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Original Research Article

Awareness, attitude and practice of COVID-19 and its vaccination in J&K, India

Fouzia Nazir[1], Abdul Rouf[1,*], Muneer Ahmad Masoodi[1]

[1] *Dept. of Community Medicine, Government Medical College, Anantnag, Jammu and Kashmir, India*

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ABSTRACT

Introduction: COVID-19 Pandemic has severely affected the health care delivery system, economic and social progress since its inception. Although COVID-19 vaccines have given, a new hope but Vaccine hesitancy has been recognized as a serious public health problem that needs extensive research among different population groups. This study was aimed to assess awareness, attitude and practice towards COVID-19 vaccination and its association with Sociodemographic variables among social media users in Jammu and Kashmir, India.

Materials and Methods: The Department of Community Medicine, Government Medical College, Anantnag conducted this cross-sectional study in June 2021, among social media users, 18 and above years of age, using online questionnaire through Google Forms. The questionnaire comprised of four segments, sociodemographic details, awareness, attitude, and practice regarding COVID-19 vaccination, ten questions from each segment.

Results: In this study, although the calculated sample size was 423, a total of 425 respondents were included. The mean scores of awareness, regarding COVID-19 disease and its vaccination, was 3.68 ± 0.44, with overall awareness was 73.6%, positive attitude 3.53 ± 0.41, with an overall positive attitude of 70.6%, and good practice towards adopting COVID-19 appropriate behaviour and vaccination was 3.43 + 0.71 with an overall good practice of 68.6% respectively. Participants with higher awareness regarding COVID-19 disease and its vaccination were 9.1 times (95% C.I = 5.16-14.32) more likely to have a positive attitude towards using COVID-19 appropriate behaviour and its vaccination and 7.8 times (95% C.I = 4.62-13.83) adopting good practice than with the low level of awareness.

Conclusion: In Jammu and Kashmir, social media users are having good awareness toward COVID-19 disease and its vaccination. Awareness generation seems to be a good tool for bringing behavioural changes and this platform should be used to disseminate information regarding COVID-19 appropriate behaviour and its vaccination.

1. Introduction

Coronavirus disease (COVID-19) is an infectious disease caused by a novel coronavirus (SARS-CoV-2), which has spread rapidly throughout the globe. World Health Organization (WHO) declared the COVID-19 outbreak a pandemic in March 2020. The pandemic has severely ravaged health care delivery systems and economic and social progress globally. To date, there is no specific treatment except supportive management and prevention against exposure to COVID-19. The best way to prevent infection from COVID-19 is to avoid exposure to the virus through public health measures like physical distancing, use of mask, hand hygiene, respiratory hygiene, prompt self-Isolation, and prompt testing but people are reluctant in taking these measures for a longer period. The only

* *Corresponding author.*
E-mail address: a.rouf.dr@gmail.com (A. Rouf).

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ray of hope is mass vaccination against COVID-19, which has been adopted by different population groups differently as we have seen with other vaccination drives in India. Vaccine hesitancy is recognized as a serious public health problem that needs extensive research among different population groups to fully understand its triggers.[1,2] Moreover, during the COVID-19 pandemic, social media platforms have become a common source of health information and people use social media to improve their knowledge about the disease, transmission, prevention, and treatment mechanisms.[3,4] As both health information and misinformation are at the fingertips of social media users, it puts them at risk of being exposed to misinformation that could potentially threaten public health.[5] To date, there is no data available on COVID-19 vaccination awareness, attitudes and practice in this part of the country. Thus, this study was aimed to assess awareness, attitude and practice towards COVID-19 vaccination and its association with Sociodemographic variables among social media users in Jammu and Kashmir, India.

2. Materials and Methods

The study was cross-sectional and was carried out by the Department of Community Medicine, Government Medical College, Anantnag in June 2021. It was conducted among social media users, 18 and above years of age. The sample size was calculated using online openepi.com with the expected frequency of outcome factor (awareness about COVID-19 and its vaccination) as 50%, based on the pilot study, confidence level of 95% and absolute error of 5%. The sample size calculated was 384 and after adding 10% non-response rate the total sample size calculated was 423. The data was collected using an online preformed and pretested (through a pilot study) questionnaire through Google Forms. The questionnaire comprised of four segments, sociodemographic details, awareness, attitude, and practice regarding COVID-19 vaccination. Each segment contains 10 questions/statements. The first segment collected information regarding sociodemographic details and COVID-19 and vaccination status, the second to fourth segments have questions/ statements on Likert's scale and Yes/No/NA format on awareness, attitude, and practice regarding COVID-19 vaccination. Good awareness/ attitude/ practice/ strong agreement was given a scoring of five (5) and no awareness/wrong attitude or practice/ strong disagreement as one (1). Likewise, Yes/NO/NA answers were given scoring of 5/1/2.5 respectively. The questionnaire was shared through Facebook and WhatsApp among Health care workers and the general population. To comply with the terms and conditions of the website an additional form for consent was added at the end of the questionnaire on Google Forms for terms and conditions of Google Forms for qualifying for submission of the form. During one week, 441 responses were received, out of which 425 were having complete responses and were taken for analysis.

2.1. Statistical analysis

Statistical analysis was done using IBM SPSS 23 version. Descriptive analysis was done using frequencies and percentages for the sociodemographic variables and information regarding COVID-19 and immunization status. Transformation of variables was done after computing variables and the Kolmogorov Smirnov test was used to check the normality of the data. The multivariable logistic regression model was used for determining the association of sociodemographic variables with awareness of COVID-19 disease and its vaccination.

3. Results

In this study, a total of 425 respondents were included out of which 69.6 were males and 30.4 were females. The other sociodemographic variable and their distribution are shown in Table 1. The mean age of participants was 34.2 + 11.2 years. 68.5% of participants were from urban areas and 31.5% from rural. Only 12% of the respondents were qualified in middle to high school, rest of the participants were matric and above level of education. About 33% of the participants were Health care workers and about 67% of the participants were having other occupations (office jobs, business, and students) as shown in Table 1. Comorbidity like Hypertension, Diabetes Mellitus, Kidney Disease, Lung Disease, or Heart Ailment was present in 14.7% of the participants. 26.7% of the participants had already contracted COVID-19 infection 10.7% did not know whether they have contracted or not because they have never been tested even after mild symptoms. 58.6% of respondents register that their family member or close friend or colleague got Covid-19 and 10.5% were not sure whether they got it or not. About 58% of the study populations had COVID-19 vaccination, 30.2% had one doze, and about 28.2% had two doses.

As per the study tool, the factors associated with Awareness regarding COVID-19 diseases and vaccination were determined after adjusting for the potential confounding, for age, sex, educational status, place of residence, and occupation, using multivariable logistic regression analysis as shown in Table 1. The age group of 31-44 years was about 1.5 times (AOR, 1.55, 95% C.I=1.13- 1.71) more significantly aware than Age group of 44 years and above and males were 1.7 times (AOR, 1.76, 95% C.I=1.44-1.89 more aware than females. The Educational level of Bachelors/ Masters was found to be 3 times (AOR, 3.01, 95% C.I=1.92-5.02) more aware than middle school educational status and Medical Doctors were having 3.7 times (AOR, 3.76, 95% C.I = 2.16-5.32) more awareness regarding COVID-19 diseases and its

Table 1: Association of socio-demographic variables of participants with awareness regarding COVID-19 diseases and vaccination (n=425)

Sociodemographic Variables	Frequency	Percentage	Crude OR with 95% C.I	Adjusted OR with 95% C.I
Age				
18-30	150	35.4%	1.10 (0.75- 2.10)	0.95 (0.63-1.93)
31-44	228	54.1%	1.75 (1.23-1.97)	1.55 (1.13-1.71)
>44	47	10.5%	1	1
Sex				
Male	129	30.4%	2.10 (1.56-3.12)	1.76 (1.44-1.89)
Female	296	69.6%	1	1
Residence				
Urban	291	68.5%	1.17 (0.85- 1.91)	0.99 (0.83-1.73)
Rural	134	31.5%	1	1
Educational status				
Bachelor/Masters	299	70.3%	3.17 (1.96-5.12)	3.01 (1.92-5.02)
Higher secondary	60	14.2%	0.25 (0.13-1.03)	0.21 (0.03-1.12)
Matric	15	3.5%	0.51 (0.33-2.22)	0.61 (0.27-2.23)
High school	17	4.0%	0.65 (0.63-1.93)	0.55 (0.43-1.88)
Middle school	34	8.0%	1	1
Occupation				
Medical doctor	122	28.7%	3.88 (2.36-5.12)	3.76 (2.16-5.32)
Office job	72	16.9%	0.95 (0.63-1.93)	0.95 (0.63-1.93)
Lab. Staff	11	2.5%	0.61 (0.33-2.12)	0.51 (0.43-2.02)
MPW/Nurse	10	2.3%	0.15 (0.03-5.93)	0.12 (0.03-5.98)
Other	210	49.4%	1	1

vaccination as shown in Table 1.

The mean score of awareness about COVID-19 disease and its vaccination was 3.68 + 0.44, and the overall awareness was 73.6%. The mean score of awareness was significantly high among Age group of 40-59 years with a p-valve of <0.04. The mean score of positive attitude among the study population towards vaccination was 3.53 + 0.41, with an overall positive attitude of 70.6%. The mean score of good practice towards adopting COVID-19 appropriate behaviour and vaccination was 3.43 + 0.71 with an overall good practice of 68.6%.

Participants who were having higher awareness regarding COVID-19 disease and its vaccination were 9.1 times (95% C.I = 5.16-14.32) more likely to have a positive attitude towards using appropriate COVID-19 appropriate behaviour and its vaccination and 7.8 times (95% C.I = 4.62-13.83) good practice than with the low level of awareness.

Descriptive analysis regarding awareness, attitude and practice questionnaire and their registered response along with percentages is shown in Tables 2, 3 and 4.

4. Discussion

In this study, the awareness regarding COVID-19 and its vaccination was about 74% among the study population, which is comparable to study conducted by Islam MS et al in Bangladesh.[6] COVID-19 disease and vaccination awareness was significantly affected by age group (31-44 years), male sex, educational level, and was higher among medical doctors in this study. These results were comparable to the study conducted in Bangladesh and Syria.[6,7] Main reason behind above findings is that the productive age group, medical doctors, people with higher education and male population is that they having higher access to information and take things seriously because of being having higher risk and exposure due to their mobile behaviour and job profile. The awareness among general population could be determined because the study population was social media users. However, it is obvious from the findings that social media users are having good awareness about the COVID-19 and vaccination and this platform can be used as a strong tool against the control of the pandemic.[8,9]

In current study it was found that the participants having higher awareness regarding COVID-19 disease and its vaccination were 9.1 times and 7.8 times more likely to have a positive attitude and good practice towards using appropriate COVID-19 appropriate behaviour and its vaccination and 7.8 times respectively than with the low level of awareness. This is one of the most important finding in this study, as to bring about COVID-19 appropriate behaviour, awareness is important and people with higher awareness are more likely to adopt positive attitude and good practice regarding COVID-19 appropriate behaviour and vaccination. However, social media users are more prone to infodemics (misinformation) which can tackled by

Table 2: Awareness regarding COVID-19 and vaccination among the study participants

Awareness	Responses	Percentage
Do you have information about severity of Covid-19 and its symptoms?	Yes	92.0
	No	8.0
Do you know that Covid-19 is a serious Disease?	Strongly Disagree	1.5
	Disagree	3.0
	Neutral	3.7
	Agree	24.7
	Strongly Agree	67.1
Do you know that you can also get Covid-19?	Strongly Disagree	2.2
	Disagree	3.0
	Neutral	9.7
	Agree	38.9
	Strongly Agree	46.1
Vaccination against Covid-19 protects you from Covid-19.	Strongly Disagree	1.5
	Disagree	11.7
	Neutral	23.7
	Agree	43.9
	Strongly Agree	19.2
Covid-19 Vaccination can protects Community from Covid-19.	Strongly Disagree	2.0
	Disagree	8.5
	Neutral	17.5
	Agree	49.4
	Strongly Agree	22.7
Covid-19 Vaccine is safe.	Strongly Disagree	1.0
	Disagree	4.2
	Neutral	25.4
	Agree	50.2
	Strongly Agree	19.2
There can be serious side effect of Covid-19 vaccine.	Strongly Disagree	5.2
	Disagree	25.9
	Neutral	38.7
	Agree	22.9
	Strongly Agree	7.2
You can get Covid-19 from Covid-19 vaccine.	Strongly Disagree	20.7
	Disagree	45.4
	Neutral	17.2
	Agree	10.5
	Strongly Agree	6.2
Covid-19 vaccine has no side effects or minor side effects, which can be managed easily.	Strongly Disagree	2.7
	Disagree	11.0
	Neutral	20.2
	Agree	50.6
	Strongly Agree	15.5
There are chances of getting Covid-19 even after its vaccination.	Strongly Disagree	1.7
	Disagree	2.0
	Neutral	11.2
	Agree	54.6
	Strongly Agree	30.4

Table 3: Attitude regarding COVID-19 and vaccination among the study participants

Attitude	Responses	Percentage
It is worth taking Covid-19 vaccine from public Health facility	Strongly Disagree	2.2
	Disagree	3.0
	Neutral	10.0
	Agree	33.7
	Strongly Agree	2.2
Private Health facility has better staff and equipment for vaccination then Public health facility.	Strongly Disagree	4.7
	Disagree	32.2
	Neutral	31.7
	Agree	24.4
	Strongly Agree	10.0
I will wait for other imported vaccines to come in market and get vaccinated.	Strongly Disagree	9.5
	Disagree	34.9
	Neutral	26.4
	Agree	16.7
	Strongly Agree	11.0
I think Health workers in Public health facility are competent enough for doing vaccination.	Strongly Disagree	1.0
	Disagree	3.2
	Neutral	8.0
	Agree	58.1
	Strongly Agree	29.7
I feel we should follow Covid-19 guidelines issued time to time by Government.	Strongly Disagree	1.7
	Disagree	0.5
	Neutral	2.7
	Agree	28.9
	Strongly Agree	66.1
I think Covid-19 vaccination gives effective protection against Covid-19.	Strongly Disagree	3.0
	Disagree	4.2
	Neutral	20.7
	Agree	52.9
	Strongly Agree	18.5
I feel anxious regarding Covid-19.	Strongly Disagree	2.5
	Disagree	7.7
	Neutral	17.5
	Agree	53.4
	Strongly Agree	19.0
I feel anxious regarding Covid-19 vaccination.	Strongly Disagree	5.2
	Disagree	20.2
	Neutral	30.9
	Agree	34.7
	Strongly Agree	9.2
Covid-19 is just a viral infection like Common Flu.	Strongly Disagree	20.4
	Disagree	41.1
	Neutral	10.2
	Agree	20.2
	Strongly Agree	8.0
There is not enough evidence in favour of safety of Covid-19 vaccine.	Strongly Disagree	4.5
	Disagree	18.0
	Neutral	29.7
	Agree	37.9
	Strongly Agree	9.2

Table 4: Practice regarding COVID-19 and vaccination among the study participants

Practice	Responses	Percentage
I follow protocols of social distancing.	Yes	92.3
	No	7.7
I follow protocols of hand hygiene.	Yes	93.5
	No	6.5
I follow protocols of wearing mask.	Yes	93.8
	No	6.2
I have vaccinate myself and family for Covid-19	Yes	55.6
	No	44.4
I have severe side effects after vaccination.	Yes	8.2
	No	57.4
	N/A	34.4
I have minor side effects after vaccination.	Yes	35.2
	No	32.4
	N/A	34.4
I have no side effects after vaccination.	Yes	33.4
	No	32.2
	N/A	34.4
I advise other to follow guideline regarding Covid-19	Yes	95.5
	No	4.5
I advise other to do Covid-19 vaccination	Yes	87.8
	No	4.5
I avoid social gathering even after Covid-19 vaccine	Yes	77.1
	No	6.6
	N/A	17.0

specialised media cells, which can clear the misconceptions and provide scientific explanations to rumours, myths and misinformation.[10]

5. Limitations of the Study

The cross-sectional study design using an online survey, the awareness, attitude and practice among general population couldn't be determined. Although internet facility is available in most of the districts of the Jammu and Kashmir, the population which didn't have access to the internet must have been missed. There were no direct face-to-face interview between the investigators and the respondents, leading to potential information bias in this study.

6. Conclusion

In Jammu and Kashmir, the social media users are having good awareness toward COVID-19 diseases and its vaccination as per current study data. The policy makers should disseminate more information regarding COVID-19 appropriate behaviour and its vaccination using this platform. However, special media cells should be formed to counter the negative impact of rumours, myths and misinformation.

7. Source of Funding

None.

8. Conflict of Interest

The authors declare no conflict of interest.

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Author biography

Fouzia Nazir, Assistant Professor

Abdul Rouf, Senior Resident https://orcid.org/0000-0002-6412-7436

Muneer Ahmad Masoodi, Professor and Head

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