

# Knowledge, Attitude and Vaccination Status on Covid-19 among Adults Living in Selected Rural Areas of Khurdha District, Odisha

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## ABSTRACT

**Introduction-** In 2019, the whole World faced with the great challenges in the health due to the epic outbreak of novel Corona virus. World Health Organization (WHO) declared the Corona virus as the global health emergency on January 30, 2020. The Covid 19 vaccine are widely created for their role in reducing the spread of Covid 19 and reducing the severity and death caused by Covid 19. People's perception toward vaccine acceptance have fluctuated with the information flow in various social medias and the severity of COVID 19 cases. This study aimed to assess the level of knowledge and attitude about Covid 19 vaccine among the community people.

**Methods-** Quantitative approach with descriptive research design was adopted for the present study. Two hundred (200) adults aged 20-60 years from Angarpada and Mahul residence in Khordha District, Odisha were selected purposively. Adults who gave their consent and were present during the data collection period were included in the study. Pregnant woman and the people have systemic diseases were excluded from the study. The tools used to collect the data were 1. Socio demographic questionnaire, 2. Knowledge questionnaire to assess the Covid 19 vaccination and 3. Attitude scale to assess the attitude on Covid 19 vaccine. The data was analysed by using descriptive and inferential statistics.

**Results-** Vaccination status of the adults living in the Khordha district shows that 83% of people vaccinated for COVID 19. Level of knowledge on covid19 vaccine shows that more than half of the people (52.5%) had poor knowledge. Highest percentage of adults (47.5%) had neutral attitude. The mean knowledge score is  $10 \pm 3.59$  and mean attitude score is  $92.38 \pm 6.54$ . There was a very weak positive correlation ( $r = 0.176$ ,  $p = 0.096$ ) found between the knowledge and attitude.

**Conclusion-** The study results indicates that most of the community people are having adequate knowledge and having neutral attitude towards the Covid 19 vaccination. It shows that awareness is needed on the importance of vaccination.

## INTRODUCTION

The COVID-19 pandemic is continuously harming human life with several devastating effects since the past two years. As of August 26, 2021, there were 215,685,565 confirmed cases of COVID-19 reported globally with 17,978,370 being actively infected and 4,501,003 deaths.<sup>1</sup>

Safe and effective vaccines are available that provide strong protection against serious illness,

hospitalization and death from COVID 19. Billions of people have been vaccinated against COVID 19.<sup>2</sup> WHO is determined to maintain the momentum for increasing access to COVID 19 vaccines and will continue to support countries in accelerating vaccine delivery, to save lives and prevent people from becoming seriously ill.<sup>3</sup>

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**KEYWORDS:** Knowledge and Attitude, Adults, Vaccination status and Covid19



COVID 19 vaccine effectiveness and impact evaluations are vital for accumulating real-world evidence of how vaccines work to guide policy and strategy. Vaccine effectiveness studies have shown that receiving 2 or 3 doses of an mRNA COVID 19 can reduce the severe COVID 19 outcomes.<sup>4,5</sup>

All countries in the world have an immunization programme to deliver selected vaccines to the targeted beneficiaries, specially focusing on pregnant women, infants and children, who are at a high risk of diseases preventable by vaccines.<sup>6</sup> India has a population of over 1390 million people. The government has recommended all its citizens within the inclusion criteria to be immunized by the two vaccines, namely the Covishield and COVAXIN.<sup>7</sup>

Free vaccination against COVID 19 commenced in India on January 16, 2021, and the government is urging all of its citizens to be immunized, to be the largest vaccination program in the World. Out of the eight COVID 19 vaccines that are currently under various stages of clinical trials in India, four were developed in the country.<sup>8</sup>

There have been several reports on COVID-19 vaccine acceptability in different countries. Data from 32 countries survey (n = 26,758) on COVID-19 vaccine acceptability range from as low as 38% in Croatia and as high as 98% in Vietnam.<sup>9</sup> In a nationwide online survey, the acceptability was 65% among residents in the 16 regions of Ghana.<sup>10</sup> Among healthcare workers in the United States, only 36% were willing to take COVID-19 vaccine once it became available.<sup>11</sup>

In a Chinese study, 76% students were willing to take COVID-19 vaccine. In this study, students had good attitudes towards the vaccination, however, vaccine uptake was thought to be reduced by alarms about the vaccine safety and efficacy.<sup>12</sup> In a survey among healthcare workers in Saudi Arabia, the acceptability of COVID-19 vaccine was about 50%, alarming for more education to alleviate fear during vaccination.<sup>13</sup>

The populations of rural areas are at greater risk of COVID-19 complications and mortality. The virus is

particularly dangerous for older individuals and rural areas generally have higher proportions of older residents. Rural residents also have a higher prevalence of pre-existing conditions.<sup>14</sup> Emerging evidence supports that in patients with SARS-CoV-2 infections, the prevalence of kidney injury is high and usually leads to a poor prognosis. Optimal prevention and management of kidney injury will benefit patients with COVID 19.<sup>15</sup>

People's perception toward vaccine acceptance have fluctuated with the information flow in various social medias and the severity of COVID 19 cases. Therefore, it is important that the current scenario of people perception toward vaccine acceptance and vaccination status are explored to promote the vaccination approach against COVID 19 prevention and transmission effectively.<sup>16</sup>

### Methods and Materials

Quantitative research approach with descriptive research design was adopted for the present study. The study was conducted in a selected rural area of Khordha district of Bhubaneswar, Odisha. The main objectives of the study were to assess the Knowledge, Attitude and Vaccination Status on Covid-19. Two hundred (200) adults aged 20-60 years from Angarpada and Mahul residence in Khordha District, Odisha were selected purposively. Adult people willing to participate in the study, present during data collection period and understand Odia language were included in the study. Person who is contraindicated for vaccine such as pregnant women, systemic disease etc were excluded from the study. The tools used to collect the data were 1. Socio demographic questionnaire, 2. Knowledge questionnaire to assess the Covid 19 vaccination and 3. Attitude scale to assess the attitude on Covid 19 vaccine. All the tools were tested for reliability. Permission obtained from CMO (Chief Medical Officer) and Panchayet Pradhan of Angarpada village. Informed written consent was obtained from participants. Door to door survey was conducted. The data was analysed by using descriptive and inferential statistics. The data was entered and analysed in SPSS version 25.

## Results

**Table No -1: Frequency and percentage wise distribution of demographic characteristics of study participants.**

**N = 200**

Sl. No	Socio demographic data	Frequency	Percentage (%)
1.	<b>Age</b>		
	20-30	59	29.5
	31-40	53	26.5
	41-50	48	24.0
	51-60	40	20.0

2.	<b>Gender</b>		
	Male	97	48.5
	Female	103	51.5
3.	<b>Education</b>		
	No formal education	23	11.5
	Primary education	53	26.5
	Secondary education	43	21.5
	Higher secondary	51	25.5
	Graduation and above	30	15
4.	<b>Occupation</b>		
	Farmer	11	5.5
	Housewife	142	71.5
	Private sector	35	17.5
	Business	10	5
	Other	2	1
5.	<b>Marital status</b>		
	Married	142	71
	Unmarried	46	23
	Widow/divorced	12	6
6.	<b>Monthly income</b>		
	<7000	33	16.5
	7000-10000	103	51.5
	>10000	64	32
7.	<b>Family type</b>		
	Nuclear	103	51.5
	Joint	73	36.5
	Extended	24	12.0
8.	<b>Religion</b>		
	Hindu	192	96.0
	Muslim	8	4.0
9.	<b>Vaccinated for covid 19</b>		
	Yes	166	83.0
	No	64	17.0
10.	<b>Any one of the family members infected with Covid 19</b>		
	Yes	52	26.0
	No	148	74.0

**Table No 1** shows the demographic characteristics of study participants. Age of the participants shows that highest percentage (29.5%) of participants aged between 20-30 years. Followed by 26.5 % of them were aged between 31-40 years, 24% were aged between 41-50 years, and 20.0% were aged between 51-60 years. Gender of the participants shows that almost equal percentage of participants were male (51.5%) and female (48.5%). Educational status shows the highest percentage (26.5%) of participants had primary education followed by 21.5% had secondary education, 25.5% had higher secondary education, 15.5% had graduation and above, whereas only 11.5% had no formal education. Occupation shows that majority (71.5%) were housewives. Majority (71.0%) were married. Monthly income shows that highest percentage (51.5%) of participants belong to the income group of 7001-10000. Highest percentage (51.5%) of participants belong to nuclear family, followed by 36.5% belong to joint family whereas, only 12% belongs to extended family. Vaccination status shows that 83% of the participants were vaccinated for covid19 and 17% participants were not vaccinated. Nearly 1\4<sup>th</sup> (26%) of the participant's family member infected with Covid-19 positive.

**Table No 2- Vaccination status of the Study Participants**

**N = 200**

Sl. No	Variable	Taken		Not Taken	
		Frequency	Percentage (%)	Frequency	Percentage (%)
1	Vaccination Status	166	83	64	17

**Table No 2** shows the Covid-19 vaccination status of the participants. Majority (83%) of the participants are vaccinated for covid-19. Whereas, 17 % were not vaccinated. Hence, it can be interpreted that majority of them were aware about Covid vaccination and remaining needs education about vaccination.

**Table No 3- Frequency and percentage wise distribution of knowledge level on Covid-19 vaccination among adult of Khordha District.**

N = 200

Variable	Levels	Frequency	Percentage (%)
Knowledge	Good (17-23)	11	5.5 %
	Average (10-16)	84	42 %
	Poor (3-9)	105	52.5 %

**Table No 3.** shows the level of knowledge on Covid-19 vaccination among adults living in Khordha district. The total knowledge score ranges between 0-25. More than half (52.5%) of the adults have poor knowledge, which depicts the knowledge score of 3-9 followed by 42% had average knowledge depicts the knowledge score of 10-16 whereas, only less than 10% i.e 5.5%) had good knowledge and depicts the knowledge score of 17-23. Hence it can be interpreted that people living in Khordha district not having adequate knowledge about Covid-19 vaccination.

**Table No -4 Attitude of adults on covid 19 vaccination.**

N = 200

Variable	Attitude	Frequency	Percentage (%)
Attitude	Positive (96-105)	72	36%
	Neutral (86-95)	99	47.5%
	Negative (76-85)	33	16.5%

**Table No 4** shows the attitude of adults on Covid-19 vaccination. The total attitude score ranges between 5-135. Highest percentage (47.5%) of the adults have the neutral attitude towards vaccination which depicts the score ranges between 86-95, followed by 36% have positive attitude depicts the score ranges between 96-105, whereas 16.5% had negative attitude and depicts the score of 76-85. Hence it can be interpreted that most of the people living in Khordha district not having positive attitude towards Covid 19 vaccine.

**Table No 5: Relation between level of knowledge and attitude of adult about Covid 19 Vaccination.**

N = 200

Variables	Mean $\pm$ SD	r value	p value
Knowledge	10 $\pm$ 3.599	0.176	0.096
Attitude	92.38 $\pm$ 6.535		

**Table No 5** shows the relation between the level of knowledge and attitude of participants about Covid-19 vaccination. There was a very weak positive correlation found between knowledge and attitude. Hence, it can be interpreted that there was no significant relation found between knowledge and attitude of covid-19 vaccination.

#### Association between level of knowledge and socio demographic variables.

There was no significant association found between the level of knowledge and Age ( $\chi^2=7.656$ ,  $p=0.264$ ), Gender ( $\chi^2=0.044$ ,  $p=0.978$ ), Occupation ( $\chi^2=4.337$ ,  $p=0.826$ ), Marital status ( $\chi^2=3.239$ ,  $p=0.919$ ), Education ( $\chi^2=5.040$ ,  $p=0.753$ ), Monthly family income ( $\chi^2=4.190$ ,  $p=0.381$ ), Family type ( $\chi^2=1.178$ ,  $p=0.882$ ), Religion ( $\chi^2=0.710$ ,  $p=0.701$ ), Vaccination status ( $\chi^2=5.469$ ,  $p=0.065$ ), Infection of family members with Covid 19 ( $\chi^2=1.606$ ,  $p=0.448$ ). Hence, it can be interpreted that there was no significant influence of knowledge by the demographic characteristics of study participants.

#### Association between the level of attitude and socio demographic variables.

There was no significant association found between the level of attitude and Age ( $\chi^2=7.744$ ,  $p=0.258$ ), Gender ( $\chi^2=1.853$ ,  $p=0.396$ ), Occupation ( $\chi^2=7.669$ ,  $p=0.466$ ), Marital status ( $\chi^2=7.22$ ,  $p=0.513$ ), Education ( $\chi^2=7.49$ ,  $p=0.485$ ), Monthly income ( $\chi^2=5.681$ ,  $p=0.224$ ), Family type ( $\chi^2=5.075$ ,  $p=0.280$ ), Religion ( $\chi^2=1.475$ ,  $p=0.478$ ), Vaccination status ( $\chi^2=0.962$ ,  $p=0.618$ ), Infection of family members with Covid 19 ( $\chi^2=1.995$ ,  $p=0.369$ ). Hence, it can be interpreted that there was no significant influence of attitude by the demographic characteristics of study participants.

## Discussion

The findings of the present study, more than half (52.5%) of the adults have poor knowledge, followed by 42% had average knowledge and 5.5% had good knowledge. Venkataraman R conducted a study on 596 participants and stated that 81.71% had adequate knowledge and 81.5% had a positive attitude toward the COVID 19 vaccine.<sup>17</sup>

In present study, 83% people taken Covid-19 vaccine. This was supported by the study findings of Chandani S et al and results shows that 20.63% were unaware of the vaccines, 10% refused to take vaccine and 70% of the participants had concerns regarding the vaccines.<sup>18</sup>

A study published in National Library of Medicine by Kishore J et al shows that 70.44% of participants got vaccinated against Covid-19 and 29.55% participants hesitated to get vaccination.<sup>19</sup> Patel JB et al conducted a study on knowledge, acceptance and attitude regarding Covid-19 vaccination and study results shows that majority (75.66%) of the participants were strongly agreed that to get vaccine against the Covid 19.<sup>20</sup>

Ayappan A et al in his study stated that among 575 participants, 80.8% were vaccinated.<sup>21</sup> Marzo RR et al conducted a study on 5673 participants and the results shows that 64% of participants agreed that the vaccine effectively controlled the Covid 19 and 23% participants agreed that there was no need for vaccination.<sup>22</sup>

## Conclusion

Vaccines are among the most safe and effective public health interventions to prevent serious disease and death. The present study revealed that level of hesitancy towards Covid 19 vaccine among adult people in rural areas is still existing. Mass awareness is needed to improve the awareness of adults towards the COVID 19 vaccine.

## References-

- [1] WHO. World Health Organization Global COVID-19 Surveillance. WHO, COVID. 2021.
- [2] World Health Organization, COVID- 19 advice for the public: Getting vaccinated (13 April,2022)  
<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/covid-19-vaccines/advice>
- [3] World Health Organization, Diseases/Coronavirus disease (COVID 19)/ COVID- 19 vaccines,  
<https://www.who.int/emergencies/diseases/novel-coronavirus-2019/covid-19-vaccines>
- [4] World Health Organization, Immunization Analysis and Insights, COVID-19 Effectiveness <https://www.who.int/teams/immunization-vaccines-and-biologicals/immunization-analysis-and-insights/surveillance/covid-19-vaccine-effectiveness-and-impact>
- [5] Centers for Disease Control and Prevention, Impact of Vaccination on Risk of COVID-19 Related Mortality.  
<https://www.cdc.gov/coronavirus/2019-ncov/science/data-review/vaccines.html>
- [6] National Library of Medicine, Indian journal of medical Research  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4078488/>
- [7] American Diabetes Association,  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8577718/>
- [8] Centers for Disease Control and Prevention (May 11,2023)  
<https://www.cdc.gov/coronavirus/2019-ncov/vaccines/vaccine-benefits.html>
- [9] Wouters OJ, Shadlen KC, Salcher-Konrad M, Pollard AJ, Larson HJ, Teerawattananon Y, et al. Challenges in ensuring global access to COVID-19 vaccines: production, affordability, allocation, and deployment. *TheLancet*. 2021.
- [10] Alhassan RK, Aberese-Ako M, Doegah PT, Immurana M, Dalaba MA, Manyeh AK, et al. COVID-19 vaccine hesitancy among the adult population in Ghana: evidence from a pre-vaccination rollout survey. *Trop Med Health*. 2021; 49(1): 1–13.
- [11] Shekhar R, Sheikh AB, Upadhyay S, Singh M, Kottewar S, Mir H, et al. COVID-19 vaccine acceptance among health care workers in the United States. *Vaccines*. 2021; 9(2): 119.
- [12] Bai W, Cai H, Liu S, Liu H, Qi H, Chen X, et al. Attitudes toward COVID-19 vaccines in Chinese college students. *Int J Biol Sci*. 2021;17(6):1469.
- [13] Qattan A, Alshareef N, Alsharqi O, Al Rahahleh N, Chirwa GC, Al-Hanawi MK. Acceptability of a COVID-19 vaccine among healthcare workers in the Kingdom of Saudi Arabia. *Front Med*. 2021; 8:83.
- [14] OECD Library <https://www.oecd-ilibrary.org/sites/c734c0feen/index.html?itemId=/content/component/c734c0fe-en>

- [15] Wuryantari, Setiadi, Ismail, Ekpproyitra, Safari D, Wa ode Danin was conducted study determined the prevalence and epidemiological characteristics of COVID-19 in Jakarta, published in PubMed on May 12, 2022. Link <https://pubmed.ncbi.nlm.nih.gov/35550635>
- [16] Phillip B, Mukherjee P, Zaide S was conducted a study related to the complication of covid19, published in PubMed on Mar 21, 2023. Link <https://pubmed.ncbi.nlm.nih.gov/36856339/>
- [17] Venkataraman R, Basavaraj SHP was conducted a community based prospective, cross-sectional study from May 2021 to October 2021 in the rural part of the Mandya Districts of Karnataka, India, published in PUB MED. Link [https://pubmed.ncbi.nlm.nih.gov/36531132//](https://pubmed.ncbi.nlm.nih.gov/36531132/)
- [18] Chandani S, Jani D, and Sharma D conducted a study to understand the covid 19 vaccination hesitancy in India, published in PubMed Dec 18, 2021. Link <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8523306>
- [19] Kishore J, U.Venkatesh, Glory Ghai, Premkumar H was conducted a cross-sectional study between October 26, 2020 and November 10, 2020, published in PubMed Central. Link <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8483144>
- [20] Babubhai J, Clarice Adeline Lyngdoh, Fahima MM Khan was conducted a cross-sectional study amongst the residents of various States and Union Territories of India from 3<sup>rd</sup> to 23<sup>rd</sup> March 2021, published in International Journal of Science and Research. Link [https://www.ijsr.net/get\\_count.php?paper\\_id=S R21720143840](https://www.ijsr.net/get_count.php?paper_id=S R21720143840)
- [21] Ayappan A, Ananthesh L, Chaudhary R Kumar, Padhi B Kumar was conducted a study aimed to identify the perceptions and issues regarding the affordability, availability, and accessibility of COVID-19 vaccination, published in PubMed in Nov 25, 2022. Link <https://pubmed.ncbi.nlm.nih.gov/36560419>
- [22] Roy R Marzo, Shesha R, Bhattacharya S, Heidder P, Tin Tin Su was conducted cross-sectional through online from April to August 2021, published in Frontiers journal. Link <https://doi.org/10.3389/fpubh.2022.958668>

