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A cross sectional survey to assess the knowledge, attitude, practice about COVID-19 among bystanders of patients visiting OPD, AIIMS, New-Delhi, India

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ABSTRACT

Background: According to WHO, the prevention and control of an epidemic and pandemic constitutes following preventive measures like hand washing, cough etiquette and dissemination of knowledge among other measures. In context to COVID-19, these measures have been proved to be very effective rendering various countries to be free of COVID-19. The knowledge, attitude and practice studies play an important role in assessing the societal readiness to accept behavioural changes, moreover they also determine baseline information to assess the actions to be taken to change the attitude and increase the knowledge of the people regarding the situation. Thus this study was undertaken to assess the knowledge, attitude and practice of the common public in India.

Methods: A cross sectional survey was done among the attenders of patients visiting the cardiac/CTVS OPD during the month of June to July. A total of 200 patients attendants were enrolled in the study. Due to COVID-19 restrictions only 10 patients per day were enrolled. After obtaining informed consent an online questionnaire was sent to their mobile phones via electronic media and participants were requested to fill the questionnaire while waiting for the doctor's visit. The knowledge, attitude and practice of the participants were assessed by a validated KAP survey questionnaire.

Results: The participants had a good knowledge score. The mean knowledge score (minimum, maximum) among the population was 7.7±1.7 (0, 11) though the participants had a poor practice score of 2.3±1.01 (0, 4). The participants had a positive attitude regarding the preventive practices regarding COVID-19 and also a positive attitude towards health care workers. The mean attitude score was 21.3±3.5 (5, 25). A significant positive correlation (r=0.263) was found between knowledge and practice scores. A significant association was also found in between the age with attitude and practice scores, and also in between qualification with knowledge and total KAP score.

CovID-19, also there was positive correlation of knowledge with practice. Hence it is important to disseminate right knowledge regarding the pandemic COVID-19 so that general public performs the appropriate practices in order to keep themselves and their near ones safe. This study reflects the awareness of general public in the difficult time, as well as their helping attitude towards healthcare professionals in form of providing accommodation etc. Community awareness, participation and preparedness are key factors in achieving a good health for all.

Keywords: Attitude, COVID-19, India, Knowledge, Practice

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INTRODUCTION

A novel pneumonia of unknown origin on the 31st of December, 2019 in the city of Wuhan, China was the start of an outbreak of pandemic with deleterious consequences on population all around the word.¹ COVID-19 was recognized as a pandemic by the WHO on March 11, 2020. On 11th February 2020 the term COVID-19 was coined as an acronym of coronavirus disease 2019. As per the World Health Organization (WHO), COVID-19 has so far infected 4,761,559 people and has claimed 317,529 lives globally. 215 countries or territories or areas have been affected so far by the deadly virus.² In India the first case of COVID-19 was reported on 30 January 2020 in the state of Kerala.³

The disease presents as common symptoms of fever, sore throat, cough, and SOB, other symptoms like chills, sore throat, muscle pain, headache, loss of smell and taste, diarrhoea etc. to death in severe cases. The incubation period is of 2-14 days (10 days).⁴

Most of the people (80%) recover from the disease, however 1 in 5 people becomes seriously ill and develops difficulty breathing. Older people, and those with comorbidities like hypertension, cardiac and lung issues, diabetes, or cancer, are at higher risk of developing serious illness. Though this is not a necessity as anyone can develop the disease and become severely ill. However, anyone can catch COVID-19 and become seriously ill.⁵

As of the latest, COVID 19 has already affected 1,51,767 people and claimed 4337 deaths in India.⁶ No vaccine is currently available for the disease which necessitates the preventive measures to control the spread of the disease. This is possible by good knowledge and practice of the people of the country. Preventive measures given by the CDC to mitigate community spread involves measures of social distancing, staying at home, wearing of facemasks by the symptomatic person as well as the general public in pubic settings (April 3, 2020) hand washing for at least 20 seconds.⁴

The Government of India is taking all necessary steps to mitigate the effect of the disease as well as to ensure adequate preparation against COVID-19. The most important factor in containing the spread is by right information and preventive measures as directed by Ministry of Health and Family Welfare. The ministry of health and family welfare has given guidelines regarding various issues (home isolation, when to seek medical help, how to use face masks etc.) relating to COVID 19, these information are being disseminated via various sources via television, radio, telephonically.⁶ The Kerala model which is an exemplary for COVID-19 containment in India had pillars like a strong primary health care, government decentralization of and strong communication to improve the preventive measures.⁷

Need of the study

According to the WHO the prevention and control of an epidemic and pandemic constitutes following preventive like hand washing, cough etiquette, dissemination of knowledge among other measures.^{8,9} In the context of COVID-19 public health measures are very vital and include staying home when sick; covering mouth and nose with flexed elbow or tissue when coughing or sneezing. Disposal of used tissue immediately; washing hands often with soap and water; and cleaning frequently touched surfaces and objects. WHO emphasizes on the public being well informed, breaking the myths, and following social distancing norms to prevent or slow transmission of the disease.5 Countries like Japan and South Korea which have come out of the pandemic have emphasized on such preventive measures to be followed by the people. Though they primarily emphasized on early detection and building the public health, both these measures gained scrutiny and an ultimately measures of social distancing and public involvement helped them out of the pandemic. 10 The knowledge attitude and practice studies play an important role in assessing the societal readiness to accept behavioural changes, moreover they also determine baseline information to assess the actions to be taken to change the attitude and increase the knowledge of the people regarding the situation. India, with 1.39 billion population, is the second largest internet user in the world with over 560 million internet users, and has over 400 million WhatsApp users as of July 2019. A lot of misinformation has been circulating by these channels, thus it is important to gauge the knowledge attitude and practice of the people of India regarding COVID 19.11

Review of literature

A literature review of the knowledge attitude and practice of the public during SARS has shown various discrepancies in the knowledge attitude and practice of public regarding it during the epidemic outbreak. In a study to explore the knowledge, attitude and practice of the population of Qatar, Saudi Arabia, towards severe acute respiratory syndrome (SARS) showed that although 79.4% of the total subjects claimed to know about SARS, only 8.0% had accurate knowledge about all of the symptoms of SARS. Overall, 73.0% of the total subjects knew that SARS was highly infectious; 69.9% knew that it could spread through close contact; 67.4% were aware that high fever was the early symptom; and 60.8% thought SARS could be cured. The survey found a high level of stress and fear among the respondents. 12

A cross sectional survey on knowledge of MERS-CoV done in Saudi Arabia among people visiting malls showed inadequate epidemiological knowledge received by the public and the reliance mostly on the clinical manifestations to recognizing the MERS-CoV disease. Comprehensive public health education programs is important to increase awareness of simple

epidemiological determinants of the disease is warranted. ¹³ In Another study to know the awareness, attitude and practices related to MERS CoV it was concluded that frequent communication between health care providers and the public is recommended to help dispel myths about the disease and to empower the public with the information needed to help the Saudi government in containing the disease outbreak. ¹⁴

In a study done regarding the KAP regarding COVID-19 in china concluded that a good knowledge of the disease is related with optimistic attitudes and practices, health programmes proved to be helpful for optimistic attitude and safe practices, A better knowledge was related with better attitude and practices towards the disease. Better knowledge and practices were related to better socioeconomic status.¹⁵ In a study done to assess the knowledge and perception of COVID-19 among general public found out that there were the general public in the United States and United Kingdom it was fund out that people had several important misconceptions about COVID-19 and correcting these misconceptions should be targeted.¹⁶

In another study done in India, Mumbai the awareness among healthcare students and professionals in Mumbai Metropolitan region it was found out that the overall awareness for all subgroups was adequate with 71.2% reporting correct answers, only 45.4% of the responders were aware of the correct sequence for the application of a mask/respirator, and only 52.5% of the responders were aware of the preferred hand hygiene method for visibly soiled hands. There is a need for regular educational interventions and training programs on infection control COVID-19 across practices for all healthcare professions.17

In a study to assess the knowledge of the public regarding COVID-19 in Mumbai knowledge and beliefs of general public of India on COVID-19 web based cross-sectional survey a considerable fraction of participants were having false beliefs towards the transmission of new coronavirus, and prevention and treatment of COVID-19. Though the overall knowledge on COVID-19 was good enough among the general public of India, still there is a need for education to avoid false beliefs especially among the people who are elderly, having a low level of education, and non-professional workers.¹¹

This study was aimed to assess the knowledge, attitude and practice regarding COVID-19 among bystanders of patients visiting OPD, AIIMS, New-Delhi, and to find an association between knowledge attitude and practice relating to COVID-19.

METHODS

The study was done among the attenders of patients visiting the cardiac/CTVS OPD during the month of June to July. During this time due to COVID-19 the patients in

the OPD were limited to only 10 patients per day. The sample size was calculated by the formula:

$$n = \frac{Z^2 p (1 - P)}{d^2}$$

Where n= sample size; Z = statistic for level of confidence (kept as 1.96 in the study); P= expected prevalence or proportion; d= precision; (kept as 0.0 in this study 5) after putting the values in the formula and P as 0.4. Where P is the prevalence.

P calculated by formula = number of existing cases on a specific date/number of people in the population on this date

Where no of existing cases was kept as the no of cases taken on a day/the total no of people coming to the designated OPD

The sample size was calculated to be 368.

Due to decrease in the no of patients attending the OPD the sample size collected was only 200.

Ethical permission was obtained from AIIMS ethics committee. Any patient's bystander of age >18 years, willing to give consent, having access to multimedia mobile phones at the time of data collection, and able to understand Hindi or English. The patients were traced in the OPD and according to the inclusion criteria were enrolled in the study, an online questionnaire was sent to them via any electronic media and they were required to fill the questionnaire while waiting for their turn to visit the doctor. The questionnaire consisted of three domains-knowledge, attitude and practice.

The knowledge domain consisted of 11 knowledge-based question regarding mode of transmission, preventive measures and practices, signs and symptoms, availability of vaccine, the medium of information and Government of India initiatives. Score of 0-3 was considered as poor knowledge score, a score of 4-6 was considered as an average score, 7-9 was considered as a good score a score of 9-11 was considered as excellent knowledge score.

The attitude domain consisted of a Likert based scale consisting of 5 attitude based questions, the response of the individual is assessed on a scale of 1-5 where 1 being strongly disagree and 5 as strongly agree. This tool assessed the attitude of the people with the health care professionals, towards social distancing, towards the disease severity, disposal of masks, reporting important issues to the concerned authority.

A score of ≤ 8 was considered as a negative attitude, a score of 9-16 was considered as an average attitude, and a score ≥ 16 was considered as a positive attitude.

The practice domain consisted of 4 questions to assess the change in normal practices after the coronavirus pandemic, disposal of masks, consultation to the health care professionals. A score greater than 3 was considered as good preventive practices being followed. A score of less than 3 was considered to be a poor practice score.

RESULTS

The analysis was performed using STATA 14 version. Descriptive statistics were used to compute mean, standard deviation of knowledge, attitude and practice scores. To find out the correlation among variables Karl Pearson's correlation coefficient was used. To find out the association between demographic variable and the KAP variable Krusskal Wallis/independent t test was used.

Table 1: Demographic variables of the participants.

Variable		Frequency	Percentage
Age (years)	<30	126	63
	30-49	55	27.5
	>50	19	9.5
Gender	Male	96	48
	Female	104	52
0 1161 41	Middle school	15	7.5
Qualification	High school	31	15.5
	Graduation	134	77
Occupation	Unemployed	48	24
	Private job/business	60	30
	Government Job	92	46

Demographic profile of the sample population-majority (63%) of the participants were less than 30 years of age, while 27.5% of people were of the age group 30-49 years and only 9.5% were greater than 50 years. 48% of the participants were male while the rest 52% were female. Most of the sample population (77%) in this study were graduates while 15.5% were high school pass outs and 7.5% were middle school passouts. 46% of the sample population were having government job, 30% had a private job/business while 24% were unemployed.

The participants had a good knowledge score. The mean knowledge score (minimum, maximum) among the population was 7.7 ± 1.7 (0, 11), though only 20% were able to select all the modes of COVID-19 transmission, 28.5% were able to choose all the options which helped in prevention of COVID-19, 75% were able to answer the correct length of incubation period, most (97.5%) of them knew the signs and symptoms of covid infection, 82% of them knew about the Arogya setu application while only 56% had it installed in their phone, 75% knew the recommended social distancing to be maintained in public

places, only 69% knew about the correct coughing etiquettes to be followed in view as a preventive measure.

The mean practice score (minimum, maximum) was 2.3±1.01 (0, 4). Most of the participants (89%) knew how to dispose off a mask properly, around 49% of people knew correctly when to consult a health care professional.

The mean attitude score was 21.3±3.5 (5, 25). Only 38.5% felt that COVID-19 could very likely cause health complications in even a healthy young individual. Related to their attitude towards health care professional, around 59.5% agreed completely to help healthcare professionals e.g. offering a rented house to a health care professional, while around 11.5 % were totally against it.

Table 2: Knowledge, attitude and practice scores in participants.

Variable	Mean score	Mean±SD	Minimum, Maximum
Total knowledge score	7.7	7.7±1.7	0, 11
Total practice score	21.3	2.3±1.01	0, 4
Total attitude score	2.3	21.3±3.5	5, 25
Total score	31.6	31.6±1.4	14, 40

A significant positive correlation (r=0.263) was found between knowledge and practice scores of the participants while no such significant correlation was found in between any of the other variables.

Table 3: Correlation among knowledge, attitude, and practice variable.

Variable	Variable	Pearson's correlation coefficient
V. andadaa	Attitude	0.117
Knowledge	Practice	0.263**
A 4444 J o	Knowledge	0.117
Attitude	Practice	0.73
Practice	Knowledge	0.263**
Practice	Attitude	0.73
	Knowledge	0.54**
Total KAP score	Attitude	0.87**
	Practice	0.39**

^{**} indicates p<0.05.

A significant association was also found in between the Age with attitude, practice, total KAP scores. A significant association was also found in between qualification with knowledge and total KAP score.

Although no such association was found between gender and knowledge, attitude or practice scores or total KAP scores.

Table 4: Association of demographic variables with knowledge, attitude and practice variable.

Demographic variable	Variable	F value, p value
Age (years)	Knowledge	0.47
	Attitude	0.03*
	Practice	0.04*
	Total KAP score	0.02*
	Knowledge	0.39
Gender	Attitude	0.20
Gender	Practice	0.58
	Total KAP score	0.58
	Knowledge	0.05*
Oualification	Attitude	0.07
Quamication	Practice	0.47
	Total KAP score	0.004**
	Knowledge	0.32
Occupation	Attitude	0.54
Occupation	Practice	0.67
	Total KAP score	0.37

^{**} indicates p<0.05

DISCUSSION

The participants of the study had good knowledge score regarding COVID-19, which is in line with the studies done among the general public of India and other countries. 11,18-22 The participants lacked knowledge regarding all the methods COVID-19 transmission, which is contradictory to the findings of Narayana et al, a considerable amount of people had wrong perceptions regarding the mode of transmission and the preventive measures against COVID-19, this finding is similar to a study done by Krishna et al. 11,18 The attitude of the participants showed a positive attitude against the prevention of COVID-19, as also found by various other studies.²²⁻²⁵ The participants in the study did not have a good practice score, implying a gap between knowledge and practice, this is contradictory to the findings of various other studies where the participants exhibited good practice scores and good practices against COVID-19.18,22,26 In support to the present study findings another study done by Chakrawarty et al also reported glitches among the general public of India relating to preventive measures being used.²⁷

The study had various limitations, first and foremost, the design of the study was an cross-sectional type, furthermore due to the restrictions due to COVID-19 the number of participants were less, and many of them were well educated, this might be due to the fact that only a few socially backward people could register online at AIIMS OPD with the help of the online portal system. Due to their requirement of meeting the doctor for check up there may be prevalence of wrong responses from the participants. Also, only a particular cardiac/CTVS OPD was taken for data collection, which could also vary the true results.

CONCLUSION

The present study concludes that people have good knowledge regarding the various aspects of COVID-19, also there was positive correlation of knowledge with practice. Hence it is important to disseminate right knowledge regarding the pandemic COVID-19 so that general public performs the appropriate practices in order to keep themselves and their near ones safe. This study reflects the awareness of general public in the difficult time, as well as their helping attitude towards healthcare professionals in form of providing accommodation etc. Community awareness, participation and preparedness are key factors in achieving a good health for all.

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