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COVID-19 VACCINATION HESITANCY AMONG PEOPLE OF AN URBAN AREA OF ROHTAK DISTRICT, HARYANA

Dr. B. M. Vashisht, Dr. Ginni Agrawal*, Arup Saha, Dr. Aman Sachdeva, Dr. Jyotsana, Dr. Pratibha and Dr. Anil Kumar

Senior Resident, House no. 686, Sector-1, Rohtak, Haryana Rohtak, India.

***Corresponding Author: Dr. Ginni Agrawal**

Senior Resident, House no. 686, Sector-1, Rohtak, Haryana Rohtak, India.

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ABSTRACT

Background: Effective and safe COVID 19 vaccines have been approved for emergency use and countries are actively vaccinating their people. Even after endless efforts, hesitancy towards the vaccines exist globally. **Objectives:** This study was conducted to find out the possible reasons associated with Covid-19 vaccine hesitancy and to identify strategies to overcome this hesitancy in an urban area of Rohtak district, Haryana. **Methods:** This study was a community based cross-sectional study conducted in an urban community of Rohtak district, Haryana, among 251 persons who had not been vaccinated with covid-19 vaccine yet. Universal sampling technique was opted and data were collected using an online semi-structured questionnaire. **Results:** More than 50% unvaccinated subjects were females belonging to 18-44 years of the age group. Mean age of the subjects enrolled was 39.78 ± 17.08 years. Pregnancy, no need of vaccine and lactation were the top most reasons for vaccine hesitancy, whereas, about 18% of unvaccinated subjects did not state any specific reason for the reluctancy towards vaccine. Proof of vaccination before boarding public transport, restricted entry at religious places without covid vaccination proof and no Government benefits to the unvaccinated were the commonly selected options from the list provided to overcome vaccine hesitancy. **Conclusion:** This hesitancy is due to lack of trust and people's attitude towards the health system and the vaccine. With proper communication strategies we can build people's trust in the vaccine and health system.

KEYWORDS: COVID-19 vaccine, vaccine hesitancy, urban, Haryana.

INTRODUCTION

COVID-19, a disease caused by SARS-CoV 2 virus which was declared by World Health Organization (WHO) a Public Health Emergency of International Concern (PHEIC) on 30th January 2020 and a Pandemic on 11th March 2020.[1,2]

Pandemic has more power to kill humans without using any weapons as compared to manmade wars, this appears true as we see the total deaths all over the world has reached 56,81,885 till 30th January 2022 due to coronavirus disease (WHO). During this time, the total number of cases and deaths in India has reached 4,13,02,440 and 4,95,050 respectively.[3]

Since the first case of coronavirus emerged at the fag end of 2019, the virus has had devastating global effects. The COVID-19 pandemic has significantly affected all facets of our lives physical, academic, financial and psychological.

Growing attention has been paid to vaccinate our population in order to control the COVID-19 pandemic. Prior to vaccination, containment efforts relied primarily on public health measures, such as social distancing, self-isolation, travel restrictions, hand hygiene, mandatory or recommended mask-wearing in public, widespread testing and lockdown procedures.

International research efforts advanced at an unprecedented pace in pursuit of a safe and effective vaccine. The coronavirus disease 2019 (COVID-19) vaccine was launched in India on 16th January 2021.[4] In the first phase, health care workers were targeted for vaccination with either of the two vaccines approved for restricted emergency use i.e., Covishield or Covaxin.[5]

Covishield is manufactured by Serum Institute of India under license from Astra Zeneca (adenovirus vectored ChAdOx1 nCoV-19 vaccine – AZD1222)[4], whereas, the inactivated severe acute respiratory syndrome-coronavirus-2 (SARS-CoV-2) vaccine Covaxin (BBV152) is manufactured in India by Bharat Biotech in collaboration with Indian Council of Medical Research.[5]

From 1st March 2021, COVID-19 vaccination has been extended to those aged more than 60 years and persons

having comorbidities in the age group of 45 to 59 years. Later, vaccination was extended to persons aged 45 to 59 years and 18 to 44 years from 1st April and 1st May 2021, respectively. Registration for the vaccination is done online through the COVID-19 Vaccine Intelligence Network (CO-WIN) portal which was developed with the support of United Nations Development Programme (UNDP). The portal also tracks enlisted beneficiaries, issues short messaging service (SMS) reminders and vaccination certificates for vaccinated individuals.[5]

The success of a vaccine depends not only on scientific and clinical readiness (i.e., having an adequate supply of a rigorously tested vaccine) but also its public acceptance (i.e., intentions of a large proportion of the population to get vaccinated for conferring herd immunity). The main threat to a successful vaccination program includes inability of providers to vaccinate all due to insufficient logistics and from acceptors due to their wrong attitudes and behaviours towards vaccination.

Current vaccine efficacy rates are 76% and 77.8% after both doses of the covishield and covaxin respectively.[6,7] The second wave of pandemic in India triggered a massive humanitarian crisis with unprecedented number of hospitalisations and deaths. Mass vaccination against COVID-19 has emerged as a key preventive strategy.

Yet, there is COVID-19 vaccine hesitancy i.e., delay in acceptance or refusal of available vaccines. Concerns regarding vaccine safety and efficacy, lack of awareness regarding their eligibility for vaccination and lack of trust in government agencies predicted COVID-19 vaccine hesitancy among people. Successful immunization programs require strategic communication to increase confidence among individuals who are vaccine-hesitant.

The World Health Organization has identified vaccine hesitancy as one of the ten greatest threats to public health (WHO, 2019), highlighting the need to study, understand, and target this construct.[8]

The objective of this study was to find out the possible reasons associated with Covid vaccine hesitancy and to identify strategies to overcome this hesitancy.

METHODOLOGY

Study area: An urban field practice area attached to the department of Community Medicine, PGIMS, Rohtak.

Study Population: Individuals who refused for COVID-19 vaccination.

Study design: A community based cross-sectional study.

Sample size and sampling technique: A total of 251 study subjects who refused for COVID-19 vaccination were enrolled in the study using universal sampling technique.

Inclusion criteria: Those participants >18 years of age who gave consent for participation in the study and were hesitant towards COVID-19 vaccination.

Data Collection: An online semi-structured questionnaire was designed to collect information regarding basic socio-demographic details, reasons for not getting vaccinated and identifying ways to overcome the hesitancy.

Out of 16330 subjects (more than 18 years of age) in the area, 251 did not get themselves vaccinated. This questionnaire was administered online using Google forms. Data collection was completely anonymous with no individual identifier.

Data Analysis: Data were collected, compiled in MS excel spreadsheet and analysed using SPSS v 20.0. The data were presented as frequency and proportions.

RESULTS

Table 1: Distribution of study subjects according to socio-demographic profile. (N = 251).

S.no.	Age group (years)	Male N (%)	Female N (%)	Total N (%)	Chi-square p-value
1.	18-44	48 (55.2)	117 (71.3)	165 (65.7)	Chi-square = 6.969 p-value = 0.031*
2.	45-59	15 (17.2)	21 (12.8)	36 (14.3)	
3	60 and above	24 (27.6)	26 (15.9)	50 (19.9)	
	Total	**87 (100)**	**164 (100)**	**251 (100)**	
	Education status				
1.	Primary	6 (6.9)	16 (9.8)	22 (8.8)	Chi-square – 9.422 p value = 0.151
2.	Middle	2 (2.3)	0 (0)	2 (0.8)	
3	Matric (10th)	13 (14.9)	17 (10.4)	30 (12.0)	
4.	12th	27 (31.0)	59 (36.0)	86 (34.3)	
5.	Graduate	17 (19.5)	19 (11.6)	36 (14.3)	
6.	Post graduate	3 (3.4)	10 (6.1)	13 (5.2)	
7.	Illiterate	19 (21.8)	43 (26.2)	62 (24.7)	
	Total	**87 (100)**	**164 (100)**	**251 (100)**	
	Occupation				

1.	Housewife	0 (0)	108 (65.9)	108 (43)	Chi-square – 187.596 p value = 0.001*
2.	Student	0 (0)	34 (20.7)	34 (13.5)	
3	Govt. Job	11 (12.6)	4 (2.4)	15 (6.0)	
4.	Private Job	36 (41.4)	13 (7.9)	49 (19.5)	
5.	Business	28 (32.2)	0 (0)	28 (11.2)	
6.	Unemployed	9 (10.3)	0 (0)	9 (3.6)	
7.	Labour	3 (3.4)	5 (3.0)	8 (3.2)	
	Total	**87 (100)**	**164 (100)**	**251 (100)**	
	Type of family				
1.	Nuclear	23 (26.4)	65 (39.6)	88 (35.1)	Chi-square – 6.818 p value = 0.033*
2.	Joint	35 (40.2)	42 (25.6)	77 (30.7)	
3	Three generation	29 (33.3)	57 (34.8)	86 (34.4)	
	Total	**87 (100)**	**164 (100)**	**251 (100)**	

*(Figures in parentheses indicate percentages) (*Statistically significant)*

Out of 251 hesitant subjects, 87 (34.66%) were males and 164 (65.34%) were females. It was also observed that most of the subjects were in the age group 18-44 (65.7%) years followed by above 60 (19.9%) years of age and 45-60 (14.3%) years. The Mean Age of vaccine hesitant subjects was found to be 39.78 ± 17.08 years. Majority of the reluctant subjects were 12th pass (34.3%) followed by illiterates (24.7%), graduates (14.3%) and 10th pass (12%). Among non-vaccinated females 65% were housewives, while 20.7% were students, 7.9% working in private, 2.4% in govt. jobs and 3% were labourers. 41.4% non-vaccinated males were working in a private sector, 32.2% were engaged in business followed by govt. jobs (12.6%) and remaining were either labourers (3.4%) or unemployed (10.3%). Among non-vaccinated subjects 35.1% belong to nuclear (35.1%), joint (30.7%) and three generation family (34.4%) were almost similar in number. (Table 1)

Table 2: Possible reasons for covid vaccination hesitancy.

S.no.	Reasons	Frequency	Percentage
1.	No specific reason, just not willing/ Refusal	45	17.9
2.	Pregnant	32	12.74
3.	No need of vaccine	26	10.3
4.	Lactation/ Post Natal	24	9.56
5.	Currently sick/ ill/ not feeling well	21	8.3
6.	Not at home/ out of station	19	7.56
7.	Diabetes/ Hypertension	16	6.3
8.	Fear from vaccine	15	5.9
9.	Allergy	14	5.57
10.	Heart disease/ MI	08	6.4
11.	Cancer	06	2.3
12.	Paralysis	05	1.99
13.	Not having faith in Govt. service	05	1.99
14.	Fever/ Dengue fever	05	1.99
15.	Busy schedule	02	0.007
16.	Liver problem	02	0.007
17.	Mental health issues	02	0.007
18.	Advised by doctor not to get vaccinated	02	0.007
19.	Surgical operation in recent past	01	0.003
20.	Menstruation	01	0.003

The subjects were asked to state reasons for not getting vaccinated and they reported various reasons out of which pregnancy (12.74%), no need of vaccine (10.3%) and lactation (9.56%) were the top most reasons for vaccine hesitancy, whereas, about 18% of unvaccinated subjects did not state any specific reason for it. Out of 251 unvaccinated individuals, 8.3% were feeling ill and 7.56% were not at home or out of station. Around 6% gave diabetes/ hypertension and heart diseases as the reasons for not being vaccinated. Allergic (5.57%) to some or the other allergens and fear from vaccine (5.9%) were also the common reasons reported. (Table-2)

Table 3: Options identified by subjects from the provided semi-structured list to overcome vaccine hesitancy (Could choose multiple options).

S.no.	Response*	Frequency	Percentage
1.	Vaccination certificate or RTPCR test report before boarding buses or train	104	41.43
2.	No entry at religious places (temple/ gurudwara/ mosque/ church) without proof of vaccination	98	39.04
3.	Vaccination certificate or RTPCR test report before going to work	78	31.07
4.	No Government benefits (Court/ bank/post office/ transport/hospital) to the unvaccinated	73	29.08
5.	No entry at closed spaces (mall, cinema hall, multiplex or departmental store) without proof of vaccination	60	23.90
6.	Limitation of movement of unvaccinated to purchase essential items and medical care	49	19.52
7.	Monetary benefits to completely vaccinated	29	11.55
8.	Limitation of movement of unvaccinated to work or school	29	11.55
9.	Release of salary after complete vaccination with both doses	28	11.16
10.	No subsidized ration to un-vaccinated	15	5.90
11.	Vaccination proof of candidates for elections and covid prevention protocols in their rallies	14	5.58
12.	Barring from government employment	13	5.18
13.	No liquor to the unvaccinated	07	2.79
14.	Any other	09	3.59

*(*Multiple responses)*

On asking that, what can be done to get those unvaccinated people motivated for taking covid vaccine multiple responses were obtained. Vaccination certificate or RTPCR test report before boarding buses or trains (41.43%), no entry at religious places (temples/ gurdwara / mosque/ churches) without proof of vaccination (39.04%), proof of vaccination before going to work (31.07%), no Government benefits (in the Court/ bank/post office/ transport/hospital) to the unvaccinated (29.08%) and no entry at closed spaces (malls. Cinema halls, multiplex or departmental stores) without proof of vaccination (23.90%) were the most common answers received from 251 unvaccinated individuals. (Table-3).

DISCUSSION

This community-based study with cross-sectional design was conducted in an urban field practice area attached to department of community medicine of a tertiary care health centre. The study comprised of majority of female participants (65.34%). The maximum participants belonged to the age group of 18-44 years i.e., 65.7%. These findings were similar to the study conducted by **Danabal et al**[9] in Tamil Nadu where also majority of participants were female (62.9%) and also maximum were in the age group of 18-45 years (68.6%). Similar findings were also reported by study conducted by **Jain et al**[10] in India where also majority participants were female (61.98%) and belonged to age group of 18-25 years (59.54%).

Regarding the reasons for hesitancy towards COVID-19 vaccination, 12.7% were hesitant to vaccination due to their ongoing pregnancy for fear of any adverse effect to the foetus. This reflects the lack of awareness among general population regarding COVID-19 vaccines. 17.9 % of participants gave no specific reason for their hesitancy towards vaccination. Around 17% of participants refused vaccination due to co-morbidity status and 5.9% due to fear of adverse events following vaccination. Around 10 % of participants felt no need of COVID-19 vaccination which is similar to a study conducted by **Chandani et al**[11] in India where around 9% participants reported no need of vaccination. This could be due to their belief that nutritional supplements could be better in boosting immunity rather than vaccines. Around 18% participants in present study reported no specific reason for hesitancy towards vaccination. In a similar study by **Chandani et al** in India reported higher proportion of participants with no specific concern towards vaccine (30%) as compared to present study. This difference could be accounted to the reason that larger sample was included in the later study.

Regarding the strategies to motivate people for COVID-19 vaccination, majority of the subjects reported essentiality of vaccination proof for using public transport as best strategy, while 39.04% assumed that no entry at religious places without vaccination would be a better and powerful step towards motivating people.

CONCLUSION

This hesitancy is mainly due to the people's attitude towards the health system and the vaccine. Meeting target immunization rates will require robust public health campaigns that will motivate individuals who are vaccine-hesitant in their attitudes and behaviours. Targeted awareness campaigns and public release of safety and efficacy data to public will be trust building activities and will further reduce COVID-19 vaccine hesitancy among people.

LIMITATIONS

The study is limited to a particular geographic area in Haryana and does not represent a state-wide data. We also came across people who had accepted the vaccine under pressure by their employers and they still had substantial hesitation and doubt, but they got vaccinated, so this aspect of vaccine hesitancy could not be recorded in our study.

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CONFLICTS OF INTEREST: Nil.

REFERENCES

1. COVID 19 Public Health Emergency of International Concern (PHEIC) ,World Health Organization. Available at https://www.who.int/publications/m/item/covid-19-public-health-emergency-of-international-concern-(pheic)-global-research-and-innovation-forum# (accessed on 30 Jan 2022).
2. WHO Declares COVID-19 a Pandemic, National Library of Medicine. Available at https://pubmed.ncbi.nlm.nih.gov/32191675/ (accessed on 30 Jan 2022).
3. Worldometer. Available at https://www.worldometers.info/coronavirus/country/india/ (accessed on 30 Jan 2022).
4. COVID-19 vaccine launch in India, UNICEF. Available at https://www.unicef.org/india/stories/covid-19-vaccine-launch-india (accessed on 30 Jan 2022).
5. Kumar VM, Perumal SR, Trakht I, et al. Strategy for COVID-19 vaccination in India: the country with the second highest population and number of cases. Npj vaccines, 2021; 6: 60.
6. The oxford/ AstraZeneca (ChAdOx1-S [recombinant] vaccine) COVID-19 vaccine: what you need to know, World Health Organization. Available at https://www.who.int/news-room/feature-stories/detail/the-oxford-astrazeneca-covid-19-vaccine-what-you-need-to-know? (accessed on 30 Jan 2022).
7. India's COVID vaccine shown 78% effective in phase 3 trial. Center for Infectious Disease Research and Policy , University of Minnesota. Available at https://www.cidrap.umn.edu/news-perspective/2021/11/indias-covid-vaccine-shown-78-effective-phase-3-trial (accessed on 30 Jan 2022).
8. Ten threats to global health in 2019, World Health Organization. Available at https://www.who.int/news-room/spotlight/ten-threats-to-global-health-in-2019 (accessed on 30 Jan 2022).
9. Danabal K, Magesh S, Saravanan, et al. Attitude towards COVID 19 vaccines and vaccine hesitancy in urban and rurak communities in Tamil Nadu, India – a community-based survey. BMC Health Services Research, 2021; 21: 994.
10. Jain L, Vij J, Satapathy P, et al. Factors influencing covid-19 vaccination intentions among college students: A corss-sectional study in India. Front Public Health, 2021; 9: 735902.
11. Chandani S, Jani D, Sahu PK, et al. COVID-19 vaccination hesitancy in India: State of the nation and priorities for research. Brain Behav Immun Health, 2021; 18: 100375.