

Research Journal of Pharmaceutical, Biological and Chemical Sciences

Awareness, Attitude And Acceptance Towards The COVID-19 Vaccination: A Population-Based Survey In Rural Bengaluru, India.

**Adish Sardar*, Althaf Hussain Chinna, Suwarna Madhukumar, and
Annee Jeneth Theresa.**

Department of Community Medicine, MVJ Medical College And Research Hospital, Dandupalaya, Bengaluru Rural, Karnataka 562114, India.

ABSTRACT

COVID19 has been menace for entire human race since 2020 and vaccines came as saviors. This study was done to understand the awareness, attitude towards Covid-19 and acceptance of vaccination among rural population. This is a cross-sectional, population-based survey. A series of structured questions were asked to volunteers over 18 years. Study carried out for 3 months in rural Bengaluru. Data collected, analyzed using SPSS and results were expressed in numbers and percentages. Significant findings proved by Chi-square test. Among our study population, 75.45% are aware that COVID19 is a severe life-threatening disease. 43.11% worried most about family members being infected. While 82.03% feared acquiring COVID-19 and transmitting it, 28.14% believed it to be a conspiracy. 18.56% of participants believed that COVID19 is God's punishment. Majority who had history of COVID-like symptoms and having cases in the neighbourhood were concerned about acquiring or transmitting the disease and are taking precautions. 55.69% felt that vaccines are safe but only 16.77% prefer Indian vaccines. 92.12% of participants had taken both doses. 91.6% showed acceptance of vaccination to protect themselves and others. Stated reasons for hesitancy to take vaccines were fear of side effects (31.74%), and feeling unsafe (20.36%). 46.11% trusted healthcare workers for pandemic-related information. 92.81% say the government should vaccinate everyone for free. Resonances about fear of vaccine safety and side effects require continuous health education to improve acceptance and reduce hesitancy.

Keywords: Covid 19 vaccination, Vaccination fear, Vaccination hesitancy, Pandemic

<https://doi.org/10.33887/rjpbcs/2022.13.5.13>

**Corresponding author*

INTRODUCTION

The pandemic has been a menace to the whole planet since its appearance in December 2019 and continues to be an unsolvable problem for mankind. Since the first ever case was reported in Wuhan (China) in November 2019 now the virus is known to have infected 587 million people worldwide and has claimed 6.43 million lives [1]. COVID19 affected everyone on the planet and governments and health care workers have been brainstorming to find a cure or at least a means to reduce the impact and slow the spread of this highly infectious disease. Governments were forced to implement partial or full lockdowns despite knowing that it would hit the country's economy in a possibly irreversible way.

Many non-pharmacological methods were advised and put into practice like basic hygiene techniques, isolation, institutional and home quarantines, lockdowns, N95 mask usage, social distancing etc. have helped us stay reasonably safe in these hard times. Many of these, though simple, has helped tremendously in limiting the spread of infection.

The medical approach consists mainly of coming up with an antiviral drug to effectively treat and cure the disease and develop a vaccination so that the disease doesn't infect the population in the first place. The covid-19 pandemic can be controlled with the use of a reliable and efficient vaccination. Currently, several nations have authorised the use of vaccines developed by various institutions [2].

Initially, with the lack of suitable vaccinations or medications, there was a worldwide struggle to limit the spread of the covid19 pandemic. But after the availability of efficient vaccines, it was evident that the acceptance level of the same wasn't satisfactory. Although distributing Covid-19 vaccinations effectively and fairly is a top governmental objective, guaranteeing acceptance is as crucial.

Various news about vaccination side effects and scandals have caused increased distrust and vaccination hesitancy. The reason for hesitancy differed greatly from person to person, it varied from being scared of acquiring the disease from the vaccination to distrust in the government health department and anything in between. This proves that vaccine acceptance is just as vital as the availability of an efficient vaccine and its equitable distribution.

The effectiveness of any immunisation campaign is largely dependent on public trust in vaccinations and the organisations which provide them [3]. Vaccine hesitancy is a major threat to the community and in actuality, even before the first appearance of covid-19 in December 2019, the WHO identified this as being among the 10 leading concerns for 2019 [4].

Understanding the awareness, attitude and acceptance towards public health preventive measures, Acceptance of coronavirus immunization among rural populations is a worldwide problem since a delay in immunisation in any nation might lead to the evolution and spread of novel variations that can overcome protection provided by vaccinations and previous sickness.

Understanding the reason for fear and hesitation will help us find new ways to educate the population, rectify and find new solutions in case of any genuine concerns, and have a more successful and effective vaccination drive.

Several studies have examined high-income nations' and certain medium-income societies' readiness to receive a possible Covid 19 vaccination. However, there is little information available about vaccine acceptability, attitude, and knowledge in low-income nations where widespread vaccination is required. This study was carried out to assess rural residents' knowledge, attitudes, and acceptability of the Covid 19 vaccine in order to identify associated demographic and social factors.

METHODOLOGY

This three-month, population-based study of Bengaluru's rural residents is cross-sectional in nature. The research only included volunteers over the age of 18 years. Convenience sampling technique was used to reach the participants. 167 individuals participated during the study period of 3 months. Participants completed a standardised, closed questionnaire with inquiries concerning public knowledge of the Covid-19 immunisation and perspectives about vaccine acceptance (non-probability sampling). SPSS was used to collect and analyse participants' demography-related data and the resource of information

about Covid-19. Vaccine awareness, attitude and acceptance in rural people and various socio-demographic factors leading to lag in poor acceptance were known after analysing the data. Results are expressed in numbers and percentages. The Chi-square test was used to prove significant findings. The P-value <5% is considered statistically significant.

Ethical clearance was obtained from the Institutional ethical committee. There were no potential risks as it is a non-interventional study, data is collected by oral interview after taking oral consent of participants.

RESULTS

We interviewed 167 participants in rural Bengaluru. Our participants had different educational backgrounds, employment status, and vaccination attitude. Among the study participants there were 53.89% men (n=90) and 46.11% women with a median age of 36 years in the overall study participants. They were primarily in the age range of 25–54 years (55%), 69.46% of them were unmarried, 56.28% graduated from College; 47.9% were employed (Table 1).

Table 1: Demographic Information (N=167)

	n	%
Age		
a) 18-24	60	35.93
b) 25-54	92	55.09
c) 55-64	11	6.59
d) >65	04	2.39
Gender		
a) Male	90	53.89
b) Female	77	46.11
Marital status		
a) Unmarried	116	69.46
b) Married without kids	14	8.38
c) Married with kids	37	22.16
Academic status		
a) uneducated	9	5.39
b) Primary School	1	0.6
c) Middle School	1	0.6
d) High School	12	7.18
e) Intermediate/PU/Diploma	23	13.77
f) Graduate	94	56.28
g) Post Graduate/Professional	27	16.16
Employment		
a) Employed	80	47.90
b) Unemployed	44	26.35
c) Students	43	25.75
Addictive habits		
a) Tobacco products	06	3.59
b) Alcohol Products	09	5.39
c) Both	16	9.58
d) Don't want to reveal	10	5.99
e) Nil	126	75.45

Nearly 27.5% of our participants have suffered COVID-like symptoms. About 64.67% participants had COVID19 cases in their neighbourhoods. Majority of our participants without any chronic disease (84.43%), without any addictive habits (75.45%). 64.67% of participants have come across people suffering with COVID-19. Among our participants 25.75% (n=43) of participants has blood and injection phobia. (Table 2)

Table 2: Health of participants

	n	%
1. History of Infectivity with COVID19 like symptoms	46	27.5
2. COVID19 cases in the neighbourhood	108	64.67
3. History of Chronic diseases	18	10.78

Majority (75.45%) of the participants are aware that COVID-19 is a severe life threatening disease, its characteristic symptoms and mode of spread. There is significant correlation between participants with a history of COVID like symptoms and who have cases in neighbourhood were well aware of symptoms, characteristics and mode of spread ($p < 0.05$). Many opine that fear of side effects (31.74%), feeling unsafe (20.36%) are the main reasons preventing citizens from taking COVID19 vaccine. The main source of information about COVID19 disease and vaccination among the majority of participants is healthcare providers (46.11%). (Table 3)

Table 3: Awareness on COVID-19 disease and vaccine

Description	n	%
1. Aware that COVID19 is a severe disease, its characteristics and mode of spread	126	75.45
2. Opinion of participants on factors preventing citizens from taking COVID19 Vaccine		
a) Side effects	53	31.74
b) Feel not safe	34	20.36
c) cost	02	1.12
d) Accessibility	04	2.39
e) Non-availability	17	10.18
f) Not Willing	12	7.18
g) Doesn't consider COVID19 a severe disease	16	9.58
h) Get COVID after getting the job	12	7.18
i) Social media advisory	17	10.18
3. The trusted source of information about COVID19 disease and vaccine among participants		
a. Health Care Providers	77	46.11
b. Articles	32	19.16
c. Internet	24	14.37
d. Media	20	11.98
e. Family Members	08	4.79
f. Social Media	06	3.59

Among the study participants, about 28.14% believe that COVID19 pandemic is just a conspiracy. The majority (82.03%) of our participants are concerned about acquiring COVID19 infection, transmitting the disease to others and loved ones. The majority (93.41%) of participants are taking precautions (mask, sanitiser, social distancing) to prevent infection and spread of COVID19. Participants with history of COVID like symptoms and who have seen cases in the neighbourhood are concerned about acquiring COVID19 infection, transmitting the disease to others, loved ones and are taking precautions better compared to others ($p < 0.05$). 89.22% of participants feel COVID19 Vaccines are safe and 10.78% are feeling it is unsafe. About 55.69% of participants feel all COVID19 vaccines are safe but 16.77% have the opinion that vaccines made in the US/UK/Europe are safer, while 16.77% have the opinion that vaccines made in India are safer. The majority of participants (92.81%) feel it is the responsibility of the government to vaccinate all citizens for free. Few (18.56%) participants believe that COVID19 is a punishment from God, the majority (76.04%) believe no role of God while 5.34% of participants preferred not to say. (Table 4)

Table 4: Attitude of Participants

Description	Yes		No	
	n	%	n	%
1. COVID19 pandemic is just a conspiracy	47	28.14	120	71.86
2. Concerned about acquiring COVID19 infection, transmitting the disease to others and loved ones	137	82.03	30	17.97
3. Taking precautions (mask, sanitiser, social distancing) to prevent infection and spread of COVID19?	156	93.41	11	6.59
4. COVID19 Vaccines are safe	149	89.22	18	10.78
5. Vaccinating all citizens for free is the Government's responsibility	155	92.81	08	4.79
6. Concerned about vaccines' effect on the mother and infant if given to pregnant women?	124	74.25	43	25.75
7. COVID19 is a punishment from god?	31	18.56	127	76.04

When the participants were asked about what worried them most about the pandemic, the majority (43.11%) replied fear of family members being infected, followed by various other worries like death (25.15%), financial related worries (17.96%), Job-related worries (8.98%), fear of getting infected (1.8%), fear of being a plot for conspiracy (1.8%), fear of taking treatment (1.2%).

Among the study participants, the majority (98.8%) were vaccinated. Among the vaccinated participants 92.12% have taken 2 doses of vaccine and 7.88% have taken a single dose. 91.6% of study participants were showing acceptance to vaccinate to protect self, family and friends. 66.47% of participants were willing to pay for the vaccine while 33.53% wanted the vaccine for free. Most of our study participants (92.8%) are suggesting others in the community get vaccinated to protect from COVID19.

Table 5: COVID19 Vaccine Acceptance

Description	Yes		No	
	n	%	n	%
1. Vaccinated with COVID19 Vaccine	165	98.8	2	1.2
2. Accept vaccine to protect self, family and friends	153	91.6	14	8.4
3. Willing to pay for the vaccine	111	66.47	56	33.53
4. Suggest others get COVID vaccine	155	92.8%	12	7.2%

DISCUSSION

The world continues to be in danger from COVID-19. A vaccination offers the best chance of controlling the viral infection. There are presently several Covid-19 vaccinations available. Vaccination must, however, be welcomed, trusted and utilized by the masses in order to be successful [5-7]. The first step in promoting vaccination awareness among people is understanding their justifications for refusing vaccinations.⁸ Few studies have proved that developing public awareness of the transmission of infection, prevention measures, and proper immunization knowledge, including possible side effects, is crucial to promote vaccination acceptability and minimize peoples' reluctance [8, 9].

Our study has shown that 75.45% of participants are aware of COVID19 disease and has knowledge on its characteristics and mode of spread. An analysis, by Ameer Hossein et.al, of 8591 individuals yielded a cumulative knowledge score of 90% on the aspects of Covid-19, with 60.8% of the common people having moderate awareness of the illness. Additionally, knowledge of the route of infection and more susceptible groups to COVID 19 was attained by 85% of the study population.

According to a study by Su Z et al. Despite the fact that covid-19 vaccinations are now licensed, safety precautions such as N95 masks, personal cleanliness, and social spacing and separation must still be taken to safeguard both individual and societal health from Covid-19 [11]. Our study shows that 93.41% of participants were taking precautions to prevent infection and spread of COVID19.

The perspective and implementation of the Covid 19 preventative measures score are 90% and 89% of the overall, according to a study by Ameer Hossein et.al that was previously mentioned [10]. In our

study 28.14% believe that COVID19 pandemic is just a conspiracy while 82.03% of our participants are concerned about acquiring COVID19 infection, transmitting the disease to others and loved ones. 89.22% of participants feel COVID19 Vaccines are safe. 92.81% of participants feel it is the responsibility of the government to vaccinate all citizens for free. Few (18.56%) participants believe that COVID19 is a punishment from God.

Our study showed 98.8% of vaccine acceptance in rural areas. 91.6% of participants want to vaccinate their family and friends. A study by Antonia bendou et.al showed that the majority of participants—64.5%—said they would unquestionably get vaccinated, followed by 13.8% who would prefer to take it, 10.4% who were unsure, 5.2% who would rather not be jabbed, and 6% who would unquestionably refuse the shot [12]. A similar study by Julio S et.al A research that included 44,260 people examined the acceptability of the coronavirus vaccination across 15 study samples from 10 low- and middle-income nations (LMICs) in Asia, Africa and South America, as well as Russia (an upper-middle-income country) and the United States. In comparison to the United States(mean 64.6%) and Russia(mean 30.4%) , they discover that people in LIMC states (mean 80.3%; median 78%; range 30.1 percentage points) are far more ready to receive the COVID 19 vaccination [13].

As per Inbaraj, L. R (2021) et.al. in Bengaluru on rural residents noted that a large number of the population are still at risk for COVID-19. This is due to the high proportion of sensitive individuals, high Infection Fatality Rate (IFR), and poor tertiary care networks. The need to maintain public health measures and improve access to vaccines are essential for the health and well-being of this population. Future respiratory pandemics can be prevented by limiting urbanization, improving housing quality, ventilation and reducing population density, along with promoting public, workplace, and community health leadership [14].

CONCLUSION

The study's subjects were adequately conscious of the coronavirus vaccination. Regarding their acceptability of the immunization, the subjects expressed satisfaction. However, some worries concerning the negative consequences of vaccinations existed. To promote vaccination acceptability and lessen its reluctance, it is crucial that medical professionals, in particular, provide enough health education regarding the credibility of these vaccinations.

REFERENCES

- [1] Ritchie, Hannah; Mathieu, Edouard; Rodés-Guirao, Lucas; Appel, Cameron; Giattino, Charlie; Ortiz-Ospina, Esteban; Hasell, Joe; Macdonald, Bobbie; Beltekian, Diana; Dattani, Saloni; Roser, Max (2020–2022). "Coronavirus Pandemic (COVID-19)". Our World in Data. Retrieved 2022-08-11.
- [2] COVID-19 Vaccine Tracker (McGill COVID19 Vaccine Tracker Team, 2021); <https://covid19.trackvaccines.org/vaccines/>
- [3] de Figueiredo, A., Simas, C., Karafillakis, E., Paterson, P. & Larson, H. J. Lancet 2020;396:908.
- [4] World Health Organization. Ten threats to global health. 2019. Available from: <https://www.who.int/emergencies/ten-threats-to-global-health-in-2019>
- [5] Global attitudes: COVID-19 vaccines (Ipsos World Economic Forum, 2021); <https://www.ipsos.com/en-ro/global-attitudes-covid-19-vaccine-january-2021>
- [6] Wouters OJ et al. Lancet 2021;397:1023–1034.
- [7] Mannan DKA, Farhana KM. Int Res J Bus Soc Sci 2020;6(4):1-23.
- [8] Elbur A, Alharthi A, Aljuaid A, Almalki NH. Knowledge of Middle IOSR J Pharm 2016;6(8):33-39.
- [9] Saied SM, Saied EM, Kabbash IA, Abdo S. J Med Virol 2021;93(7):4280-4291.
- [10] Erfani A, Shahriarirad R, Ranjbar K, Mirahmadizadeh A & Moghadami M. Knowledge, Attitude and Practice toward the Novel Coronavirus (COVID-19) Outbreak: A Population-Based Survey in Iran. [Preprint]. Bull World Health Organ. E-pub: 30 March 2020. doi: <http://dx.doi.org/10.2471/BLT.20.256651>
- [11] Su Z, Wen J, McDonnell D, et al. Brain Behav Immun Health 2021;12: 100204.
- [12] Antonia Bendau et.al. Int Immunopharmacol 2021;97:107724.
- [13] Julio S. Solís Arce et.al. COVID-19 vaccine acceptance and hesitancy in low- and middle-income countries. Nature Medicine. <https://doi.org/10.1038/s41591-021-01454-y>
- [14] Inbaraj LR, George CE, Chandrasingh S. PloS one 2021;16(3):e0249247.