Original research article

Awareness Admist SARS-COV-2 Disease (COVID-19) Pandemic Among Residents and Students in Chhindwara, Madhya Pradesh

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Abstract

Background: Knowledge attitude practice study helps in improving the knowledge of the public, their awareness and promote positive message which could help in combating against Corona virus disease (COVID-19) or similar pandemic in future.

Objectives: The objectives of the study were to assess knowledge, attitude and practices of residents and students towards COVID-19 pandemic in Chhindwara, Madhya Pradesh.

Material and methods: This cross-sectional survey conducted in Chhindwara, Madhya Pradesh, from February 2021 to March 2021. Data was collected using Google form as an online survey. A self-designed questionnaire with four parts general instructions, knowledge, attitude and practice was prepared comprising of 07 questions on knowledge, 08 for attitude, and 08 for practice.

Results: Out of the 164 participants, 48.78 % males, 51.21% females, 82.31% of 18-30 years and 15% ≥31 years. 71.34% were medical students and 28.65% paramedical staffs. 98.78% had correct knowledge about the spread of COVID-19, 97.53% about use of washing hands with soap and water and hand sanitizer. 97.54% avoided crowded places, 87.80% agreed vaccination can prevent spread of COVID-19 infection. 68.71% said they have not visited crowded places, 99.38% said spread of COVID-19 was social responsibility, 95.67% were wearing masks, 75.92% said vaccination will overcome the COVID-19. 92.40% avoided unnecessary travel, 94.93% wearing mask, 94.93% showed good practice, 94.87% encouraged social distancing at office, 89.74% avoided hand shaking. Significant difference found in practice score of different genders (P<0.004).

Conclusion: The present study showed that participants had higher knowledge, positive attitude and good practices regarding COVID-19.

Keywords: Knowledge, attitude, practice, COVID-19

Introduction

Coronaviruses are enveloped, single stranded RNA viruses mainly responsible for flu-like symptoms ranging from common cold to more severe disease of respiratory tract. The main mode of transmission of virus is through droplets of saliva or secretions from the nose when an infected person coughs or sneezes.[1] A confirmed case of COVID-19 was reported in January 2020 in Kerala, India. WHO reports 428,511,601 confirmed cases of COVID-19, including 5,911,081 deaths as on 24th February 2022.[2]

Transmission rate of Coronavirus is very high so adequate knowledge about basic hygiene, preventive measures will help reducing spread of infection. Compliance of preventive measures such as frequent hand washing with soap and water or use of hand sanitizers, social distancing, covering nose and mouth while sneezing or coughing, wearing face mask, not touching face and getting vaccinated are essential for helping reducing the spread of virus.[3]

Nations throughout the world have implemented measures such as lockdown, timely closure of schools, colleges, markets, restricting movement of people, but the public behaviour directly affects the success or failure of such measures.[4]

Reasons for spread of COVID-19 infection and leading to pandemic can be due to little knowledge of disease, casual approach and dangerous practices.[5] Knowledge, attitude and practice (KAP) studies are useful in understanding public reaction, acceptance of any intervention applied to limit the spread of the virus.[6] It will help in improving the knowledge of the public, their awareness and promote positive message which could help in combating against COVID-19 or similar pandemic in future.[6] This study will thus provide an insight when designing future interventions to promote specific messages to enhance knowledge, change attitude and improve practice regarding COVID-19 among residents and students of Chhindwara.

Aims and Objectives

The study aimed to assess the awareness regarding COVID-19 disease among residents and students in Chhindwara, Madhya Pradesh. The objectives of the study were to assess knowledge, attitude and practices of residents and students towards COVID-19 pandemic in Chhindwara, Madhya Pradesh.

2. Materials and methods

2.1. Participants and data collection

This cross-sectional survey was conducted among the residents and students of Chhindwara city, medical students and paramedical staff of Chhindwara Institute of Medical Sciences, Chhindwara, Madhya Pradesh, from February 2021 to March 2021. As we all know, social-distancing, regular hand washing and wearing mask are the best way of prevention from COVID-19, therefore, instead of conducting a community-based survey, this study collected the data using Google form platform as an online survey. The link of Google form was posted and circulated using various social media platforms and personal e-mail address of the residents, students, medical students and paramedical staffs. The study participants were informed about the details of the study objectives for filling the questionnaire and confidentiality at the beginning of the survey, and informed consent was obtained from each participant. It has been disclosed to all the participants that their identity will keep confidential and the results will be used only for research purposes only. Among these 169 responses, 05 not participated therefore, final samples were 164.

2.2. Questionnaire

A self-designed questionnaire was prepared, which comprised into four parts such as general instructions, knowledge, attitude and practice to collect responses against COVID-19. The questions were established based on earlier published literatures and available knowledge.[7,8] After the preparation of the questionnaire, it was consulted with experts for their opinions regarding the validity of the questionnaire followed by a small pilot study to test its simplicity and difficulty.

The first part of the questionnaire covered demographic information of the participants and the second part contained questions regarding general knowledge about COVID-19. Third part contained questions regarding attitude towards COVID-19 and fourth part contained questions regarding practices against COVID-19.

General instructions included age, gender, and religion of the participants. The self-designed questionnaire comprised 07 questions regarding knowledge, 08 for attitude, and 08 for practice against COVID-19. Knowledge questions mainly comprised to check the participants' knowledge regarding clinical symptoms, transmission routes, prevention, and control of COVID-19. These questions were responded on a true/false basis with an additional "I don't know" option. The true answer was assigned with 1 point and false/I don't know answers were assigned with 0 point. Higher scores represented a better knowledge of COVID-19. Similar options were assigned for the questions related to attitude while only two options namely 'Yes' and 'No' were assigned for the questions related to practice towards COVID- 19.

2.3. Statistical analysis

Statistical analyses were performed using online platform Graphpad. Measurement data were expressed as mean±SD and categorical data were presented as frequency and percentage. Parametric test (t) was used for comparison between different subgroups of the participants pre-intervention. Comparisons of KAP scores among the students with respect to gender, religion, and age-category are done using independent samples t test and one-way analysis of variance (ANOVA), as appropriate. The statistical significance level of the test was expressed as α =0.05.

3.0 Results

3.1 General characteristics

General information about participants involved in this study like gender, age, education, marital status and occupation are represented in **Table 1.** Different sources of awareness about Covid-19 disease and precautions are present in **Figure 1.** Out of the 164 participants, 48.78 % were males while the rest were female 51.21% the majority of them were 18-30 years old (82.31 %) while only 15% were ≥31 years old. Almost 71.34% of the participants were medical students and paramedical staffs (28.65 %). Participants involved in this study were well educated and belongs to undergraduate (64.63%), postgraduate (14.02%), and doctorate (03.65%) categories. Among all the participants some were married (18.29%) and live with their families and maximum participants were unmarried (79.26 %) and live in hostel and rented room.
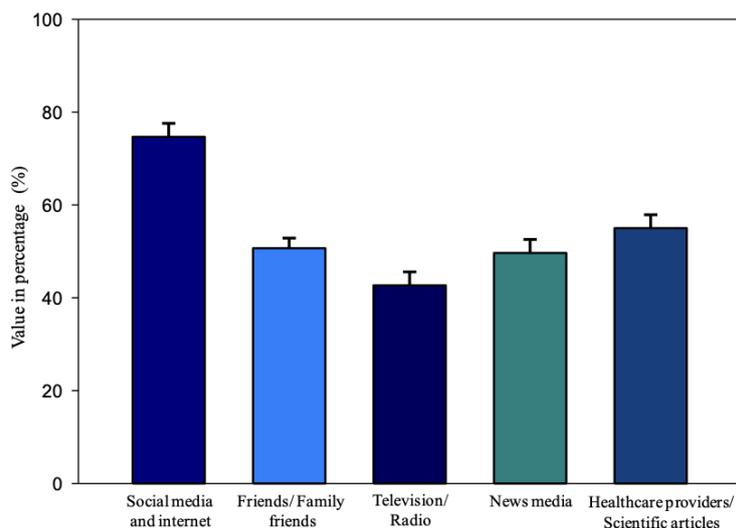
Figure 1: Different sources of awareness about Covid-19 disease and precautions

Table 1: General information of the participants

S. No.	Variable	Number (n)	Percentage (%)	Mean deviation	*p*- value
1	**Gender**				
	Male	84	48.78	49.5±1.5	0.012
	Female	80	51.21		
2	**Age group (Years**				
	18-30	135	82.31		
	31-40	13	07.92	24±29	0.0001
	41-50	10	06.09		
	51-60	02	1.21		
3	**Education**				
	Undergraduate	106	64.63		
	Postgraduate	23	14.02	27± 24.667	0.0001
	Doctorate	06	03.65		
4	**Marital Status**				
	Married	30	18.29	48.5±30.5	0.0001
	Unmarried	134	79.26		
5	**Occupation**				
	Medical Student	117	71.34		
	Paramedical Staff	47	28.65	49.5±21.5	0.0001

3.2. Knowledge

The results of knowledge of the participants towards COVID-19 infection are presented in **Table 2. Figure 2** is showing knowledge of the participants towards COVID-19 infection transmission. The majority of the participants (98.78%) had correct knowledge about the spread of COVID-19 patients and they should immediately be isolated in proper place for at least 14 days. **Figure 3** is showing knowledge of the participants towards clinical symptoms of COVID-19. Furthermost, 51.8% of the participants agreed with use of warm saline water gargles, drinking turmeric milk, kadha can cure COVID-19 while (34.1%) participants disagreed. The majority of the participants (97.53%) had correct knowledge about the repeated use of washing hands with soap and water and use of alcohol based hand sanitizer can be

effective in against SARS-CoV-2 virus. Almost, every participant had correct knowledge about the masks can help to prevent the infection of COVID-19. Consciousness about the prevention and treatment was high among the 97.54% participants showed correct knowledge about avoiding crowded places and use of public transportations can help to prevent the spread of COVID-19. In case of vaccination related knowledge, 87.80% participants were agreed with vaccination can prevent the spread of COVID-19 infection. Furthermore, 66.46% of participants realized that social distancing, wearing masks, avoid crowded places and vaccine can prevent spread of COVID-19. While, 9.14% participants said that social distancing and wearing masks can prevent spread of COVID-19.
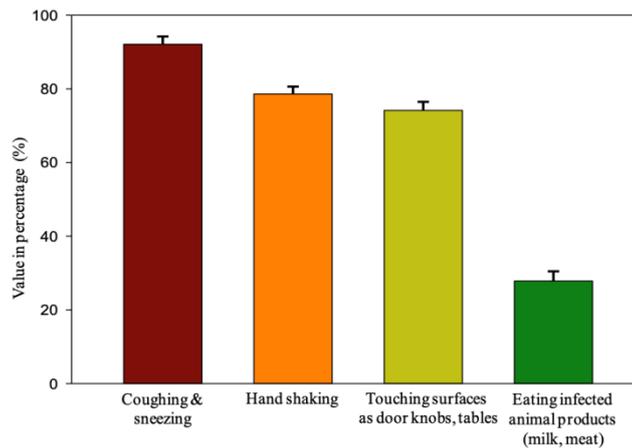

Figure 2: Showing of graph of COVID-19 transmission

3.3. Attitude

The results of attitude of the participants towards COVID-19 infection are presented in **Table 3.** During rapid surge of COVID-19 infection 59.75% participants get worried by common cold infection. In the attitude section, 68.71% participants said that they have not visited crowded places. Similarly, 99.38% participants said that spread of COVID-19 was social responsibility and it can be overcome by wearing mask, social distancing, regular hand wash and vaccination. In addition, the majority of the participants (95.67%) were wearing masks after leaving home and regularly while in office/college. Furthermore, 64.02% participants not watching information related to corona virus because most of them (75.92%) have faith on vaccination will overcome the COVID-19 situation.
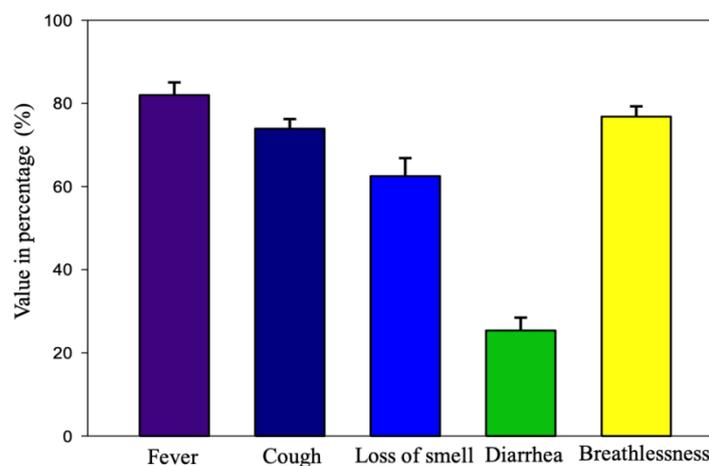

Figure 3: Showing of graph of clinical symptoms of COVID-19

Table 2: Knowledge of the participants towards COVID-19 infection

Knowledge	N (%)	Male	Female	Mean deviation	p-value
People in contact with positive COVID-19 patients should isolate for at least 14 days.	162 (98.78%)	86 (52.43%)	78 (47.56%)	49.5±2.5	0.004
Warm saline, water gargles, drinking turmeric milk, kadha can cure COVID-19	84 (51.2%)) Agree	45 (27.43%)	39 (23.78%)	25±2	0.0129
	56 (34.1%) Disagree	24 (14.63%)	32 (19.51%)	16.5±2.5	0.0016
Washing hands with soap and water and sanitizer is effective in eliminating the SARS-CoV-2 virus	158 (97.53%) Agree	82 (50.61%)	76 (46.91%)	48±2	0.004
	1 (0.6%) Disagree	1(0.6%)	-		
Masks can help to prevent the infection of COVID-19	162 (99.38%) Agree	82 (50.30%)	80 (49.07%)	49.5±0.5	0.0130
Avoid crowded places public transportations to prevent the spread of COVID-19	159 (97.54%) Agree	80 (49.07%)	80 (49.07%)	49±0	0.0130
	1 (0.6%) Disagree	1 (0.6%)	-		
Vaccination can help in preventing the spread of COVID-19 infection	144 (87.80%) Agree	78 (78.56%)	66 (40.24%)	59±19	0.0001
	7 (4.26%) Disagree	3 (1.82%)	4 (2.43%)	1.5±0.5	0.3743
How can we prevent spread of COVID-19	164 (100%)	84 (51.21%)	80 (48.78%)	49.5±1.5	0.0130
Social distancing	15 (9.14%)	8 (4.87%)	7 (4.26%)	4±0	0.1560
Wearing masks	15 (9.14%)	7 (4.26%)	8 (4.87%)	5.5±1.5	0.1145
Avoid crowded places	1 (0.60%)	-	1 (0.60%)		
Vaccine	10 (6.09%)	3 (1.82%)	7 (4.26%)	2.5±1.5	0.2422
Social distancing, Wearing masks, Avoid crowded places, Vaccine	109 (66.46%)	62 (37.80%)	47 (28.65%)	32.5±4.5	0.0001

3.4. Practice

The results of practice of the participants towards COVID-19 infection are presented in **Table 4.** A high percentage of the participants (92.40%) avoided unnecessary travel or outing and 94.93% wearing mask every time step out from home. Similarly, 94.93% participants were showing good practice towards COVID-19 infection while covering face with handkerchief, tissue every time during coughing/ sneezing. Also, a high percentage of participants used (94.87%) encouraging social distancing at office/ college and 89.74% avoiding hand shaking with their friends instead of saying Namaste. Participants involved in the present study have applied good practices in daily life against the COVID-19 infection.

3.5. Analysis of KAP scores with respect to demographic characteristics

Scores of knowledge, attitude, and practices towards COVID-19 with respect to demographic variables such as gender, age, education and occupations were present in table 2, 3 and 4. The knowledge scores of the male were slightly higher than that of females, although the difference was significant (P<0.004). However, higher scores of females were observed in the attitude and practice as compared with that of males. In addition, the difference in practice score was significant between different genders (P<0.004), therefore, it was found that females more attentive to practice towards COVID-19.The KAP score for the age-category of 18-30 was higher than the other categories, with significant difference among groups (P>0.001).

Table 3: Attitude of the participants towards COVID-19 infection

Attitude	N (%)	Male	Female	Mean deviation	p-value
If you have common cold nowadays do you get worried	98 (59.75%) Yes	42 (25.60%)	52 (31.70%)	28±3	0.0001
	52 (31.70%) No	34 (20.73%)	19 (11.58%)	15.5±4.5	0.0001
Visited crowded place few days back	43(26.38%) Yes	21 (12.88%)	22 (13.49%)	12.5±0.5	0.0508
	112 (68.71%) No	57 (34.96%)	55 (33.74%)	33.5±0.5	0.0190
Travel restriction, lockdown, quarantine can protect us from the current situation	74 (45.39%) Yes	38 (23.31%)	36 (22.08%)	22.5±0.5	0.0289
	57 (34.96%) No	21 (12.88%)	36 (22.08%)	17±5	0.0001
Safety measures in controlling spread of COVID-19 is social responsibility	161 (99.38%) Yes	84 (51.85%)	76 (46.91%)	48.5±2.5	0.0004
	1 (0.61%) No	-	1 (0.61%)		
Are you wearing masks after leaving home?	155 (95.67%) Yes	82 (50.61%)	73 (73.06%)	61.5±11.5	0.0001
	07 (4.32%) No	2 (1.23%)	5 (3.08%)	2±1	0.2952
Is social distancing, wearing masks and hand washing followed in office/college?	155 (95.67%) Yes	79 (48.76%)	76 (46.91%)	47±1	0.0135
	07 (4.32%) No	04 (2.46%)	03 (1.85%)	1.5±0.5	0.3743
Are you sure vaccination will overcome COVID-19 infection soon?	123 (75.92%) Yes	56 (34.56%)	67 (41.35%)	37.5±3.5	0.0001
	11 (6.79%) No	05 (3.08%)	06 (3.70%)	3±0	0.2048
Awareness related to COVID-19 in society is sufficient.	72 (44.72%) Yes	33 (20.49%)	39 (24.22%)	22±2	0.0021
	79 (49.06%) No	44 (24.32%)	35 (21.73%)	22.5±1.5	0.0283

Table 4: Practice of the participants towards COVID-19 infection

Practice	N (%)	Male	Female	Mean deviation	p-value
Are you wearing mask every time you step out of your house?	150 (94.93%) Yes	74 (46.83%)	76 (48.10%)	47±1	0.0135
	6 (3.79%) No	4 (2.53%)	2 (1.26%)	1.5±0.5	0.3743
Are you covering face with handkerchief, tissue every time while coughing/ sneezing?	150 (94.93%) Yes	75 (47.46%)	75 (47.46%)	47±0	0.0135
	5 (3.16%) No	2 (1.26%)	3 (1.89%)	1±0	0.5000
Do you refrain from hand shaking nowadays?	140 (89.74%) Yes	71 (45.51%)	69 (44.23%)	44.5±0.5	0.0143
	12 (7.69%) No	7 (4.48%)	5 (3.20%)	3.5±0.5	0.1772
Are you encouraging social distancing at your office/ college nowadays?	148 (94.87%) Yes	76 (48.71%)	72 (46.15%)	47±1	0.0135
	2 (1.28%) No	-	2 (1.28%)		
Are you using hand sanitizer due to COVID-19 outbreak?	149 (94.30%) Yes	73 (46.20%)	76 (48.10%)	47±1	0.0135
	6 (3.79%) No	4 (2.53%)	2 (1.26%)	1.5±0.5	0.3743
Did you prefer more online shopping of groceries and other items at this time?	124 (78.48%) Yes	62 (39.24%)	62 (39.24%)	39±0	0.0163
	27 (17.08%) No	13 (8.22%)	14 (8.86%)	8±0	0.0792
Are you avoiding cash transaction and have started using online modes for payments of products?	140 (88.60%) Yes	71 (44.93%)	69 (43.67%)	43.5±0.5	0.0130
	14 (8.86%) No	5 (3.16%)	9 (5.69%)	4±1	0.1560
Do you dispose mask when it becomes moist or at least 8 hours after wearing?	139 (88.53%) Yes	71 (45.22%)	68 (43.31%)	43±1	0.0148
	10 (6.36%) No	5 (3.18%)	5 (3.18%)	3±0	0.2048

4. Discussions

Cross-sectional survey conducted among the medical students and paramedical staff of Medical College, Chhindwara. Similar type of study has been reported where total 354 candidates participated (males 50.3% and female 49.7%) and majority of them were 21-23 years old while

only 10% were ≥24 years old. [9]In an interesting study total 399 community health workers of Nepal participated (males 57.6% and female 42.4%) and majority of them were 18-37 years old while only 12% were ≥38 years old.[10] However, no significant difference was found in knowledge or attitude scores with respect to all demographic variables, but gender played a significant role in practice scores. Similar type of study was also conducted by Zhong et al., 2020; also reported that practice scores were affected by gender. Knowledge regarding COVID-19 in our KAP study was better with overall corrected score of 90% and above. Similar corrected knowledge scores above 90% are reported by Zhong et al.[8] The knowledge scores were statistically significant ($p<0.05$) to the knowledge responses of isolating themselves for 14 days period, repeated hand washing and use of hand sanitizers for virus elimination, wearing a mask for prevention of virus, social distancing and avoiding crowded places and getting vaccinated (Table 2). Most of participants had good knowledge about the clinical symptoms of the disease. Rahman et al 2020.[12] have found a direct association of knowledge score and wearing mask when going outside. High knowledge scores found in our study could be due to the fact that most of the participants of this online survey were young people who had gained knowledge about COVID-19 from various sources on internet and from media and by the efforts taken by government to create awareness among the residents of India. Positive attitude score was recorded for all the responses in our study. 99% people felt that it was their social responsibility in following safety measures to control the virus. Similarly, they had a positive attitude following social distancing and wearing masks. 75% population was sure that vaccination will soon overcome COVID-19 infection. Similar positive attitude was also seen in other studies from India.[13] To combat with the spreading of the virus and breaking the chain of infection, the Government of India had enforced lockdown. This was a fruitful action taken by the government and might be one of the reason for the positive attitude in the Indian population to tackle this virus.

More than 90% of the people in our study showed good practice of avoiding unnecessary travelling, wearing mask when going outside, covering face with tissue, avoiding hand shaking and following social distancing. Knowledge and awareness created by the government, media are responsible for promotion of good preventive practices followed by the citizens. Our finding are comparable with a similar study done in Saudi Arabia[14] where 95% of the population refrained from attending social events, avoiding crowded places and hand shaking.

Limitations

As it was an online study, mainly the participants were young adults with those having access to internet and are familiar with the use of smart phones. Older population who are not well versed with the internet and those who do not have internet access could not be included in the study. Sample size was limited due to short duration of access to the questionnaire. Further study is needed targeting a larger population.

Conclusions

The results of the present study showed that the residents and students of Chhindwara show higher knowledge, positive attitude and good practices regarding COVID-19. The policies made by the government, awareness campaigns conducted through media are all responsible for this positive attitude and has brought in a behavioural change in the citizens that they are practicing preventive measures against COVID-19. Further such studies can be helpful in targeting the desirable population and the vulnerable group to educate them about the spread and prevention of the disease.

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