Assessment of knowledge and practice towards COVID-19 amid inhabitants of Karnataka

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ABSTRACT

Background: COVID-19 outbreak has been declared as pandemic by WHO on March 11, 2020. Globally more than 16 lakh cases have been reported, affecting nearly 195 nations till April 12th 2020. Health authorities have initiated measures to create awareness and to control the spread. **Objectives:** To assess the Knowledge and practices of general public towards COVID-19. **Materials and Methods:** A cross sectional study was carried out among general public residing in Karnataka. Online questioner was prepared and circulated in social media and responses were collected during March 2020. Data was analysed using SPSS 23.0, descriptive statistics were calculated. Knowledge scores and practices with socio-demographic profile were done using Independent *t* test, one-way ANOVA and Chi-square test. **Results:** A total of 1048 responses were received. Majority were males (61.3%), married (57.4%), of age 20–40 years (79.4%) and held a bachelor degree (53.1%). The mean knowledge score for COVID 19 was 11.7 ± 2.07. There was a statistically significant difference of knowledge score among various socio-demographic variable like age ($P = 0.009$), gender ($P = 0.001$), educational status ($P = 0.00$) and marital status ($P = 0.00$). Majority of the study participants preferred consulting a doctor 964 (91.84%) when they have symptoms like fever and cough. 68 (6.4%) of the study participants had been to crowded places in recent times. 974 (92.9%) and 843 (80.5%) update their knowledge and prefer wearing mask outside the home respectively. **Conclusion:** More than three-fourth of the participants had adequate knowledge and around 90% of the participants had satisfactory practices towards COVID-19.

KEY WORDS: Awareness; Coronavirus; Outbreak; Pandemic; Perception.

INTRODUCTION

COVID-19 is an infectious disease caused by a newly discovered coronavirus.[1] Coronaviruses are ecologically diverse with the greatest variety seen in bats, suggesting that they are the reservoirs for many of these viruses.[2,3] Most people infected with the COVID-19 virus will experience symptoms like fever and mild to moderate respiratory illness like cough, sore throat and shortness of breath.[4] The virus spreads mainly through droplets of saliva or secretions from the nose when an infected person coughs or sneezes.[5] Geriatric age group and those with underlying co-morbidities are more likely to develop serious illness.[1]

In the end of 2019, China officials reported a cluster of pneumonia cases with unknown etiology.[6] WHO declared it as Public Health Emergency of International Concern on 30th Jan 2020 and as a controllable pandemic on March 11, 2020.[7] As per the first WHO's situation report on January 21, 2020, 282 cases were reported from 4 countries.[8] There was a gradual increase in number of cases to 1,696,588 cases and 1,05,952 deaths globally as on April 12, 2020.[9] The

overall case fatality rate (CFR) was 2.3%, but a significantly higher rate was seen among older age group 14.8% and 49% of CFR was seen among critical cases.[10]

In India a confirmed case of COVID 19 was reported in Kerala on January 30, 2020.[11] Twenty-one days nationwide lockdown was announced by Prime Minister of India on March 24, 2020. As on April 12, 2020 total of 8447 confirmed cases were reported, of which Karnataka has 247 cases.[12,13]

The present study aims at assessing knowledge and practice regarding the COVID-19. Knowledge and practice surveys are helpful health tools in identifying the proper strategies to contain the outbreaks.[14] Educating the public and engaging the community during pandemics can be carried out using the outcomes of knowledge, attitudes and practices surveys.[15]

MATERIALS AND METHODS

A cross-sectional study was conducted during March 2020 among the residents of Karnataka adults aged more than 20 years. Data was collected online, questionnaire was developed and distributed in social media like what's app and face book along with the information sheet briefing the background, objective and voluntary nature of participation. The questionnaire was pretested among 20 randomly selected members to analyse its readability, clarity and acceptability. Participants had to answer a yes-no question to confirm their willingness to participate voluntarily. After confirmation the participants were directed to the self-reporting questionnaire. Institutional ethical committee approved our study protocol.

The questionnaire had 2 parts: Socio-demographic profile and knowledge, practice questions on COVID 19. Demographic variables like age, sex, marital status, education, occupation and place of residence were included. Based on the information and guidelines on COVID 19 available on WHO website, the questions on knowledge and practice were framed. Knowledge part covered questions on symptoms, mode of spread and preventive measures. It consisted of 9 questions answered as yes, no and not sure, except for the 3 questions which had multiple answers. Correct responses were given 1 point and the wrong response was assigned 0 point. The total knowledge score ranged from 0 to 15 with 15 denoting adequate knowledge on COVID 19. Practice part had 8 questions which stressed on handwashing, social distancing and self-care.

The data entry was done using Microsoft Excel and analysed in SPSS 23.0. Descriptive statistics like frequencies and percentages were calculated. Knowledge score to socio-demographic characteristics were compared using independent *t*-test and one-way ANOVA. Practice response with socio-demographic variable was done by Chi-square test. $P < 0.05$ was taken as statistical significance.

RESULTS

A total of 1048 adults participated in our study. Majority of the study participants were males (61.3%), married (57.4%), of age 20–40 years (79.4%) and held a bachelor degree (53.1%) as depicted in Table 1. A multiple-choice question was posed on source of information about COVID 19, most of the participants opted Television 718 (68.5%), Internet 718 (68.5%) and Newspaper 414 (39.5%).

Knowledge

The mean knowledge score for COVID 19 was 11.7 ± 2.07. The minimum score obtained was 4 and maximum was 15. Majority of the study participants opined cough 976 (93.1%), fever 966 (92.1%) and breathlessness 962 (91.7%) were the symptoms of COVID-19. The responses given by study participants on mode of spread and preventive measures are depicted in Figures 1 and 2 respectively. Around one-third of the participants were not aware about the asymptomatic transmission of the disease 354 (33.7%). More than half of the study participants opined that general public should wear mask for protection against the disease 678 (64.6%). A vast majority of the participants know that isolation of infected 1006 (95.9%) and avoiding crowd places 1008 (96.1%) are best measures to prevent the spread of COVID-19. 984 (93.8%) of participants told there is no effective medication nor vaccine available at present to combat this disease.

There was a statistically significant difference of knowledge score among various socio-demographic variable like age ($P = 0.009$), gender ($P = 0.001$), educational status ($P = 0.00$) and marital status ($P = 0.00$) [Table 2].

Table 1: Socio-demographic characteristics of the study participants (*n*=1048)

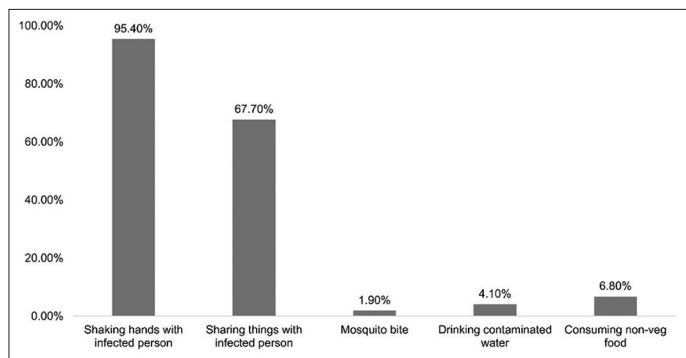| Socio demographic variables	Frequency (*n*)	Percentage
Age		
20–40 years	832	79.4
41–60 years	188	17.9
Above 60 years	28	2.7
Sex		
Male	642	61.3
Female	406	38.7
Marital status		
Married	602	57.4
Unmarried	446	42.6
Education		
Up to PUC	90	8.6
Graduate	556	53.1
Post graduate	402	38.4

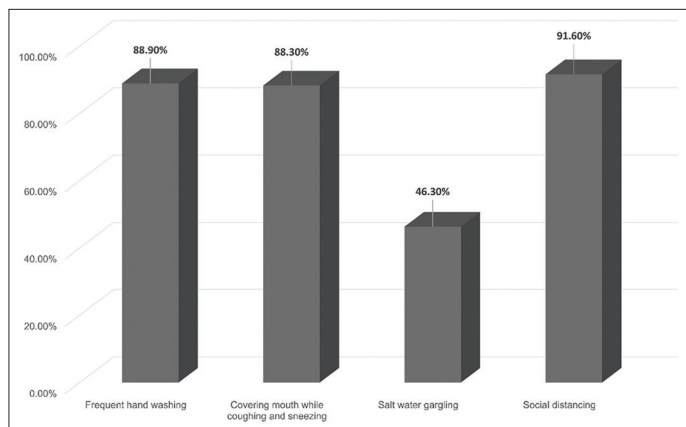**Figure 1:** Modes of spread of COVID-19 according to study participants

Figure 2: Preventive measures of COVID-19 answered by study participants

Table 2: Mean difference of knowledge score among selected socio-demographic variable

Socio demographic variables	Mean±SD	t/F	*P* value
Age			
20–40 years	11.76±1.99	4.766	0.009*
41–60 years	12.04±2.33		
Above 60 years	10.78±2.07		
Sex			
Male	12.02±1.92	3.313	0.001*
Female	11.41±2.24		
Marital status			
Married	12.08±2.09	3.914	0.00*
Unmarried	11.38±1.98		
Education			
Up to PUC	11.06±2.04	13.92	0.00*
Graduate	11.63±2.08		
Post graduate	12.16±2.00		

*$P<0.05$

Practice

Majority of the study participants preferred consulting a doctor 964 (91.84%) when they have symptoms like fever and cough. 68 (6.4%) of the study participants had been to crowded places in recent times. Most of the participants

update their knowledge 974 (92.9%) on COVID-19 [Table 3].

Around half of the study participants wash their hands 496 (47.3%) more than 10 times a day. Majority used soap and water 940 (89.69%) for washing hands and 546 (52.1%) washed hands for 10–15 s. Few participants reported that they were taking medications at present against COVID-19, of which non-allopathic medicines 26 (2.4%), chloroquine 24 (2.2%), hydroxychloroquine 20 (1.9%) and azithromycin 12 (1.1%) were mentioned.

DISCUSSION

A total of 1048 residents of Karnataka participated in this study. Majority were males (61.3%), married (57.4%), of age 20–40 years (51.1%) and held a bachelor degree (53.1%). The mean knowledge score on COVID-19 was 11.7 indicating more than three-fourth (78%) of the study participants are knowledgeable about COVID-19.

Similar findings were found in a study conducted among health professional in Mumbai.[16] In a study conducted among Chinese residents the mean score was 10.8 suggesting 90% correct responses on knowledge test. This difference in knowledge may be because of the study population included in that study were from Wuhan and Hubei provenance where the outbreak of COVID-19 started.[17] We also found that the source of information on COVID-19 was television and Internet. But in a study conducted among medical staff in Chinese psychiatric hospital, 38.3% of the participants mentioned their source of information as medical journals.[18] In this study participants answered fever (92.1%), cough (93.1%) and breathless (91.7%) are the main symptoms of COVID-19, Shaking hands (95.4%) and sharing things with infected persons are the modes of spread, Frequent handwashing (88.9%) and following cough etiquettes (88.3%) are the important measures to prevent the spread and 69% of the participants told there are no effective vaccine nor treatment available to treat the disease.[19,20] Similar findings were present in the study conducted in China, Jordan, UK and US.[17,21,22] Relatively higher proportion of participants knew about the non-availability of treatment (78.9%) and vaccine (89%) in a study conducted at Jordan, this can be attributed to the study population who were medical students.[22]

In our study 91.9% of participants preferred consulting a doctor when they have respiratory illness, But in US and UK 35.8% and 21% respectively answered that they prefer consulting primary care provider if they develop symptoms like fever and cough along with contact history or travel history.[21] This difference may be because of the timeline of the study conducted, US reported its case on March 21st, 2020 i.e., after this study was published and also due to the specificity of the question asked.[23] In our study we found

Table 3: Practice towards COVID 19 by socio-demographic variables

Socio demographic variables	P1 n* (%)	P5 n* (%)	P6 n* (%)	P7 n* (%)
Age				
20–40 years	770 (92.5)	772 (92.8)	150 (18)	774 (93)
41–60 years	168 (89.4)	182 (96.8)	48 (25.5)	178 (94.7)
Above 60 years	26 (92.9)	26 (92.9)	6 (21.4)	24 (85.7)
Sex				
Male	588 (91.6)	588 (91.6)	114 (17.8)	586 (91.3)
Female	376 (92.6)	392 (96.6)#	90 (22.2)#	390 (96.1)#
Marital status				
Married	554 (92)	572 (95)	124 (20.6)	572 (95)
Unmarried	410 (91.9)	408 (91.5)#	80 (17.9)	404 (90.6)#
Education				
Up to PUC	76 (84.4)	86 (95.6)	24 (26.7)	82 (91.1)
Graduate	518 (93.2)	514 (92.4)	108 (19.4)	514 (92.4)
Post graduate	370 (92) #	380 (94.5)	72 (17.2)	380 (94.5)

* - Correct responses, # - $P < 0.05$, P1: Do you prefer consulting a doctor if you have fever, cough, cold, P5: In recent days, have you gone to any crowded place?, P6: In recent days, have you worn a mask when leaving home?, P7: Do you update yourself on recent information on COVID-19

that 80.5% prefer wearing mask outside the home. Similarly, US (35.8%) and UK (81.2%) residents also told they prefer wearing mask.[21] Contrastingly, only 64.7% of medical and non-medical students prefer wearing mask in Jordan.[22] Initially WHO recommended wearing mask for general public only if they suffer from respiratory illness or taking care of confirmed case.[24] Recently, April 06, 2020 WHO revised the guidelines on using mask.[25] Health and family welfare of India and other sources also recommends use of facemask by the general public.[25-28] Our study participants also told that salt water gargling (46.3%) can prevent the infection. Similarly, Jordan study participants practiced eating garlic and drinking honey with ginger to prevent COVID 19.[22] But, there are no evidence at present to suggest the effectiveness of these with prevention of COVID-19.[29-31] Our findings of socio-demographic factors associated with knowledge are consistent with study conducted in China.[17]

The strength of the study is the sample size and exploring the knowledge and practice during the lockdown period. This study has few limitations. Firstly, we enrolled the participants through social media which might have a possible impact of selection bias. The generalizability of the finding is therefore limited. Secondly, it is possible that participants looked up the answers to some questions before answering.

CONCLUSION

In the present study, more than three-fourth of the participants had adequate knowledge and around 90% of the participants had satisfactory practices towards COVID-19. The survey results depict the quantum of awareness by the World Health Organization, Government, local health officials to sensitize the community regarding the outbreak. However, a small proportion of participants had unsatisfactory knowledge

and practice suggesting the need for more effective health education campaigns. The outcome of this study may serve as a baseline for creating awareness campaigns by health officials for faster containment of COVID-19 and its spread.

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