

## Public Knowledge, Attitudes, Practices and Assessment of Side Effects and Effectiveness of Covid Vaccine: An Online Cross Sectional Survey in Gujarat.

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### ABSTRACT

**Background:** Recently, billion of people are suffering from COVID-19 pandemic era since last one year. Safe and effective vaccines will be a game changer: but for the predictable future we must carry on wearing masks, physically and social distancing and avoiding crowds. **Aim:** Aim and objective of research is to survey the effectiveness and side effects of covid vaccine and also what to be a public knowledge, attitudes and practices towards the covid vaccine in corona pandemic era. **Methods:** A cross sectional survey was conducted within the duration of March 2021 to April 2021 by using qualitative research approach and surveying public knowledge, attitudes, practices and assessment of side effects and effectiveness of covid vaccine. Among the 1000 people were included study from Gujarat, the respondents (n=500) showed interest in the study. **Results and Discussion:** Among the participants 79.1 % (n=396) people shows effectiveness of covid vaccine, 95.3% (n=478) people believe that follow the precautions after vaccination like physical distancing, to avoid crowd and mask and 86% people shows vaccine is more effective than medications. The 62.8% (n=314) people believe that vaccine may provides long term protections and 93% (n=465) people says that to take vaccine when it is available and no any major side effects of vaccine. **Conclusion:** The vaccination in Gujarat against corona virus we found that maximum people are taking vaccine those who have not any major infections of covid 19 prior vaccination and no any side effects found in comorbid patients. People believe that, the covid vaccine is more effective than medications and no any major side effects are found in covid vaccinated people.

**Key words:** Vaccine, Corona, Side effects, Effectiveness, Gujarat

**Key message:** To survey the public knowledge, attitudes, practices and assessment of side effects and effectiveness of Covid vaccine in Gujarat is helpful to stable the mindset of people to take the covid vaccine and create the strong positive atmosphere against the covid vaccine

### I. INTRODUCTION

The world is suffering from COVID-19 pandemic era since last one year. As WHO and its team work together on the response tracking the pandemic.<sup>1</sup> The World Health Organization advising on distributing essential medical supplies to those in need, significant interventions and they are racing to expand and organize safe and effective vaccines.<sup>2</sup> Vaccines save millions of lives each year. Vaccines give the body's natural defenses via to recognize and fight off the microorganism like viruses and bacteria they target and provide the immune system in our body.<sup>3</sup> If the body is later on showing to those disease caused by germs after vaccination then the body is directly ready to wipe out them and preventing from illness.<sup>4</sup>

So, Vaccines are a best new therapy against COVID-19 and it is vastly encouraging to observe most of vaccines proving doing well and going into development and progress.<sup>5</sup> Working as rapidly as they can, scientists from among the world are collaborating and innovating to carry the tests, treatments and vaccines that will cooperatively save lives and end this COVID pandemic.<sup>6</sup>

In country there are seven different vaccines among three platforms have been rolled out on 18 February 2021. In all countries are the highest priorities for vaccination in vulnerable populations.

The goal of WHO is to end the acute phase of the COVID-19 pandemic by:

- Quickly develop the safe and effective vaccines against COVID-19;
- supporting the building of manufacturing facilities; and
- Together working with governments and manufacturers to make sure fair and equitable distribution of the vaccines for all countries.

There are four types of vaccines under in pipeline for clinical trials: whole virus, protein subunit, viral vector and nucleic acid (RNA and DNA). Few of them try to smuggle the antigen within the body, others utilize the body's own cells to build the viral antigen.

The drug regulator has also given the green signal to the Oxford-AstraZeneca vaccine, known as Covishield in India, to be used.<sup>7</sup>

The domestic government-backed vaccine, known as Covaxin; has an 81% efficacy rate.

In Gujarat, there are two types of vaccine is launched; one is covaxin and another is covishield.

- Covaxin is killed vaccine because it is made up of killed coronaviruses and making it harmless and safe to be injected into the body. When injected the vaccine, immune cells can still identify the dead virus, enhancing the immune system to make antibodies against the pandemic COVID virus. The two doses of covaxin are given four weeks at a distance. The vaccine can be stored at freeze temperature like 2°C to 8°C.

- The covishield vaccine is made from a weakened state of a common cold virus (known as an adenovirus) from chimpanzees. It has been adapted to appear more like coronavirus and even though it cannot cause infection. The vaccine is injected in two doses given between four and twelve weeks separately. The vaccine stored at temperatures between 2°C to 8°C.<sup>8</sup>

But there was not sufficient clear data to approve the half-dose or full-dose idea. However, unpublished data give the information about a longer gap between the first and second doses increases the overall effectiveness of the vaccine - in a sub-group given the vaccine this way it was found to be 70% effective after the first dose.<sup>9</sup>

Safe and effective vaccines will be a game changer: but for the predictable future we must carry on wearing masks, physically and social distancing and avoiding crowds. Being vaccinated does not mean that we can throw caution to the wind and put ourselves and others at risk, especially because it is still not clear the extent to which the vaccines can protect not only against disease but also against infection and transmission.<sup>10</sup>

So, main aim and objective of research is to survey the effectiveness and side effects of covid vaccine and also what to be a public knowledge, attitudes and practices towards the covid vaccine in corona pandemic era.

## **II. METHODS**

Recent mental health studies on covid vaccine were cross sectional.<sup>11</sup> A cross sectional survey was conducted within the duration of March 2021 to April 2021. The participants were the people of all over Gujarat. For digital and speedy collection of the information and questionnaire was prepared with the help of Google form.

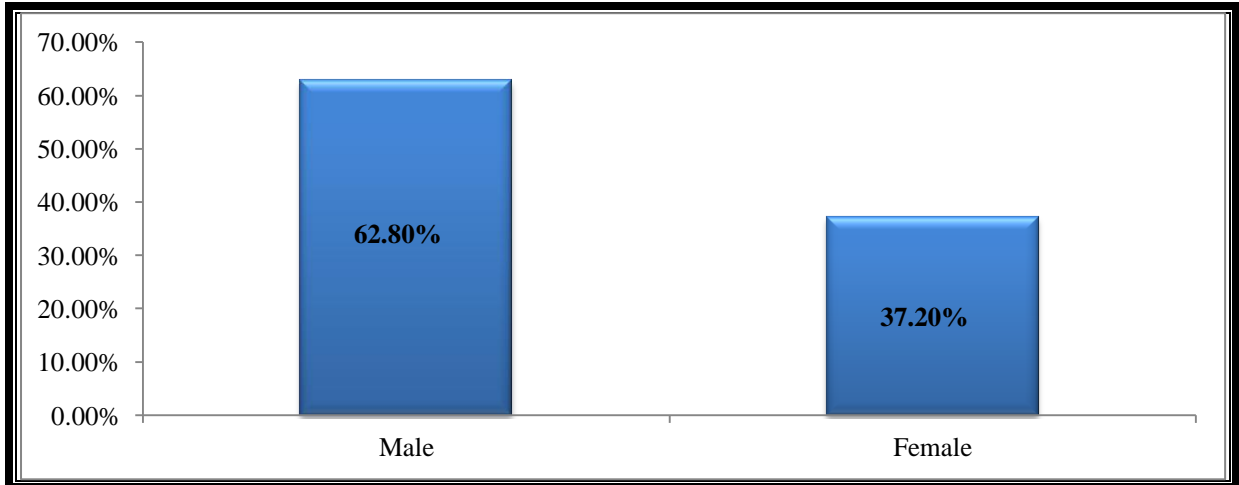
The questionnaire included basic information and strategic open and close ended questions regarding types of vaccine, How much effective, what are the side effects for it on mind set of different categories of people from all over Gujarat. After explaining the purpose of the study the respondents were asked to participate voluntarily. Confidentiality was also assured for all the information provided. A total 1000 people were included in the study and send them the questionnaire through what's up or Facebook messenger or mail. Among them n= 500 participants were interested to join the survey and they gave inputs.

## **III. DATA COLLECTION AND DATA ANALYSIS**

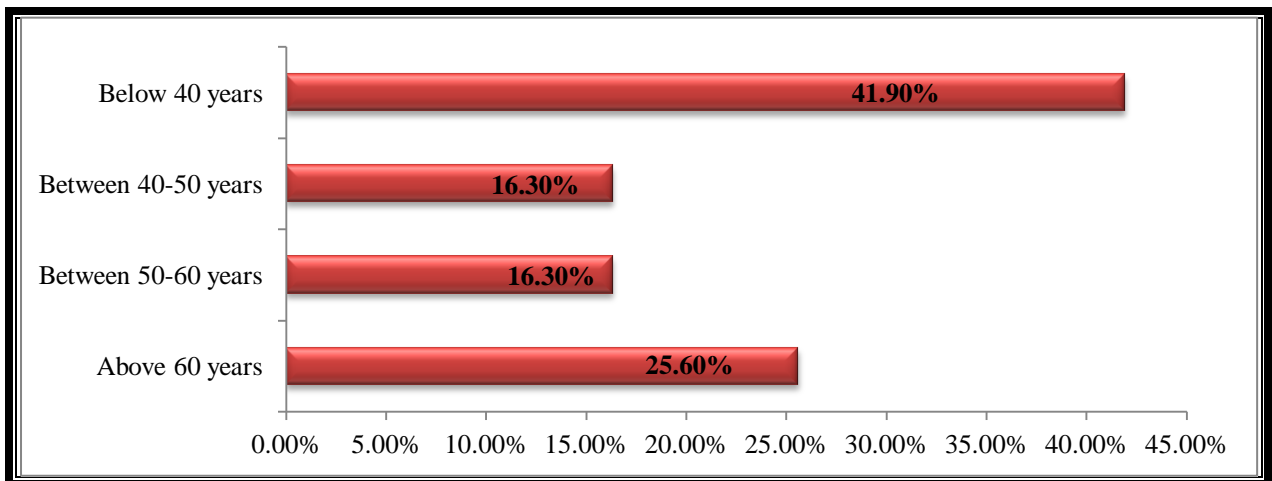
The total population comprised of the people (n=500) in all over Gujarat. Among the 1000 people were included in study from Gujarat, the people (n=500) showed interest in the study and majority of the people responded through Google form link via what's app. The data were collected and analyzed with the descriptive statics on Google form responses.

## **IV. RESULT**

Among the participants responded to the survey as shown in the Graph 1, the demographic data of gender are: Male 62.8% (n=314) and Female 37.2% (n=186).



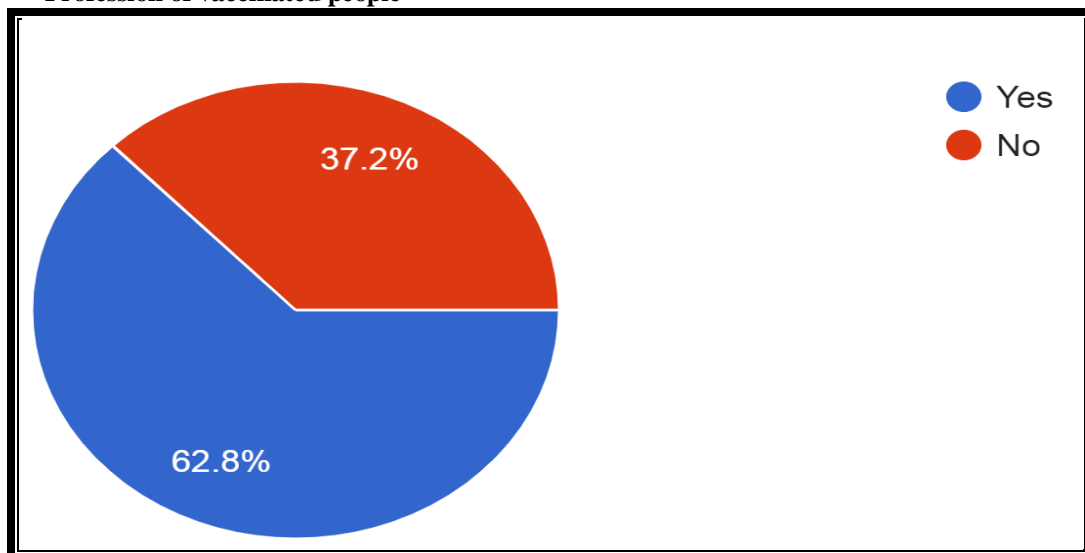
**Graph 1. Gender of the People**



**Graph 2. Age of People**

As per Graph 2, among the participants people 25.6% (n=128) above 60 years, 16.3% (n=81) between 50-60 years, 16.3% (n=81) between 40-50 years and 41.9% (n=210) below 40 years.

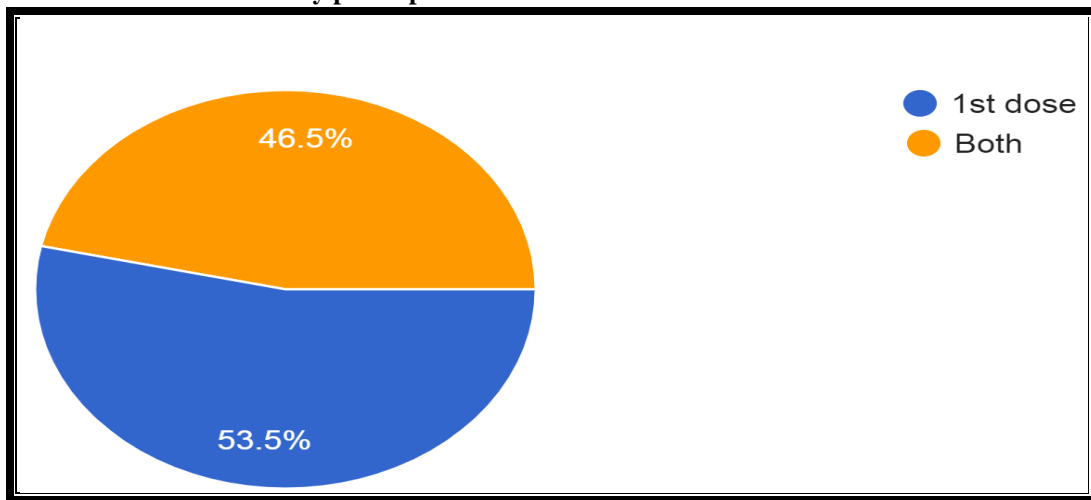
➤ **Profession of vaccinated people**



**Graph 3. Profession of the participants**

As per graph 3, among the 500 participants 62.8% (n=314) participants are health worker by profession and 37.2% (n=186) participants are non health worker.

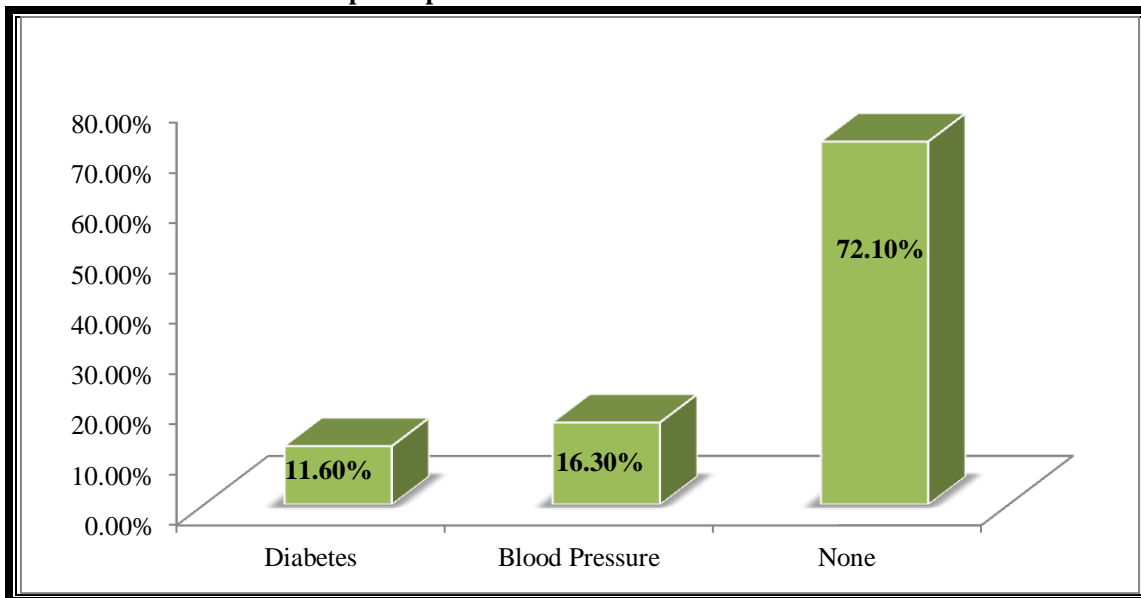
➤ **Dose of vaccine taken by participants**



**Graph 4. Dose of Vaccination**

As per Graph 4, among the participants 46.5% (n=232) people are vaccinated 1st and 2<sup>nd</sup> dose of vaccine and 53.5% (n=268) participants are vaccinated only 1<sup>st</sup> dose of vaccine.

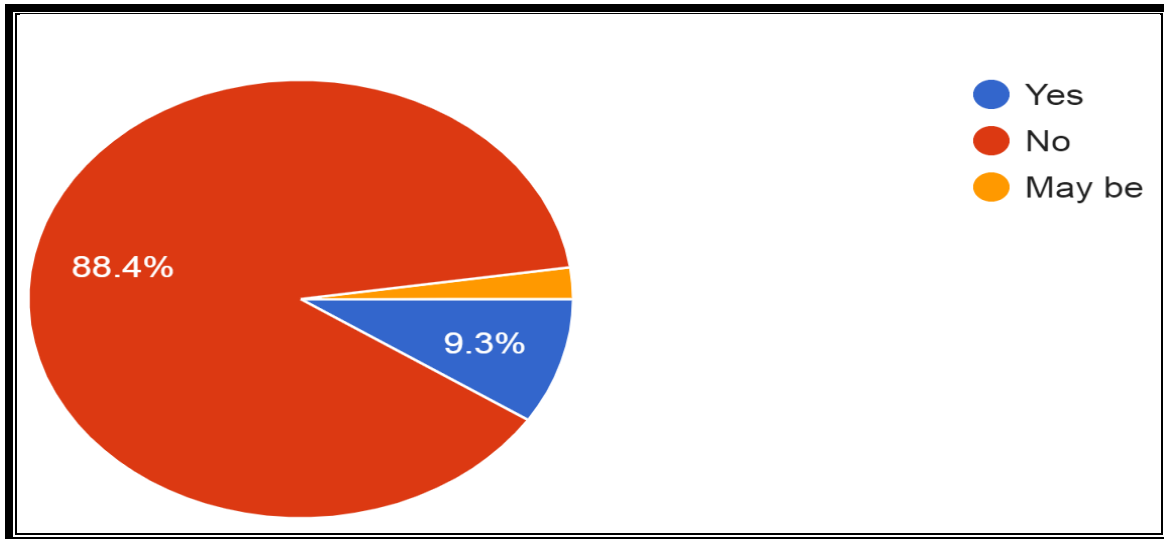
➤ **Comorbid conditions of participants**



**Graph 5. Disease or comorbid conditions of participants**

As per Graph 5, among the 500 participants 72.1% (n=360) are not suffering from any disease, 16.3% (n=82) are suffering from blood pressure and 11.6% (n=58) are diabetes.

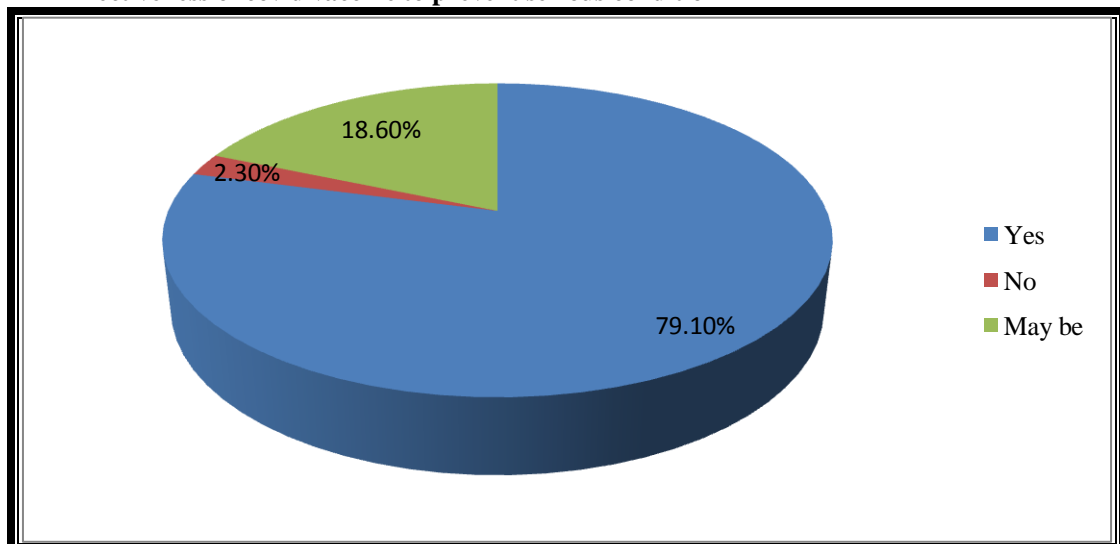
➤ **Covid infection before vaccination**



**Graph 6. Infection of covid 19 prior vaccination**

As per graph 6, among the participants 88.4% (n=442) are not any infection of covid 19 prior vaccination and only 9.3% (n=46) are infected by covid 19 prior vaccination. Participants (n=12) believe that may be infected by covid 19 prior vaccination.

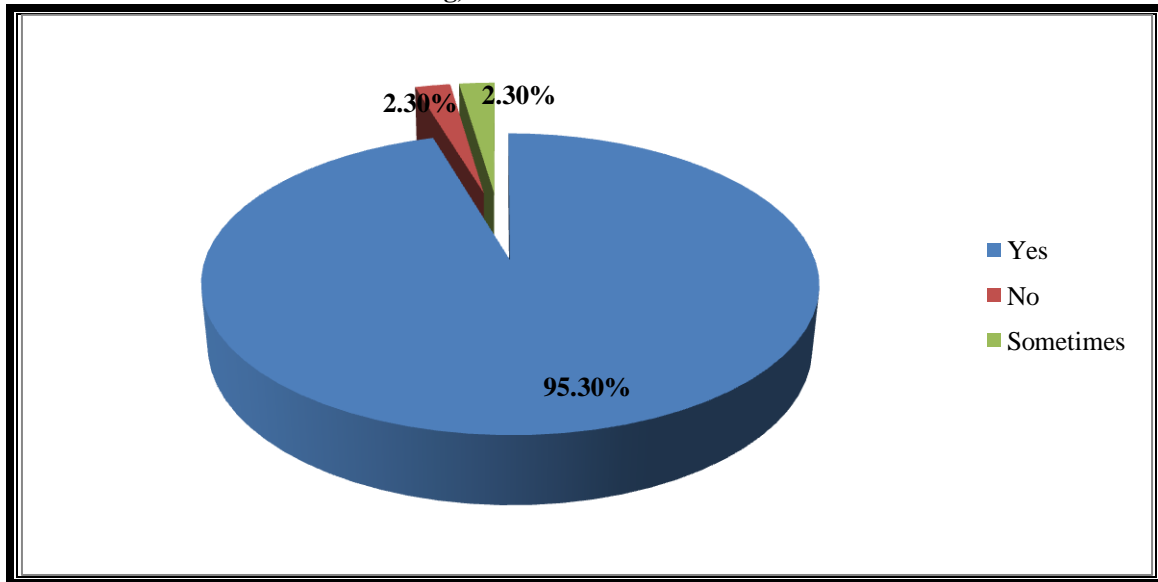
➤ **Effectiveness of covid vaccine to prevent serious condition**



**Graph 7. Effectiveness of covid vaccine**

As per Graph 7, among the 500 participants 79.1% (n=396) participants say that covid vaccine is effective to prevent serious condition of covid infection. 18.6% (n=93) people say that covid vaccine may be effective and only 2.3% (n=11) participants are believe that covid vaccine is not effective.

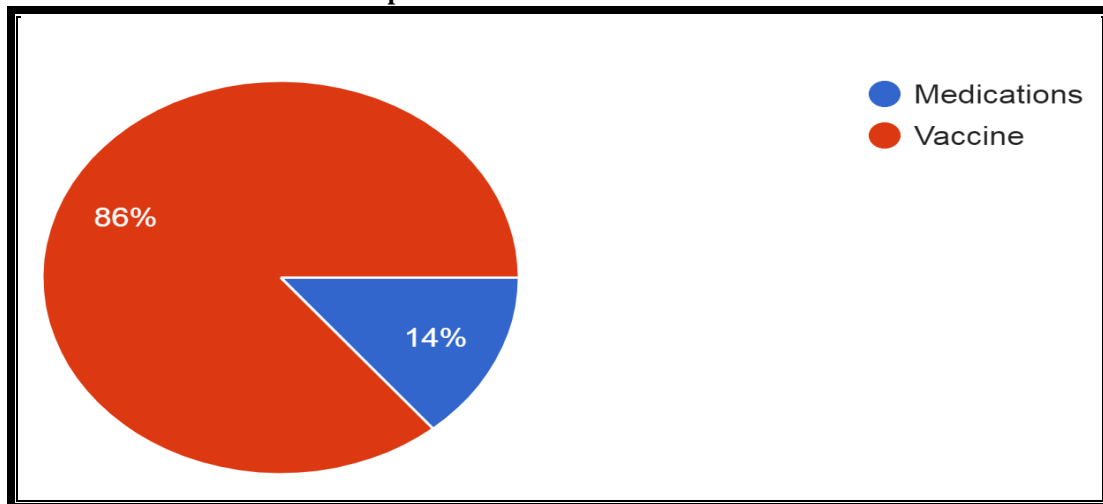
➤ **Precautions like social distancing, mask and to avoid crowd after vaccination**



**Graph 8. Follow the Precautions after vaccination**

As per graph 8, among the participants 95.3% (n=478) people follow the precautions like social distancing, to avoid crowd and mask and 2.3% (n=11) participants follow the sometimes and 2.3% (n=11) participants do not follow the precautions after vaccinations.

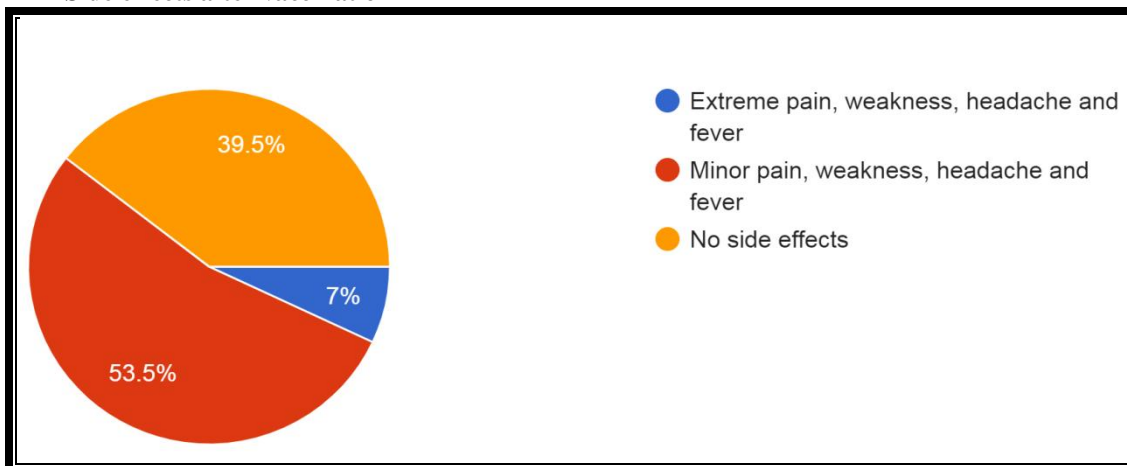
➤ **Vaccines or medications as a precaution of serious condition of covid infection**



**Graph 9. Vaccines or medications**

As per graph 9, among the participants 86% (n=430) people are believe in vaccination and 14% (n=70) participants are believe in medications against corona virus.

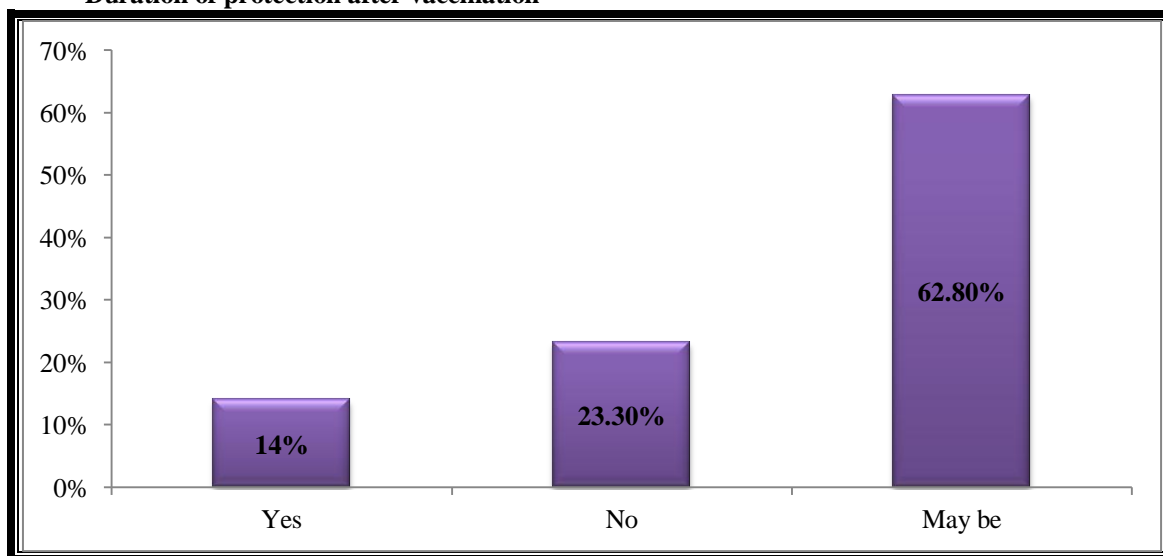
➤ **Side effects after vaccination**



**Graph 10. Symptoms after vaccinations**

As per graph 10, among the 500 participants 53.5% (n=268) have minor pain, weakness, headache and fever and 7% (n=35) have extreme pain weakness, headache and fever and 39.5% (n=197) have no side effects of vaccine.

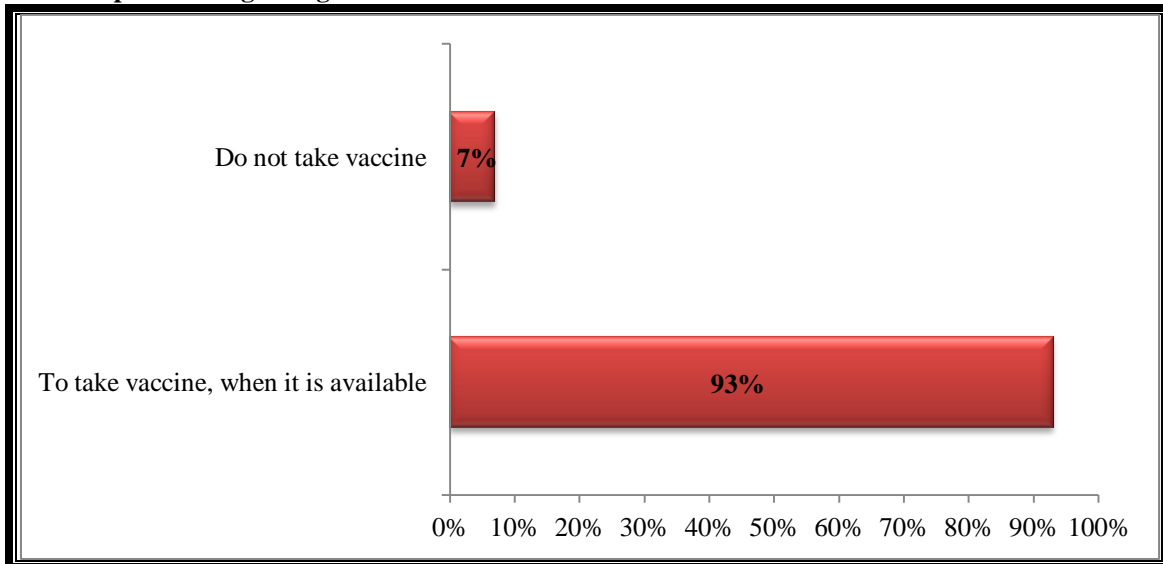
➤ **Duration of protection after vaccination**



**Graph 11. Long term protection of vaccine**

As per graph 11, among the participants 62.8 % (n=314) people believe that, vaccine may be provides long term protection, 14% (n=70) participants say that vaccine provide long term protection and 23.3% (n=116) participants believe that, vaccine do not provide long term protections.

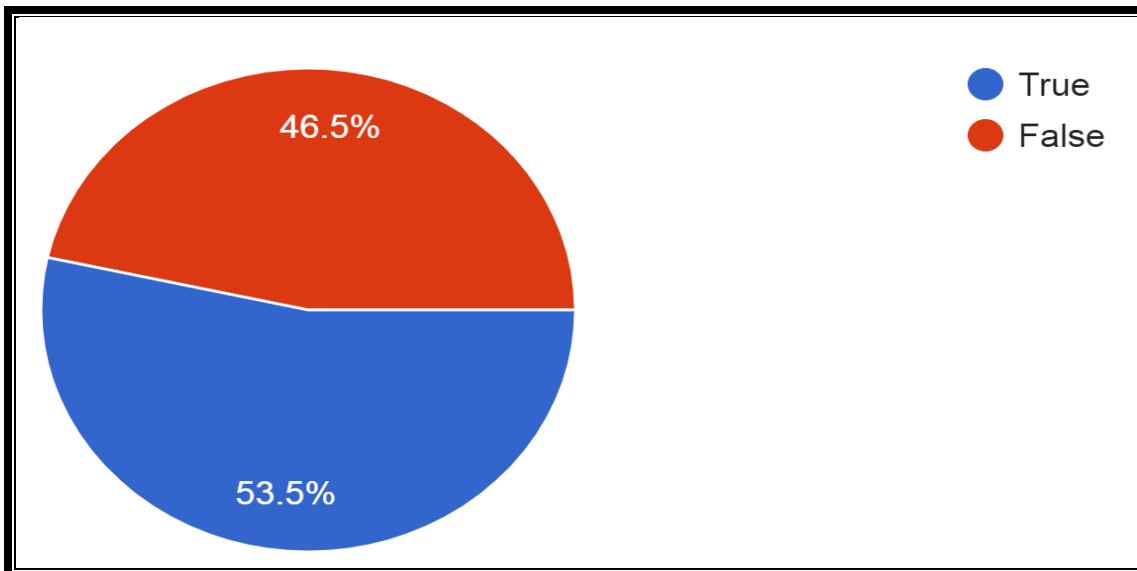
➤ **Experience regarding vaccination**



**Graph 12. Experience regarding vaccination**

As per graph 12, 93% (n=465) participants suggested that to take vaccine when it is available and 7% (n=35) participants do not suggested that to take vaccine.

➤ **Public attitudes towards vaccine**

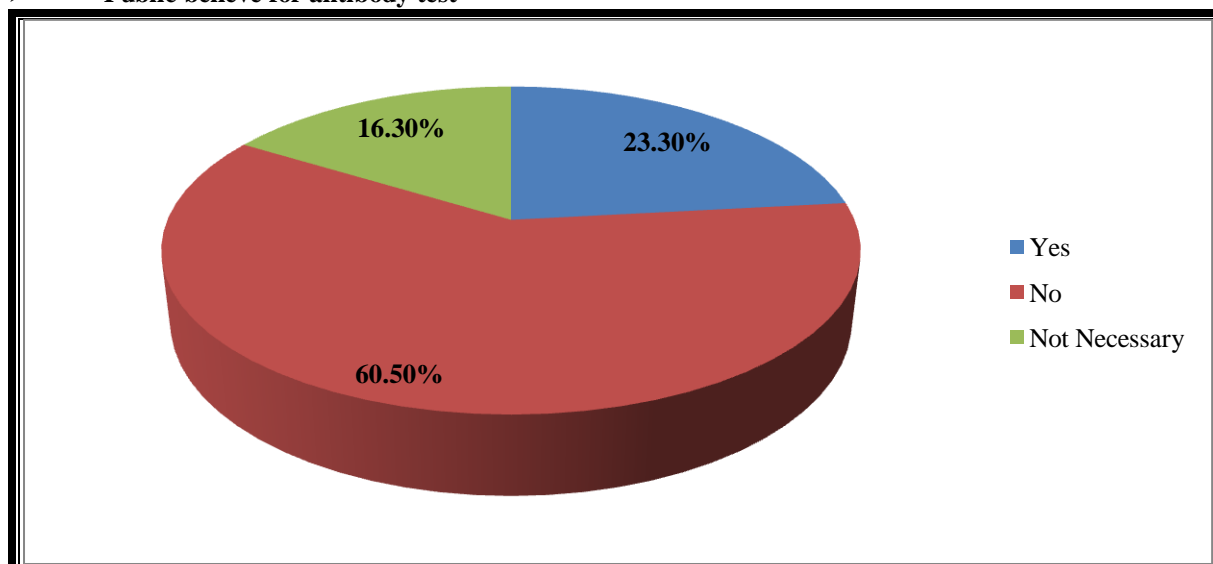


**Graph 13. Vaccinated against coronavirus**

As per graph 13, 53.5% (n=268) participants says that, every person need not be vaccinated and 46.5% (n=232) participants says that, every person need to be vaccinated against corona virus.



➤ **Public believe for antibody test**



**Graph 14. Antibody test after 2<sup>nd</sup> dose of vaccine**

As per graph 14, only 23.3% (n=116) participants go for antibody test and 60.5% (n=302) participants do not go for antibody test and 16.3% (n=82) believe that, antibody test do not necessary.

## V. DISCUSSION

Our cross sectional study describes that the public knowledge, attitudes, Practices and assessment of side effects and effectiveness of Covid vaccine in the general population in Gujarat, India. We believe that decisive and rapid actions were taken by the Indian government for vaccinations against corona virus because to reducing further spread of corona virus and immunity develop against corona virus in people as well as quickly recover the covid patients.

Our studies highlights that public knowledge, attitudes and practices towards corona vaccine like type and dose of vaccine, profession and age of participants, comorbid conditions of participants, infection of covid 19 prior vaccination, participants follow the precautions after vaccination and what you prefer vaccines or medications are common and more pronounced. Furthermore, aim of our studies is public attitudes about side effects and effectiveness of covid vaccine like, symptoms after vaccinations, Long term protection of vaccine, and antibody test after 2<sup>nd</sup> dose of vaccine are common and more pronounced. Some stable results are also found during our survey that people are taking covishield vaccine, most of these are health worker and below 40 yrs old, most of vaccinated people are not suffering from any comorbid conditions and most of participants are not infected of covid 19 prior vaccinations.

People awareness regarding the vaccination, we found that 93% (n=465) people says that to take a vaccine when it is available and 23.3% (n=116) people go for antibody test after 2<sup>nd</sup> dose of vaccination. Most of people say that some minor side effects like minor fever, pain and weakness are produces after vaccination but these side effects indicating the effectiveness of vaccine.

From our survey some participants are already suffering from comorbid conditions like hypertension, diabetes, cancer etc. yet to be vaccinated and also found that no any side effects in comorbid patients. So, comorbid patients also suggest that to take a vaccine when it is available.

Public knowledge and attitudes about vaccination, 95.3% (n=478) people follow the precautions like physical distancing, avoid crowd and mask after vaccination and 86% (n=430) people believe that vaccine are more effective than medicines to cure covid-19 and to provide long term protection against corona virus.

In response to mitigating factors, open ended question, so many suggestions were we found during our survey like to take vaccine in comorbid or disease conditions, vaccine is more effective than medicines, vaccine provides long term protection, no any major side effects of vaccine, follow the precautions after vaccination and go for antibody test after fully vaccinated etc.

Our study has some limitations like the anonymity of the questionnaire made this sampling is unavoidable. Another is due to self reporting of the level of vaccination, negative thoughts about vaccination is generated due to minor side effects of vaccination and infections of covid 19 prior vaccination which may not always be aligned with objective assessment. Nevertheless experience regarding vaccination based on personal feeling and self reporting was paramount during the covid-19 pandemic. Further study can be performed in large

group of people in Gujarat. Even the perceptions of categorized people like occupations wise can be included in further study and study can be performed in other geographical area also.

## VI. CONCLUSION

From response of the participants in this survey we found that maximum people are taking vaccine those who have not any major infections of covid 19 prior vaccination and no any major side effects found in comorbid patients. People believe that, the covid vaccine is more effective than medications and no any major side effects are found in covid vaccinated people. So, most of participants are health worker and suggested that to take covid vaccine when it is available and provide long term protection against corona virus.

### Sources of Support

NIL

### Conflicts of interest

There are no Conflicts of interest

## ACKNOWLEDGMENT

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