Original Articles

Global Journal of Medicine & Public Health

A cross– sectional study to assess awareness, attitude and practices for COVID-19 disease and its vaccination among the patients attending tertiary care hospital Rajnandgaon, Chhattisgarh during the third wave of COVID pandemic

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ABSTRACT

BACKGROUND

COVID-19 has rapidly become a global pandemic and as it spread across the globe [1]. Vaccines were developed to fight against it. Indian government has started phase wise COVID 19 vaccination programs to end covid-19 disease. However, it wasn't made compulsory to all. Negative attitude and unwillingness to vaccinate can be serious public health problem [2].

Methods

A cross sectional observational study was conducted among the patients of age 18 years and above who were attending the OPD and admitted in the IPD of the clinical departments of the tertiary care hospital Rajnandgaon (Chhattisgarh) by using predesigned semi- structured Questionnaires using Google form by face-to-face interview method.

Statistical analysis- Data was entered in MS EXCEL sheet. Analysis of the data was done by using SPSS software. Data was presented in the form of percentage, frequency, table and graphs after statistical analysis.

Result

Awareness, attitude, and practices regarding COVID 19 disease and COVID 19 vaccination were discussed separately. The awareness, attitude & practices regarding COVID 19 disease were 88.3%, 70.4% & 94.7% respectively and COVID 19 vaccination were 70.5%, 98.0% & 99.5%

Conclusion

Awareness & practices regarding COVID 19 disease and attitude and practices regarding COVID 19 vaccination is high among the study population.

Keywords: COVID-19 disease & vaccination, awareness, attitude and practices.

GJMEDPH 2023; Vol. 12, issue 3| OPEN ACCESS

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Conflict of Interest—none | **Funding—**none

INTRODUCTION

The COVID-19 pandemic caused disaster on healthcare systems around the world, posing unprecedented problems. World Health Organization on 29 July 2022 had confirmed 572 million cases including 6.3 million deaths due to COVID-19 disease [1]. The elderly and individuals with a history of comorbidities, such as hypertension, obesity, diabetes, and kidney illness, are particularly susceptible to this virus [3,4]. Vaccinations have long been seen to be the most effective way to combat quickly spreading of this infectious disease [5]. However, various organizations, government and people have tried to promote vaccination strategies to save their lives. In India the COVID-19 vaccination was launched in phase manner. Initially it was started only for health care workers and later on it was for everyone.

It was estimated that more than 82 percent vaccinating of the population is essential for achieving the requisite herd immunity to control virus transmission and end the pandemic [6]. This requires strong acceptance and low hesitancy regarding the COVID-19 vaccination throughout the population. Thus it becomes easier to implement the policy for control of this disease and to framework the educational campaign targeted at raising vaccine awareness among the general public [7].

Our government was facing problems about misconception and negative attitude regarding the COVID 19 vaccination to fight against the disease. This study was conducted to understand the above problem in general public and guide them about the disease and its preventive measures. Thus, the study was carried out with the objectives to assess the awareness, attitude and practices of the COVID-19 disease & its vaccination and to know the status of COVID-19 disease & it's vaccination among the patients attending the tertiary care hospital Rajnandgaon, Chhattisgarh.

Methods

The Hospital based cross sectional observational study was chosen to assess the status of awareness, attitude and practices towards COVID-19 diseases and its vaccination in the patients attending BRLSABVM Medical Hospital Rajnandgaon (Chhattisgarh). The study was approved by the Institutional Ethics Committee BRLSABVM Medical College Rajnandgaon (C.G) before starting the study. To maintain the confidentiality name and address of the study subjects was not asked and all the procedure was explained before starting the face to face interview. The study setting was done at the Department of Community Medicine BRLSABVM Medical College, Rajnandgaon, C.G.

The study subjects were the patients who attended the OPD and admitted in IPD of clinical departments of tertiary care hospital Rajnandgaon C.G. and willing to participate & gave informed written consent for the study. Those who were not supportive & not gave written consent for the study, mentally challenged & under-treatment for any mental condition, seriously ill patients, unable to talk, visually & hearing-impaired persons and duplication of person were excluded from the study.

The study was carried out in-between March 2022 to September 2022. The data was collected by face to face interview technique by using Google forms during the third wave of the COVID- 19 pandemic in between July 2022 to September 2022. The sample size is calculated by using the formula –

$$n = \frac{Z^2_{(1-a/2)} * (p * q)}{d^2}$$

Where, n = sample size, Z^2 (1-α/2) = standard normal deviate for α=95%value is 1.96

p= prevalence of awareness of COVID-19 disease and vaccination.

q= (1-p), d = allowable error, which is 5%.

Here p= 64.5[unawareness regarding COVID-19 vaccination] [8]

So, n= 351

By taking the non-response rate 10%. The sample size will be 386.The calculated sample size for the approximate population will be around 400.The samples were selected by using the simple random sampling method. This study was carried out among the patients of age 18 and above those who have attended the OPD of clinical departments (Medicine, Surgery, ENT, Ophthalmology, Orthopedics, Obstetrics and Gynecology) and those who are admitted in IPD

of respective departments of tertiary care hospital, Rajnandgaon Chhattisgarh. To maintain the uniformity, the sample size of 400 was equally divided i.e., 200 patients taken from OPD and IPD each of the mentioned departments. Total 6 clinical departments were involved. So the patients taken in the consideration from each clinical department were 35 each from IPD and OPD. In our tertiary care hospital in some departments like in ENT & Ophthalmology where patients were comparatively less in OPD & IPD were fulfilled by the patients available in the other mentioned departments.

To fulfill the sample size from OPD & IPD, the study subjects were selecting from OPD & IPD registration register. It was checked and selected randomly till the sample size was fulfill. Those who were registered in the OPD of the respective departments and available at the time of survey were considered for the study. Those who admitted in the ward and not discharged by the respective departments were considered for the study. In case of refusal, next to them has been considered. To comply with the terms and conditions of the study an additional form for consent was added at the beginning of questionnaires of Google form and written consent was taken.

Study tool used was Pre-designed, pre- tested, semi structured questionnaire consisting of 4 parts:

Part- 1 consists of socio-demographic details from questionnaires (1-14)

Part- 2 consists of questionnaires (15-24) are related to awareness regarding COVID 19 disease & vaccine.

Part 3 consists of questionnaires (25-34) are related to attitude regarding COVID 19 disease & vaccine.

Part 4 consists of questionnaires (35- 46) are related to practices regarding COVID 19 disease & vaccine.

The Questionnaires were divided into four parts. Good awareness/attitude/practice/strong agreement is given a scoring of (5) and no awareness/wrong attitude or practice /strong disagreement as (1), likewise yes/no/NA answers are given scoring of 5/1/2.5 respectively.

Vaccine efficacy is the degree to which a vaccine prevents disease, and possibly transmission, under ideal and controlled circumstances. Vaccine efficacy was assessed in terms of participant's assertiveness towards the ability of vaccine to prevent the disease during the third wave of Covid-19 pandemic.

Vaccine's effectiveness refers to how well it performs in the real world – including against new variants, and in people who may have been excluded from the research such as frail elderly individuals, or those taking drugs that suppress immune responses. [9] Vaccine effectiveness was assessed in terms of participant's outlook towards the vaccine's actual performance in the third wave of Covid-19 pandemic.

The awareness regarding COVID 19 disease was assessed in terms of heard about the severity of COVID 19 disease & its symptoms and awareness regarding COVID 19 vaccination was assessed in terms of heard about the COVID 19 vaccination.

The **attitude** regarding COVID 19 disease was assessed in terms of think to follow COVID 19 disease guidelines issued time to time by the government and attitude regarding COVID 19 vaccination was assessed in terms of faith on COVID 19 vaccination programme.

The **practices** regarding COVID 19 disease was assessed in terms of following the protocols of social distancing and practices regarding COVID 19 vaccination was assessed in terms of their received status of the COVID 19 vaccination.

The **Hesitancy** for COVID 19 vaccination was assessed in terms of their attitude towards vaccination gives effective protection against COVID19 disease.

Statistical analysis

The collected data has been entered in MS EXCEL sheet and analysis of data has been done by using SPSS-21 software. Data is presented in the form of percentage, frequency, table and graphs after statistical analysis.

Result

The present cross-sectional observational study was conducted in the tertiary care hospital Rajnandgaon (C.G), for which sample size was 400. To complete the sample size 436 subjects were contacted; of them 35 were refused and the reason was not willing to participate in the study Total 401 samples were collected. Thus, the response rate for the study was 92%. Figure no.1& 2 depicts that the patient participated from all six clinical departments are almost equal; departments like ENT & Ophthalmology where the patients were comparatively less were compensated by the patients attending/ admitting the Surgery & Medicine department.

Figure 1-Distribution of study participants according to the out patients & In patients departments (n=401)

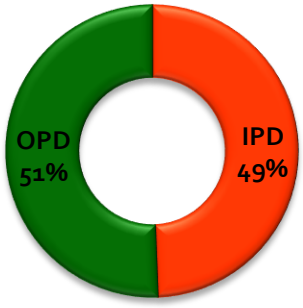
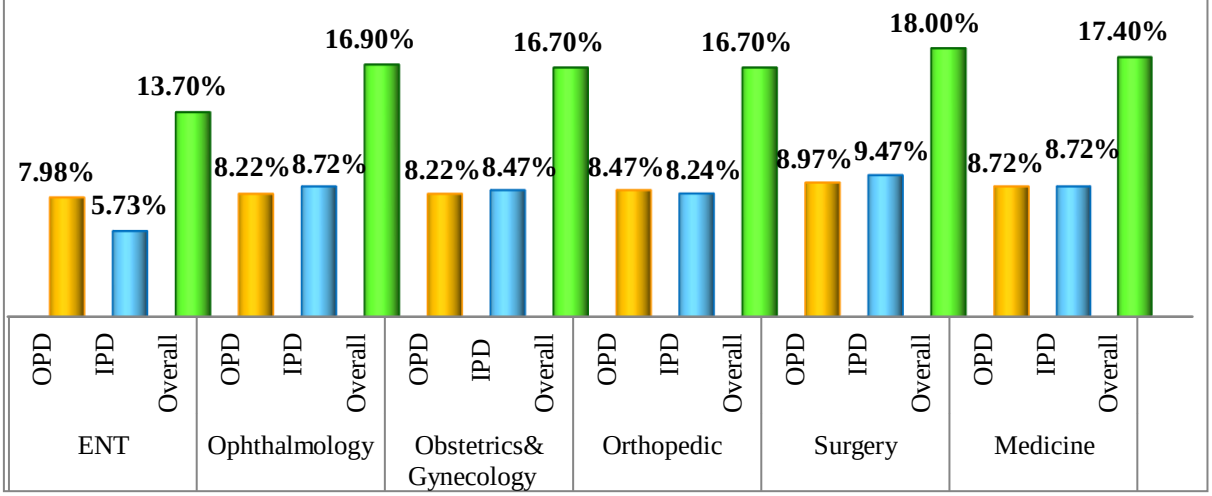


Figure 2- Department wise distribution of the study subjects



It can be observed from the table no. 1 that the maximum 78.05% participants belonged to less than 50 years age group, male & female were almost equally participated i.e. 51.6% & 49.4% respectively. Maximum 77.3% were married, 53.9% were from urban area and 84.5% were having annual income of less than Rs. 100,000. Majority 23.9% subjects have completed middle school education & only 12.4% subjects were illiterate. Mostly 67.1% were taking mixed diet. Maximum 40.6% were addicted; of them maximum 13.4% addicted from khaini, 10.4% from gurakhu and 9.2% from alcohol drinking. Majority 11.7% were suffering from eye disease & gastritis, 8.7% & 6.2% from hypertension & anemia respectively.

The present study is showing that the status of awareness regarding COVID 19 disease and COVID 19 vaccination is 88.3 % and 70.5% respectively. Status of attitude regarding COVID 19 disease and COVID 19 vaccination is 70.4% and 98.0% respectively. Status of practices regarding COVID 19 disease and COVID 19 vaccination is 94.7% is 99.5% respectively (Table no 2, 3 &4).

Table 1 Distribution of the subjects according to the socio-demographic characteristics (N=401)

Socio-Demographic Characteristics		Frequency (n)	Percentage (%)
Age (in completed years)	≥ 50	88	21.9
	<50	313	78.05
Sex	Male	207	51.6
	Female	196	49.4
Residence	Rural	185	46.1
	Urban	216	53.9
Marital status	Unmarried	81	20.2
	Married	310	77.3
	Separated/widow/living in	10	2.5
Education	Illiterate	50	12.4
	Primary school	86	21.4
	Middle school	96	23.9
	High school	41	10.2
	Intermediate/ diploma	57	14.2
	Graduate	15	3.7
	Post graduate	56	13.9
Annual Income (in Rs.)	<1,00,000	339	84.5
	> 1,00,000	62	15.4
Any addiction	Yes	163	40.6
	No	238	59.3
Forms of addiction (n=163)	Alcohol	37	9.2
	Bidi/cigarette	26	6.4
	Ganja	4	0.9
	Gurakhu	42	10.4
	Tobacco/Khaini	54	13.4
Diet	Vegetarian	86	21.4
	Non-vegetarian	46	11.4
	Mixed diet	269	67.1
Any comorbidity	None	251	62.5
	Anemia	25	6.23
	Cancer	9	2.2
	Diabetes	28	6.9
	Hypertension	35	8.7
	Tuberculosis	6	1.4
	Any other (eye disease, gastritis)	47	11.7

Source of awareness is mostly 32.6% & 23.4% from the panchayat & doctors respectively. Mode of awareness is mostly 37.9% & 36.9% from the government hospital & television respectively. 66.4% study participants are showing positive attitude regarding public health facility are good to take COVID 19 vaccination. (Table no-2)

Table 2 Distribution of the subjects according to the Awareness status regarding COVID 19 diseases & it's vaccination (N=401)

Awareness Status regarding COVID 19 diseases & it's vaccination		Frequency (n)	Percentage (%)
Have you heard about severity of COVID 19 and its symptoms	No	47	11.7
	Yes	354	88.3
Have you heard Regarding COVID 19 Vaccine	No	118	29.4
	Yes	283	70.5
Have you heard about seriousness of the disease	No	134	33.4
	Yes	267	66.5
Have you heard about you can also get affected	No	122	30.4
	Yes	279	69.5
Have you heard about COVID 19 Vaccination can protect you from the disease	No	118	29.4
	Yes	283	70.5
Have you heard about COVID 19 Vaccination can protect the community from the disease	No	118	29.4
	Yes	283	70.5
Have you heard about COVID 19 vaccine is safe	No	117	29.2
	Yes	284	70.8
Have you heard about serious side effect of COVID-19 vaccine	No	261	65.1
	Yes	140	34.9
Have you heard that the disease is less severer after receiving COVID 19 vaccination	No	136	33.9
	Yes	265	66.1
Have you heard that minor side effects of COVID 19 vaccine can be managed	No	151	37.6
	Yes	250	62.3
Have you heard that chances of COVID 19 infection even after vaccination	No	166	41.4
	Yes	235	58.6
Mode of awareness about vaccine	Television	148	36.9
	Radio	25	6.2
	News paper	60	14.9
	Government hospital	152	37.9
	Private hospital	16	3.9
Sources of awareness about COVID 19 vaccine	Doctor	94	23.4
	Nurse	39	9.7
	Paramedical staff	59	14.7
	Panchayat	131	32.6
	Ward Parshad	32	7.9
	Social Leader	46	11.4

**** For the purpose of calculation of prevalence of awareness strongly agree and agree row has been merged & consider in Yes and disagree, strongly disagree & neutral row has been merged & consider in number***

It can be found from the table no. 3 that the hesitancy regarding the COVID 19 vaccination is 60.4%. Positive attitude of the participants towards the Covaxin was 49.3% due to its easy availability and towards Covishield was 31.9% due to its good efficacy.

Table 3 Distribution of the subjects according to the Attitude regarding COVID 19 diseases & it's vaccination (N=401)

Attitude regarding COVID 19 diseases & it's vaccination		Frequency (n)	Percentage (%)
Do you think it's good to take COVID 19 vaccine from public health facility	No	135	33.6
	Yes	266	66.4
Do you think that private health facility has better staff and equipment for vaccination than public health facility	No	253	63
	Yes	148	37
Do you think that imported vaccines to come in market and get vaccinated	No	293	73
	Yes	108	27
Do you think that health workers in public health facility are competent enough for doing vaccination	No	124	31
	Yes	277	69
Do you think that COVID 19 vaccination gives effective protection against COVID 19 disease	No	105	26.1
	Yes	296	60.9
Do you think to follow COVID 19 disease guidelines issued time to time by the government	No	119	29.6
	Yes	282	70.4
Are you anxious regarding COVID 19 vaccination	No	226	56.3
	Yes	175	43.7
Do you think that COVID 19 disease is just a viral infection like flu	No	187	46.6
	Yes	214	53.3
Are you anxious about COVID 19 disease	No	218	54.3
	Yes	183	45.7
Do you think that there is not enough scientific evidence in favour of safety of COVID 19 vaccine	No	218	54.4
	Yes	183	45.6
Do you think that there is need of COVID 19 vaccination	Yes	389	97.0
	No	12	3.0
Have you faith on COVID 19 vaccination programme	Yes	393	98.0
	No	8	2.0
What reasons you think for Covaxin is better than the other available vaccines	Good Efficacy	55	13.7
	Easily available	198	49.3
	Less side effects	22	5.4
	Short dose interval	32	7.9
	Good efficacy and less side effects	63	15.7
	Good efficacy and short dose interval	30	7.4
	All above	1	0.2
What reasons you think for Covishield is better than the other available vaccines	Easily available	18	4.4
	Good Efficacy	126	31.4
	Less side effects	26	6.4
	Travel certificate	60	14.9
	Most effective	56	13.9
	Easily available and good efficacy	46	11.5
	Easily available and less side effects	18	4.0
	Easily available and travel certificate	7	1.7
	All of the above	44	10.9

Education, occupation & co-morbidity show significant association (0.001 each) with the status of awareness regarding COVID 19 disease. It shows that as the level of education increases from illiteracy to the higher education and level of occupation increases from lower to higher occupation the status of awareness significantly increases. Students are found to be significantly most aware among all which may be due to good awareness campaign by the school & education department as well as due to the parent's teaching to them about the self-care.

Table 4 Distribution of the subjects according to the Practices regarding COVID 19 diseases & it's vaccination (N=401)

Practices regarding COVID 19 diseases & it's vaccination		Frequency (n)	Percentage (%)
Are you following protocols of social distancing	Yes	380	94.7
	No	21	5.3
Are you following protocols of hand hygiene	Yes	374	93.3
	No	27	6.7
Are you following protocols of wearing mask	Yes	368	91.7
	No	33	8.3
Have you received the COVID 19 vaccination	Yes	399	99.5
	No	2	0.5
Your choice of vaccine (n=399)	Covaxin	90	22.5
	Covishield	309	77.0
Have your family members received the COVID 19 vaccination	Yes	365	91.1
	No	36	8.9
Do you experience any side effects after COVID 19 vaccination	Yes	263	65.5
	No	138	34.5
Type of side effects after COVID 19 vaccination (n=263)	Major	97	36.8
	Minor	166	63.2
Do you advise others to follow guidelines regarding COVID 19 disease	Yes	364	90.7
	No	37	9.3
Do you advise others to do COVID 19 vaccination	Yes	365	91.0
	No	36	8.97
Do you avoid social gatherings even after COVID 19 vaccination	Yes	365	90.9
	No	37	9.1

Non- comorbid subjects show significant association with the awareness status regarding the COVID 19 disease which can be think that non-comorbid persons were show more alertness regarding the COVID 19 disease and thinking towards healthier life style. Male were showing significant association (0.000 & 0.002 respectively) with the status of awareness regarding COVID 19 disease and attitude for COVID 19 vaccine (Table no. 5).

Sex	Awareness **about COVID**-19 disease		
	Unaware	Aware	
Male	53 25.6%	154 74.4%	χ^2 = 11.738 df= 1 P value= 0.000
Female	81 41.8%	113 58.2%	
Education	Awareness about COVID-19 disease		χ^2 = 16.831 df=3 p value=0.001
	Unaware	Aware	
Illiterates	27 48.2%	29 51.8%	
Primary and middle school	55 40.4%	81 59.6%	
High/higher secondary/diploma	38 27.7%	99 72.3%	
Graduation and post-graduation	14 19.4%	58 80.6%	
Occupation	Awareness about COVID 19 Disease		$\chi^{2=}$23.065 df= 6 p value= 0.001
	Unaware	Aware	
Unemployed	11 61.1%	7 38.9%	
House makers	50 42.4%	68 57.6%	
Farmer/Labor	43 35.2%	79 64.8%	
Government employee	4 30.8%	9 69.2%	
Private Sector Employee	18 25.0%	54 75.0%	
Business men	3 15.8%	16 84.2%	
Students	5 12.8%	34 87.2%	
Co morbidity	Awareness about COVID 19 disease		χ^2=9.065 df=1 p value=0.001
	Unaware	Aware	
Non comorbid	66 49.3%	185 69.3%	
Comorbid	68 50.7%	82 30.7%	
Sex	Attitude for COVID 19 vaccine		χ^2=9.679 df=1 P value=0.002
	Negative	Positive	
Male	81 39.1%	126 60.9%	
Female	106 54.6%	88 45.4%	

DISCUSSION

In the present study male & female were almost equal. Of total, 77.3% were married, 53.9% were from urban area and 84.5% were having annual income of less than Rs. 100,000. It is comparable with the study conducted by Danabal KG et al. in the Tamil Nadu[10], that depicts equal participation of male & female and 50% each participants from urban area and 88.1% were having annual income of less than Rs. 100,000, almost similar findings with our study. It was also found that overall hesitancy of participants about vaccination was 40.7% whereas in our

study it was more i.e. 60.4%. Vaccine hesitancy is playing a role of barrier it may be due to less awareness regarding the vaccination program.

In our study 78.05% participants belonged to less than 50 years age group, main source of awareness was mostly 32.6% & 23.4% from the panchayat & doctors respectively. For 37.9% & 36.9% participants most common mode of awareness was government hospital & television respectively. It can be compared with the study conducted by Gupta P et al. in northern Indian District [11] which shows that 89.5% participants belonged to less than 50 years age group, main source of information was television for 55.0% subjects. All finding are higher from our study. In this study awareness, attitude and practices regarding COVID 19 disease and COVID 19 vaccination is discussed separately. The awareness, attitude & practices regarding COVID 19 disease are 88.3%, 70.4% & 94.7% respectively and COVID 19 vaccination are 70.5%, 98.0% & 99.5%, which is comparable to the study conducted by Nazir F. et. al. [12] in J&K showing that awareness, attitude and practices regarding COVID 19 disease and its vaccination was 73.6%, 70.6% & 68.6% respectively. It is lower than our study findings.

Our study findings show that 80.6 % study participants who were aware of COVID 19 disease were graduate and post graduate and status of awareness is showing significantly increasing pattern as level of education increases. It can be compared to the study findings of Bhartiya S et al. [8] conducted in West India which show 67% willing participant to get vaccinated were only educated less than high school. It is lower and contrary findings with our study findings.

ACKNOWLEDGEMENT

Author wants to thank Dr. Divya Sahu, Professor & head Department of Community Medicine and undergraduate students of BRLSABVMM College Rajnandgaon C.G. for their wonderful support.

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