

Preparedness towards COVID – 19 among People of Odisha, India

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Abstract

COVID-19 is a highly contagious respiratory tract infection. The morbidity may range from asymptomatic mild to severe life threatening. It may transmit through droplets or contaminated surfaces. In an effort to mitigate the outbreak of COVID-19, most of the countries have imposed drastic lockdown. The effectiveness of these mitigation measures is highly dependent on cooperation and compliance of the public. The knowledge, attitudes and practices of people toward the disease, play an integral role in determining a society's readiness to accept the prevention strategies from health authorities. The aim of the current study was to explore the knowledge, attitudes and practices toward COVID-19 among the people of Odisha, a state located in the east of India. A cross-sectional online survey of 1,086 people residing in Odisha was conducted between 30th June 2020 to 04th August 2020. The survey tool was consisted of demographic characteristics, 12 items on knowledge, 6 on attitudes and 4 on practices, modified from a previously published questionnaire on COVID-19. Descriptive statistics, ANOVA and chi-square tests were conducted. The average knowledge score for participants was 9.9 and there was age wise significant difference observed in knowledge scores and knowledge had a significant association with attitude of the participants. However, irrespective of the demographic profile, knowledge level and attitude, most of the participants (above 80%) were following appropriate practices to protect themselves from getting infection. The results highlight the importance of consistent health education programs to improve the levels of knowledge, attitudes and practices.

Key words: Preparedness, COVID – 19, Odisha, India, Knowledge, Attitude, Practice.

INTRODUCTION

The coronavirus disease 2019 (COVID-19) first identified in Wuhan, China in December 2019. Since then, it has spread to other countries and has been declared as global pandemic by the World Health Organization (WHO). To date, there are more than 22 million positive COVID-19 cases recorded with more than 7 lakhs deaths globally.^[2] With more than 2 million positive cases and over 54 thousand death cases now India has the largest number of confirmed cases in Asia and has the third highest number of confirmed cases in the world followed by United States and Brazil.^[2] The first case of COVID-19 in India was reported on 30th January, 2020.^[3] Since 22nd March, India observed a mandatory lockdown in COVID-19 hotspots and all major cities. Further, on 24th March, a nationwide lockdown for 21 days implemented. Again since 14th April, India extended the nationwide lockdown till 3rd May which was followed by two-week extensions starting from 3rd to 17th May with substantial relaxations.^[3] The first case of the COVID-19 was confirmed in the Indian state of Odisha on 16th March, 2020. There are 70,020 confirmed cases, including 22,651 active cases, 46,936 recoveries and 380 deaths as of 20th August, 2020.^[4]

Lockdown measures were enforced as necessary to control the spread of the virus since much about the virus remained unknown.^[5] Due to the unclear information about the virus and the mode of transmission, it is further challenging to impose preventive strategies in the digital era with the

flooding of information without even authenticity. The knowledge, attitudes and practices (KAP) toward COVID-19 play a pivotal role in determining a public readiness to accept strategies from health authorities. KAP studies provide baseline information to decide the type of intervention that may be required to bring the needed behavior change. The lessons learned from the SARS outbreak revealed that knowledge and attitudes are associated with measures to control the spread of the disease.^[6,7] The survey also gives a general picture of COVID-19 in Odisha and the people's participation in the prevention practices. The findings will definitely show the ways to control the pandemic more effectively now and in future,

METHODS

A quantitative approach was used to achieve the objectives of this study.

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A cross-sectional online survey was conducted to gather information on COVID-19 for the Indian state Odisha context. The call for participation was made on social media like, Facebook, LinkedIn, WhatsApp, Messenger etc. Participants who gave consent to participate willingly in the survey were directed to complete the self-administered questionnaire after clicking the ‘Continue’ button. Data collected between 30th June 2020 to 4th August 2020. A total of 1,086 participants took part in the survey. The survey tool is an adaptation of the measures developed in a study on Chinese residents’ knowledge, attitudes and practices (KAP) towards COVID-19 in China.^[1] The questionnaire consisted of 1) demographics characteristics such as gender, age and education; 2) knowledge questionnaire about COVID-19 which included 12 questions; 3) questionnaire about attitudes toward COVID-19, included 6 questions; and 4) questionnaire regarding practices relevant to COVID-19 consisted of 4 questions. The questionnaire made in the English languages. A correct response for knowledge question was assigned 1 mark and the incorrect/not sure response was assigned with 0 marks. The maximum total score ranged from 0–12, with a higher score 10 and above indicating better knowledge about COVID-19. To measure attitudes towards COVID-19, participants were asked whether they agreed, disagreed or were not sure for each question and to measure practices, participants were asked to response their answers about their actions with yes, no, or sometimes regarding specific preventive practices.

The collected data were analyzed using the SPSS version 26. Descriptive analysis used to determine the frequencies and percentages while one-way ANOVA was used to determine the variation in knowledge between various demographic variables and chi-square tests used to determine the association between knowledge score and attitude. The statistical significance level was set at $p < 0.05$.

RESULTS

A total of 1086 participants participated in the study with an average age 29 years (SD = 12.2, range = 10–82), out of which 611 (56.3%) female and 475 (43.7%) were male.

Knowledge assessed by 12 questions and the average knowledge score for participants was 9.9 (SD = 1.8, range 0–12). About 68.6% participants were able to obtain scores 10 and above, representing an acceptable level of knowledge on COVID-19.

Figure 1 showing most participants knew that both children and young adults need preventive measures (95.60%) and that it is essential, who exposed to infected persons should be quarantine for a minimum of 14 days period

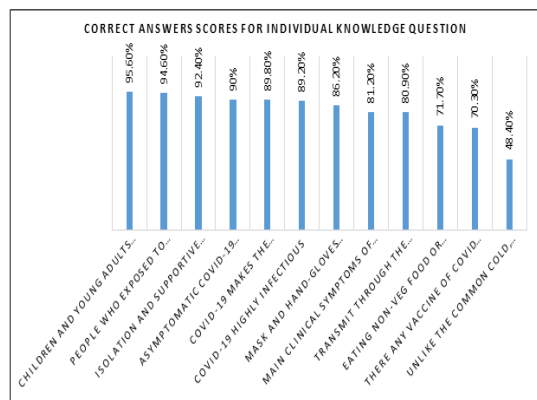


Figure 1: Individual knowledge question wise correct answer scores.

(94.6%). There was noticeable confusion among participants regarding vaccine of COVID – 19 (70.3% correct answer) and unlike the common cold, stuffy nose, runny nose and sneezing are less common in persons suffering from COVID-19 (48.4% correct answers).

Comparison of knowledge scores among various demographic characteristics were assessed using ANOVA test (Table 1). The results show that knowledge scores among female was little better than male and the finding is similar to the study conducted in Malaysia,^[8] but there was no significant difference noticed in knowledge score with regard to gender and education level, although there was age wise significant difference observed in knowledge scores.

Chi-square test performed to assess the association between knowledge score and attitude towards COVID-19 and it was found that knowledge had a significant association with attitude of the participants.

Figure 2 shows, irrespective of the demographic profile, knowledge level and attitude, most of the participants were following appropriate practices to protect themselves from getting infection.

Table 3 Shows age wise, there was no significant difference in practice score of participants toward COVID-19.

DISCUSSION

SARS-CoV-2 is a relatively new virus, since it was first detected in December 2019, it spreads very quickly and affecting 213 countries. Till date, there has been very few published data available on knowledge, attitudes and practices toward COVID-19 of various population. The unclear information due to the novelty of this disease, make it complicated for health authorities to plan appropriate strategies to prepare and manage the public. The study of knowledge, attitudes and practices of the population is therefore important to guide the efforts. The average knowledge score of participants was 9.9 (SD = 1.8, range 0–12). About 68.6% participants were able to obtain scores 10 and above, representing an acceptable level of knowledge on COVID-19. But it also indicates that over 30% population lacking adequate knowledge regarding COVID – 19. Even though there is consistently dissemination of COVID-19 information since the disease was first detected in India, there was variation in levels of knowledge may be due to the overload of information that may have caused confusion and difficulty ascertaining correct information.

Some studies conducted among the general population^[1] and healthcare workers^[9] have indicated high levels of knowledge regarding COVID-19. Differences in measurement and scoring systems do not make it possible for

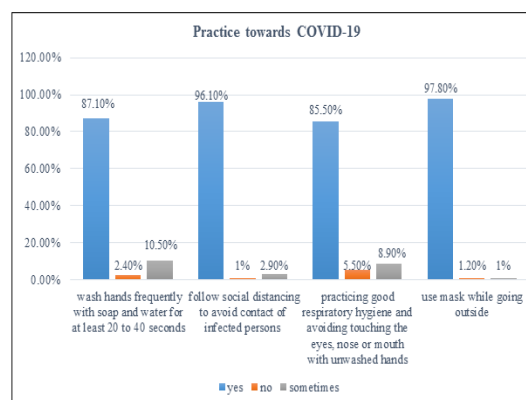


Figure 2: Practice towards COVID-19.

Table 1: Demographic characteristics of participants and knowledge score (N = 1086).

Characteristics		Frequency/ Percentage	Knowledge mean (SD)	F	p
Gender	Male	475 (43.7%)	1.67 (0.47)	0.924	0.337
	Female	611 (56.3%)	1.69 (0.45)		
Age in years	< 15	38 (3.5%)	1.47 (0.50)	4.894	0.008
	15 - 45	900 (82.9%)	1.68 (0.46)		
	> 45	148 (13.6%)	1.73 (0.44)		
Education	Matric	129 (12%)	1.63 (0.48)	1.148	0.333
	Inter	349 (32%)	1.68 (0.46)		
	Under graduate	430 (40%)	1.69 (0.46)		
	Post graduate	173 (16%)	1.72 (0.44)		
	Above	5 (0%)	1.40 (0.54)		

Table 2: Association of knowledge score of participants and their attitudes toward COVID-19 (N 1086).

Attitude questions	>10			<10			p
	Yes	No	Not sure	Yes	No	Not sure	
Are you hopeful that Indian people will get rid of COVID-19 very soon?	527(48.5%)	86(7.9%)	133(12.2%)	209(19.2%)	42(3.9%)	89(8.2%)	0.004
Do you believe that hand hygiene and wearing a mask can help to prevent getting the infection?	714(65.7%)	171(1.6%)	15(1.4%)	284(26.2%)	27(2.5%)	29(2.7%)	<0.001
Do you agree that practicing quarantine by staying at home and avoiding crowded places can help prevent getting infection?	735(67.7%)	4(0.4%)	7(0.6%)	303(27.9%)	17(1.6%)	20(1.8%)	<0.001
Is it necessary to rub hands with soap or alcohol for at least 20 sec?	720(66.3%)	19(1.7%)	7(0.6%)	298(27.4%)	19(1.7%)	23(2.1%)	<0.001
Is it essential to maintain at least 1 meter physical distance to prevent getting infection?	706(65.0%)	30(2.8%)	10(0.9%)	296(27.3%)	22(2.0%)	22(2.0%)	<0.001
Do you believe that focusing on improving immune power is a good option to prevent getting infection?	709(65.3%)	18(1.7%)	19(1.7%)	302(27.8%)	12(1.1%)	26(2.4%)	<0.001

Table 3: Age wise observation of mean practice score of participants toward COVID-19 (N 1086).

Practices	Mean practice score (S.D.)			F	p
	<15 yr.	15 – 45 yr.	>45 yr.		
Wash hands frequently with soap and water for at least 20 to 40 sec	1.18 (0.56)	1.23 (0.62)	1.23 (0.64)	0.12	0.88
Follow social distancing to avoid contact of infected persons	1.18 (0.56)	1.06 (0.33)	1.06 (0.33)	2.25	0.1
Practicing good respiratory hygiene and avoiding touching the eyes, nose or mouth with unwashed hands	1.36 (0.75)	1.22 (0.58)	1.27 (0.65)	1.4	0.24
Use mask while going outside	1.05 (0.22)	1.02 (0.21)	1.05 (0.28)	1.01	.36

accurate comparisons of knowledge levels across these studies. Knowledge scores among female was little better than male and the finding is similar to the study conducted in Malaysia,^[8] but there was no significant difference noticed in knowledge score with regard to gender and education level, although there was age wise significant difference observed in knowledge scores. A vast majority of participants held positive attitudes toward overcoming COVID-19, which also supported with the findings of the study conducted in Malaysia^[8] and there was strong association between level of knowledge and attitudes observed. But one appreciable thing is that irrespective of the demographic profile, knowledge level and attitude, most of the participants were maintaining compliance with the appropriate practices to protect themselves from getting infection. Table 3. Shows age

wise, there was no significant difference in practice score of participants toward COVID-19. Since people above 45 yrs.^[10] are at more risk for poor prognosis of COVID-19, they need to be very cautious about the preventive practices.

The present study indicates the need for more consistent authentic comprehensive education programmes and dispelling misinformation by the relevant authorities.

Limitations

Sampling for the study was a convenience sample through the networks of

the researchers and disseminated through different social media platforms such as WhatsApp, Facebook etc. thus there is a possibility of bias as underprivileged populations may not have been able to participate in the study. A more systematic, inclusive sampling method can improve the generalizability of the findings. The second limitation is related to the KAP instrument used in this study. Another limitation of the present study is the chances of participants giving socially desirable responses.

CONCLUSION

The present study was a comprehensive survey of the knowledge, attitudes and practices of population of Odisha, a state in India toward COVID-19. The findings suggest that nearly 70% of the population of Odisha have an acceptable level of knowledge on COVID-19 and are generally positive in their perspective towards overcoming the pandemic. Consistent dissemination of information from the government and/ or health authorities are key to aid public knowledge and understanding of COVID-19.

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CONFLICT OF INTEREST

The authors declare no Conflict of interest.

Author Contributions

Conceptualization, data analysis and manuscript prepared by Farzana Begum. Manuscript editing and data collection done by Nabanita Jena, Chinmaya Choudhury and Trupti Mayee Patel.

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