



# A survey on effects of COVID-19 vaccination on local population of Bhopal, MP, India

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## Article Info

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## ABSTRACT

*Coronaviruses are a group of viruses that cause disease in both animals and humans. The new strain of coronavirus known as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) causes COVID-19 which has led to a worldwide pandemic. SARS-CoV-2 is a novel strain of coronavirus that has not been previously identified in humans. Coronavirus outbreak began in Wuhan, China. On 31 December 2019, the WHO China Country Office was informed of cases of pneumonia of unknown etiology detected in Wuhan City, Hubei Province of China, a few months later it was declared a pandemic by WHO. COVID-19 is commonly transmitted via respiratory droplets formed while talking, coughing, and sneezing in an infected patient. The first cases of COVID-19 in India were reported in Kerala. After detecting initial cases, a few weeks later, on 16 January 2021, India began its vaccination drive against the virus, which has caused the COVID-19 pandemic. Initially, the prime concern was to vaccinate healthcare workers and frontline workers, and citizens belonging to the 45-60 age group but now 18 and older everyone is eligible for vaccination. This study was conducted online by preparing a survey containing 31 questions to get personalized opinions on COVID-19 vaccination, its effects, and whether people are interested in getting vaccinated or not.*

**KEY WORDS-** COVID-19, Vaccination, Pandemic, Survey

## 1. INTRODUCTION

It started as an epidemic in China, COVID-19 was declared a pandemic by the WHO on 11 March 2020. It has affected around 220 countries and territories, wrecking the physical health and mental health of countless individuals. The COVID-19 pandemic has caused a terrible capital loss. The COVID-19 pandemic has sunk the global economy into its deepest recession in eight decades, but more unfortunately it has caused the untimely end of innocent lives, shattering innumerable families. The most commonly observed symptoms of COVID-19 are fever, cough, fatigue, and shortness of breath. In addition to the symptoms above, some people

may experience other symptoms, although these tend to be less common: body aches and pain, headaches, runny or stuffy nose, sore throat, and nausea or diarrhoea<sup>[1]</sup>. Most often the symptoms are visible on the 5th–6th-day after the initial exposure but sometimes it can take up to 14 days. Most people develop mild symptoms and recover without hospitalization but elderly individuals and people with existing medical conditions are at high risk of getting severe COVID-19 symptoms and requiring hospitalization. Recently, in India alarming rise in COVID-19 cases generated a second wave. This infection rise may affect the vaccination program in India, and it can also affect vaccine production. The pandemic has put

our health systems under immense pressure. India recorded as high as 4,00,000 daily at the peak of its second wave. This has been an unprecedented time for the health sector and particularly for those dealing with this infectious disease. After the world was hit by the pandemic all focus of scientists and researchers shifted on making safe and effective vaccines to contain the pandemic as there are no certain medical treatments to cure COVID-19. For now, vaccination seems to be the only long-term solution to contain the pandemic. Without a vaccine against SARS-CoV-2 the coronavirus that causes COVID-19 will always be a risk that new outbreaks of the disease will emerge<sup>[2]</sup>.

COVID-19 vaccines are now available and completely safe to use, fully vaccinated people can have immunity against the virus for six months<sup>[3]</sup>. Vaccination will also prevent from getting severe COVID symptoms. Fully vaccinated people will either be asymptomatic or will have mild symptoms. As of 30 November 2021, India has reportedly successfully administered 1.24 billion doses of both first and second shots.

Vaccines will prevent you from the virus but may cause side effects in some people. Some people may experience no side effects at all. There have been reports of severe allergic reactions by Moderna COVID-19 vaccine including, anaphylaxis – a severe life-threatening allergic reaction.

## 2. MATERIALS AND METHODS

This study was conducted by preparing a questionnaire that was distributed among the general population of Bhopal, MP, India through social networking platforms in June 2021 and the data was collected till 31<sup>st</sup> July 2021. The questionnaire is divided into two sections, the first section contains only single response questions and the second section contains single response questions, multiple response questions, open-ended questions, and ratio scale questions. The questionnaire collects data on vaccination status, side effects, and views on vaccine efficiency. The questionnaire was uploaded to online survey administration software, Google Forms. The collected data were analysed and presented using statistics including frequencies and percentages.

## 3. RESULTS

A total of 171 participants filled the survey form, in which more than half of the participants (62%) belong to the age group of 18-25, of which majority of the participants (57.3%) were students while the working participants were (34.5%). In addition to that female participants were (55%) and male participants were (45%).

### Vaccination and After-Effects

Out of 171 participants a majority (83.6%) people were vaccinated, (43.3%) participants felt slightly unwell in the initial days after getting the vaccine, (14%) participants felt very sick, whereas (24.6%) participants felt completely fine. The after-effects of vaccination seen in the participants include pain and stiffness at the site of injection (49.7%), fever (39.8%), headache (26.3%), muscle ache (25.7%), fatigue (18.1%), etc.

### Cost and Place

A large number of the participants (76.6%) got their vaccination shots at zero cost. The majority of the participants got their vaccination shot at Government hospitals (44.4%), Private hospitals (12.3%), and Municipalities (8.8%) respectively.

### Preferred and Utilized

The majority of the participants found Covishield (53.2%) as the safest vaccine followed by Covaxin (24%) and Sputnik V (15.2%). The most administered vaccines were Covishield (63.2%) and Covaxin (21.1%).

### Second shot of Vaccine

The vast majority of the participants (61.4%) were yet to get their second shot of a vaccine. A few participants (23.9%) got their second shot of a vaccine, in which (21.6%) got their vaccine on time and (2.3%) faced some delay for their vaccination shot.

### Concern for the side effects of vaccine

A few people among participants (33.3%) were concerned about the side effects of vaccines. The majority of the participants (66.7%) felt that vaccines were completely safe to use.

### Vaccine- A temporary solution?

Vaccine reluctance and refusal are not new, but the viral spread of doubt and questioning today travels at unprecedented speed and reach. Among the participants (39.8%) believed that vaccination is a temporary solution to contain the pandemic, whereas (24.6%) participants

believed that vaccination is the permanent solution for the covid-19 pandemic.

#### **Ayurveda or Vaccine**

The global community is facing pandemic COVID-19, which does not have a cure till date and thus needs to be contained in any manner including using Ayurveda way of prevention by boosting immunity, cleansing the home, etc. During the pandemic, people were partaking home remedies like 'Kaadha' to boost their immunity against the virus, still majority of the participants (55.6%) prefers vaccine over Ayurveda/Traditional remedies for immunity against the virus, whereas (44.4%) prefers Ayurveda/Traditional remedies over vaccine for immunity against the virus.

#### **Health problems in the future**

There is a general concern among people that vaccines can cause health problems in the future. The majority of the participants (57.9%) believed that vaccines will not cause any health problems in the future, a small fraction of the participants (42.1%) felt that vaccines can cause health problems in the future.

#### **New Remedy/Vaccine**

Among the participants, 51.5% were still waiting for a new remedy against the virus, the remaining 48.5% were happy with the current remedies available.

### **4. DISCUSSION**

Since the beginning of the pandemic, the main concern was to make safe and effective vaccines to immunize people against the virus and inoculate the vaccines as fast as they could<sup>[5]</sup>. Vaccines should be widely available and affordable. Vaccines are now available but are expensive for the common masses. Vaccines should fall under the budget so common people can get a vaccine without worrying about the cost<sup>[6]</sup>. This extreme vaccine inequity and injustice is not just a moral failure, as called out by World Health Organization (WHO) Director Tedros Ghebreyesus; it is also an economic and human rights catastrophe, and self-defeating. To solve this issue, the government of India took a good initiative by providing vaccines free of cost at government hospitals. On January 16, 2021, India launched the "World's largest Vaccination Drive" with two vaccine candidates: Covishield, the Indian version of the Oxford AstraZeneca vaccine, produced by the Serum Institute of India, and Covaxin, India's homegrown inactivated COVID-19 vaccine, produced by the Pharma firm Bharat Biotech in

collaboration with the Indian Council of Medical Research (ICMR) and the National Institute of Virology (NIV). The majority of the people are now getting vaccines for free, thus it fulfilled its purpose and is encouraging more people to get a vaccine<sup>[7]</sup>.

Vaccine hesitancy is one of the biggest challenges in fighting against COVID-19. In January 2019, the World Health Organization (WHO) listed "vaccine hesitancy" as a top ten global health threat. In India, vaccination drive led to some questions regarding the effectiveness of the vaccine and the side effects that vaccine can cause. These questions got some people convinced to not get a vaccine, but on the bright side majority of people are getting vaccines and do not believe the negative tattle. Most people are also interested in getting the second dose of vaccine<sup>[8]</sup>.

India is known for its traditional medicinal systems. There are several medicinal plants that have a significant role in immunity-boosting such as Ashwagandha, Tulsi, Shatavari, Giloy, Aloe vera, Amla, Neem, etc, and during the pandemic, people were inclined towards home remedies or Ayurveda methods for immunity against the virus. As per the recommendations available in Ayurveda, the management of these infectious diseases can be either preventive or curative, but that doesn't make people deprecate the value of vaccines. Our study shows that the majority of people prefer vaccines over home remedies for immunity to fight against the virus.

Vaccines plays a vital role in providing immunity against the virus but it is also very known that it don't provide long-lasting immunity. According to the study conducted, the majority of people doesn't believe that vaccine can provide long-lasting immunity and hence long for a permanent cure.

### **5. CONCLUSION**

The survey conducted on Bhopal, MP, India population on effects of COVID-19 vaccination showed that the people are quite happy with the vaccination drives and they trust the vaccines which are commonly available like Covishield and Covaxin. They felt that the vaccines weresafe and the majority believed that this would not cause any hazardous health concerns in the future. Bhopal population also relies quite on Ayurveda or home remedies along with their beliefs in vaccines.

## Conflict of interest statement

Authors declare that they do not have any conflict of interest.

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