ISSN: 2581-5989
PubMed - National Library of Medicine - ID: 101738774

International Journal of Dental Science and Innovative Research (IJDSIR)
IJDSIR : Dental Publication Service
Available Online at: www.ijdsir.com
Volume – 5, Issue – 5, October - 2022, Page No. : 134 - 144

To assess the knowledge, attitude and awareness of the general public towards COVID- 19 vaccination as the first step towards preventing and controlling the spread and severity of COVID-19, creating immunity in human body to resist the virus

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Citation of this Article: Krishna Kumar, Aarathi J Prakash, Civy Pullayath, Jubin Thomas, Arshita Nair, "To assess the knowledge, attitude and awareness of the general public towards COVID- 19 vaccination as the first step towards preventing & controlling the spread and severity of COVID-19, creating immunity in human body to resist the virus", IJDSIR- October - 2022, Vol. – 5, Issue - 5, P. No. 134 – 144.

Type of Publication: Original Research Article

Conflicts of Interest: Nil

Abstract

Aim: To assess the knowledge, attitude and awareness of general public towards Covid-19 vaccination as the first step towards preventing and controlling the spread and severity of covid 19 pandemic.

Material and methodology: A questionnaire survey will be conducted among general Population. Their knowledge will be assessed about severity of covid 19 Disease, risk, safety of vaccination and types of vaccines available. Their Attitude toward taking preventive measures, receiving vaccination, following infection control protocols will be assessed. The collected data will be tabulated and percent frequency distributions for Responses to each question will be calculated to assess the knowledge, Attitude and awareness of the general public towards COVID 19 vaccination.

Result: Survey was conducted on google form to assess the knowledge, attitude and awareness of the general public towards COVID-19 vaccination. A total of 1500 people have submitted their response and a large

proportion of them are from the age group 20 to 40 and from the Kerala. Of these respondents 70% were female. 62% of population think that the covid risk is very high and hence 98% knows the safety precautions but among that only 88% find it possible to maintain the precautions. 80% are ready to take the vaccination as soon as possible. More than 90% of people know the two types of vaccines and the scheduling of doses. It was interesting to note that Majority are ready to accept the vaccination if either recommended by WHO or proven effective after using for long time. Among the 1500 participants nearly 83% is vaccinated at least one dose but among that only 69 % people is satisfied about the availability of vaccines at their place.

Conclusion: Based on the survey conducted to assess the knowledge, attitude and awareness of the general public towards COVID-19 vaccination In summary, the degree of awareness portrayed by the studied populations is moderately adequate, yet lacking in specific dimensions such as availability of vaccination at their locality and to follow the precautionary methods. They showcase a positive attitude towards vaccination.

Keywords: Covid-19, Covishield, COVAX in, Hesitance, Knowledge, Unavailability, Vaccine.

Introduction

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is the causative virus for the coronavirus disease 2019 (COVID-19) ongoing pandemic[1]. SARS-CoV-2 first emerged in late 2019 in Wuhan (China) and hastily become a global threat affecting 220 countries[2]. As of 22 December, the COVID-19 pandemic has resulted in 76.2 M cases and death rate is more than 1.6 M worldwide. The pandemic has resulted in a devastating impact worldwide[3]. The ground strategy followed by most countries around the world was to reduce the transmissibility of the disease, enforcing masks policy, hands sanitization, social distancing, travel restrictions and partial or complete lockdowns[4]. The US Food and Drug Administration (FDA) had granted Remdesivir an Emergency Use Authorization for severely ill hospitalized patients with COVID-19. However, the WHO recommended against its use in November 2020 [5]. Vaccines are one of the most reliable and cost-effective public health interventions. India have successfully developed vaccines in less than a year's time frame, started their trial, approved and permitted the mass vaccination drive[6].

The COVID-19 vaccination program kick started on 16th January 2021 in India. The first group of beneficiaries included healthcare and frontline workers. The second group, comprising people over 60 years of age (as of January 1st, 2022) while vaccination for those above 45 years of age started from April 1st, 20217. Covishield® and COVAX in® are the two vaccines that are accepted in India. Despite all the efforts on the governmental end, the public response, particularly, in the early days of the first phase of vaccination was no less than dismal[8]. It was observed that people were either unaware or hesitant towards the current vaccination program [9].

Therefore, the objective of this google form online survey was to assess our citizens awareness and acceptance of the current COVID-19 vaccination program and availabilities issues of the vaccination. Our study was conducted during the 3rd phase of the vaccination program in India. The results, presented in this work are based on the response, collected from a sample of 1500 online voluntary participants from different states and union territories of India for 3 weeks (from July 7th, 2021 to July 28th, 2021). It was an open survey where people above the age of 20 participated. It is envisaged that the outcome of this survey will

definitely assist in decision making and policy framing to fortify the current COVID-19 vaccination program in the subsequent phases.

Materials and Methodology

Survey plan and Participants

The time-frame of this cross-sectional survey was set from 7th July 2021 to 28th July 2021. During this period, the third phase of COVID-19 vaccination was initiated among the age group of 18 and above. The lockdown was continued, citizens were advised to stay at home, maintain social distancing, wear masks and wash hands.

The nation also witnessed triple lockdown in various states. It was not feasible as well as advisable to conduct any off-line survey during this period, therefore, we decided to collect the data online using Google form. The respondents were Indian citizens, aged 20 years or more and voluntarily agreed to participate in the study without receiving any compensation or remuneration. The personal details of the participants were kept confidential.

Questionnaire and Score

We designed a survey questionnaire, based on the current situation. The questionnaire consisted of demographics of the participants, knowledge, and acceptance-attitude towards the current COVID19 vaccination program in India.

A total of 28 questions are there out of which Demographic variables include age, gender, occupation, state and type of institution working in as 1st category. Regarding the knowledge about covid 19 and vaccines Participants were asked to indicate if they were infected with COVID-19 or knew anyone who was infected. Another question item was dedicated to surveying participants who believe they may have contacted the virus but without a confirming test. Participants were asked to indicate their most trusted sources when seeking knowledge of COVID-19 vaccines. Besides, participants were asked about their concerns during the COVID-19 pandemic. These questions were primarily multiple options based. To gain information about acceptance and attitude of participants they were asked whether they accept to receive COVID-19 vaccines when they are available.

Ethical considerations

All procedures performed in this study, involving human participants, complied with the institutional ethical standards. The online pages for the self-administered questionnaire could be accessed by the participants for attempting and completion, subjected to indication (through a click on ‘Yes ’button) of consent for voluntary participation.

Results

A total of 1500 participants attempted the survey questionnaire.

Demographic characteristics

Among 1500 responses, majority are from the age group 20-39. 80.7% are from 20 to 39years of age.

17.3% are from 40 to 59 years. 2% are from 60-79 years group.

About 70.7% of them were females, 28% males and 2% prefer not to say.

Majority of participants are from Kerala followed by Delhi, Chennai, Karnataka and Nagpur.

49.3% responded individuals were doctors, 34.7% were non health workers, 12% were health workers, 2.7% nurse and 1.3% paramedical staff.

About 75.3% works at private institute and 16.7% at others followed by 7% public sector and 1% cooperate sector.

Assessment of knowledge

32.7% believe they have been exposed to covid 19 but 38% responded as they don't think they have been exposed to the same and 29.3% are not sure about the exposure.

86.7% were aware that people in their social environment have been infected with covid 19. 6.7% believe no one is infected and 6% participants are not sure.

Among the 1500 individual, about 44% obtain information regarding covid 19 from the social media whereas 24.7% got the updates from government.

only 15.3% depends on the mainstream media for the information and 11.3% follow WHO to gain information. 3% get information from doctors and 1% from peer groups and others.

72% of them find that it is easy to get the information related to vaccine whereas 13% believe it's difficult and 15% are in doubt.

Among 1500 responses, 62% rated that the risk of covid 19 is very high, 34% as high, 4% as low and No one rated it as negligible.

98% of them were aware of the measures which should be taken for self-protection and 88% believe that they can follow the infection control protocols but 12% believe this difficult.

Among 1500, 62% believe taking preventive measures is sufficient to keep them protected but 38% deny that.

Assessment of vaccine Acceptance and Attitude

40% of them strongly disagree that covid 19 vaccine is riskier than contacting covid. 32% disagree,

21.3% stand neutral, 4% agree and 2% strongly agree. 70% among the participants believes vaccine approved by government are safe but 2% believe they are not and 28% are not sure of it.

80% participants want to get vaccinated as soon as possible but 9.3% will take if it's made mandatory. 7% want to wait and observe if there are any side effects, 3% want to wait and do some research and 1 % completely disagree with vaccines.

70.7% of them disagree with the statement that those who already got covid don't need vaccination but 23% believe they don't need a vaccine and 6% are in a doubt.

87% of them are well aware that they can get covid even after getting it once but 6% of the participants believe they won't get infected and 6% are in doubt.

88.7% are well aware that they need to get vaccinated even though others around them are vaccinated. But 9% believe they don't need a vaccination.

96% are aware of the two types of vaccine approved by Indian government and among them 89.3% knows that two doses of vaccine should be taken to complete the vaccination schedule and only 7% were unaware of it.

69% of them believe that they will be eligible to receive a vaccine in initial rollout, 15% believe they are not and 15% are in a doubt.

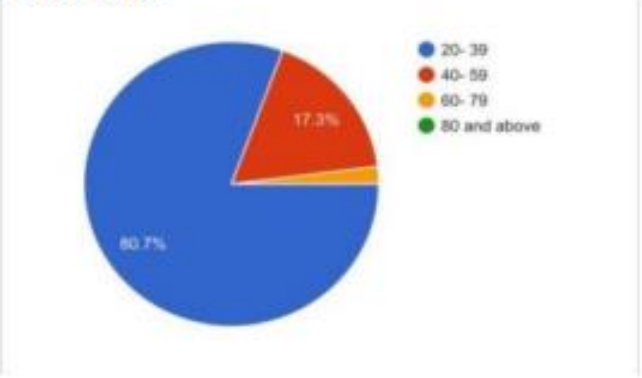
40.7% participants prefer recommendation from WHO to receive vaccine, 20.7% based on the long-term effect, 16% participants decision depends on the side effects.

12% would take vaccine if produced in India. 5% want to take vaccine if the risk of covid increases and 3% if vaccine is made in abroad. 40.7% prefer private health centres to receive vaccination, 39% prefer government hospitals and 20% prefer private hospitals.

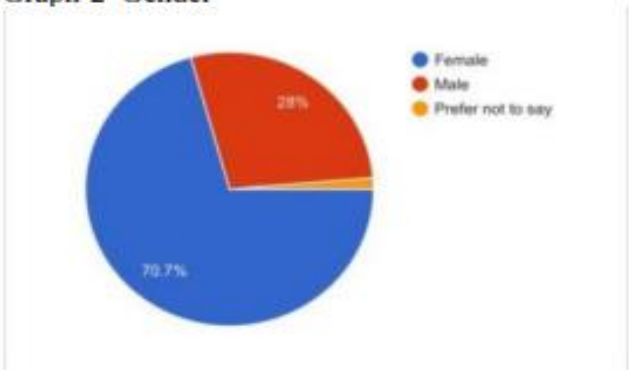
82% already received one of the vaccinations but 17% still needs to receive their first dose. For 69% participants the vaccines are available nearby but for 23% it's not and 8% are unaware of it.

67% responded that they are waiting for the second dose of vaccine availability. 30% of the individuals didn't get their first dose-vaccine due to its shortage.

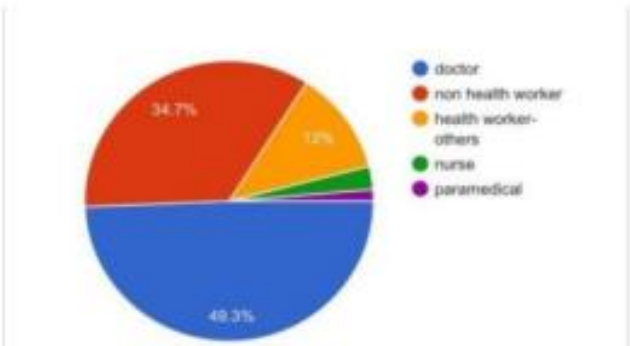
Graph-1 Age



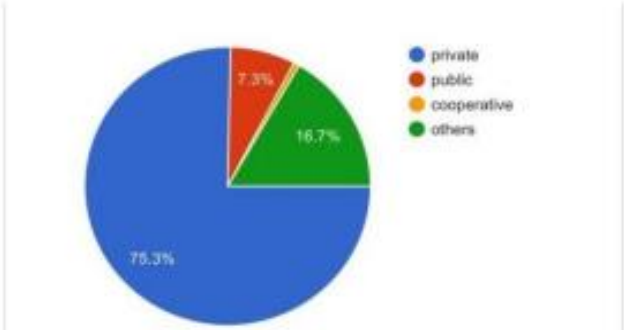
Graph-2 Gender



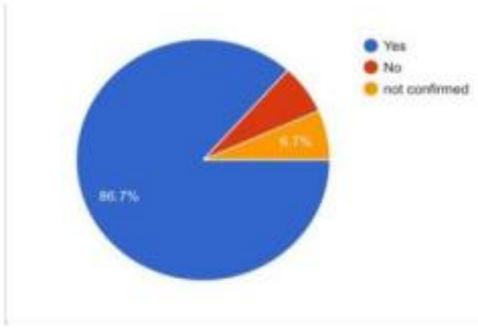
Graph-3 Occupation



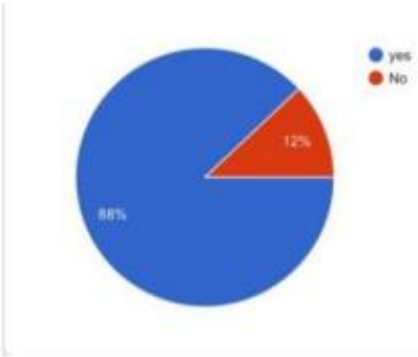
Graph-4 Type of institute they work



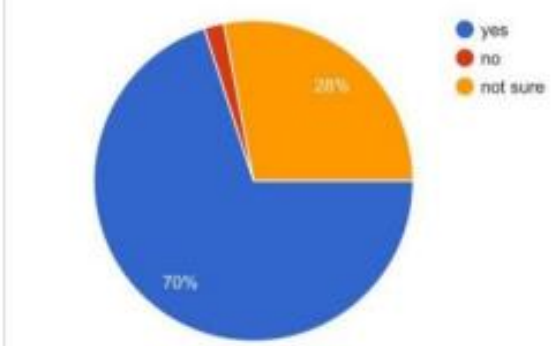
Graph-5 Do you know people in your social environment who have been infected with Covid 19?



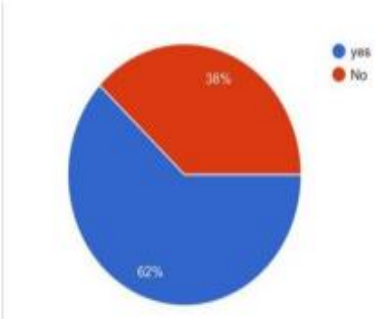
Graph-6 Possibility of following infection control protocol



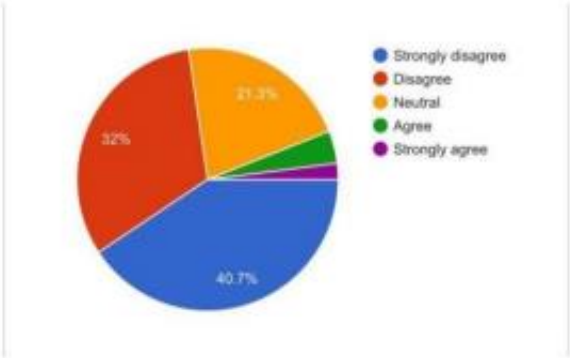
Graph-7 Vaccine launched by government are safe



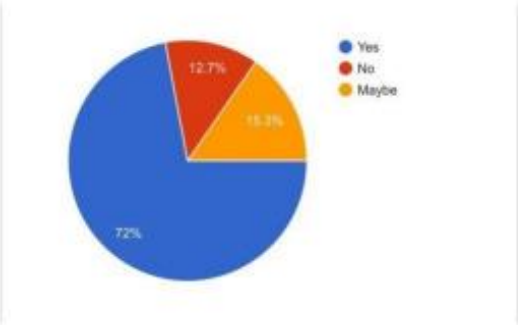
Graph-8 Preventive measures are sufficient to keep you protected



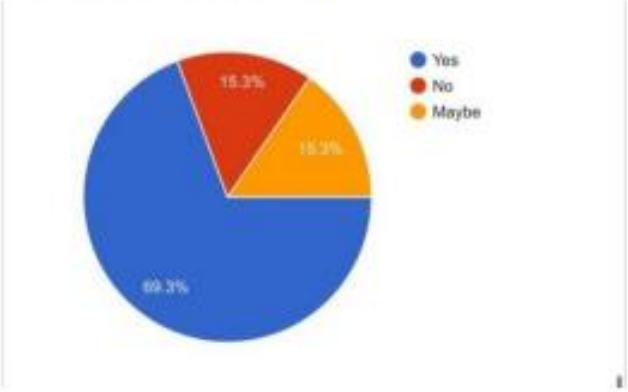
Graph-9 Vaccination is more risky than contacting covid.



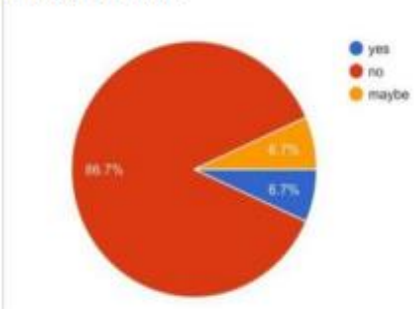
Graph-10 Is it easy to find the information related to vaccine?



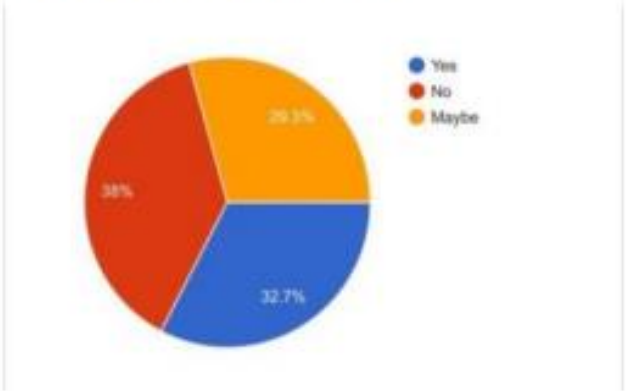
Graph-11 Eligibility to receive vaccine in initial roll out of covid 19 vaccine.



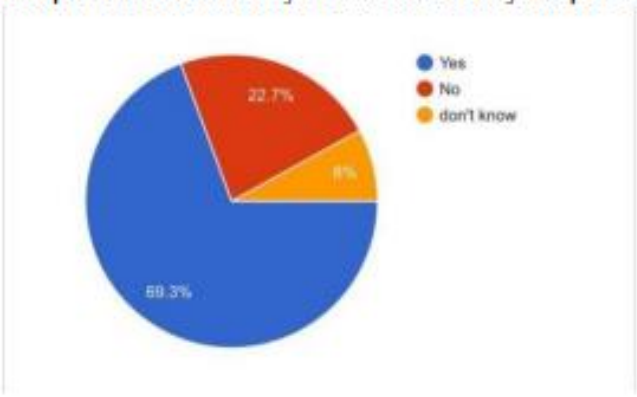
Graph-12 Belief that if you have already got covid 19 once Wont get it again



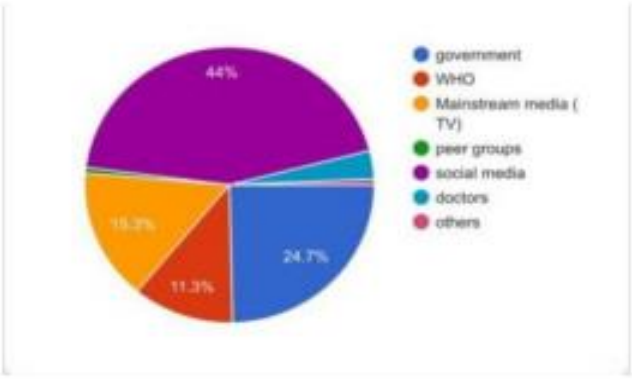
Graph- 13 Exposed to covid 19



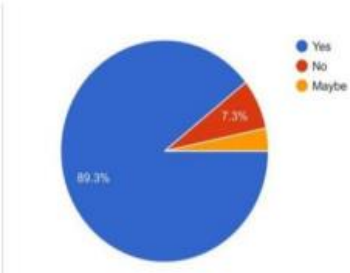
Graph- 14 Availability of vaccine near your place



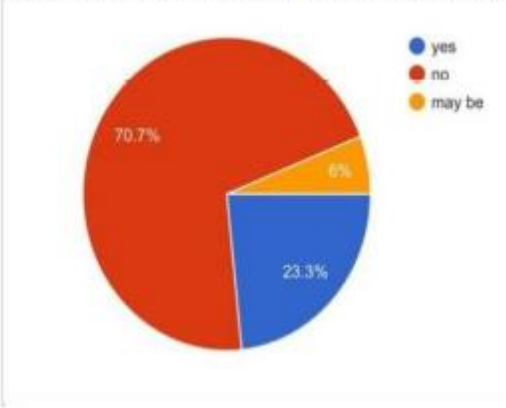
Graph- 15 Resources for covid 19 information schedule



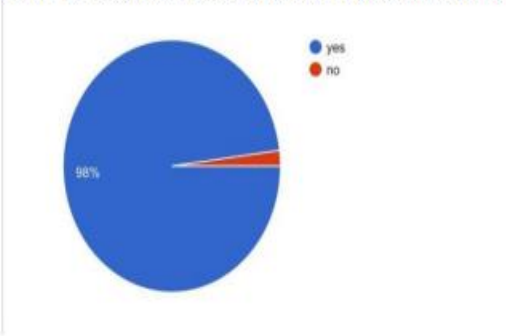
Graph-16 Belief that two doses of vaccine is needed to complete the vaccination



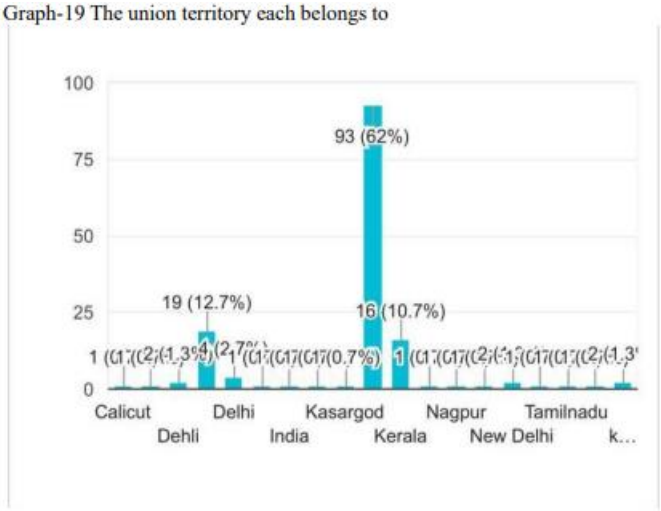
Graph-17 Belief that if already got covid, vaccine is needed



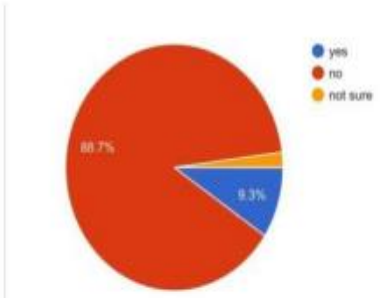
Graph-18Percentage of people aware of taking self protection against covid.



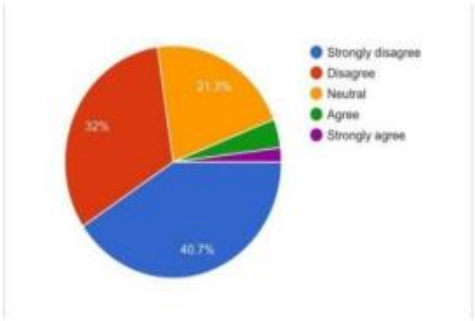
Graph-19 The union territory each belongs to



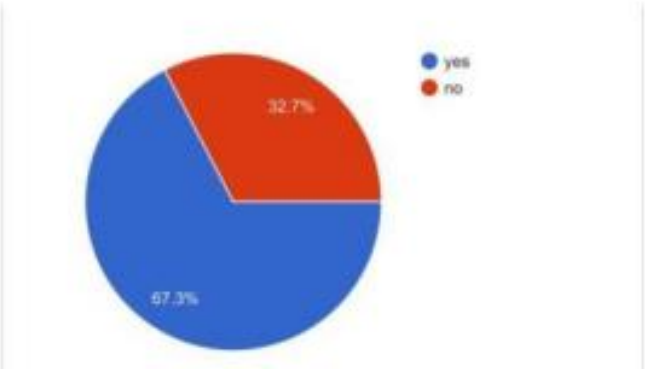
Graph-20Belief that if others are vaccinated you don't need a vaccine



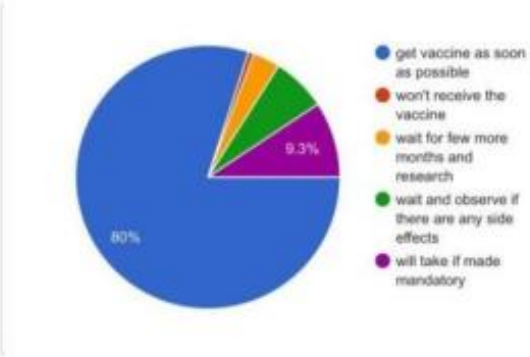
Graph-21 Taking covid 19 vaccine is more risky than contacting covid



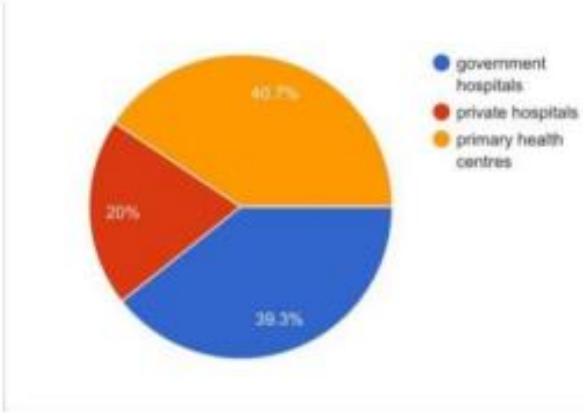
Graph-22 Waiting for second dose



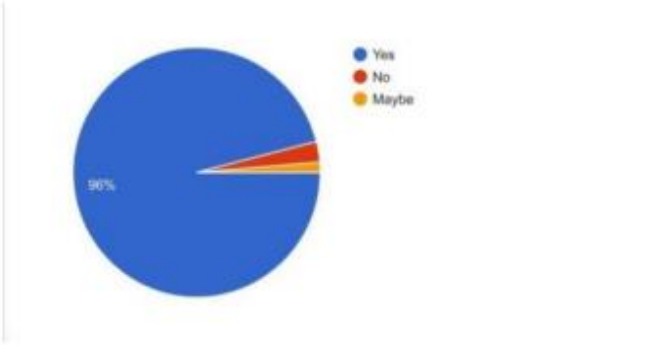
Graph-23 Their plan when government has rolled out vaccine



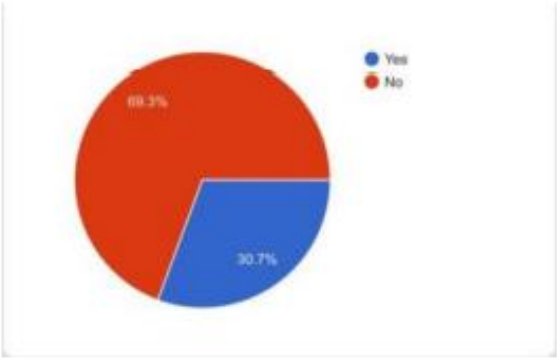
Graph-24 Place of preference to get vaccinated



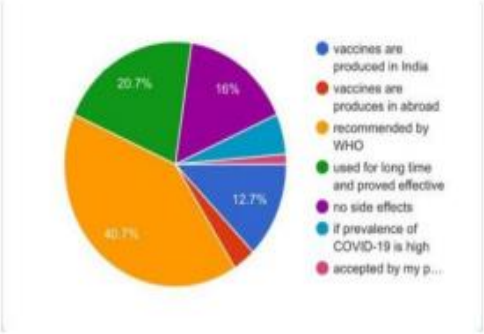
Graph-25 Awareness of two types of Indian vaccine



Graph- 26 Interested to take first dose but not available



Graph-27 Decision to receive the vaccine would be more favorable if .



Discussion

The global cataclysm ushered in by COVID-19 needs no extensive description. Since the first quarter of 2020, the world has witnessed an unprecedented catastrophe in the form of COVID-19. The global population has been anxiously waiting for a potential vaccine for more than a year by now. Once the rollout of vaccine was initiated in January 2021, the general public was in a state of confusion of whether to take it or not. But with time as the population got educated and aware regarding seriousness of the disease and advantages of vaccine the interest of public increased towards vaccination.

By May 2021 when vaccines were made available for ages above 18, the shortage of vaccines started. Many people willing to take vaccines were unable to get and many of them waiting for their second dose. As of 24 February 2021, 221.8 million doses of COVID19 vaccine were administered worldwide. It included 12.3 million from India since 16th January 2021.

18 per cent citizens or someone in their social network could not find a Covid-19 dose when they went for vaccination in the first 10 days of April. As India expands its vaccination drive with vaccines now being made available to all above the age of 18 and plans to inoculate 50 lakh people each day, leaders of some states in India are reporting a vaccine shortage. The shortage may be due to suboptimal local distribution, also possible that certain centres have a genuine shortage.

It must also be noted that as the 2nd wave of Covid strengthened in India, 80% of citizens expressed interest in taking the vaccine. Vaccine hesitancy and misinformation in many countries stand as impediments in achieving coverage and population immunization but later the decline in vaccine hesitancy could be contributing to the demand-supply mismatch[10].

The limited number of vaccinated individuals indicates the hesitancy among the public of various countries, showing the fear about the safety of the COVID-19 vaccine used by the respective countries along with the spread of misinformation[11]. Despite the backing from the scientific fraternity, vaccine acceptance is shaped according to the dictates of space, time, social class, ethnicity, knowledge and attitude[12].

In some studies, executed before the COVID-19 vaccination program (when the spread was intensive with alarming number of cases, registered per day) had

started in India, varied acceptance levels of 86.3 % (Sharun et al. 2020)[13], 77.3 % (Gautam et al. 2020)[14], 74.5 % (Lazarus et al. 2021)15 and 74 % (Kazi Abdul and Khand Aker Mursheda, 2020)[16] were recorded. In our survey on knowledge and acceptance for COVID-19 vaccination, conducted during the 1st phase of vaccination in India, we found a major acceptance among 1500 participants, hailing from different parts of the country.

The vaccination drive started on 16th January 2021 in India and nearly, all the participants were aware about it: TV and social media, being the main sources of information. Although more than 80% have taken first dose still majority of them are either waiting for second dose or have not received the first dose. A total of 1500 people have submitted their response and a large proportion of them are from the age group 20 to 40 and from the state Kerala. Of these respondents 70% were female. Majority of people depend on social media to stay updated for the information. 62% of population think that the covid risk is very high and hence 98% knows the safety precautions but among that only 88% find it possible to maintain the precautions. 80% are ready to take the vaccination as soon as possible. 87% think that even after first exposure there are chances of getting disease again. More than 90% of people knows the two types of vaccines namely COVAX in and covisheild provided by government and the scheduling of doses. It was interesting to note that Majority of the population are ready to accept the vaccination if either recommended by WHO or proven effective after using for long time. Among the 1500 participants nearly 83% is vaccinated at least one dose but among that only 69 % people is satisfied about the availability of vaccines at their place.

Previously, it has been advocated that the awareness about the vaccines and vaccination program should be increased among the population; this can have profound role in reducing vaccine hesitancy[17]. When it comes to mass immunization, a transparent, evidence-based policy as well as clear, accurate and timely communication are indispensable. The current pandemic seems to be open up an opportunity-portal to build and fortify vaccine acquaintance and confidence among public towards the administration of potential COVID-19 vaccine.

Limitations of the study

This study had a number of limitations. The survey was conducted based on the online network and relied on the circulation of the link on social media for a certain period of time. There is a possibility of bias as underprivileged populations may not have been able to participate in the survey[18]. Moreover, when compared to the current population in India, the survey-sample was over representative for participants below the age of 50, students, and educated. The findings may not be a true representation from the perspective of the entire nation. Despite these limitations, our findings are expected to provide valuable information about the knowledge and acceptance toward current COVID-19 vaccination program among Indians.

Conclusion

This community based online survey on knowledge and attitude of acceptance for COVID-19 vaccine, conducted during the 1st phase of vaccination among Indians revealed that the majority of the participants had positive acceptance and good knowledge with positive correlation between the two. Based on the survey conducted to assess the knowledge, attitude and awareness of the general public towards COVID-19 vaccination In summary, the degree of awareness portrayed by the studied populations is moderately

adequate, yet lacking in specific dimensions such as availability of vaccination at their locality and to follow the precautionary methods. They showcase a positive attitude towards vaccination. Concerned authorities should allocate more precautions and resources into raising awareness through official platforms and extensive social media campaigns, and also adequate vaccination supplies and the easy availability of vaccines at every place in an effort to help the population overcome the challenges of the emergent pandemic.

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