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Awareness And Perception Regarding Prevention Towards Covid 19 Amongst Selected Indian Population: A Cross- Sectional Study

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Abstract

Background: The present study was conducted to assess the awareness and perception regarding prevention towards Covid 19 amongst Indian population.

Objectives: To elicit knowledge of the study subjects with relation to Covid 19 disease spread and vaccination. To semi quantify their perception regarding social and other important issues related to Covid 19.

Methodology: This awareness study was conducted among the general population of India. A self -designed questionnaire was developed using a Google form and circulated via social media and through e- mail. Data was entered into Microsoft Excel and further analysis was done. Percentages and Chi square test was done where ever applicable.

Results: Out of the total 381 subjects studied, 131 subjects were males and 250 were females. Male Health Care Workers (HCWs) accounted for 56 (42.7%) subjects and female HCWs were 161 (64.3%). Significantly higher number of Health Care Workers responded negatively (65.6%) for taking vaccine in case they have suppressed immune systems. A higher proportion of HCWs (66.2%) know that immunity will not develop against Covid 19 immediately after vaccination. Health care workers in a larger proportion (63.7%) know that a person with Covid infection can remain asymptomatic.

Conclusions: Females have responded in significantly higher number than males in Health Care Workers. Similar number of HCWs and others belonging to non-HCW group have answered 'yes' to the question Covid 19 is more severe than SARS/flu and also that it affects only human beings. Almost equal number of HCWs and others have the intent to get vaccinated once it is available. Significantly larger proportion of health care workers is against giving vaccine to domestic animals

and pets at home. A higher proportion of HCWs know that immunity will not develop against Covid 19 immediately after vaccination.

Keywords: Covid 19, Awareness, Vaccine, Prevention

Introduction

Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus that can affect your upper respiratory tract (sinuses, nose, and throat) or lower respiratory tract (windpipe and lungs). In early 2020, after a December 2019 outbreak in China, the World Health Organization identified SARS-CoV-2 as a new type of coronavirus. The outbreak quickly spread around the world.

Globally, as of 27 January 2021, there have been 99,864,391 confirmed cases of COVID-19, including 2,149,700 deaths, reported to WHO[1]. As on 25 January 2021, India has 10 667 736 confirmed cases and 153 470 total deaths[2]. The world is in the midst of a COVID-19 pandemic. WHO and partners have been working together on the response -- tracking the pandemic, advising on critical interventions, distributing vital medical supplies to those in need---they are racing to develop and deploy safe and effective vaccines. There are more than 50 COVID-19 vaccine candidates in trials against this deadly infection. Given the urgent need for COVID-19 vaccines some of the steps in the research and development process have been happening in parallel, while still maintaining strict clinical and safety standards.

In India COVID vaccine was launched on 16th January, 2021. The first group includes healthcare and frontline workers. The second group to receive COVID 19 vaccine will be persons over 50 years of age and persons under 50 years with comorbid conditions[3]. WHO Country Office for India (WCO) continues to work closely with MoHFW, in responding to COVID-19 and roll out of Covid19 vaccination at the national, state and district level[4].

In the previous literature published by various authors there are numerous articles on knowledge attitude and practices for COVID 19. The prevention component especially regarding the vaccine research and development, its availability, and various other aspects concerning vaccine have not been dealt with. There is very less information regarding the public perspective of COVID 19 vaccine in India. Therefore this study is taken up with the intention of assessing how much the Indian general public knows about Covid 19 prevention and vaccine.

Objectives

To elicit knowledge of the study subjects with relation to Covid 19 disease spread.

To obtain the knowledge of the subjects regarding vaccination along with any side effects.

To test their perception regarding other important issues related to Covid 19.

Material & Methods

The awareness study was done by online Google form and sending the link to groups of Health Care Workers and groups of others who are not Health Care Workers who were above the age of 18 years after institutional ethical clearance has been obtained.

The total number of study subjects who returned the questionnaire answered are 381.

The demographic details like age, gender and occupation was taken.

A question whether Covid 19 is more severe than SARS was given, whether Covid 19 affects only humans and also which age and gender groups were more susceptible to Covid 19 was asked.

The treatment options available for Covid 19 was asked, and the inclination to take an available vaccine

was elicited. The subjects were asked whether the vaccine was free of cost or to be met out of their pockets was asked, also whether the vaccination policy is universal or high risk group immunization as elicited and they were asked about the necessity of taking the vaccine if already tested positive and treated for Covid 19.

The subjects were asked if the side effects of vaccination are thought to be severe, their willingness to send their children to school after the first dose of vaccination was asked and the willingness of their taking the vaccine if they had allergy and if they are immune suppressed due to common causes was elicited.

Their inclination to postpone their travel plans and abstinence from social movements after vaccination was asked, the necessity of giving the vaccine to cattle and pets in their house was asked.

The subjects were asked whether Covid 19 would be successfully controlled after vaccination, their knowledge of any available antidotes for adverse events after vaccination was elicited and whether they will be protected immediately after vaccination. They were also asked whether vaccination confers life- long immunity and asked whether the Government initiatives are effective in controlling Covid 19 epidemic.

The subjects were asked whether another complete lockdown is necessary for controlling the epidemic and also asked whether the vaccine can be given to pregnant and lactating women, and to critically ill Covid 19 patients admitted in the ICU. They were asked whom do they contact for their queries related to Covid 19, also whether a person can have asymptomatic Covid 19 infection and if mRNA vaccines are safe to be administered against Covid 19.

The study subjects were asked whether herd immunity is protective against Covid 19, also the various social measures against spread of Covid 19 was elicited.

The responses were tabulated mostly into 2 X 2 tables and the chi square test was done and the significance of difference two proportions namely, the knowledge of each item in Health Care Workers and in the subjects other than Health Care Workers was tested for statistical significance.

The conclusions were drawn and discussed with relation to studies available in literature which were very small in number and finally the recommendations were made.

Results & Discussion

Out of the total 381 subjects studied, 131 subjects were males and 250 were females. Male Health Care Workers (HCWs) accounted for 56 (42.7%) subjects and female HCWs were 161 (64.3%). Difference is significant with p value less than 0.05.

When asked whether COVID 19 is more severe than SARS/FLU, 240 subjects answer was a yes. Among them 134 (55.8%) were HCWs. Among the 141 subjects who said no or not sure 83 (53.8%) subjects were HCWs. Difference between the two groups is not significant.

Knowledge whether COVID 19 affects only humans is questioned, 144 subjects have answered yes. Among them 73 (50.7%) subjects were HCWs. About 237 subjects said no or not sure. Among them 144 (60.7%) were HCWs. The difference between the two groups is not significant. In a cross sectional study done by Most. Zannatul Ferdous[5] et al around 60% of the study participants said that Covid 19 affects only humans.

A majority of the 286 subjects are willing to get vaccinated, once COVID 19 vaccine becomes available. Among them, 166 (58.0%) were HCWs. Out

of the 95 subjects, 51 (53.6%) HCWs were neither willing nor sure of receiving the vaccine. Difference is not significant. Our study confers with a study done by Luigi Roberta Biasio[6] et al in Italy where the study subjects intention to be vaccinated against COVID-19 was very high that is 92%.

Among the 231 subjects who said COVID 19 vaccine is given free of cost, 100 (43.3%) subjects were non – health workers. The rest of the 150 subjects say that it is out of pocket expenditure. Among them, 86 (57.3%) were HCWs. Difference is not significant.

A total of 50 participants said that the severity of side effects from vaccination are more severe than COVID 19 infection. Among them 28 (56.8%) were HCWs. A vast majority of 331 subjects, out of which 189 (57.1%) were HCWs, 142 (42.9%) were non HCWs, have answered not severe. The difference between HCW and non HCW group is not significant.

Out of the 122 subjects willing to send their children to school after first dose of vaccination, 69 (56.5%) subjects were HCWs. Most of the study subjects were not willing to send their children to school after first dose. The difference is not significant.

When asked if the study subjects were willing to take the vaccine even if they were immuno-compromised or had an allergic history, 78 subjects have answered yes. A total of 303 subjects have answered no and the difference is significant with p value 0.03.

Out of the 223 subjects who are willing to postpone travel or avoid any kind of social gatherings 130 (58.3%) subjects were HCWs. The difference is not significant. In a cross- sectional study done by Sonam Maheshwari[7] et al among medical students in Dehradun, India about 96.9% answered that COVID-19 can be prevented by avoiding crowded places such as train stations and avoiding public transportation.

A total of 97 subjects think that the vaccine should be given to cattle and pets at home. Among them, 45 (46.4%) subjects were HCWs. A total of 284 subjects answered that COVID 19 vaccine need not be given to cattle and pets. The difference is significant with p value 0.01.

A total of 165 subjects of which 90 (54.5%) were HCWs and 75 (45.5%) subjects belonged to various other groups said that COVID 19 control will be successfully achieved after vaccination. Around 216 subjects answered no or not sure among which 127 (58.8%) subjects were HCWs. The difference is not significant. In a study done by Jiahao Wang[8] et al in China, of the total 2058 respondents, 1842 (89.5%) thought that vaccination would be an effective way to prevent and control COVID-19.

Out of the 88 subjects who said that there is an effective antidote for side effects after vaccination, 44 (50.0%) were HCWs. Around 293 subjects said there is no antidote among which 173 (59.0%) were HCWs. The difference is not significant

A total of 37 subjects think that they are immediately protected after vaccination. 344 subjects have answered that the protection is not immediate after vaccination. Among them 202 (58.7%) were HCWs and 142 (41.3%) were non HCWs. The difference is significant with p value 0.03.

Among the 34 subjects who said that COVID 19 provides life- long immunity 14 (41.2%) subjects were HCWs. Most of the subjects i.e 347 have no knowledge of the duration of immunity provided by the vaccine, out of which 203 (58.5%) were HCWs. Difference is not significant.

Most of the subjects 219, think that the government initiatives are effective enough in controlling the spread of COVID 19. Out of them, 116 (53.0%) were HCWs.

A total of 162 subjects answered no or not sure to this question out of which 101 (62.3%) were HCWs. The difference is not significant.

Out of the 134 subjects who said that a complete lockdown should be introduced once again to control further spread of COVID 19, 76 (56.7%) were HCWs. A majority of 247 subjects have answered no or not sure out of which 141 (57.1%) were HCWs. The difference is not significant.

Among the 82 subjects who said yes, COVID 19 vaccine can be given to pregnant and breastfeeding women, 51 (62.2%) were HCWs. Out of 299 subjects who said that it is not given or they are not sure, 166 (55.5%) were HCWs. Difference is not significant.

Majority of the HCWs i.e. 161 (58.5%) subjects out of the 275 said that it is not given or not sure if it is given to critically ill patients admitted in ICU. Out of the 106 subjects who answered yes, it is given, 56 (52.8%) were HCWs. The difference is not significant.

Out of the 295 subjects answered yes, a person infected with COVID 19 can remain asymptomatic 188 (63.7%) were HCWs. A total of 86 subjects said they do not know or they are not sure. Among them 57 (%) subjects belonged to non HCWs. Difference is significant with p value 0.00.

Among the 324 subjects who said mRNA vaccines do not alter the genetic structure of the individual, 182 (56.2%) were HCWs. Difference is not significant.

A total of 188 subjects answered yes to the question on herd immunity protection from COVID 19. Among them 112 (59.6%) subjects were HCWs. Most of the subjects 193, were not sure or they do not know if herd immunity protects from COVID 19. Among them, 105 (54.4%) were HCWs. Difference is not significant.

Table 1: Difference between proportions of HCWs and others regarding knowledge of Covid diseases and vaccination whether significant or not.

S.NO	ITEM	HCW	OTHERS	TOTAL	p VALUE
1.	MALE FEMALE	56 (42.7%) 161 (64.4%)	75 (57.3%) 89 (35.6%)	131 (100.0%) 250 (100.0%)	0.00005 SIGNIFICANT
2.	SEVERE THAN SARS/FLU NOT SEVERE	134 (55.8%) 83 (58.8%)	106 (44.2%) 58 (41.2%)	240 (100.0%) 141 (100.0%)	0.5 NOT SIGNIFICANT
3.	AFFECTS ONLY HUMANS OTHERS ALSO	73 (50.7%) 144 (60.7%)	71 (49.3%) 93 (39.3%)	144 (100.0%) 237 (100.0%)	0.054 NOT SIGNIFICANT
4.	WANT TO TAKE VACCINE NO NOT WANT TO TAKE	166 (58.0%) 51 (53.6%)	120 (41.9%) 44 (46.4%)	286 (100.0%) 95 (100.0%)	0.4 NOT SIGNIFICANT
5.	COVID VACCINE	131 (56.7%)	100 (43.3%)	231 (100.0%)	0.07

	FREE PAID	86 (57.3%)	64 (42.7%)	150 (100.0%)	NOT SIGNIFICANT
6.	SIDE EFFECTS FROM VACCINE SEVERE THAN COVID NOT SEVERE	28 (56.0%) 189 (57.1%)	22 (44.0%) 142 (42.9%)	50 (100.0%) 331 (100.0%)	0.8 NOT SIGNIFICANT
7.	SCHOOL SENDING YES NO	69 (56.5%) 148 (57.1%)	53 (43.5%) 111 (42.9%)	122 (100.0%) 259 (100.0%)	0.9 NOT SIGNIFICANT
8.	WANT TO TAKE VACCINE THOUGH ALLERGIC YES NO	36 (46.1%) 181 (59.7%)	42 (53.8%) 122 (40.3%)	78 (100.0%) 303 (100.0%)	0.03 SIGNIFICANT
9.	TRAVEL POSPONEMENT YES NO	130 (58.3%) 87 (55.1%)	93 (41.7%) 71 (44.9%)	223 (100.0%) 158 (100.0%)	0.5 NOT SIGNIFICANT
10.	VACCINATION OF PETS & CATTLE YES NO	45 (46.4%) 172 (60.6%)	52 (53.6%) 112 (39.4%)	97 (100.0%) 284 (100.0%)	0.01 SIGNIFICANT
11.	COVID 19 CONTROL AFTER VACCINATION YES NO	90 (54.5%) 127 (58.8%)	75 (45.5%) 89 (41.2%)	165 (100.0%) 216 (100.0%)	0.4 NOT SIGNIFICANT
12.	ANTIDOTE FOR AEFI YES NO	44 (50.0%) 173 (59.0%)	44 (50.0%) 120 (41.0%)	88 (100.0%) 293 (100.0%)	0.1 NOT SIGNIFICANT
13.	IMMEDIATE PROTECTION AFTER				

	VACCINATION YES NO	 15 (40.5%) 202 (58.7%)	 22 (59.8%) 142 (41.3%)	 37 (100.0%) 344 (100.0%)	 0.03 SIGNIFICANT
14.	VACCINE PROVIDES LIFELONG IMMUNITY YES NO	 14 (41.2%) 203 (58.5%)	 20 (58.8%) 144 (41.5%)	 34 (100.0%) 347 (100.0%)	 0.051 NOT SIGNIFICANT
15.	GOVERNMENT INITIATIVES EFFECTIVE NOT EFFECTIVE	 116 (53.0%) 101 (62.3%)	 103 (47.0%) 61 (37.7%)	 219 (100.0%) 162 (100.0%)	 0.06 NOT SIGNIFICANT
16.	LOCKDOWN TO BE INTRODUCED NOT TO BE	 76 (56.7%) 141 (57.1%)	 58 (43.3%) 106 (42.9%)	 134 (100.0%) 247 (100.0%)	 0.9 NOT SIGNIFICANT
17.	VACCINE FOR PREGNANT & LACTATING WOMEN GIVEN NOT GIVEN	 51 (62.2%) 166 (55.5%)	 31 (37.8%) 133 (45.5%)	 82 (100.0%) 299 (100.0%)	 0.2 NOT SIGNIFICANT
18.	VACCINE FOR TERMINALLY ILL GIVEN NOT GIVEN	 56 (52.8%) 161 (58.5%)	 50 (47.2%) 114 (41.5%)	 106 (100.0%) 275 (100.0%)	 0.3 NOT SIGNIFICANT
19.	ASYMPTOMATIC YES NO	 188 (63.7%) 29 (33.7%)	 107 (36.3%) 57 (66.3%)	 295 (100.0%) 86 (100.0%)	 0.0001 SIGNIFICANT

20.	mRNA VACCINES ALTER GENETIC MAKE UP YES NO	 35 (61.4%) 182 (56.2%)	 22 (38.6%) 142 (43.8%)	 57 (100.0%) 324 (100.0%)	 0.4 NOT SIGNIFICANT
21.	HERD IMMUNITY PROTECTS YES NO	 112 (59.6%) 105 (54.4%)	 76 (40.4%) 88 (45.6%)	 188 (100.0%) 193 (100.0%)	 0.3 NOT SIGNIFICANT

Among the 235 subjects who answered that elderly are more susceptible to covid 19, 145 (61.7%) are HCWs. Out of the 130 subjects who said that sick are more susceptible 68 (52.3%) are HCWs. 16 subjects have opined that children and pregnant women are more susceptible. In a study done by Most. Zannatul Ferdous[5] et al in Bangladesh the respondents have opined that the highest risk group for developing COVID-19 is the old age persons (86.1%), individuals with cancer, diabetes, chronic respiratory diseases (74.6%), migrants from other parts of the world having COVID-19 (44.8%), children (25.3%), pregnant women (21.2%).

A total of 313 subjects have answered that natural boosting of immunity is an alternative treatment option available for covid 19. Amongst them 179 (57.1%) were HCWs and 134 (42.8%) belonged to other categories.

Out of the 90 study subjects who said that the vaccine need not be taken if tested positive and cured from the disease, 56 (62.2%) were HCWs. Most of them, 161 (55.3%) were HCWs and 130 (44.6%) who belonged to other categories said they were not sure.

Among the 360 study subjects who would contact a HCW for any Covid related queries, 212 (58.8%) were HCWs group and 148 (41.2%) belonged to other groups.

Majority of the study subjects have awareness regarding prevention of covid 19. They are willing to maintain social distancing, cover mouth and nose, wash hands regularly, avoid crowded places, cleaning and disinfection.

Among the 209 subjects who answered that the vaccine is given to everybody, 123 (58.8%) were HCWs. 65 HCWs say that it is given only to HRGs and 16 subjects belonging to HCW group said that it is given only to those who pay for it.

Table 2: Difference between proportions of social issues related to knowledge of Covid disease

S. NO.	ITEM	HCW	OTHERS	TOTAL
1.	SUSCEPTIBILITY			
	ELDERLY	141 (61.7%)	90 (38.3%)	235 (100.0%)
	CHILDREN	03 (25.0%)	09 (75.0%)	12 (100.0%)
	SICK	68 (52.3%)	62 (47.7%)	130 (100.0%)
	PREGNANT	01 (25.0%)	03 (75.0%)	04 (100.0%)
2.	TREATMENT OPTIONS			
	AYURVERDA	04 (50.0%)	04 (50.0%)	08 (100.0%)
	HOMEOPATHY	03 (42.8%)	04 (57.2%)	07 (100.0%)
	BOOSTING IMMUNITY	179 (57.1%)	134 (42.8%)	313 (100.0%)
	NOT SURE	31 (58.4%)	22 (41.5%)	53 (100.0%)
3.	VACCINE FOR PREVIOUSLY POSITIVE & CURED			
	YES	0 (0.0%)	0 (0.0%)	0 (0.0%)
	NO	217 (56.9%)	164 (43.1%)	381 (100.0%)
4.	CONTACT FOR QUERIES			
	HCW	212 (58.9%)	148 (41.1%)	360 (100.0%)
	POLICE	0 (0.0%)	01 (100.0%)	01 (100.0%)
	SANITARY WORKER	01 (50.0%)	01 (100.0%)	02 (100.0%)
	NONE	04 (22.2%)	14 (77.8%)	18 (100.0%)
5.	PREVENTION			
	SOCIAL DISTANCE	01 (20.0%)	04 (80.0%)	05 (100.0%)
	COVER MOUTH NOSE	04 (36.4%)	07 (63.6%)	11 (100.0%)
	WASH HANDS	0 (0.0%)	0 (0.0%)	0 (0.0%)
	AVOID CROWDS	01 (50.0%)	01 (50.0%)	02 (100.0%)
	ISOLATION	01 (20.0%)	01 (80.0%)	05 (100.0%)
	DISINFECTION	0 (0.0%)	01 (100.0%)	01 (100.0%)
	ALL	210 (58.8%)	147 (41.2%)	351 (100.0%)
6.	GLOBAL VACCINATION			
	EVERYBODY	123 (58.8%)	87 (41.6%)	209 (100.0%)
	HRG	65 (52.8%)	58 (47.2%)	123 (100.0%)
	DON'T KNOW	30 (62.5%)	18 (37.5%)	48 (100.0%)

Conclusions

Females responded in significantly higher number than males in Health Care Workers. Significantly higher number of Health Care Workers responded negatively for taking vaccine in case they have suppressed immune system. Significantly larger proportion of health care workers is against giving vaccine to domestic animals and pets at home. A higher proportion of HCWs know that immunity will not develop against Covid 19 immediately after vaccination. Health care workers in a larger proportion know that a person with Covid infection can remain asymptomatic.

Similar number of HCWs and others belonging to non-HCW group have answered 'yes' to the question Covid 19 is more severe than SARS/flu and also that it affects only human beings. Almost equal number of HCWs and others have the intent to get vaccinated once it is available. Similar number of HCWs and others think that the vaccine is given free of cost by the government of India. Almost equal number of HCWs and others have stated that the side effects from the vaccine are not severe than Covid 19 and also willing to stay away from crowded places and postpone travel. A similar number of study subjects belonging to both the groups are of opinion that Covid 19 control will be successful after vaccination. Similar number of participants stated that vaccine does not provide life long immunity. The study subjects say that the government initiatives and policies were effective enough to control the spread of Covid 19 and that there is no need for another lockdown.

Recommendations

Although significant number of HCWs are knowledgeable regarding non vaccination of persons with allergy to vaccine, total pool of HCWs are to be targeted for education of the same.

For the time being, more HCWs are knowledgeable regarding non vaccination of domestic animals and pets but further research is required regarding the same.

HCWs have knowledge of no immediate protection after vaccination. They have to ensure education of all the vaccinees the same fact.

HCWs to a large extent know that some persons with Covid infection are asymptomatic and hence they have to take part in advocacy for the dissemination of that fact to the public.

Conflict of interest - None

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References

1. WHO Coronavirus Disease (COVID 19) Dashboard https://covid19.who.int/
2. Novel Coronavirus Disease (Covid - 19) Situation Update Report – 52, January 25,2021 https://cdn.who.int/media/docs/default-source/wrindia/situation-report/india-situation-report-52.pdf?sfvrsn=cd0a4b84_4
3. Information Regarding COVID 19 Vaccine https://www.mohfw.gov.in/covid_vaccination/vaccination/index.html
4. Novel Coronavirus Disease (Covid - 19) Situation Update Report – 52, January 25,2021 https://cdn.who.int/media/docs/default-source/wrindia/situation-report/india-situation-report-52.pdf?sfvrsn=cd0a4b84_4

5. Most. Zannatul Ferdous, Md. Saiful IslamI, Md. Tajuddin Sikder, Abu Syed Md. Mosaddek, J. A. Zegarra-Valdivia, David GozalI. Knowledge, attitude, and practice regarding COVID-19 outbreak in Bangladesh: An onlinebased cross-sectional study.
6. Luigi Roberto Biasio ,Guglielmo Bonaccorsi,Chiara Lorini &Sergio Pecorelli Assessing COVID-19 vaccine literacy: a preliminary online survey Received 05 Jul 2020, Accepted 21 Sep 2020, Published online: 29 Oct 2020)
7. Sonam Maheshwari, Puneet Kumar Gupta, Richa Sinha, Pravesh Rawat Knowledge, attitude, and practice towards coronavirus disease 2019 (COVID-19) among medical students: A cross-sectional study
8. Jiahao Wang, Rize Jing, Xiaozhen Lai, Haijun Zhang, Yun Lyu, Maria Deloria Knoll) Acceptance of COVID-19 Vaccination during the COVID-19 Pandemic in China