

COVID-19 Awareness among Final Year Medical Students in India: A Questionnaire-Based Survey

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Abstract

Introduction: The rapid spread of the COVID-19 pandemic globally has evolved as a major concern and Healthcare workers (HCWs) working in the forefront, fighting the virus is at higher risk of contracting the infection compared to the general population. The aim of this study is to analyse the awareness of COVID-19 disease among final year medical students in the state of Kerala.

Materials and Methods: The study was a cross-sectional survey based on a web based questionnaire carried out among final year medical students of two different government medical colleges in Kerala. The survey comprised a total of 18 questions and was to evaluate awareness about COVID-19, knowledge about the symptoms, modes of transmission and precautions for reducing risk of contracting the disease.

Results: A total of 350 students were approached and 260 responses were obtained. Most of them were well aware of the source of infection and the modes of spread. Majority of the respondents also were knowledgeable about the different aspects of basic protective measures that should be followed in order to prevent the transmission of the disease. They also know regarding the period of home isolation, how it should be done and the others measures to be followed by family members during home isolation.

Conclusion: COVID-19 pandemic is spreading rapidly and health care workers are exposed to the highest risk. The final year medical graduates have high knowledge levels regarding the spread and measures needed to be taken to reduce the transmission of the disease which can be attributed to the efforts by state and central government to create awareness.

Keywords: COVID-19 India • Coronavirus • Health care workers • WHO coronavirus • Medical Students

Introduction

Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) is the newly detected novel coronavirus responsible for the current COVID-19 pandemic [1]. The virus was reported to be first identified in Wuhan (China) in December 2019 [2]. Previous reports have documented new coronavirus has 86.9% resemblance to bat coronavirus and hence suspected to develop from bats [3]. The COVID-19 spread occurs through droplet, feco-oral, and direct contact with an incubation period of 2-14 days even though many cases of higher incubation periods have been reported [4]. The rapid spread of the pandemic over the past months has been alarming and the lack of any specific treatment for the disease emphasizes the importance of preventive measures in breaking the spread of COVID-19 [2,3].

Only precise following of preventive measures is the only way to avoid the human-to-human transmission substantially, reducing the impact of the pandemic [4,5]. India has already passed the stage of lockdown and now is in the stage of unlock down but is struggling to control the spread of virus. At the time of writing, July 2020, the figures related to COVID-19 had surpassed 11,417,491 confirmed cases and over 534,279 deaths.

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Healthcare workers (HCWs) working in the forefront, fighting the virus are at higher risk of contracting the infection compared to the general population. To date no definitive treatment or vaccine is available. Hence, proper knowledge regarding the virus and its way of spread along with the preventive measures is needed to avoid contraction of the disease. Medical students are part of healthcare workers and are either directly or indirectly related to these pandemics. The objective of the study is to analyse the level of awareness and attitude of final year medical students in two medical colleges in Kerala towards COVID-19 pandemic. This was a questionnaire-based study based on the guidelines and information published by the Government of Kerala (Table 1).

Research Methodology

The study was a cross-sectional survey based on a web based questionnaire carried out among final year medical students of two different government medical colleges in Kerala namely Government Medical College, Kozhikode and Government TD Medical College, Alappuzha, Kerala. The web based questionnaire was prepared based on notifications and guidelines published by the Department of Health Services, Government of Kerala. The questionnaire was in Malayalam which is the official language of the government of Kerala even though English is the primary language of higher education in India.

The survey comprised a total of 18 questions. The survey was composed of questions adapted to evaluate awareness about COVID-19, knowledge about the symptoms, modes of transmission and precautions for reducing risk of contracting the disease. We used Google Forms, a web based survey method to create as well as to distribute the questionnaire. The questionnaire was distributed to all the students through WhatsApp messaging software. The access to questionnaire was opened to the students only for 30 minutes

Table 1. Questions with response percentages.

Questions	Correct Response (%)	Wrong Response (%)
What is the virus that causes COVID-19 infection called?	27.7	72.3
The first reports of cases were from the city of Wuhan in China's Hubei Province.	98.5	1.5
What is the main cause of transmission of the virus from person to person?	76.9	23.1
Can the virus that causes COVID-19 be transmitted through the air?	54.6	45.4
Which of the following is considered a "close contact"?	68.5	31.5
In which of the following situations should you seek medical advice?	74.6	25.4
Have you received any formal training on hygiene in the last three years?	83.8	16.2
Which of the following is a hand hygiene measure to prevent the transmission of the virus to a health worker?	96.2	3.8
Can a person have COVID-19 without symptoms?	98.5	2.5
What is the minimum distance to keep when talking to prevent corona virus?	90.8	9.2
How to clean dirty hands with soap and water?	83.8	16.2
What is the most effective way to prevent COVID-19 infection in a health care setting?	96.2	3.8
Is there a vaccine available to prevent COVID-19 infection?	100	0
Which personal protective equipment (PPE) should be worn by persons examining certified COVID-19 patients within a health care centre?	100	0
What is the duration of home isolation for individuals who have made inter-district and international trips?	83.8	16.2
How to do home insulation?	96.9	3.1
Can a person leave the room during home insulation?	98.5	1.5
Can other family members go out of the house during home insulation?	76.2	23.8

to avoid cross discussion and answering. Consent was obtained from all the participants. No personal or demographic information was collected in the study. The responses were collected as Excel sheets and analysed and validated with SPSS software version 25.0 (IBM, Armonk, NY, USA).

Results

A total of 350 students were approached and 260 responses were obtained. Most of them know that the infection is caused by a virus but had confusion regarding the name of the virus. Only 27.7% answered the question correctly regarding the name of the virus. 98.5% participants know the place from where initial cases were reported as Wuhan, china.

Regarding the mode of spread of the virus 76.9% answered correctly that both the respiratory aerosols and contact with contaminated surfaces while 20.8% considered former as the only mode of transfer and remaining 2.3% answered later only. At the time of this survey there were no reports suggesting the spread of virus through air and 45.4% answered it correctly. The question on close contact criteria was answered correctly by 68.5% while the remaining considered only either of one option as close contact. Majority of the participants (74.6%) answered the question on when to get medical consultation correctly. 83.8% of the respondents received formal training on infection control in the last 3 years. 96.3% of the participants are aware of when to do hand sanitization to avoid contraction of COVID-19 infection. Regarding the hand wash with soap and water 83.8% was aware about the desired duration which is 20 seconds while the remaining opted 60 seconds as the answer. Most of them (96.2%) know that self-protection is the best way to avoid disease contraction rather than vaccination and also distance to be maintained (90.8%) while talking to another person. All the participants were aware that there is no proven vaccination available against the virus till date. 100% also answered the protective devices to be worn while handling the COVID-19 patients.

Majority of them (83.8%) know the home quarantine period of fourteen days for interstate travellers as instructed by the government. Majority of the participants were well aware of how to do the home quarantine and measures to be followed. More than 90% of them know that the home isolated person should be confined to rooms with attached bathrooms and should not go out of the room. Majority also know that the other family members should be cautious and avoid travelling during the period of home isolation. 98.5% of respondents know about asymptomatic carriers.

Discussion

To best of our knowledge this is the first study that analysed the COVID-19 related knowledge among the Indian medical students. Until recently it was believed that COVID-19 is neither transferred through air or water rather from infected persons to others through respiratory droplets as well as on contact with contaminated surfaces where virus can survive for up to 4 days [6]. Recent studies reported that transmission through air is possible and the same was acknowledged by World Health Organization [7]. The incubation period of the virus ranges from 2 to 14 days and the common symptoms include fever, sore throat, dry cough and fatigue. Other less common symptoms are myalgia, diarrhoea, anosmia, headache etc. [8,9]. The phenomenon of happy hypoxia where patients fail to show signs of dyspnoea even with extremely low blood oxygenation later ending up intubated, ventilated or dead is still puzzling the medical experts [10].

Healthcare workers being on frontline in fighting the disease are at higher risk of infection. With no protective vaccine available, identification and isolation of COVID-19 patients is the most important step in reducing the spread of coronavirus. Added to these following proper personal protective measures like maintaining social distancing, hand hygiene, N95 mask etc. are must to avoid contracting the disease [11].

In the present study, analysis of awareness about COVID-19 as well as knowledge regarding the mode of transmission and preventive measures were done. Most of the respondents were aware of the Hubei province in Wuhan, china was the first cases of COVID-19 were reported but many respondents were unaware of the other names of coronavirus. Majority of the respondents (49%) identified the name as SARS-CoV-2. A study by Modi et al. on awareness among healthcare students and professionals noted similar answers by medical undergraduates [12].

Regarding the modes of spread of virus, most respondents were knowledgeable about the ways of spread of COVID-19 even though 45% answered it wrong regarding the spread of virus through air (spread of virus through air was not validated while this study was conducted). Proper isolation of patients and minimizing aerosol producing procedures and activities can significantly lower the risk of infection healthcare workers [13]. Early contact tracing and identification and isolation of close contacts have evolved as the most important step in breaking off the transmission chain of COVID-19 [2,4,5]. CDC has defined 'as any individual who was within 6 feet (1.83 m) of an infected person for at least 15 minutes' and 68.5% of the respondents answered it correctly and 74.5% of the respondents were well-informed about when to take medical care for COVID-19 [14]. Majority of the interviewees

were well aware of asymptomatic carriers and also the social distance to be maintained.

Routine protective measures against COVID-19 mainly includes wearing N95 mask, face shield and hand hygiene where the Health care worker should clean their hands using soap and water for at least 20 seconds or disinfect their hands with a 60–95% alcohol-based disinfectant [15]. Added to these use of gloves, PPE kits, goggles and shoe cover needs to be used while engaging in aerosol generating procedures and interacting with COVID-19 patients [4,6,14]. Majority of the respondents had received training on cleanliness as well as were well-informed about hand hygiene and protective wearables to prevent the transfer of infection. Home isolation of asymptomatic persons have evolved as the mainstay of treatment in asymptomatic patients in the stages of community spread of COVID-19 to avoid congestion and better utilization of the health system for sicker patients [16]. Most of the respondents were knowledgeable about the protocols that need to be followed during home isolation and how it can be achieved.

Conclusion

COVID-19 pandemic is spreading rapidly and health care workers are exposed to the highest risk. We identified that final year medical graduates have high knowledge levels regarding the spread and measures needed to be taken to reduce the transmission of the disease. The higher knowledge among the respondents can be attributed to the efforts by state and central government through webinars, routine press meets and awareness campaigns.

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