

**ORIGINAL ARTICLE**

**Knowledge, Attitude and Practice towards COVID-19 Vaccination in District Badaun:  
A cross-sectional study**

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**ABSTRACT**

**Background:** COVID-19 was declared pandemic by WHO on 30<sup>th</sup> January 2020 and to cure it, No specific antiviral treatment has been developed yet, therefore only preventive measures such as; facemask, regular hand washing, social as well as physical distancing, respiratory etiquettes and vaccination against Covid-19, are proven methods of its control and prevention. **Objectives:** To study the knowledge, Attitude and Practices among people about COVID-19 vaccine and find out various socio-demographic factors for its decision making. **Material & Methods:** A descriptive cross sectional study was conducted among the persons attended the tertiary care center to get vaccine against COVID-19 at Government Medical College, Badaun, UP. **Results:** Out of all respondents, majority (77.2%) of them accepted to get the vaccine as soon as available. 81.5% of respondents were male and more than half (60%) of them were unmarried. More than three fourth (77.5%) of respondents were unemployed and nearly one third (32%) belonged to BPL category. As per study, majority of respondents (86%) and (71.8%) said that vaccine is safe and effective way to control and prevent COVID-19, respectively. (77.2%) respondents who accepted that vaccine should be taken as soon as available, more than half (57%) of them said that doctor's recommendation is an important factor in vaccination decision-making. **Conclusion:** The most important factor for vaccine hesitancy is the occurrence of mild to moderate adverse effects following immunization, and this may be the biggest challenge in the global response against the Covid-19 pandemic.

**Keywords:** COVID-19, KAP study, Covid-19 Vaccine, Pandemic & BPL

**Introduction**

The novel Corona virus was first reported in December 2019 as a cluster of acute respiratory illness in Wuhan, Hubei Province, China<sup>1</sup> from where it spread rapidly to other countries. WHO declared it a public health emergency of international concern on 30<sup>th</sup> January 2020 and a pandemic on 11<sup>th</sup> March 2020. In India first case was reported on 27<sup>th</sup> January 2020 in Kerala as a student who returned from Wuhan China.<sup>2</sup> As we don't have specific treatment against Covid-19 till date, therefore only preventive measures are proven methods of its control and prevention. The ground strategy followed by most countries around the world was to reduce the transmissibility of the disease, often by non-pharmaceutical interventions (NPIs) including; enforcing masks application, hands sanitization, physical & social distancing, travel restrictions, schools closures, and partial or complete lockdowns.

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Vaccines are one of the most reliable and cost-effective public health interventions ever implemented that are saving millions of lives each year. Covid-19 can be prevented by getting available vaccine and keep on taking preventive measures. Therefore, present study was conducted to assess the knowledge, attitude and practices about Covid-19 vaccination.

**Material and Methods**

**Study Design and participants:** This cross-sectional study was conducted in Government Medical College, Badaun, Uttar Pradesh. The Interview was conducted after consent of the participants. The participants were more than 18 years and residing in district Badaun. An optimum sample size of 400 participants was obtained by 4PQ/L<sup>2</sup> assuming 50% acceptance of vaccine among people with 10% relative precision and 95% confidence interval. The data collection was conducted in the period of 01 May 2021 to 30 May 2021. Data was entered in the MS Excel and analysis was done in SPSS 16. Statistical value (p- value) was calculated using chi-square test.

**Table 1:** Relations between socio-economic variables and acceptance of Covid-19 vaccine (n=400)

Variables		Acceptance of Vaccine				Total		p-value
		It should be taken as soon as available		It should be Delayed				
		No.	%	No.	%	No.	%	
<b>Age group (years)</b>	<25	148	47.9	56	61.5	204	51.0	<b>0.054</b>
	25-35	98	31.7	24	26.4	122	30.5	
	>35	63	20.4	11	12.1	74	18.5	
<b>Gender</b>	Male	255	82.5	71	78.0	326	81.5	<b>0.331</b>
	Female	54	17.5	20	22.0	74	18.5	
<b>Marital status</b>	Single	170	55.0	70	76.9	240	60.0	<b>0.001</b>
	Married	137	44.3	21	23.1	158	39.5	
	Divorced/ Widow	2	0.7	0	0.0	02	0.5	
<b>Type of Family</b>	Nuclear	112	36.2	40	44.0	152	38.0	<b>0.183</b>
	Joint	197	63.8	51	56.0	248	62.0	
<b>Religion</b>	Hindu	292	94.5	86	94.5	378	94.5	<b>0.998</b>
	Muslim	17	5.5	05	5.5	22	5.5	
<b>Caste</b>	General	153	52.4	49	57.0	202	53.4	<b>0.707</b>
	OBC	97	33.2	27	31.4	124	32.8	
	SC	42	14.4	10	11.6	52	13.8	
<b>Educational Status</b>	Illiterate	8	2.6	0	0.0	8	2.0	<b>0.008</b>
	Primary	6	1.9	0	0.0	6	1.5	
	Middle	63	20.4	11	12.1	74	18.5	
	Secondary	89	28.8	19	20.9	108	27.0	
	Graduate	115	37.2	45	49.4	160	40.0	
<b>Occupational status</b>	Employed	72	23.3	18	19.8	90	22.5	<b>0.480</b>
	Un-employed	237	76.7	73	80.2	310	77.5	
<b>Poverty line</b>	APL	201	65.0	71	78.0	272	68.0	<b>0.020</b>
	BPL	108	35.0	20	22.0	128	32.0	

**Table-1**, shows that out of 400 respondents, more than half 51% of them were below the age group of <25 years and out of total, 77.2% respondents who accepted to get the vaccine as soon as available, nearly half 47.9% of them also believed like that. Association between age of respondents and acceptance of vaccine was found statistically significant  $p=0.054$ . As per study majority 81.5% of respondents were male as well as more than half 60% were single unmarried. Statistically a significant association  $p=0.001$  was found between acceptance of vaccine and their marital status.

It was observed that majority 62% of respondents were from joint family. As for religion and caste were concerned, 94.5% of respondents were Hindu and more than half 52.4% of them were from general category. As for education level was concerned, more than one third 40% respondents were graduate. Statistically a significant association  $p=0.008$  was found between acceptance of vaccine and educational level of respondents. It was also observed that majority 77.5% of respondents were unemployed as well as about one third 32% participants belonged to BPL below poverty line category.

**Table-2:** Comparison between socio-demographic variables and acceptance of the Covid-19 vaccine. n=400

Variables		Acceptance of Vaccine				Total		p-value
		It should be taken as soon as available		It should be Delayed				
		No.	%	No.	%	No.	%	
<b>Source of knowledge about Covid-19 Vaccine</b>	Newspaper	53	17.2	11	12.1	641	16.0	0.524
	Television	90	29.1	32	35.2	122	30.5	
	Health care provider	114	36.8	28	30.8	142	35.5	
	Friends	12	3.9	06	6.6	18	4.5	
	Family member	28	9.1	10	10.9	38	9.5	
	Others	12	3.0	04	4.4	16	4.0	
<b>Is the vaccine an effective way to prevent and control Covid-19</b>	Yes	229	74.1	58	63.7	287	71.8	0.053
	Don't know	80	25.9	33	36.3	113	28.2	
<b>COVID-19 vaccine is safe</b>	Agree	287	92.9	57	62.6	344	86.0	0.000
	Disagree	04	1.3	24	26.4	28	7.0	
	Don't know	18	5.8	10	11.0	28	7.0	
<b>Vaccine convenience vaccination method, frequency, distance to vaccination sites etc. is an important factor in vaccination decision-making.</b>	Yes	164	53.1	32	35.2	196	49.0	0.003
	No.	145	46.9	59	64.8	204	51.0	
<b>Doctor's recommendation is an important factor in vaccination decision-making.</b>	Yes	176	57.0	10	11.0	186	46.5	0.000
	No.	133	43.0	81	89.0	214	53.5	
	<b>Total</b>	309	77.2	91	22.8	400	100.0	

**Table-2**, Illustrate that out of 400 respondents, majority 77.2% of them who accepted to get vaccine as soon as available; more than one third 36.8% of them got information from health care providers. Majority 71.8% of respondents said that vaccine is an effective way to prevent and control Covid-19. It was also observed that majority 86.0% of respondents were agree and said that vaccine is safe to take it. Statistically a significant association

$p=0.000$  was found between acceptance of vaccine and its safety. It was also found that nearly half 49.0% of respondents accepted that vaccine convenience is an important factor for vaccination decision-making. Statistically a significant association  $p=0.003$  was found between vaccine convenience and its acceptance. As per study, more than half 53.5% of respondents said that doctor's recommendation for getting vaccine is not important factor in vaccination decision-making. Statistically a significant association  $p=0.000$  was found between vaccine acceptance and doctor's recommendation for decision making.

## Discussion

In the present study, Knowledge, Attitude and Practices KAP of 400 respondents were assessed toward the acceptance of Covid-19 vaccine. As per study, majority 77.2% of the respondents accepted that vaccine against covid-19 should be taken as soon as available that is similar to study conducted by Bhartiya S et al<sup>3</sup> in west India among 1342 participants and revealed that nearly 79% respondents were willing to take it. In another study conducted by Alqudeimat Y et al.<sup>4</sup> in Kuwait it was said that more than half 53.1% of participants were willing to accept a covid-19 vaccine once available. In present study, about one fourth 22.8% respondents had some kind of hesitancy to delay the vaccination that is similar to previous study conducted by Issanov Alpamys et al.<sup>5</sup> in Kazakhstan which concluded that more than 36% respondents considered themselves covid-19 vaccine hesitant which was high in female  $p=0.02$ .

The present study states that out of 77.2% respondents who accepted that vaccine should be taken as soon as available nearly half 47.9% of them were belonged to age group of <25 years. It is in accordance to study conducted by El-Elimat T et al, 2021<sup>6</sup> in Jordan, that revealed, more than one third 39.7% of beneficiaries were from age group of 18-25 years. About 82.5% male subjects were more willing to accept vaccine than female 18.5%, that is similar to findings of previous study conducted by Alqudeimat Y et al<sup>4</sup> that revealed, majority 58.3% of male were more willing to accept it than female 50.9%. In this study, out of total respondents 77.2% who accepted that vaccine should be taken as soon as available more than half 55% of them were single unmarried. It is in accordance to previous study done by Issanov Alpamys et al.<sup>5</sup> in Kazakhstan and revealed that about two third 63% respondents identified as single. As far as type of family is concerned, compare to nuclear family 36.2% person belonging to joint family 63.8% have more willingness for accepting the vaccine.

As far as religion and caste was concerned, out of total respondents having willingness for accepting the vaccine as soon as available, 94.5% and 52.4% of them were Hindu and general, respectively. People with a higher level of education were more likely to accept vaccination than those with a lower level of education. In this study out of 77.2% respondents more than one third around 37.2% of them were graduate having more willing to accept the vaccine. It is in accordance to previous study done by Mazro RR et al.<sup>7</sup> in Malaysia and revealed that 42.3% people accepted the vaccine have tertiary level education. Majority 77.5% of respondents said that they became unemployed and poor due to covid-19 crisis which is similar to study done by Nicola M et al<sup>8</sup> who said that social distancing, self-isolation, and travel restrictions lead to a reduced work force across all economic sectors and caused many jobs to be lost.

In this study, out of 77.2% respondents who believed to get vaccine as soon as available, majority 76.7% of them were unemployed. It is in accordance to study conducted by Bhartiya S et al.<sup>3</sup> that revealed more than 2/3rd of the people who responded that they are willing to accept the Covid vaccine, belonged to the no income group.

As per study more than one third 35.5% respondents got information about covid-19 vaccination from health care providers that is similar to study conducted by El-Elimat T et al,<sup>6</sup> that revealed about half 45.4% of the participants trusted on health care providers as a source of information about it. As per study, total respondents 77.2% who accepted that vaccine should be taken as soon as available, nearly three fourth 74.1% of them believed that vaccine is an effective way to prevent covid-19. It is in accordance to previous study done by Marzo RR et al.<sup>7</sup> who revealed 95.9% respondents

thought that vaccination would be an effective way to prevent and control Covid-19. Most of the respondents 92.9% having positive view, believed that vaccine is safe contrary to previous study done by A Shiva Raj et al<sup>9</sup> in South Korea and reported that it was only 36.7%.

As per study, total respondents 77.2% who believed that vaccine should be taken as soon as available, more than half 53.1% and 57% of them accepted that vaccine convenience factors and doctor's recommendation are important in decision making, respectively. These findings are tending to be similar to previous study done by Marzo RR et. al. 2020<sup>7</sup> and revealed that essential factors influencing vaccination decisions making were vaccine convenience 95.7% and doctor's recommendation 97.3%.

### **Conclusion**

Overall, among all respondents, 77.2% of them showed strong willingness to get vaccine against Covid-19 as soon as available. Since vaccination appear to be an essential preventive measure that can halt the Covid-19 pandemic that's why awareness and motivation among people should be created to get 100% coverage. Awareness about the Covid-19 vaccine, and its acceptance, varies depending on socio-demographic characteristics. The most important factor for vaccine hesitancy is the occurrence of mild to moderate adverse effects following immunization that may be the biggest challenge in the global response against the pandemic.

Vaccine acceptability may be increased once additional information about vaccine safety and efficacy is available in the public domain, preferably by a trusted, centralized source of information. In addition, all efforts must be made to curb the spread of misinformation about the vaccine. Interventional educational campaigns especially targeting the populations at a higher risk of vaccine hesitancy are therefore essential to avoid low vaccination coverage.

### **Recommendations**

1. Government should also focus on other source of information dissemination like awareness camp, skit and group discussion.
2. More involvement of females and students in awareness related activities
3. Government should educate people that there are no side effects of Covid-19 vaccine so more and more participation of individuals.
4. More emphasis on grass root and low socio-economic status.

### **References**

1. Wu F, Zhao S, Yu B, Chen Y-M, Wang W, Song Z-G, et al. A new coronavirus associated with human respiratory disease in China. *Nature*. 2020; 579:7798:265–9.
2. World Health Organization. WHO announces Covid-19 outbreak a pandemic. <http://www.euro.who.int/en/health-topics/health-emergencies/coronavirus-covid-19/news/news/2020/3/who-announces-covid-19-outbreak-a-pandemic> Accessed 12 March 2020.
3. Bhartiya S, Kumar N, Singh T, Murugan S, Rajavel S, Wadhvani M. Knowledge, attitude and practice towards Covid-19 vaccination acceptance in West Indi. *International Journal of Community Medicine and Public Health*. 2021; 83:1170-1176.
4. Alqudeimat Y, Alenezi D, AlHajri B, Alfouzan H, Almokhaizeem Z, Altamimi S, et al. Acceptance of a Covid -19 vaccine and its related determinants among the general population in Kuwait. 2021; 30 : 262-271.

5. Alpamys I, Akhmetzhanova Z, Riethmacher D, Mohamad Aljofan. Knowledge, attitude, and practice toward Covid -19 vaccination in Kazakhstan: a cross-sectional study. *Human Vaccines and Immuno-therapeutics*. 2021; 1710: 3394-3400.
6. El-Elimat T, Abu Al Samen MM, Almomani BA, Al-Sawalha NA, Alali FQ. Acceptance and attitudes toward COVID-19 vaccines: A cross sectional study from Jordan. *PLoS ONE*. 2021;164: 1-15.
7. Marzo R.RA. AhmadK. Abid A.P.Khatiwada A. Ahmed T.M. Kyaw I.B.Z. Abidin M. Srithar S.Sinnathamby A.P Sarvasundram S. Shrestha <https://doi.org/10.1016/j.vacun.2021.07.007>Get rights and content Factors influencing the acceptability of Covid-19 vaccination: A cross-sectional study from Malaysia October 2020 to Jan 2021.
8. NicolaM, AlsafibZ, Sohrabic C, KerwandA, Al-JabirdA, Iosifidisc C. The socio-economic implications of the corona virus pandemic Covid-19: A Review. *International journal of Surgery*. 2020; 78: 185-193.
9. Acharya S, Moon D, Shin Y. Assessing attitude toward Covid-19 vaccination in South Korea. *Frontiers in Psychology*. 2021; 12: 1-6.

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