

Original Research Article

PERCEPTION OF COVID-19 VACCINATION AMONG INDIVIDUALS VISITING A TERTIARY CARE HOSPITAL IN NASHIK, INDIA: A CROSS-SECTIONAL OBSERVATIONAL STUDY

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ABSTRACT

Background: COVID-19 vaccination has been a major public health strategy for reducing morbidity, mortality, and transmission during the pandemic. However, vaccine acceptance is influenced by awareness, perceived safety, misconceptions, and accessibility. This study assessed the perception of COVID-19 vaccination among individuals visiting a tertiary care hospital in Nashik, India.

Materials and Methods: A cross-sectional analytical study was conducted from August 2022 to September 2022 at a tertiary care centre in Nashik, Maharashtra. A total of 1100 consenting adults aged 18 years and above, including patients and accompanying family members attending OPD and IPD services, were included. Data were collected through face-to-face interviews using a structured questionnaire covering socio-demographic details, prior COVID-19 exposure, information sources, vaccination status, vaccine preference, reasons for acceptance or hesitancy, and perceived side effects. Data were analysed using descriptive statistics and appropriate tests of association.

Results: The mean age of participants was 36 ± 12 years, with males comprising 59.18% of the study population. Overall, 883 participants (80.2%) were vaccinated, while 217 (19.8%) were unvaccinated. Among vaccinated individuals, 92% reported receiving the vaccine by their own choice, and the most common reason for vaccination was protection and prevention of disease spread (69.9%). Post-vaccination side effects such as fever, cold, body pain, and headache were reported by 42.8% of vaccinated individuals. COVISHIELD was the most preferred vaccine, cited for perceived efficacy, fewer side effects, Indian manufacture, and better reported outcomes. Among unvaccinated participants, concerns regarding side effects, poor health, lack of perceived importance, non-availability of vaccines, and time constraints were common reasons for non-vaccination. More than half of the unvaccinated individuals (55.5%) expressed willingness to receive the vaccine if made available.

Conclusion: The study showed generally positive awareness and acceptance of COVID-19 vaccination among adults visiting a tertiary care hospital in Nashik. Although most participants perceived vaccines as safe and effective, hesitancy persisted among a proportion of unvaccinated individuals due to fear of adverse effects and misinformation. Strengthening public health communication, ensuring equitable access, and providing accurate information may further improve vaccine acceptance.

Keywords: COVID-19 vaccination; vaccine perception; vaccine hesitancy; vaccine acceptance; COVISHIELD; COVAXIN; tertiary care hospital; Nashik; India.

INTRODUCTION

The COVID-19 pandemic, caused by the novel coronavirus SARS-CoV-2, emerged in late 2019 and rapidly spread across the globe, leading to unparalleled health, social, and economic consequences.^[1,2] Characterized by high transmissibility and variable clinical manifestations ranging from asymptomatic infection to severe respiratory failure, the disease placed an extraordinary burden on health systems worldwide. Data from hospitalized cohorts indicated a mortality rate of approximately 3% with more than 20% of patients developing severe illness, particularly among the elderly and those with pre-existing comorbidities.^[3,4]

In the absence of specific antiviral therapy, vaccination was recognized as the most effective strategy to control the pandemic by reducing transmission, morbidity, and mortality.^[5] The rapid development and deployment of COVID-19 vaccines, facilitated by advances in biomedical research and international collaboration, marked an unprecedented achievement in public health. Vaccination programs initially prioritized frontline healthcare workers, elderly populations, high-risk individuals, and later expanded to include all eligible age groups, including children.^[6,7]

However, vaccine acceptance has been heterogeneous. While many individuals embraced immunization, pockets of hesitancy persisted due to concerns regarding safety, efficacy, misinformation, and lack of trust in public health authorities.^[8,9] Studies have shown that misinformation, particularly on social media, has amplified anti-vaccination sentiments, influencing public perceptions and fueling resistance to immunization efforts.^[10-12] Recognizing this, the World Health Organization (WHO) has identified vaccine hesitancy as one of the top global health threats.^[13]

During the COVID-19 pandemic, numerous studies across the globe have evaluated public perceptions, attitudes, and acceptance toward vaccination. These investigations highlight both encouraging levels of vaccine acceptance and persisting concerns that may hinder widespread uptake.

A cross-sectional study by Kishore J et al,^[14] explored COVID-19 vaccine acceptance among Indian adults aged 17 years and above using an online, semi-structured questionnaire where approximately 70% individuals expressed willingness to receive the vaccine. Comparable findings were reported in international contexts; in the United States, about 70% demonstrated intent to vaccinate,^[15] while in Turkey, the figure was 69%.^[16] In France, acceptance rates reached 74%,^[17] whereas higher willingness was reported in the United Kingdom (86%) and Italy (92%).^[18] However, limitations such as modest sample sizes and reliance on online surveys constrain the generalizability of these findings.^[19] Another large-scale study,^[20] conducted across India revealed that 94.3% of

respondents believed prevention through vaccination was the best strategy against COVID-19, even though uncertainties regarding vaccine efficacy persisted. A noted limitation was the under-representation of rural populations, leaving a gap in understanding perceptions in under-served communities.

These prior studies indicate substantial willingness to accept COVID-19 vaccination but also underline the need for more representative data, especially from rural areas. Since rural populations often face barriers such as limited access to healthcare, lower health literacy, and higher vulnerability to misinformation, targeted studies in these settings are critical.

Despite extensive vaccination campaigns, regional variations in perception and acceptance remain underexplored. No prior research has systematically evaluated public views on COVID-19 vaccination in Nashik, India. Hence, this pilot study was undertaken with the aim of assessing the awareness, perceptions, and attitudes of the general population towards COVID-19 vaccination, including its perceived benefits and risks, and the influence of various information sources such as social media. Findings from this study are intended to provide insights into public perception that could help address vaccine hesitancy and strengthen immunization awareness strategies.

MATERIALS AND METHODS

This was a cross-sectional analytical study conducted over a two-month period (August 2022 to September 2022) at a tertiary care center in Nashik, Maharashtra, India. The study population included patients and their accompanying family members visiting the outpatient department (OPD) and inpatient department (IPD) of the hospital. All individuals aged ≥ 18 years who consented to participate were eligible for inclusion. Those who refused participation were excluded. The required sample size was estimated at 1100 participants, calculated on the assumption of a 50% vaccine acceptability rate, with a 3% margin of error and a 95% confidence interval.^[21] A complete enumeration approach was employed, wherein all eligible individuals presenting to the OPD/IPD during the study period were approached until the target sample size was reached.

Data were collected offline through face-to-face interviews using a structured questionnaire. The instrument was prepared in both English and the local language (Marathi) to facilitate better comprehension. Trained investigators assisted participants when clarification was required, ensuring active two-way communication during data collection. The questionnaire comprised three sections namely, 'Socio-demographic data' which included age, gender, education, occupation, income, marital status, address, and contact details; 'COVID-19 exposure and information sources' which consisted of prior infection of self or family, and sources of information regarding the vaccination drive and 'Perceptions regarding COVID-19

vaccination' which had separate sub-sections for vaccinated and unvaccinated individuals, addressing perceived risk, reasons for acceptance or hesitancy, choice of vaccine preference, side effects experienced, and vaccination status of family members.

Ethical approval for the study was obtained from the Institutional Ethics Committee. Written informed consent was obtained from all participants after explaining the objectives of the study. Confidentiality of personal data was maintained throughout, and no identifiable information was disclosed in reporting. Data were entered and analyzed using SPSS software (version XX). Descriptive statistics were used to summarize socio-demographic characteristics and perception scores. Associations between vaccine perceptions and explanatory variables were assessed using appropriate statistical tests of association (e.g., chi-square test), with significance set at $p < 0.05$.

RESULTS

Demographic of Patients: In this study, data collected from 1100 participants was analyzed. The mean age of the participants was 36 ± 12 years. There were more males (59.18%) compared to females [Figure 1]. Of the total participants in the study, 37.8% were home makers and students, 32.5% were skilled, 5.4% were unskilled laborers, 4.9% were professionals, 17.6% were semi-professionals and 1.8% were retired. The average annual income of survey population was INR 416034 [Figure 2 and 3]. 2.6% of the population were uneducated while 45.7% studied up to 12th standard and the rest were graduates. About 16.8% (185) individuals were reported to be positive for COVID-19 and 22.9% (252) had their family members infected with COVID-19 prior to the vaccination. 48.6% individuals came to know about vaccines from news while 17.3% from social media and rest from their friends, relatives or workplaces [Figure 4].

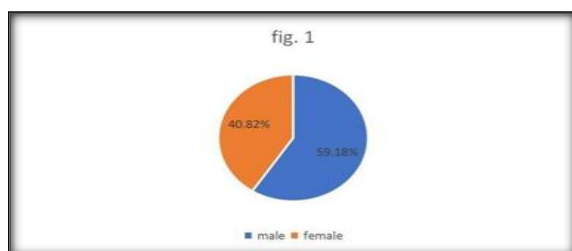


Figure 1: Gender distribution of participants included in the study.

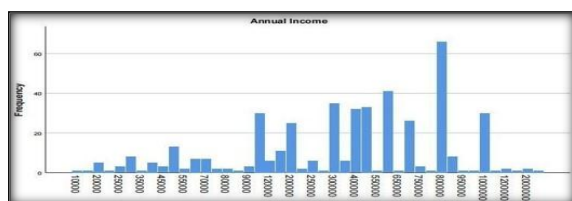


Figure 2: Distribution of vaccinated participants according to average annual income.

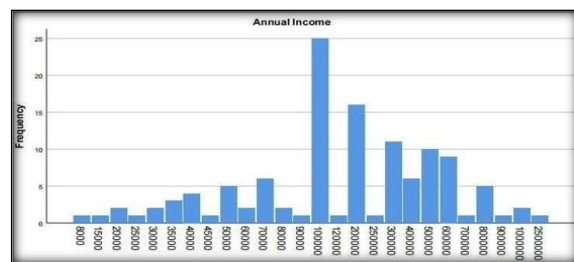


Figure 3: Distribution of non-vaccinated participants according to average annual income.

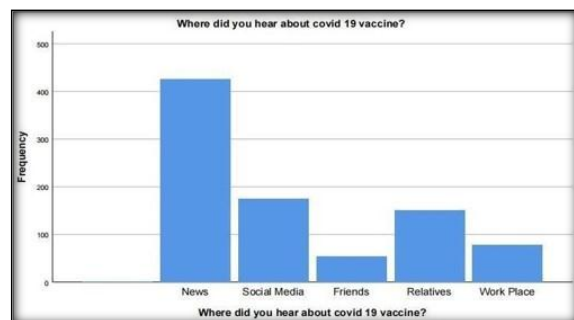


Figure 4: Sources of information regarding COVID-19 vaccination among study participants.

Response toward vaccine:

Out of the total population studied, 883

Out of the total 820 vaccinated individuals 74.5% preferred free vaccine and did not want to pay for it. If vaccines made available for children, then 470 individuals (42.7%) were comfortable with the idea of providing such protection. The result also showed that 91% individuals had their family members vaccinated to protect them from disease and to prevent spread of COVID 19.

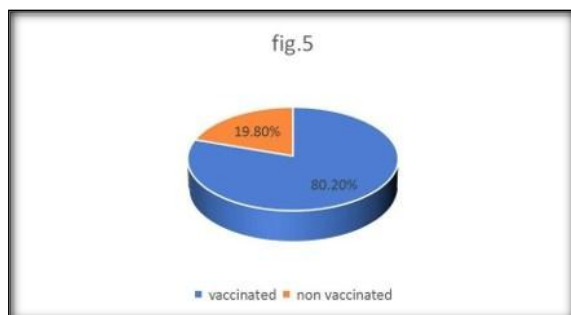


Figure 5: COVID-19 vaccination status among the study population.

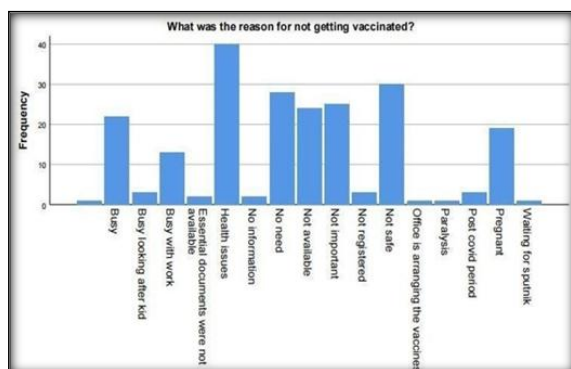


Figure 6: Reasons for non-vaccination among unvaccinated participants.

DISCUSSION

Majority of the individuals were aware of the severity of the COVID and the importance of vaccination, as a result most of them had shown acceptance to the vaccine to prevent spread of disease and to protect themselves. Public have few concern due to development of side effects like fever, headache, myalgia, etc. vaccines are surely more beneficial than not. Easy accessibility played a very big role in general population saying yes to vaccines.

One study (Brain, Behavior, & Immunity - Health Volume 18, December 2021, 100375) stated that COVID 19 vaccine hesitancy is about 37% translating to roughly more than 200 million adults, which is indeed concerning. Vaccine hesitancy in our research study is still less (9.7%), pointing towards late acceptance of vaccine as above study was conducted earlier during pandemic period. Reason for vaccine hesitancy as stated by a study (Dror et al., 2020; Sallam, 2021; Khubchandani and Macias, 2021; SolísArce et al., 2021; Khubchandani et al., 2021a) like concern about side effects and not

perceiving COVID as a serious disease, go hand in hand with our study.

Awareness campaigns and communication about COVID-19 vaccination should be evidence-based, regionally focused, multipronged, and should be undertaken by policymakers, healthcare professionals, and role models. Research on the most effective means to communicate about COVID-19 vaccination benefits, alleviating concerns, dispelling myths and misinformation, and rumor control should be undertaken, keeping in view the vastly diverse population across India (Sallam, 2021; Shah, 2021; Chowdhury et al., 2021; Umakanthan et al., 2021; Danabal et al., 2021; Khubchandani and Macias, 2021; SolísArce et al., 2021; Khubchandani et al., 2021a, 2021b; Sahay and Mishra, 2021; Dey, 2021; Kumar et al., 2021; Tarfe, 2021).

Limitations of our study were that sample population was restricted to Nashik region. Such studies must be carried out pan India to know about the vaccine hesitancy, acceptance and preference. Ours is one of the first assessment on COVID 19 vaccine preference which state that COVISHIELD is preferred majorly over other vaccines, so greater exploration of this topic is needed.

CONCLUSION

Our study showed that, most of the people of age 18 years and above in Nashik agreed that COVID-19 vaccines are safe and risk-free and that they will be effective in the fight against this pandemic. Even among the non-vaccinated participants, there was a positive response towards vaccine. According to the analysis of the data in the study every 2 people out of 10 are not vaccinated, so it will be crucial for the governmental and other related sectors to ensure that accurate and up-to-date information is shared to the general public, so that even those who are uninterested in or unsure about vaccination will be vaccinated. Moreover, COVID-19 vaccines should be made available promptly and should be distributed equitably.

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