

Knowledge, Attitude, and Practice of Medical Doctors Practicing in Karnataka towards SARS-CoV-2: A Cross-sectional Study

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ABSTRACT

Background: As the world was brought to a standstill by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), unprecedented prevention and control measures are being adopted to curtail the spread of SARS-CoV-2. The adherence to these control measures is affected by the knowledge, attitude, and practice (KAP) towards SARS-CoV-2.

Methods: A cross-sectional study was done on medical doctors comprising a knowledge questionnaire consisting of 11 questions regarding the clinical characteristics and prevention of coronavirus disease-2019 (COVID-19), four questions to assess the attitude of doctors towards SARS-CoV2 and eight questions regarding the practices adopted by doctors during the pandemic. Data were analyzed using Statistical Package for Social Sciences (SPSS) software.

Results: In our study, we found that all (100%) of the participants had good knowledge, 55.5% of the participants had good attitudes, and 60.9% adopted good practices while managing SARS-CoV-2. A total of 59.1% said there was a training program conducted at their place of work regarding the management of SARS-CoV-2. A total of 16.4% faced stigma because of their line of work during the pandemic (e.g., eviction from rental houses/apartments, physical or verbal abuse, etc.). Comparison of scores among professions revealed that the KAP towards the management of SARS-CoV-2 was better among consultants and senior residents when compared to junior residents and interns, but only the practice part was statistically significant.

Conclusion: The participants in this study had good knowledge regarding SARS-CoV-2 and its management; measures have to be taken to improve their attitude and practices, which will ensure better management and treatment of the affected individuals. Increased training and education programs need to be implemented at the institutional and hospital level.

Keywords: Attitude, Knowledge, Medical doctors, Practice, Severe acute respiratory syndrome coronavirus 2.

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INTRODUCTION

In January 2020, there was an outbreak of viral pneumonia centered around Wuhan, Hubei, China, and a novel coronavirus, SARS-CoV-2, was identified as its causative agent.¹ World Health Organization (WHO) declared the outbreak as a “public health emergency of international concern” in January 2020, coined it as COVID-19 in February 2020 and in March 2020, WHO formally declared COVID-19 to be a pandemic.²

People belonging to all age groups are susceptible to contracting SARS-CoV-2. In symptomatic patients, the clinical manifestations of the disease usually start within a week, consisting of fever, cough, nasal congestion, fatigue, and other signs of upper respiratory tract infections.³ The infection can progress to severe disease with dyspnea and severe chest symptoms corresponding to pneumonia in approximately 75% of patients, as seen by computed tomography on admission.⁴ Studies have identified angiotensin receptor 2 as the receptor through which the virus enters the respiratory mucosa.⁵

As of 20th May 2020, there were 61,149 active COVID-19 cases in India, out of which Karnataka had 1,397 confirmed cases.⁶ Knowing the mode of transmission of SARS-CoV-2, doctors and health care workers (HCWs) were expected to be at a higher risk of infection.

Effective infection prevention and control practices depend on awareness and compliance among doctors and HCWs at all levels.

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A poor level of knowledge has been implicated in the rapid spread of the infection in hospitals; therefore, we intended to study the KAP of COVID-19 in medical doctors of Karnataka.

METHODS

Study type: Cross-sectional study.

Study setting: Online, relying on the authors' networks, the questionnaire was posted/reposted on "WhatsApp groups" and "Instagram accounts."

Study period: 1 month (April–May 2020).

Study population: Medical doctors practicing in Karnataka.

Inclusion criteria: Medical doctors who are practicing in Karnataka and are willing to participate were included in the study.

Exclusion criteria: Medical doctors who do not practice in Karnataka or who do not wish to participate were excluded from the study.

Sample size: 113 medical doctors participated in this online study.

Sampling method: Convenient sampling.

The questionnaire contained a brief introduction on the background, objective, procedures, voluntary nature of participation, declarations of anonymity, and confidentiality.

The questionnaire comprised 28 questions—five pertaining to demography, 11 for knowledge, four for attitude, eight for practice assessment, and two related to training programs conducted in their work regarding the management of SARS-CoV-2 and if they faced any stigma or discrimination because of their line of work during the pandemic (e.g., eviction from rental house/apartments, physical or verbal abuse, etc.). The knowledge was assessed about the clinical features, diagnosis, treatment, and complications of SARS-CoV-2. The attitude was assessed by asking the doctors to rate their fear of contracting the disease in particular, fear of one of their family members contracting the disease, and the chance of recovery of a person infected with SARS-CoV-2. The practices were assessed by using Likert scale for assessing the behavior of doctors regarding washing hands for 20 seconds with soap and water, use of disposable items, use of masks, use of alcohol-based hand rubs, etc.

RESULTS

A total of 113 doctors participated in the study, with a response rate of 97.3%. The majority of the participants belonged to the

age group of 21–40 years (54.55%), followed by 41–50 years (26.36%). Around 60.9% of the responses were from females. Around 67.3% were consultants; the frequency of junior and senior residents was 24.5 and 8.2%, respectively.

All the participants (100%) reported that they were aware of the ongoing COVID-19 outbreak and social media was the major source (34.5%) of their information, followed by television (23.6%), written media (20.9%), and teaching programs (14.5%). When asked regarding the symptoms of SARS-CoV-2, majority of the participants selected fever (99.1%), followed by cough (98.2%), difficulty breathing (97.3%), sore throat (88.2%), diarrhea (68.1%), aches and pains (54.5%), nasal congestion (54.5%), conjunctivitis (44.5%), rhinorrhea (40.9%), and skin rashes (36.4%).

A total of 95.5% of the participants agree that currently, there is no effective cure for SARS-CoV-2, but early symptomatic and supportive treatment can help most patients recover from the infection, and 99.1% feel isolation, and treatment of people who are infected with SARS-CoV-2 are effective ways to reduce the spread of the virus.

When asked about the fear of contracting the virus on a scale of 0–10, it was observed that there was increased fear of one of their family members contracting the virus compared to the fear of the participant contracting the virus themselves. Around 56.4% of the participants do not consider SARS-CoV-2 to be a life-threatening disease, and 87.3% of the participants feel people infected with SARS-CoV-2 usually recover.

Around 59.1% said there was a training program conducted at their place of work regarding the management of SARS-CoV-2. About 16.4% faced stigma because of their line of work during the pandemic (e.g., eviction from rental houses/apartments, physical or verbal abuse, etc.) (Tables 1 to 3) (Fig. 1).

In our study, all the participants (100%) had good knowledge, but 55.5% had a good attitude, and 60.9% had good practice attributes toward SARS-CoV-2.

Comparison of scores among professionals revealed that the KAP towards the management of SARS-CoV-2 was better among consultants and senior residents when compared to junior residents and interns, but only the practice part was statistically significant.

Table 1: KAP score division from the study population

Percentage	Level	Knowledge	Attitude	Practice
		Score range	Score range	Score range
≤49%	Poor	0–5.4	0–1	0–4
50–59%	Moderate	5.5–6.5	2	5
60–100%	Good	6.6–11	3–4	6–9

Table 2: Awareness level of patients with respect to KAP regarding COVID-19

Level	Knowledge	Attitude	Practice
Poor	0 (0%)	12 (10.9%)	25 (22.7%)
Moderate	0 (0%)	37 (33.6%)	18 (16.4%)
Good	110 (100%)	61 (55.5%)	67 (60.9%)

Table 3: Comparison of KAP scores among professionals

	Profession	N	Minimum	Maximum	Mean	Standard deviation	Median	Interquartile range	Mean rank	Mann–Whitney U	p-value
Knowledge	Consultant/senior resident	83	7	11	8.74	0.79	9	1	56.17	1064.5	0.681
	Junior resident/intern	27	7	10	8.66	0.86	9	1	53.43		
Attitude	Consultant/senior resident	83	1	4	2.71	0.94	3	1	57.81	928.5	0.162
	Junior resident/intern	27	0	4	2.40	0.93	2	1	48.39		
Practice	Consultant/senior resident	83	3	9	6.19	1.74	6	3	59.14	818.5	0.034
	Junior resident/intern	27	0	8	5.22	1.94	5	3	44.31		

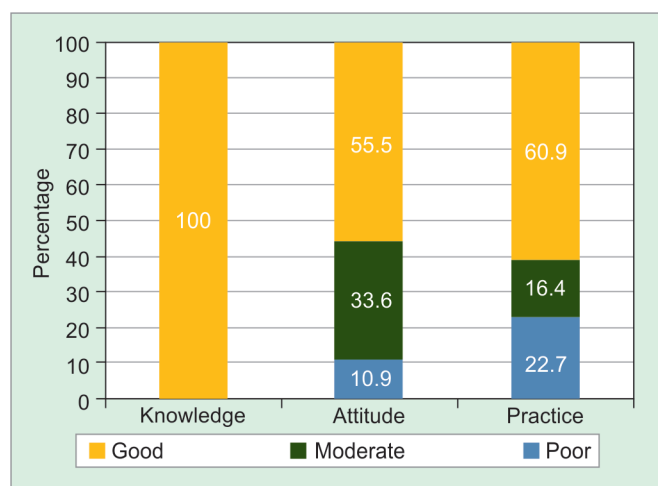


Fig. 1: Showing the distribution of knowledge, attitude, and practice among the medical doctors

DISCUSSION

This study was started after the first complete lockdown was imposed (23rd March 2020), and measures were taken by the authorities to disseminate information related to the disease. Therefore, our findings may provide baseline information regarding the KAP related to SARS-CoV-2 among doctors practicing in Karnataka.

The study showed that the proportion of female respondents was much higher than men (60.9 vs 39.1%), which was similar to a study by Van Nhu et al.⁷ The high rate of knowledgeable participants may correlate with the overwhelming news on social media and television, as well as advisory measures and protocols designed by the Ministry of Health and Family Welfare (MoHFW) and Indian Council of Medical Research (ICMR). Besides, the previous experiences in controlling other virus outbreaks, such as influenza A (H1N1), Nipah, avian influenza, and SARS, may contribute to a better understanding of the preventive measures adopted for SARS-CoV-2.

Around 61.9% of the surveyed doctors were afraid of becoming infected at work, which is comparatively less when compared to a study conducted by Zhang et al.,⁸ where 85% of HCWs were afraid of getting infected at work.

The study conducted by Olum et al.⁹ regarding KAP among HCWs at Makerere University Teaching Hospitals, Uganda towards SARS-CoV-2, revealed that there was no statistically significant correlation between attitude and the sociodemographic variable (sex, age, and designation), which is similar to our study.

Around 60.9% of the doctors in our study were following good practices, which is low compared to 89.7% of HCWs who followed good practices, according to a study conducted by Zhang et al.⁸

Our findings revealed that although the doctors practicing in Karnataka who participated in this study possessed satisfactory knowledge about SARS-CoV-2 there was some room for improvement in terms of attitude and practices being adopted. These gaps should be addressed through educational initiatives, training, and strict implementation of guidelines issued by the WHO, MoHFW, ICMR, and other reliable sources.

CONCLUSION

The participants possess good knowledge regarding SARS-CoV-2 and its management; measures have to be taken to improve their attitude and practices, which will ensure better management and treatment of the affected individuals. There were certain misconceptions regarding the transmission modalities and treatment of those infected with SARS-CoV-2. Increased training and education programs need to be implemented at the institutional and hospital level to ensure a better standard of care and treatment, a better attitude, and improved adherence to preventive measures. There have been instances of violence against HCWs who were involved in the treatment of those infected with SARS-CoV-2 and faced stigma. The government has to take steps to spread information and awareness among the general public to avoid such incidents.

LIMITATIONS

This study has some limitations.

- As it was a web-based survey, we had a limited number of participants in the study.
- The survey was conducted in only one state of India—Karnataka, so the results may not be generalizable to the medical doctors belonging to other states and countries.
- No standardized tool for assessing KAPs on COVID-19 has been previously validated.

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