



## A CROSS SECTIONAL STUDY ON CONSUMER PERSPECTIVE OF COVID 19 VACCINE SAFETY AND EFFICACY

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### ABSTRACT

The vaccines employed in the national immunization programme are effective as well as safe. Despite the knowledge that a safe and efficient vaccine is the first and best option for combating the COVID-19 outbreak, vaccine skepticism persists. As part of this investigation, consumer perceptions of COVID 19 vaccination are being evaluated, which will have an impact on the country's immunization rate. A questionnaire was used to conduct an online poll to gauge consumer approval of the COVID-19 vaccine. When determining whether or not to get vaccinated, a variety of variables have been considered by the public. When the responses were analysed, it was discovered that the vast majority of people were suspicious of vaccine safety and effectiveness. This could be a contributing factor for the low immunization rate prevalence. According to the responses, Adverse Effects Following Immunization (ADFI) is manageable and do not pose a health risk. Vaccines are quite inexpensive, but many people are hesitant to obtain them right away. Thus, improving people's belief in the safety and efficacy of vaccines is vital, and the government should spearhead vaccination campaigns.

### INTRODUCTION

Vaccines are biological compounds that stimulate the immune system to respond to a specific antigen obtained from a pathogen that causes an infectious disease. Vaccines are one of the most cost-efficient and effective public health interventions ever produced, saving millions of lives every year. [1] Significant advances have been made in the search for a safe and effective vaccine against the SARS-CoV-2 virus. COVID-19 vaccination for healthcare and frontline workers became offered in India for the first time on January 16, 2021. In India, during the first wave of the outbreak, two vaccines were given emergency authorization. The Oxford–AstraZeneca vaccine (marketed as Covishield by Serum Institute of India) and Covaxin (a vaccine

Developed by Bharat Biotech) were first approved in India. The initial receivers were to be 30 million health workers who worked directly with COVID patients. [2] Vaccination programmes continue to encounter substantial challenges, despite the availability of safe and efficient vaccines. Vaccine apprehension is on the rise not only in India, but around the world. Several factors contribute to widespread misunderstanding about vaccination. According to one poll, 35.8% of Americans refuse to get vaccinated against the flu. [3] Vaccine acceptability is influenced by three factors: confidence, convenience, and complacency.[4] An adverse event post immunization is a medical phenomenon that occurs after vaccination but does not always

have a causal relationship with vaccine use. An unpleasant encounter could be any unfavourable or unexpected sign, abnormal test finding, symptom, or illness.[5] The occurrence of an adverse event after vaccination is one factor that influences vaccine acceptance. The goal of this study was to assess consumer perceptions of COVID 19 immunization in order to make conclusions from the consumer's point of view, and thereby provide insight into how to address the problem.

## MATERIALS AND METHODS

A population-based, exploratory, and anonymous e-survey was undertaken among those over the age of 18. Information was presented at the beginning of the questionnaire, and consent was requested online, among those who completed the Survey online. They were assured that the information gathered would be kept private. The survey included both open-ended and multiple-choice questions with predefined responses, allowing respondents to choose from a variety of alternatives. The questionnaire consisted of twenty-eight questions and was aimed to collect basic information on vaccination as well as popular perceptions about the Covid-19 vaccine. The questions are divided into three categories. The first investigates demographics. The second section focuses on vaccine information, AEFI's post-vaccination observations from vaccine recipients, and vaccine recipients' and non-recipients' safety concerns. The third block's questions are for important health care personnel. The data was collected between April and May of 2021. Being a descriptive survey, the sample size was calculated as per Cochran's formula.[6]

$$N = Z^2 pq / e^2$$

Z = value is obtained from Z table at a given value of precision, 1.96

p = estimated proportion of the population which has the attribute in question; for our heterogeneous group of population, p = 0.056

$$q = 1 - p$$

e = desired level of precision (ie, the margin of error) = 5% = 0.05

The data from the completed surveys was analyzed in a descriptive manner. Gender, age,

whether they had been diagnosed as COVID positive, priority for receiving the vaccination, and willingness to be vaccinated were all collected from vaccinated and nonvaccinated individuals, as well as safety concerns, general information about the vaccine received, AEFIs noticed, length of AEFIs, and general perceptions toward vaccine. The Institutional Research Committee approved the study protocol.

## RESULTS

There were a total of 155 answers. 76.5 percent of respondents have received at least one dose of vaccine. There are 59 percent females and 41% males among the participants. The majority of those who responded are between the ages of 18 and 45. The majority of respondents were between the ages of 18 and 45, and the majority of them were healthcare workers and students. Sixty-six percent of the respondents were vaccinated, while twenty-four percent were not. Covishield was given to 51% of those who had been vaccinated, while Covaxin was given to 49% of those who had been vaccinated. According to the current study, 65.8% of those who received a single dosage were only partially vaccinated, while 34.1% were fully immunized. 85% of health-care personnel were vaccinated, whereas 15% were not. Out of 156 persons who responded to the study, 39.4 percent were found to be recovered COVID patients. 66% percent of those who tested positive were vaccinated, while 34 % were unvaccinated by the time of survey.

### AEFIs as reported by consumers

A total of 53 percent of the 117 members who were vaccinated experienced at least one post-vaccination symptom. Fever (55.8%), lethargy (36.3%), swelling at the injection site (9.7%), discomfort and redness (23.9%), muscle pain (38.1%), headache (39.8%), chills (10.6%), and weakness(0.9%) are some of the symptoms. The majority of these side effects were noticed within the first 24 to 48 hours. AEFIs were begun in 65% of the cases within 24 hours of immunization. Co morbid conditions affect 16% of the vaccinated population, while co morbid conditions affect 84 % of the population.

**Consumer perception towards vaccine safety and efficacy**

Out of 156 responses, 117 are for those who have been vaccinated and 39 are for those who have not been vaccinated. According to the results of the survey, 47.3 percent of unvaccinated respondents were unsure about the covid-19 vaccine, 50 percent believe it is safe and effective, and only 2.7 percent believe it is dangerous. According to the

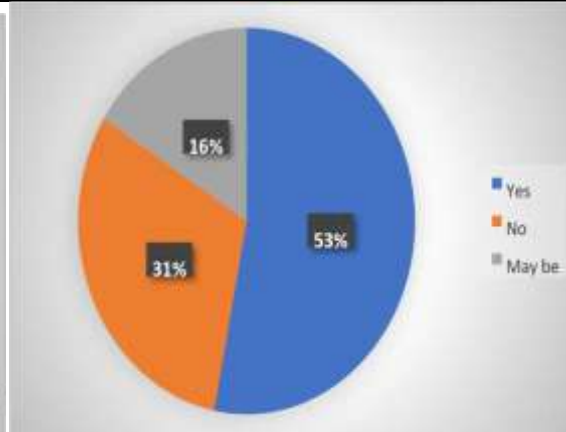
results of our survey, 58 percent of people intend to take the vaccine, 24 percent are unsure about the vaccine, and 18 percent refuse to take the vaccine owing to concerns about their health and allergic reactions to the vaccine. Out of 117 responses, 77 (65.8%) members received a single vaccine dose and 40 (34.1%) members received both vaccine doses.

**Table 1. Demographic details**

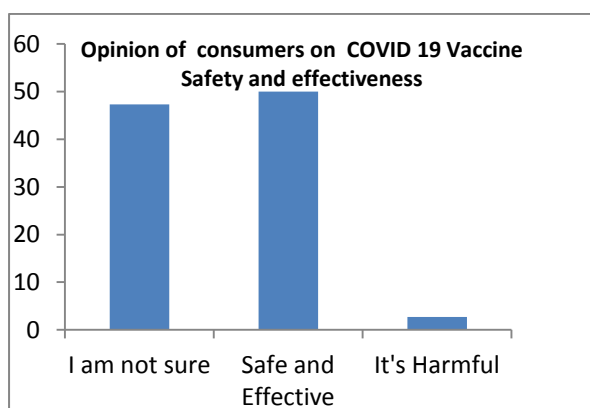
Age	18-45	52.9%
	above 45 years	30.3%
	above 60 years	14.8%
	above 80 years	2%
Gender	Female	59%
	Male	41%
Occupation	Health care	16.7%
	Non Health care	83.3%
Vaccination	Yes	76%
	No	24%
Received Vaccine	Covishield	51%
	Covaxin	49%



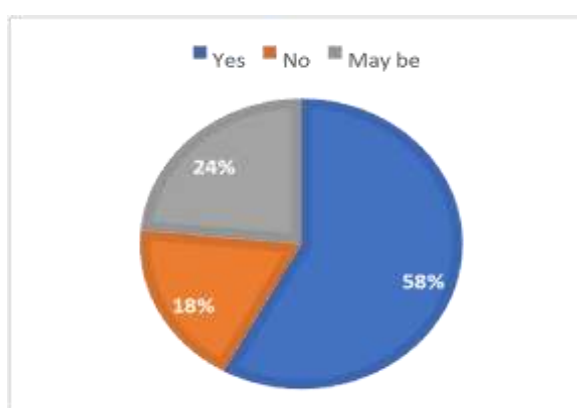
**Fig 1. Duration of AEFI**



**Fig 2. Occurrence of AEFIs**



**Fig 3. Consumers opinion on vaccine safety**



**Fig 4. Responder's readiness to take vaccine**

**Capacity and supply of COVID vaccines as observed by Participated Healthcare workers :** The health care workers participated in the survey had satisfied supply chain at the centres they were working and getting enough doses for supply and the supply was between 150- 200 doses/day.

**DISCUSSION:** Females were more likely than males to be vaccinated in the current survey, but males had better perception scores about Covid-19 vaccinations in general surveys conducted by healthcare departments. Males were more willing to be vaccinated than females in a US survey done among the adult population. It's because of the internet's influence, as well as the fact that males had easier access to information sources than females. [7] According to data from the office of the director of public health and family welfare, 13.8 percent of the population in India has received a single dose of vaccination, while only 3.3 percent has received a full vaccination. According to the results of the current poll, 76.5 percent had been partially vaccinated and 34.1 percent had been fully vaccinated. Because the poll was done in an urban, persons in the city may be more aware about immunization than those in rural areas.[8] The main grounds for vaccination rejection were "vaccine safety and religious concerns.[9] The majority of healthcare personnel are immunized, according to the current study. It was consistent with earlier studies in that healthcare personnel who were directly involved in the treatment of COVID patients were willing to get vaccinated, whereas parents, nurses, and other healthcare workers who were not directly involved were not. Medical students who refused to be vaccinated were concerned about adverse effects after immunization.[10]

SARS-CoV2 vaccines cause side effects in about one-quarter to one-third of those who get them. Fever, headaches, body aches, and exhaustion are some of the symptoms. These signs and symptoms usually disappear after a few days of reclining, resting, and drinking plenty of water. It is acceptable to take pain relievers such as Paracetamol up to three times a day for these side effects. Anyone suffering from significant cardiovascular illnesses,

diabetes, hypertension, cancer, AIDS, or persons with disabilities has been added in the list of co morbidities that can render a person in the age group of 45 to 59 eligible for vaccination.[11]

A sizable portion of the Indian population still believes the pandemic is exaggerated. Citizens will reject the vaccine as a result of this mindset. Other concerns shared by Indian citizens included skepticism about the vaccine's nationality, skepticism about vaccine trials, skepticism about health after taking the vaccine, side effects to the vaccine, distrust of pharmaceutical companies, doubts about data provided by vaccine companies, the prevalence of numerous vaccines and concerns over choosing the safest, and the rush in providing vaccine.[12] Even throughout the Second Wave, this pattern persisted. Respondents who have not been vaccinated are mostly concerned about the safety and efficacy of the Covid 19 vaccine. This conclusion was consistent with prior research on COVID-19 vaccine safety concerns across a variety of populations, including college students, health care workers, and the general public. [11,13,14] As a result, vaccine drives and awareness campaigns should be launched to speed up the vaccine programme, which is currently going at a slow rate, particularly in nations like India. Governments bear duty for increasing public confidence in Covid 19 immunization. Using well-developed pharmacovigilance systems to identify problems or adverse reactions not found in clinical trials, ongoing surveillance for the possible appearance of harmful effects is also necessary to maintain public trust. With the rollout of COVID-19 vaccines, stringent regulatory authorities (e.g. FDA, EMA) are expanding their vaccine monitoring procedures and publishing regular safety updates. Considerable efforts should be taken by the governments, pharma companies, and NGOs in educating the general public about the vaccination program and the necessity of implementing it to return to normal life. Special emphasis should be given to ensure all the hoaxes and insecurities of the general public regarding the COVID-19 vaccines are addressed so that it will motivate

and encourage the general public to take vaccines.

**LIMITATIONS OF STUDY:**

However, the survey's shortcoming is that we were unable to get sufficient responses from important health care personnel. The study may not reflect the entire situation of the Indian population because it was conducted in a city. The most serious issue was that it was taken during the Second Phase's lockdown time, which could make it difficult for the public to participate actively in the immunisation programme voluntarily.

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Resources: I.Sanjana & K.V.K.Bhuvaneshwari

**Conflicts of interest:** The authors declare No Conflict of Interest

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