



ATTITUDES AND HESITANCY TOWARD COVID-19 VACCINE AMONG HEALTHCARE WORKERS AND MEDICAL STUDENTS OF RUHS-COLLEGE OF MEDICAL SCIENCES JAIPUR, RAJASTHAN: AN OBSERVATIONAL STUDY

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ABSTRACT

Background: A massive global human disaster has been created by a recent contagious respiratory infectious disease caused by a novel coronavirus (SARS-CoV-2). The most effective way of controlling infectious diseases is often vaccination. Public vaccine hesitancy is a big problem for public health authorities. Present study was designed to assess the attitudes and hesitancy toward Covid -19 vaccine among healthcare workers and medical students of RUHS-College of Medical Sciences. Material and methods: It was an observational, questionnaire-based study carried out under the department of Pharmacology, RUHS-college of medical sciences Jaipur. The study tool was consists of a digital questionnaire which was prepared in English language. Result: The present study was carried out among 521 health care workers. In this study 48.9% participants were completely agree 31.9% somewhat agree, 13.6% neutral, 3.5% somewhat disagree and 2.1% completely disagree to accept covid-19 vaccine without prior employer recommendation. After employer recommendation covid-19 vaccine acceptance was increased. Now 54% participants were completely agree to accept covid-19 vaccine. Hesitancy to covid-19 vaccine was maximal due to possible side effects (65.5%). Conclusions: Acceptability of vaccination in our participants was increased after awareness to vaccine. So by increasing awareness for acceptance of covid-19 vaccine, we can prevent mass rejection of covid-19 vaccine in general population during vaccination program. Vaccine hesitancy must be addressed for successful implementation of covid-19 vaccination program in future.

KEYWORDS : Adverse Effects, Attitudes, Covishield Vaccine, Hesitancy, Novel Corona virus, Vaccination.

INTRODUCTION

A massive global human disaster has been created by a recent contagious respiratory infectious disease caused by a novel corona virus (SARS-CoV-2) which holds the same veiled RNA structure resembling SARS-CoV-1 that caused the Severe Acute Respiratory Syndrome (SARS) outbreak(1). The first cases of COVID-19 were identified in Wuhan, China at the end of December 2019. The virus has now affected virtually every country across the world and the number of deaths continues to rapidly increase (2). In India first case of Covid-19 identified in Kerala on January 27, 2020. After that 35 million cases and 0.4 million deaths have been reported in india.(3)

Social distancing and quarantine may slow the spread of the virus and flatten the epidemic curve; it may not be sufficient to completely halt the spread of COVID-19, herd immunity gained by infection or vaccination will need to be well established within the population(4). The most effective way of controlling infectious diseases is often vaccination, while success is challenged by individuals and groups who choose to delay or refuse vaccines (5). Although immunization has successfully reduced the global burden of illness and death, public confidence in vaccines can be affected by various concerns. Patients often trust and rely on healthcare professionals for information about vaccines and vaccine- preventable diseases, as well as the therapeutic and public health benefits associated with immunization(6). In India, the Covishield vaccine was launched on 16th January, 2021. The first group included healthcare and frontline workers. The second group to receive COVID 19 vaccine was persons over 50 years of age and persons under 50 years with co-morbid conditions. Vaccination for COVID-19 is voluntary and provide free of cost. 4000 million persons globally and 1500 million persons in India have vaccinated(7). However, public vaccine hesitancy is a big problem for public health authorities. Vaccine hesitancy can lead to delays and refusal and sometimes contribute to disease outbreaks (8). After the discovery of vaccine, the distribution and acceptance of the vaccine in general population is the new challenge. With the availability of COVID-19 vaccines, little information is available on the public acceptability and attitudes towards the COVID-19 vaccine in India.

Vaccines are effective interventions that can reduce the high burden of diseases globally Therefore, This study aimed to investigate the Attitudes and hesitancy toward Covid-19 Vaccine among Healthcare

worker and Medical students of RUHS- College of Medical Sciences, Jaipur, Rajasthan.

Materials and Methods:

Design of the Study:

An observational, questionnaire-based study was carried out under the department of Pharmacology of RUHS College of Medical Sciences at Jaipur, Rajasthan. Ethics committee clearance (EC/P-42.1/2021) was obtained.

Sample size:

A convenient sample approach was adopted in this study where healthcare workers and medical students of RUHS college of medical sciences jaipur, rajasthan were invited to participate.

Study population:

Inclusion criteria:

Study population consists of healthcare workers and medical students of RUHS College of Medical Sciences, Jaipur.

Exclusion criteria:

Not willing healthcare workers and medical students were excluded from the study.

Conduct of the Study:

The study tool was consists of a digital questionnaire which is prepared with the help of the psychiatrist in English language. Questionnaire was self-developed and pre validated consisting of twenty questions. It was pretested on a group of Healthcare workers. An online survey was performed to get the response from Healthcare workers and Medical students. The participants were contacted with the digital Questionnaire through various networking systems. In this study, online social media platforms (WhatsApp Group, Facebook, email) were used to recruit participants.

Statistical analysis:

Categorical variables were presented as numbers and percentages, while continuous variables were presented as median [interquartile range]. The univariate analysis was performed using an independent

Mann–Whitney U test for continuous variables and Chi-square test for categorical variables as appropriate.

RESULTS:

The present study was carried out among 521 health care workers. According to age, we divided the participants in 3 groups in which 386(74%) were in 18-24 age group, 117(22.5%) were in 24-40 year age group and 18(3.5%) were in >40 year age group (Figure-1). The median age of participants was 23 years of which 293 (56.2%) were males and 228 (43.8%) were females (Figure 2). About 78% were undergraduate medical students, 7% were post graduate medical students, 10% were doctors, 2% were nursing staff and paramedics each (Table-1). In this study 48.9% participants were completely agree, 31.9% somewhat agree 13.6% neutral, 3.5% somewhat disagree and 2.1% completely disagree to accept Covid-19 vaccine without prior employer recommendation (Figure 4). After employer recommendation covid-19 vaccine acceptance was increased. Now 54% participants were completely agreed to accept Covid-19 vaccine (Figure 4).

As shown in Table 2 and Table 3, 18-24 age group and undergraduate medical students were more likely to accept Covid-19 vaccine ($p < 0.05$). There was no statistical significant difference between male and female ($P > 0.05$).

Hesitancy to Covid-19 vaccine was maximal due to possible side effects (65.5%). 16.5% were concerned that vaccine is too new to use, while 7.2% showed lack of trust in government to ensure vaccine safety and 10.7% had some other reasons. Hesitancy was maximum in 18-24 age group and in undergraduate group which is statistically significant (p value < 0.05). Hesitancy was statistically insignificant in different gender group (p value > 0.05) (Table-4).

Table 1. Demographic details of study participants: (n=521)

Variables	N (%)
1. Age(years)	
18-24 Years	386 (74.0%)
24-40 Years	117(22.5%)
>40 Years	18(3.5%)
2. Gender	
Male	293 (56.2%)
Female	228(43.8%)
3. Education	
Undergraduate students	410 (78.7%)
Postgraduate students	36(6.9%)
Doctor	53 (10.2%)
Paramedics	11(2.1%)
Nursing staff	11(2.1%)
4. Accept covid-19 vaccine if generally available	
Completely agree	255 (48.9%)
Somewhat agree	166 (31.9%)
Neutral/no opinion	71 (13.6%)
Somewhat disagree	18 (3.5%)
Completely disagree	11 (2.1%)
6. Accept covid-19 vaccine if employer recommended it	
Completely agree	282 (54.1%)
Somewhat agree	136 (26.1%)
Neutral/no opinion	74 (14.2%)
Somewhat disagree	21 (4.1%)
Completely disagree	8 (1.5%)
5. Hesitancy to covid-19 vaccine due to-	
Worried about possible side effects	341 (65.5%)
Lack of trust in government to ensure the vaccine safety	38 (7.3%)
Concerns that the vaccine is too new	86 (16.5%)
Others	56(10.7%)

Table 2. Acceptance of Covid-19 vaccine if generally available: (n=521)

Factors	Completely agree N (%)	Somewhat agree N (%)	Neutral/no opinion N (%)	Somewhat disagree n (%)	Completely disagree N (%)	P-value
Age						
18-24	178(46.1)	133(34.5)	63(16.3)	8(2.1)	4(1)	<0.001 (S)
24-40	65(55.6)	29(24.8)	8(6.8)	9(7.7)	6(5.1)	
>40	12(66.7)	4(22.2)	0(0.0)	1(5.6)	1(5.6)	
Gender						
Male	158 (53.9)	86(29.4)	34(11.6)	8(2.7)	7(2.4)	0.092
Female	97(42.5)	80(35.1)	37(16.2)	10(4.4)	4(1.8)	

Qualification						
Undergraduate students	46.1(40.68)	140 (34.1)	67 (16.3)	10 (2.4)	4 (1)	<0.001 (S)
Postgraduate students	14 (38.9)	11 (30.6)	3 (8.3)	2 (5.6)	6 (16.7)	
Doctor	33 (62.3)	12(22.6)	1 (1.9)	6 (11.3)	1 (1.9)	
Nursing staff	9 (81.8)	2 (18.2)	0(0.00)	0(0.00)	0(0.00)	
Paramedics	10 (90.9)	1 (9.1)	0(0.00)	0(0.00)	0(0.00)	

Table 3. Accept covid-19 vaccine if employer recommended it: (n=521)

Factors	Completely agree N(%)	Somewhat agree n(%)	Neutral/no opinion N(%)	Somewhat disagree n(%)	Completely disagree n(%)	P-value
Age						
<24	194 (50.3)	110(28.5)	66(17.1)	14(3.6)	2 (0.5)	<0.001 (s)
24-40	74(63.2)	24(20.5)	7 (6)	7 (6)	5 (4.3)	
>40	14(77.8)	2 (11.1)	1 (5.6)	0 (0)	1(5.6)	
Gender						
Male	168(57.3)	67 (22.9)	37(12.6)	15 (5.1)	6 (2)	0.083
Female	114 (50)	69 (30.3)	37(16.2)	6 (2.6)	2 (0.9)	
Qualification						
Undergraduate students	208 (50.7)	118(28.8)	67(16.3)	16 (3.9)	1 (0.2)	<0.001 (s)
Postgraduate students	17 (47.2)	6 (16.7)	5 (13.9)	2 (5.6)	6 (16.7)	
Doctor	35 (66)	12 (22.6)	2 (3.8)	3 (5.7)	1 (1.9)	
Nursing staff	11 (100)	0 (0.38)	0(0.00)	0 (1.9)	0 (0.00)	
Paramedics	11 (100)	0 (0.19)	0(0.00)	0(0.00)	0(0.00)	

Table 4: Hesitancy to covid-19 vaccine due to: (n=521)

Factors	Worried about possible side effects N(%)	Lack of trust in government to ensure the vaccine safety N(%)	Concerns that the vaccine is too new N(%)	Others N(%)	P-value
Age					
<24	275 (71.2)	26 (6.7)	41 (10.6)	44 (11.4)	<0.001 (s)
24-40	60 (51.3)	12 (10.3)	34 (29.1)	11 (9.4)	
>40	6 (33.3)	0 (0.0)	11 (61.1)	1 (5.6)	
Gender					
Male	179 (61.1)	26 (8.9)	49 (16.7)	39 (13.3)	0.051
Female	162 (71.1)	12 (5.3)	37 (16.2)	17 (7.5)	
Qualification					
Undergraduate students	294 (71.7)	25 (6.1)	45 (11)	46 (11.2)	<0.001 (s)
Postgraduate students	16 (44.4)	6 (16.7)	10 (27.8)	4 (11.1)	
Doctor	17 (32.1)	7 (13.2)	24 (45.3)	5 (9.4)	
Nursing staff	6 (54.5)	0 (0.0)	4 (36.4)	1 (9.1)	
Paramedics	8 (72.7)	0 (0.0)	3 (27.3)	0 (0.00)	

DISCUSSION

Covid-19 pandemic is a major health Challenge in human history in last 100 years. Severe Acute Respiratory Syndrome Corona virus 2 (SARS-cov-2) is the causative virus for the corona virus disease 2019 (COVID-19) ongoing pandemic (9).

Vaccines are a key strategy to stop the escalation of the COVID19 pandemic. Understanding of vaccine acceptance is important, because of relatively high vaccine hesitancy for existing vaccines and relatively low vaccination coverage (10). This virus is so virulent, contagious and has rapid spread to worldwide that rapid development of vaccine become difficult. Although, many developed countries and some developing countries have prepared vaccines against corona virus within a short period. Vaccines aim to expose the body to an antigen and provoke an immune response that can block or kill the virus if a person becomes subsequently infected, without causing the disease (11). Preparation of vaccine within short period has raises many issues in front of health workers and scientist like either vaccine is effective or not, what will be the side effects of vaccines and post marketing surveillance has not been done. Due to these issues, few of health workers have showed resistance against vaccination of Covid-19. In last few months a number of studies in several countries have studied attitudes and hesitancy towards covid-19 vaccine (12, 13, 14, 15). Negative attitudes towards vaccines and an uncertainty or unwillingness to receive vaccinations are major barriers to managing

the COVID-19 pandemic in the long-term (16).

In our study, we found positive attitudes towards acceptance of covid-19 vaccine (48.9% completely agree). Only 2.1% participants were completely disagree and 3.5% were somewhat disagree (p value $< .001$). Acceptability of vaccination in our participants was increased after awareness to vaccine. So by increasing awareness for acceptance of Covid-19 vaccine, we can prevent mass rejection of Covid-19 vaccine in general population during vaccination program.

In the context of covid-19 pandemic, vaccine hesitancy is a major barrier to accept Covid-19 vaccine. In this study, hesitancy was mostly due to vaccine safety. 65.5% participants were hesitant to accept covid-19 vaccine due to worried about possible side effects. Vaccine hesitancy must be addressed for successful implementation of Covid-19 vaccination program in future.

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Conflict of interest:

The authors declare no conflict of interest.

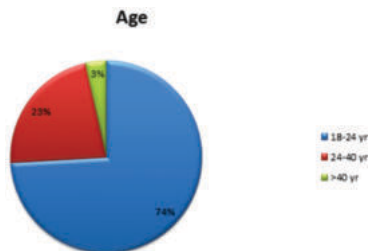


Figure-1. Age Wise Distribution Of Study Participants

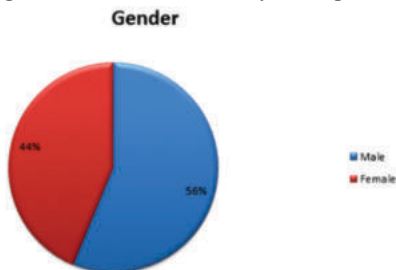


Figure-2. Gender Wise Distribution Of Study Participants

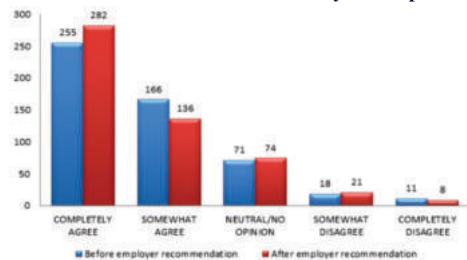


Figure 3: Attitude Towards Covid-19 Vaccine Before And After Employer Recommendation

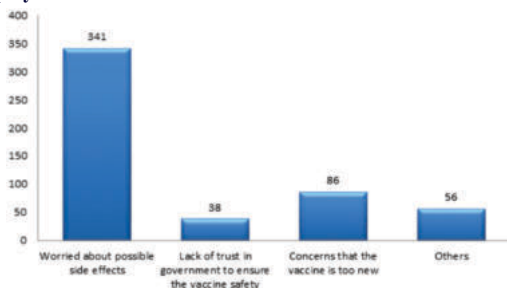


Figure-4. Hesitancy Towards Covid-19 Vaccine

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