

Attitudes, Apprehensions, Hurdles and Hesitancy Towards Covid-19 Vaccination in Punjab(India)

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Abstract

Background: World health organization declared covid-19 pandemic worldwide. Efforts are being made to increase the awareness about covid-19 in the general public and as well as in patients through various health education programs. **Material and Methods:** The study included 1000 individuals and was conducted by The Department of Pulmonary Medicine, Government Medical College, Patiala during the 6-month period from January 2021 to June 2021. Patient intentions, apprehensions, and reasons for not getting vaccinated were assessed by questionnaire. All walk-in patients above 18yr of age were included. To assess the knowledge, attitude, and practice of the participants, 18 questions (including for knowledge, attitude, for practice) were included. The questions were directly asked from patients in their vernacular language along with demographic details and responses noted. **Need of study:** To spread the Knowledge about vaccination and the need for getting vaccinated so that hesitancy for covid-19 vaccination can be decreased and the severity of infection can be controlled. Awareness about vaccination is vitally important for developing effective control measures in a public health crisis. **Results:** Most (93.4%) of the participants were aware that the COVID-19 virus was circulating in the community out of these 57.3% were sure that covid pandemic is real, 31.2% didn't think that covid pandemic is real, 11.5% thought that it may or may not be real. The 42.8% of these 1000 individuals didn't complain of any hurdles faced in getting covid vaccination. On asking reasons for apprehension from these unwilling individuals, 31.3% had fear of vaccine side effects, and 1.8% didn't believe that vaccine works. 27.5% of these 1000 individuals were not vaccinated. However, 30.2% of these unvaccinated people were not willing to get vaccinated, and 2.5% were not sure whether to get vaccinated or not. **Conclusion:** There is COVID 19 vaccine hesitancy in the general population. This hesitancy is driven by the people's attitude towards the health system and the vaccine. Apart from these attitudes, social, health system and accessibility factors also probably play a major role in vaccine hesitancy. This study provides an understanding of people's attitudes towards the COVID 19 vaccines and their association with hesitancy and the findings will help design effective behavior change communication campaigns.

Keywords: Attitudes, Apprehensions, Covid-19 Vaccination

Introduction

Coronavirus disease 2019 (COVID -19) is caused by severe acute respiratory syndrome, corona-virus 2 (SARS-CoV-2) was first reported in Wuhan, China, in December 2019.^[1] World Health Organization (WHO) has declared COVID-19 as a public health emergency of international concern on 30th January 2020.^[2] The virus is transmitted through direct contact with respiratory droplets of an infected person while coughing and sneezing and touching surfaces contaminated with the virus.^[1] The key clinical signs and symptoms include fatigue, fever, dry cough, dyspnea, fatigue, and myalgia.^[3] In India first case was noted on 27 January 2020 in Kerala.^[4,5] Implementation of contact and respiratory precautions to prevent the spread of COVID-19 is essential. SARS-CoV-2 transmission prevention strategies include low-cost, high-impact behaviors such as hand hygiene, face mask use, and social contact avoidance.^[3,6,8] However, for such measures to be effective, public adherence is essential, which is affected by their knowledge, and attitudes towards COVID-19 vaccination.^[7,9,10] The direct and indirect effects of the pandemic, acting through social, economic, environmental, and healthcare pathways, can also be countless. India began the COVID 19 vaccination campaign on 16 January 2021.^[10,11] As of 04 September 2021, India has vaccinated 67.6 crore people amounting to about 11% of the population fully vaccinated.^[12] However, this rate of vaccination is not sufficient to halt the pandemic. There are also substantial inequities in gender, class, and rural-urban divide in the coverage of vaccines in India.^[13,14] Currently the main vaccines available in India are the Oxford-Astra Zeneca vaccine locally referred to as Covishield, Bharat Biotech-ICMR indigenous vaccine named Covaxin and the Russian Sputnik V vaccine which is imported.^[15] In addition several other vaccines have also been given emergency use authorization. While availability and distribution of the vaccines remains a challenge, even in places where vaccines are made available there is vaccine hesitancy.^[16]

Vaccine hesitancy is the reluctance of people to accept a vaccine that has been proven safe and effective and made available to them for protection against an infectious disease.

Objective of study

To assess the covid-19 vaccination intentions, apprehensions, and reasons for not vaccinating among the general population.

Materials and Methods

The study was conducted by The Department of Pulmonary Medicine, Government Medical College, Patiala. It was a retrospective study. 1000 people were surveyed online and offline. A series of 18 questions regarding the intentions, perceptions, and reasons for not vaccinating the population about COVID-19 vaccination were asked, and participants' demographic characteristics and sources of information regarding COVID-19 vaccination were noted and analyzed.

Inclusion Criteria: Any patient age ≥ 18 yr

Exclusion Criteria: Patient age ≤ 18 yrs

Questionnaire

1. Have you been infected with COVID 19 or knew anyone infected with the virus? Yes/No
2. Do you think the COVID Pandemic is Real? Yes/No/Maybe
3. Do you think you were infected with the virus but didn't get a confirming Test ? Yes/No/Maybe

4. What was the most trusted source of information about COVID 19 vaccine ?
Doctor/News/Social Media/Internet
5. What were you most concerned about during the pandemic?
6. Have you been vaccinated? Yes/No
7. If Yes ,Did you have any side effects ? Yes/No
8. If Yes Any of the below ? Fever/Diarrhoea/Bodyache/Cough/Other_____
9. If Not are you willing to get vaccinated? Yes/No/Maybe
10. If You don't want to get Vaccinated what is the reasons for apprehension? Vaccine Side Effects, Don't believe the Vaccine Works, Don't believe that COVID 19 is a real disease, Peer Pressure, Religious Issue, Other_____
11. What are the hurdles you faced or are facing in getting vaccinated ? Difficulty in registration, Don't know where to get vaccinated from, Non cooperative health staff/Don't believe COVID 19 Vaccine Works, Vaccination Center Far away, Health Didn't allow, Other_____
12. Did u get any other vaccine? Yes/No
13. Do u believe vaccine works? Yes/No/Maybe
14. If a vaccine for children is available will you get your kids vaccinated? Yes/No/Maybe
15. Are you willing to pay for vaccination against COVID? Yes/No/Maybe
16. Do you think everyone should be vaccinated ? Yes/No/Maybe
17. Do u think vaccine side effects will effect your decision to get vaccinated ?
Yes/No/Maybe
18. Do you think COVID vaccine is safe ? Yes/No/Maybe

Results

Sociodemographic Characteristics

A total of 1000 individuals participated in the study. There were 56.6% and 43.4% individuals that belonged to the urban and rural locality respectively with 41.9% females and 58.1% males. Out of this population, 70.8% were literate. About half of the population (53.4%) were in the age group of 18–40 years.68.2% of these individuals were unmarried. 41.3% were unemployed, 23.2% were students, and 0.3% were doctors. Majority of the population approximately 68.8% didn't have any prior medical history.

Table 1: Demographic Profile

		Number	Percentage
Age	18-25	217	21.7
	26-40	317	31.7
	41-55	265	26.5
	56-70	185	18.5
	71-85	14	6.4
	86-100	2	0.2
Sex	Female	419	41.9
	Male	581	58.1
Marital Status	Married	682	68.2
	Unmarried	318	31.8
Do you have any children	Yes	630	63.0
	No	370	37.0
Education Status	Illiterate	289	28.9
	Literate	708	70.8
	Doctor	3	0.3

Employment Status	Government Job	81	8.1
	Private Job	131	13.1
	Self Employed	129	12.9
	Not Currently Employed	413	41.3
	Student	232	23.2
	Daily Wager	14	1.4
Locality	Rural	434	43.4
	Urban	566	56.6
Any Known Medical History	Yes	312	31.2
	No	688	68.8

Most (93.4%) of the participants were aware that the COVID-19 virus was circulating in the community out of these 57.3% were sure that covid pandemic is real, 31.2% didn't think that covid pandemic is real, 11.5% thought that it may or may not be real. 33.5% gave a history of covid infection, and 66.3% denied any covid infection history or being contacted with someone having covid infection. 19.5% thought that they were infected with the virus but didn't get a confirming test and the rest of the individuals went for the test on suspicion of covid 19 infection. Most of these individuals were apprehensive or concerned about health (59.1%), economic (20.3%) and education (4.9%). 6.9% were not concerned about anything during the pandemic. The most trusted source of information about COVID 19 vaccine and the disease itself was doctor (35.7%), news (23.4%), the internet (21.2%), and social media (19.7%). 27.5% had vaccine hesitancy. 72.5% of these 1000 individuals took vaccination. 40.5% of these vaccinated individuals had side effects. Fever was most common (85.7%), body ache (22.2%), cough (9.1%), diarrhoea (0.5%), and other rare side effects included like dysgeusia, loss of smell (0.1%). 22% of these vaccinated individuals didn't complain of any side effect.

27.5% of these 1000 individuals were not vaccinated. However, 30.2% of these unvaccinated people were not willing to get vaccinated, and 2.5% were not sure whether to get vaccinated or not.

On asking reasons for apprehension from these unwilling individuals, 31.3% had fear of vaccine side effects, 1.8% didn't believe that vaccine works, 22.5% didn't believe that COVID 19 is a real disease, 1.5% had religious Issues, 42.9% didn't give any reason or had some other reason.

The 42.8% of these 1000 individuals didn't complain of any hurdles faced. However, 20.8% had difficulty in registration, 0.7% didn't know where to get vaccinated from, 0.4% reported about non-cooperative health staff, 0.6% complained about the difficulty in reaching the vaccination center due to far way situated center. 15% reported that their health didn't allow, 19.7% had other hurdles in registration.

79.1% of these 1000 individuals took previous vaccinations and 20.9% didn't take any vaccine but for covid vaccine, 54.9% of these individuals didn't think that vaccine works, 18.7% thought that it may or may not be working effectively but still more than half of this population took co-vid vaccination anyways. Half of the study population (49.4%) believed about the safety profile of the vaccine, 24.9% didn't believe that it is safe, and the remaining were not sure about its safety.

Table 2: ?

		Number	Percentage
Have you been infected with COVID 19 or known anyone	Yes	335	33.5
	No	663	66.3

infected with the virus	May be	2	0.2
Do you think the COVID Pandemic is Real	Yes	573	57.3
	No	312	31.2
	May be	115	11.5
Do you think you were infected with the virus but didn't get a confirming Test	Yes	195	19.5
	No	690	69.0
	May be	115	11.5
What was the most trusted source of information about COVID 19 vaccine	Doctor	357	35.7
	News	234	23.4
	Social Media	197	19.7
	Internet	212	21.2
What were you most concerned about during the pandemic	Exam / Study	47	
What were you most concerned about during the pandemic	Economic	203	20.3
	Education	49	4.9
	Health	591	59.1
	Not concerned about anything	69	6.9
	Social	88	8.8
Have you been vaccinated	Yes	725	72.5
	No	275	27.5
If Yes, did you have any side effects?	Yes	405	40.5
	No	320	32.0
If Yes any of the below?	Fever	347	85.7
	Bodyache	90	22.2
	Cough	37	9.1
	Diarrhoea	2	0.5
	Other	4	0.1
If not are you willing to get vaccinated	Yes	185	18.5
	No	83	8.3
	May be	7	0.7

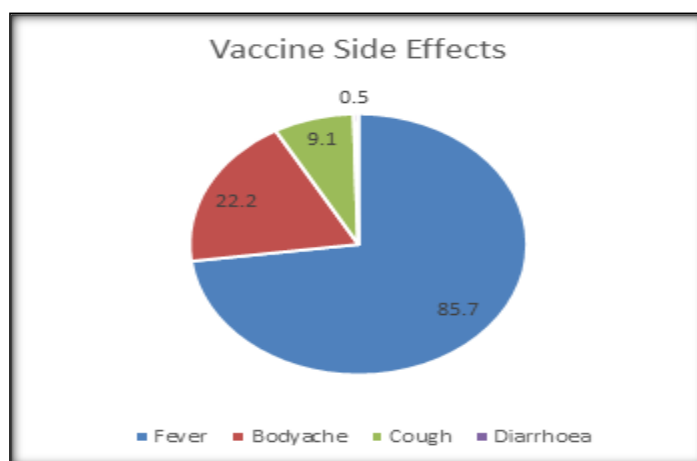
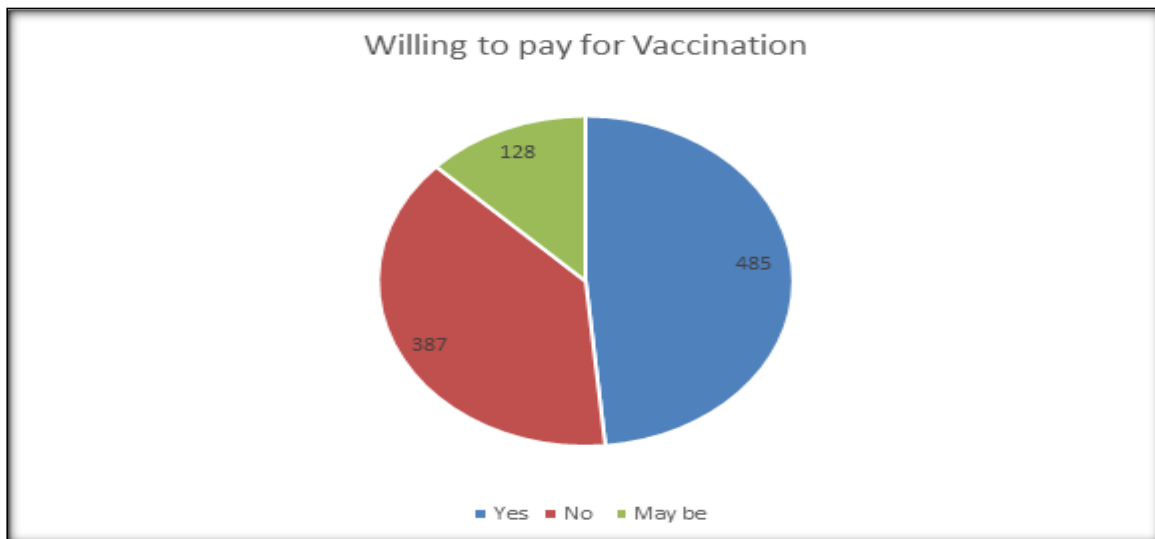
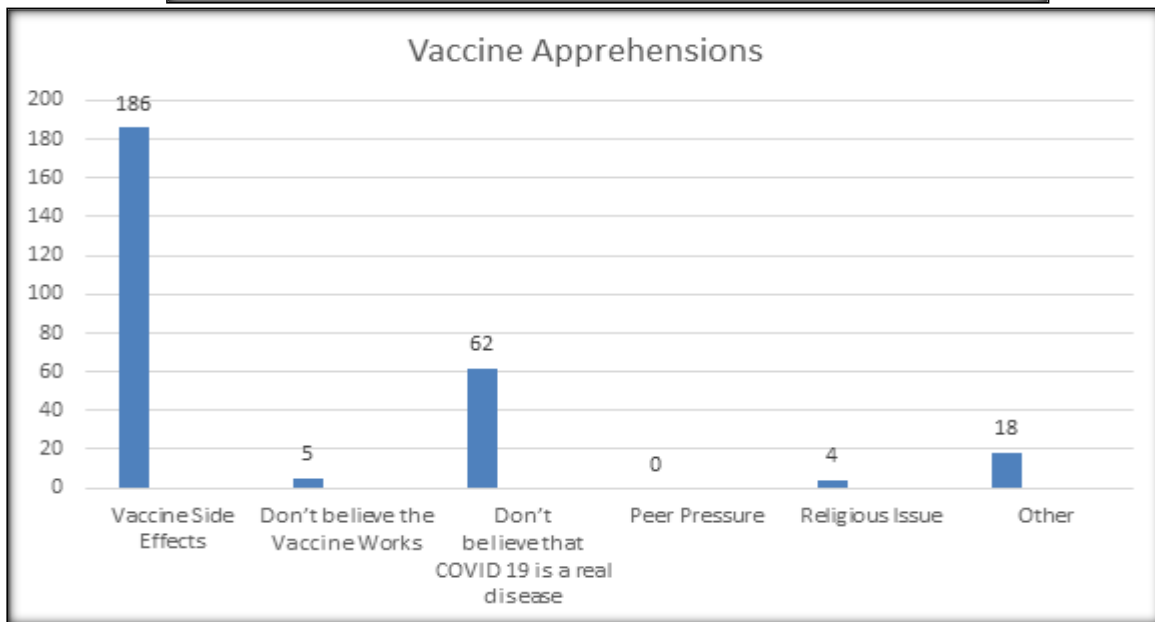
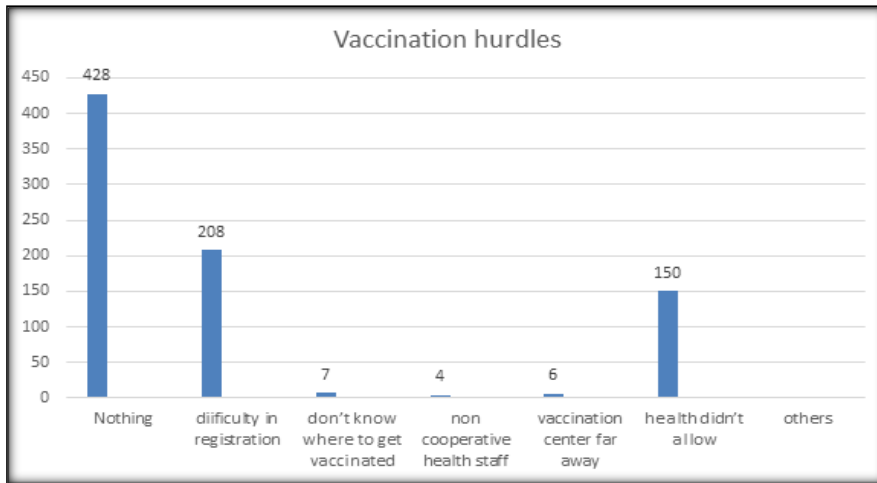


Table 3: ?

		Number	Percentage
If You don't want to get Vaccinated	Vaccine Side Effects	186	18.6
	Don't believe the Vaccine	5	0.5

what is the reasons for apprehension?	Works		
	Don't believe that COVID 19 is a real disease	62	6.2
	Peer Pressure	0	0.0
	Religious Issue	4	0.4
	Other	18	1.8
What are the hurdles you faced or are facing in getting vaccinated?	Nothing	428	42.8
	Difficulty in registration	208	20.8
	Don't know where to get vaccinated From	7	0.7
	Non-cooperative health staff	4	0.4
	Vaccination Center Far away	6	0.6
	Health Didn't allow	150	15.0
	Other	197	19.7
Did u get any other vaccine	No	209	20.9
	Yes	791	79.1
Do u believe vaccine works	Yes	549	54.9
	No	262	26.2
	May be	189	18.9
If a vaccine for children is available will you get your kids vaccinated	Yes	563	56.3
	No	310	31.0
	May be	126	12.6
	I don't have a kid	1	0.1
Are you willing to pay for vaccination against COVID	Yes	485	48.5
	No	387	38.7
	May be	128	12.8
Do you think everyone should be vaccinated	Yes	505	50.5
	No	313	31.3
	May be	182	18.2
Do u think vaccine side effects will effect your decision to get vaccinated	Yes	786	78.6
	No	67	6.7
	May be	147	14.7
Do you think the COVID vaccine is safe	Yes	494	49.4
	No	249	24.9
	My be	257	25.7



Discussion

We present data on 1000 community-based individuals in the Patiala.

In this community-based survey of attitudes, intentions, and apprehensions towards COVID 19 vaccines and vaccine hesitancy in urban and rural populations, we found that about half the population had a positive attitude towards the vaccines. About 2.5% of the respondents denied vaccines, whereas 27.5% were hesitant. The main dimensions of the attitudes towards the COVID 19 vaccines were trust in effectiveness of the vaccines, mistrust in the health system and the vaccines, concern regarding adverse reactions of the vaccines, and hurdles faced during the vaccination.

In multivariable analysis, age, gender, and education were not significantly associated with vaccine acceptance. This finding contrasts with the results of other studies conducted in Portugal and Indonesia,^[14,15] where vaccine acceptance was significantly associated with education and marital status, respectively. Studies among other populations too have reported several reasons for hesitancy toward COVID-19 vaccines, including side-effects of the vaccine¹⁶, uncertainty about the effectiveness,^[17] and medical mistrust.^[18-20] Half of the population denied their children vaccination if it comes in near future. It was the same reason of hesitancy to get their children vaccinated.

More than 70% of the population were vaccinated. On asking the hurdles faced 20.8% had difficulty in registration, 0.7% didn't know where to get vaccinated, 0.4% said non-cooperative health staff, and 0.6% complained about the vaccination center was far away. 15% said their health didn't allow it. 61.5% of the population didn't face any hurdles to getting vaccinated for covid vaccination. These hurdles could have led to the increased hesitancy and denial towards covid vaccination.

This cluster (21.5%) with low levels of mistrust of COVID 19 vaccine, but also had a high level of concern regarding the adverse effects of the vaccines. Though they had low trust in the vaccine, they were concerned about the adverse effects. Young people between 18 and 25 years, professionals, and people with no exposure to COVID 19 infection were more likely to belong to this cluster. It is interesting to note that this cluster had a high proportion of vaccine deniers, probably driven by a low age profile and less risk perception and concern regarding adverse effects, despite a high trust in the vaccines. Interventions directed at this cluster must focus on allaying anxieties regarding the adverse effects, working with employers and encouraging them to provide paid leave for vaccination, and in case of any adverse reactions after vaccination, providing incentives for taking vaccines.

The majority of the participants (>50%) believed in the effectiveness of vaccines. People above 40 years of age, males, urban residents, and business people and executives, with higher income, and with exposure to COVID 19 infection were more likely to belong to this cluster.

Various studies have closely examined the level of vaccine hesitancy in different parts of the world. The COVID 19 vaccine hesitancy in the UK was reported to be around 35%²¹. A systematic review of COVID 19 vaccine acceptance rates in different parts of the world revealed high acceptance in Malaysia, Indonesia, and China and very poor acceptance rates in Italy, Russia, the United States, and France.^[22] A multi-country survey conducted in June 2020 before the availability of the vaccine showed that there was wide heterogeneity of factors in various countries that determined vaccine acceptance. Whereas the elderly were more likely to accept the vaccine in France and Germany, the young were more likely to accept it in China. High education was associated with greater acceptance in France, Germany, and India, whereas low education was more likely to lead to vaccine acceptance in Canada, Spain, and UK.^[23] In a nationwide survey conducted among medical students in India, vaccine hesitancy was found among 10.6% of the students.^[24] This is high given the fact that their level of awareness and risk perception is likely to be high. The major factors driving vaccine hesitancy are false information about the vaccine, lack of sufficient credible

information, lack of trust in the health system, and religious factors that deter one from accepting the vaccine.^[25]

Our study has some limitations. Although we used data from a large population of individuals, reporting on a mobile phone app, the sample contained under-represented individuals in more deprived areas. Furthermore, we were unable to analyze the impact of ethnicity due to the low number of participants who provided this information. Additionally, the data were self-reported; vaccination status might not have been completely accurate and there might have been temporal gaps in reporting.

The strength of our study is that it systematically segmented the population using robust statistical methods based on their attitudes towards the COVID 19 vaccine and understanding the levels of hesitancy related to their attitudes. The understanding that this study provides regarding the subgroups of the population which have high levels of hesitancy and those that have high levels of vaccine denial will guide the development of specific targeted interventions to reduce the hesitancy. The findings of this study are directly actionable and can help develop effective behavior change communication campaigns.

Conclusion

There is COVID 19 vaccine hesitancy in the general population. This hesitancy is driven by the people's attitude towards the health system and the vaccine. Apart from these attitudes, social, health system and accessibility factors also probably play a major role in vaccine hesitancy. This study provides an understanding of people's attitudes towards the COVID 19 vaccines and their association with hesitancy and the findings will help design effective behavior change communication campaigns.

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