multiple information resources to gain knowledge and health information about the disease, including television, radio, newspapers, social media, friends, co-workers, healthcare providers, scientists, governments, etc.<sup>12</sup> Since such information sources can shape peoples' acceptance or refusal of COVID-19 vaccines, it is crucial to disseminate transparent and accurate information about vaccines' safety and efficacy to gain the trust of the population especially the hesitant and skeptical ones.<sup>13,14</sup> Hence, gaining an understanding of the resources that people trust the most to get information about COVID-19 vaccines is critical for the success of any future national vaccination campaign. In our study 72.3% participants stated that they received support from community leaders which indicates that the state has credible influencers from local communities to build their trust and acceptance which is an indicator in the COVID-19 communication strategy 2020. The study reveals that there is strong contextual Influence arising due to institutions such as schools where majority (75.1%) of them are willing to get their child vaccinated if the school advices them in this regard, which is a major advocacy

strategy suggested by the Indian government. This clearly explains that the respondents are motivated to adopting to the new treatment mode of vaccination against COVID-19. Nevertheless, there are respondents who are worried about the efficacy, side effects, safety of the new vaccine, they have also raised concern regarding faulty or fake vaccine. Information regarding the efficacy and safety of an upcoming COVID-19 vaccine should be disseminated to ensure its acceptance and coverage. Implications for policy and future research as the whole world is keen to curb this pandemic these are some implications for policy pertaining to vaccine hesitancy. An indicator in the COVID-19 communication strategy 2020 is related to the support from community leaders and a majority of the participants in this study have agreed that they are receiving such support. This can be encouraged so as to increase the vaccination coverage. The study has found that there is strong contextual Influence arising due to institutions such as schools which can influence the uptake of vaccines. Nevertheless, there are respondents who are worried about the efficacy, side effects, safety of the new vaccine, they have also raised concern regarding faulty or fake vaccine. Information regarding the efficacy and safety of an upcoming COVID-19 vaccine should be disseminated to ensure its acceptance and coverage. Majority (59.6) of them preferred to get vaccinated from the health centre in the state which is an indication of preference of the public regarding the place they want to get vaccinated.

There are some limitations of the study. As this study was conducted by distributing an online questionnaire through many social media platforms, a section of population not equipped in using these social media platforms and smart phones were automatically excluded from the study. We were not able to know the result in aforementioned people.

### **CONCLUSION**

The rate of immunization is generally high in the district Jhansi, and though our study findings also lead to this fact, while regarding the current scenario of the pandemic the small population who shows vaccine hesitancy will pose a huge threat to the community. Religion, occupation, education, marital status and gender does not influence the acceptance of vaccine.

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Institutional Ethics Committee

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