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Knowledge, Attitude and Practice Regarding SARS CoV-19 Among Medical Students of a Medical College in Western India

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ABSTRACT

Background: Medical students being the doctors of tomorrow play very important role in community health awareness, especially in emergency situation like Covid 19. This research was under taken to study the knowledge, attitude and practices of medical students regarding COVID 19 pandemic.

Material and method: A descriptive, cross-sectional study was conducted in the month of May, 2021, among medical students. A 33-item web-based survey questionnaire was developed to assess knowledge, attitude and practice among the medical students.

Results: Total 342 valid responses were studied. Male to female ratio was 0.93 in the subjects. Common sources of information about COVID-19 were internet, social media and television. Most of the medical students were aware of the common modes of spread of infection. 80.7 % knew the correct incubation period. Only 35.1 percent of students thought that mild form of disease is most common. Nearly all knew that washing hands and wearing mask are important measures for prevention from COVID-19. Most of them feel that disease is dangerous (91.5%) and 43.3% are scared to do hospital work.

Conclusion: Present study focus on a decent level of existing knowledge, practice, and attitude of COVID-19 among medical students.

Keywords: Coronavirus, COVID-19, knowledge, practice, attitude, medical students

INTRODUCTION

Coronavirus disease 2019 (COVID-19) is caused by Severe Acute Respiratory Syndrome (SARS) coronavirus 2 (SARS-CoV-2), which is as an acute respiratory infection. In December 2019, Wuhan City of China, reported an outbreak of pneumonia by this novel virus.[1] The clinical symptomatology was that of a respiratory infection with a symptom of severity ranging from a mild common cold-like presentation, to a severe viral pneumonia leading to acute respiratory distress syndrome which was potentially lethal.[2] WHO acknowledged it a pandemic on 11 March 2020. By end of April 2020, the number of Covid-19 cases worldwide crossed the mark of 3 million.[3] In India, it started late but more than 30 million cases have been diagnosed till 30th Jun 2021.[4]

Till date, there are no antiviral drugs with scientifically proven effectiveness against this disease. Public health measures which focus on infection prevention and control becomes the most important intervention in such situations. Public health authorities are promoting, hand hygiene, cough etiquette, social distancing, and avoiding social gathering nowadays.[2] All this information about the disease and its prevention, has been unfold to general public via newspaper, social media, radio, TV news channel and posters in public places. World health organization, local public health authorities and medical fraternity are

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regularly updating information about the disease and its preventive measures. Medical students, at the same time, are at the risk of accessing various other circulating unreliable data on social media. Medical students are future healthcare force and are at equal risk of getting infected and transmitting this infection to their patients, friends and families like other health care workers (HCWs). Social and psychological effect of the illness can influence attitudes of the students towards the disease, patients and also for the profession. Therefore, it is needed to study knowledge, attitude and practice regarding COVID 19 pandemic among medical students.[5]

Teaching institutions including medical schools were closed by government as an important preventive measure for COVID-19 during the peak. This has negatively affected medical education and training of medical students worldwide. On the other hand, numbers of students have shown their interest to serve in this global pandemic. Many believe that students can be helpful in some of the hospital based roles and should be useful in situation of health care workers scarcity.[6,7] However others think that students can act as additional vectors for viral transmission as they are still in learning stage.[8] At this stage it becomes important to understand how much they know about this novel corona virus, how they feel about this pandemic and what all preventive measures they are practicing. Keeping all this in mind the present study was designed. This study aims to understand the knowledge, attitude and practices of medical students regarding COVID-19.

MATERIAL AND METHODS

This was a cross-sectional observational study conducted in the month of May, 2021, among medical students in a medical college located in South Gujarat, western India. A total of 342 medical students from a medical college were interviewed. Students who did not willing to participate and those who did not respond were excluded from the study.

A 33-item web - based survey questionnaire was developed to assess knowledge, attitude and practice among the medical students. Close ended questions were prepared in after extensive literature search on the internet and a review article [2] and frequently asked questions from WHO website. Content was validated by physicians, pulmonologists and public health experts from our institute. The questionnaire included demographic details of the participants, epidemiology, clinical features, and complications of the disease. Performa also contained questions for evaluation of attitudes of the individual towards the disease and its effects and infection control and prevention practices followed by subjects. The questionnaire was pilot tested initially among the faculties in the department and late on among 10 medical students. Certain minor modifications were made based on the pilot survey. The students participated in pilot survey were not included in the main survey.

Questionnaire link was emailed to all medical students studying in out institute. Questionnaire link was also shared in various medical students WhatsApp groups. A time period of one week was given to submit the questionnaire. There were total around 750 students in the college. We received response from 401 participants (response rate 53.5%). However, after careful review 59 (14.7%) forms were excluded. Out of these 59 excluded forms, 26 were repeat submission, 19 were from other than medical students of our institute and 8 were internees and 7 were due to incorrect information (e.g. age below 18 or above 30 years, etc). So finally 342 forms were included in final analysis which makes final response rate of 46%.

Ethical considerations

Submission of online form us considered as consent of the participants. All the required information related to the consent has been mentioned in the beginning of the online form. Though name, email and mobile number of participants were collected but were kept separately than the data analysis sheet. This information was not directly available to any person except the investigator. The study protocol was approved by the Institutional ethical committee of the institute.

Statistical analysis

All data was entered in MS Excel spreadsheet. Analysis was done by using Epi info 7.2.1.0 version. Categorical variable was expressed as frequency and percentage.

RESULTS

Total 342 responses were included in the final analysis. **Table 1** shows the demographic characteristics of the participants. Of 342 medical students, male to female ratio was 0.93. 62.6% of respondents were in the age group of 17-20 years. 37.4 % of students were in final year MBBS. Most of the students have received information from multiple sources **(Table 2)**. The common sources were internet, television and social media.

Table 1: The demographic characteristics of the respondents (N=342)

Measure	Participants (100%)
Age group (years)	
17-20	214 (62.57)
21-26	128 (37.43)
GENDER	
Male	165 (48.25)
Female	177 (51.75)
Year of study	
1st MBBS students	84 (24.56)
2nd MBBS students	77 (22.51)
3rd MBBS students	78 (22.81)
4th MBBS students	103 (30.12)

Table 2: Source of information obtained by study subjects (N=342)

Source	Students (%)
Social media	232 (67.84)
Internet	250 (73.1)
Govt. Resources	17 (4.97)
Friend and family	139 (40.64)
News paper	162 (47.37)
Radio	31 (9.06)
TV	236 (69.01)

Table 3 and 4 illustrate the knowledge of study subjects. Almost all knew the mode of transmission of infection and common preventive measures. 80.7% of students correctly answered about incubation period of 1-14 days. 23.4 % subjects assume that touching an infected person does not spread infection. Most of the students knew acute respiratory distress syndrome (ARDS) and death as possible complication of COVID-19 (91.8%). Most of them believed that washing hands and wearing mask are important for prevention. Only 35.1 % of students knew that most common form of disease is mild. On the other hand, 97.4 % were aware that it involves predominantly the respiratory system. 91.1% of people knew that diagnosis of COVID- 19 can be confirmed by laboratory testing of respiratory sample. 91.4% believe that patient older than 65 year are at more risk of severe illness.

Table 3: Knowledge of study subjects (N=342)

Knowledge Variables	Students (%)
Symptoms	
Cough, difficulty in breathing, chest pain and sore throat	337 (98.54)
Fever, body ache	302 (88.3)
Vomiting, loose stool	80 (23.39)
Eye congestion, running nose	143 (41.81)
Mode of spread	
via respiratory droplets produced when a person sneezes or coughs	331 (96.78)
touching eyes, face and nose after contact with surfaces contaminated with virus particles	341 (99.71)
Touching an infected person	262 (76.61)
Preventive measures	
Washing hands	337 (98.54)
Wearing a face mask	318 (92.98)
Avoid touching eyes, nose, and mouth	305 (89.18)
Possible complications	
Respiratory failure ARDS) and death	314 (91.81)
Pneumonia	244 (71.35)
Neurological symptoms	48 (14.04)
Shock drop in BP) and renal failure	111 (32.46)

Table 4: Knowledge of study subjects (N=342)

Question	Doctors (%)
Vaccines available for protection against Corona virus infection (No)	265 (77.49)
Age group of people are more at risk of severe illness (>65 years)	313 (91.52)
Most affected body system (Respiratory system)	333 (97.37)
COVID-19 be caught from a person who has no symptoms (yes)	287 (83.92)
Incubation period (1-14 days)	276 (80.7)
Heath care workers involved in care of COVID-19 patients, can catch infection from their patients (yes)	334 (97.66)
Diagnosis of COVID-19 be confirmed by laboratory testing of a respiratory sample cough/nasal oral pharyngeal swab (Yes)	311 (90.94)
Most common form of disease (Mild disease)	120 (35.09)

Table 5: Attitude of study subjects (N=342)

Variables	Students (%)
Washing your hands more frequently	334 (97.66)
Interested in following the disease news	302 (88.3)
If vaccine for Corona is available, would you take it	332 (97.08)
Eating well and taking care of your own heath	332 (97.08)
Transmission of covid-19 be prevented by using standard and isolation precautions given by Ministry of health & family welfare, India and WHO etc	304 (88.89)
Feel disease is dangerous	313 (91.52)
Avoid going to crowded places or follow social distancing	332 (97.08)
Scared of doing your hospital work	148 (43.27)
Worried about one of your family members getting infection	286 (83.63)
Government institutions will able to control the pandemic	217 (63.45)

Table 6: Practices of study subjects

Practice	Always	Sometimes	Never
Washing hands			
After covering the nose while sneezing	283 (82.75)	45 (13.16)	14 (4.09)
apply soap while washing your hands	298 (87.13)	27 (7.89)	17 (4.97)
Before wearing a face mask	275 (80.41)	36 (10.53)	31 (9.06)
Before touching your eye and nose	328 (95.91)	6 (1.75)	8 (2.34)
Wear face mask			
when having fever, cough or a runny nose	329 (96.2)	8 (2.34)	5 (1.46)
When you are in public places	329 (96.2)	9 (2.63)	4 (1.17)
When you are in hospital	278 (81.29)	41 (11.99)	23 (6.73)
Do you change the facemask after using it once	282 (82.46)	22 (6.43)	38 (11.11)
Practices while coughing			
throw away the used tissue into the dustbin	333 (97.37)	6 (1.75)	3 (0.88)
turn your face from the surrounding people	330 (96.49)	3 (0.88)	9 (2.63)
Cover mouth and nose with a tissue or handkerchief or elbow	332 (97.08)	6 (1.75)	4 (1.17)

Table 5 shows the attitude of students towards the disease and its prevention measures. Most of them feel that disease is dangerous (91.5%) and 43.3% are scared to do hospital work. 63.5% believe that government institutions would be able to control the pandemic. Table 6 mentions the existing practice among the medical students.

DISCUSSION

COVID-19 is a global pandemic and all the countries are fighting with this disease. Many accept that medical students can be considered in a portion of the emergency and non emergency clinical based jobs and should be utilised in the situation of health care workers shortage. [6,7] It is essential to know the knowledge and attitude of medical students and also assess their practice. Subsequently, we assessed these significant angles by standardized online survey in our investigation.

Since COVID-19 is brought about by a novel infection and the sickness is new, the greater part of the data about COVID-19 originates from alternative resources as opposed to clinical course reading. In our study, common source of information was internet, television, and social media. It is simpler to get to data from web however there is a worry in regards to the legitimacy of the material accessible. There is a hazard that students will be presented to incorrect or bogus information which can bring about wrong conduct or practice. Henceforth it is significant for the health authorities to scatter reliable data by means of these medium. This will play an important role in control of infection.

Our study observed that about all study subjects have knowledge that mode of infections are respiratory droplets and fomites but about one fourth of them did not know that it can spread by touching an infected patient. A similar study was done by Taghrir et al among Iranian medical student in February 2020. Respondents from their study had also answered it in same way. 88.5% of students in our study correctly answered about incubation period of disease as 1- 14 days this was also akin to study done by Taghrir et al. [9] In another study by Giao et al from Vietnam, only 60-70% of the HCWs were aware of the incubation period, treatment options and route of transmission.[10]This difference in the observation can be due to increasing knowledge among the study subjects over the last two months. As the pandemic is progressing, people are learning more about the disease.

Students were familiar with common symptoms of COVID-19 like cough, shortness of breath, chest pain, sore throat, fever and body ache but few were recognizant of gastrointestinal symptoms and eye congestion. These findings were comparable to studies done by Taghrir et al and Alzoubi et al. [9,11] Participants in our study were very well aware of respiratory failure, Acute respiratory distress syndrome (ARDS), and death as possible COVID-19 complications. Death a possible outcome was known to lesser number of medical and nonmedical university students in a research done in Jordan by Alzoubi et al. [11] Being a respiratory illness, students in our study can perceive the symptoms related to respiratory system more correctly. On the other hand, they were not enough aware that COVID-19 can involve the other body system like cardiovascular, gastrointestinal and nervous system.

In our study, most of the students knew that COVID-19 diagnosis is done by taking nasopharyngeal or oropharyngeal swabs or lower respiratory sample which was akin with study done by Taghrir et al. [9] Students in present study were less aware that the disease is milder in severity in most of the cases. This impression can also be due to fear caused by the disease in the society. This makes everyone believe that the disease is very dangerous. Still they were aware that the severe illness is seen in patients who are older than 65 year. In this study, students were aware of preventive measures like hand washing, wearing face mask and avoid touching eyes, nose, and mouth. This is similar to observation made by Taghrir et al and Alzoubi and colleagues. [9,11]

Another important finding in our study was that majority of students had overall a positive attitude towards the disease. They all admit that they have seen

increasing compliance to preventive measures in their practice similar to study done in Iranian medical students.[10] Most of them feel that disease is dangerous and worried about spreading the disease to their family members because of their hospital exposure but less than half of them were scared of doing hospital work. Many of them were willing to get vaccinated against SARS CoV-2 once the vaccine is available. These findings are similar to the observation made by Giao et al in a study on health care workers. [10] We also noted that students were interested in updating themselves with newer information about the disease. Students were confident that transmission of disease would be prevented by following Ministry of health and family welfare, India and World Health Organisation advices. Substantial number of them believe that government health system will be able to control this pandemic. These findings were comparable to study done by Alzoubi et al. [11]

In our study, we also looked into the practices adopted by the study subjects in their daily routine life. Students practice high level of hand hygiene, cough hygiene and wearing face mask. Much the same was observed in other studies [9,11]. This was reported to be 75% in a study done by Modi et al [12].

LIMITATIONS

The present study was a single centre study. Results of the study cannot truly represent the knowledge, attitude and practice of medical students worldwide and therefore there is need of similar studies from other medical colleges.

CONCLUSION

This study highlights the level of existing knowledge, attitude and practice of COVID-19 among medical students. Students need to be made more knowledgeable about atypical and uncommon clinical presentations and complications about disease.

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