

Assessment of Knowledge and Perception Regarding COVID-19 among Undergraduate Medical Students of Assam Medical College, Dibrugarh, Assam

Dutta Raj Kumar¹, Boruah Manjit², Mahanta T G³

¹Assistant Professor, Department of Community Medicine, Assam Medical College, Dibrugarh, Assam

²Assistant Professor, Department of Community Medicine, Assam Medical College, Dibrugarh, Assam

³Professor, Department of Community Medicine, Assam Medical College, Dibrugarh, Assam

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Corresponding author: Dutta Raj Kumar

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Abstract

Background: COVID-19 has made people more vulnerable to infection due to a lack of understanding and hazardous practices. Medical students can play an important role as trust worthy information sources. The purpose of this study was to analyze medical students' knowledge and perceptions of COVID-19 at a tertiary care center.

Methods: Participants took an online cross-sectional survey using Google Forms between November 2020 and January 2021. The research was carried out on MBBS students. To describe participant characteristics, descriptive statistics were used.

Results: The survey was completed by all participants. They are all MBBS students. The majority of participants had acceptable knowledge for Covid 19 identification, while approximately 6.2% had just incomplete understanding (picked either RT-PCR or Immunofluorescent antigen detection technique). Students have a favorable opinion of COVID-19 prevention. More over half of the students (62.5%) correctly believed that antibiotics are ineffective in COVID-19 treatment, and 15.8% believed that vaccines are insufficient to prevent COVID-19 transmission at this time.

Conclusion: As the COVID-19 virus causes on and off waves of cases around the world, it is critical to spread awareness and beliefs among the general public in order to avert a pandemic of such magnitude. Medical students, with their educational background and basic understanding of COVID-19, can play an important role in informing the society about the genuine facts of this pandemic situation.

Keywords: COVID-19; Knowledge; Perception; Students.

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Introduction

The emergence of coronavirus SARS-CoV-2 (COVID-19) in Wuhan (China) in December 2019 surpassed previous virus outbreaks, such as severe acute respiratory syndrome coronavirus (SARS-CoV) and Middle East respiratory syndrome coronavirus (MERS-CoV), which spread globally and had a significant impact on everyone's social life [1]. According to the WHO situation assessment, as of May 3, 2020, there were approximately 3349786 confirmed cases of COVID-19 caused by the SARS-CoV-2, with an estimated 238,628 deaths. [2]. On January 27, 2020, the first case in India was recorded in Kerala, India. The pandemic expanded quickly in India, with 11.01 lakh confirmed cases (7863 cases per million people) and 1.5 lakh deaths (112 deaths per million population) as of February 2021. COVID-19 has a 2–14-day incubation period [3], and the first symptoms appear to be fever, cough, shortness of breath, difficulty breathing,

pain or pressure in the chest, weariness, myalgia or arthralgia, disorientation, bluish lips or face [4]. Maintaining hand hygiene, covering mouth and nose when coughing or sneezing with a face mask, keeping a 6-foot distance from anyone showing symptoms of respiratory illness, and avoiding unprotected contact with farm or wild animals are all recommendations for the general public to prevent the spread of infection. [5] To avert further spread of virus and to flatten the infection curve, curfews and restrictions on social activities have been recommended and imposed in most countries [6] However, several studies have been conducted to assess their knowledge and awareness regarding COVID-19 as per information provided by WHO. After the end of lockdown measures, MBBS classes were gradually started from December 2020 in Assam Medical College Dibrugarh. Information regarding knowledge and perception of Covid-19

among the recently joined undergraduate medical students was needed so that appropriate steps can be taken to correct any misinformation. Also, in order to introduce and install effective control measures against COVID-19, having correct knowledge about COVID-19 is of vital importance as this would lead to increased preventive measures by the students and help the college authorities to design targeted messages in order to improve the levels of knowledge. Therefore, the aim of this study was to assess the knowledge and perception regarding COVID-19 among undergraduate MBBS students in the aforementioned area.

Materials and Methods

An online cross-sectional survey was conducted using Google Forms, which the participants completed between November 2020 and January 2021. The study was conducted among MBBS undergraduate students at Assam Medical College. Final year batch was excluded from the study considering their examinations. First years were yet to join because of the delay in counselling and admission. There were three batches apart from final year and the sample size was divided equally among the 3 batches. From each batch, using the list of roll

numbers from each batch as sampling frame, 40 students were selected by simple random sampling by using computer generated random numbers of which the sample size came out to be 120.

Ethical approval taken from college management prior to the conduct of the study. Informed consent was obtained from the respondents prior to conducting the interview. The Google Forms survey was distributed WhatsApp groups. The link for this form was sent to the selected student of each batch. The students filled the form on their own mobiles and submitted online. All participants in the electronic survey accepted participation by selecting to participate prior to enrolment in the survey. They were assured that their responses would remain anonymous.

Results

All the participants filled out the web-based survey and completed the questionnaire with a response rate of 100%. The mean age of the study participants was 19.81 ± 1.6 years. All the participants were UG MBBS students of different semesters. Gender distribution of participants are detailed in Table 1.

Table 1: Demographic characteristics of study participants (n = 120)

Gender of respondents	Frequency	Percentage
Male	70	58.3
Female	50	41.6
Total	120	100

Knowledge about novel coronavirus

The subsequent table (Table 2) illustrates the knowledge about novel Coronavirus among the students. Majority of the study participants (71.6%) correctly identified novel Coronavirus i.e. COVID-19. A high proportion of study participants (95.8%) provided the correct response while 1.6% did not have any idea whether COVID-19 is contagious or not. Further, 2.5% of the participants were not aware about the origin of COVID-19. More than two-thirds of the participants know about the incubation period of COVID-19. Additionally, about 84% of study participants knew that the elderly persons or people with comorbidities are more prone to acquire COVID-19. More than two third of

students knew that the person infected with COVID-19 can remain asymptomatic while 2% of them had given incorrect response.

Majority of participants had partial knowledge (those who have selected either respiratory symptoms or neurological symptoms) regarding the symptoms of severe COVID-19 cases About 90% of the participants rightly identified the modes of COVID-19 transmission. About 94% participants correctly identified that RT-PCR (Reverse Transcriptase Polymerase Chain Reaction) and Immunofluorescent antigen detection assay are the diagnostic tests for COVID-19 while 6.2% had partial knowledge (selected either RT-PCR or Immunofluorescent antigen detection assay).

Table 2:

Knowledge on		Frequency	Percentage
Agent causing Covid-19	Middle East respiratory syndrome CoV	0	0
	Severe acute respiratory syndrome CoV	9	7.5
	Severe acute respiratory syndrome Corona virus	86	71.6
	All the above	25	20.8
Covid-19	Yes	115	95.8
	No	3	2.5
	No Idea	2	1.6
Incubation period of	2-14 Days	115	95.8

Covid 19	1-5 Days	5	4.16
	30 Days	0	0
	90 Days	0	0
COVID 19 infected person can remain asymptomatic	No	0	0
	Yes	117	98
	No idea	3	2
Routes of transmission of COVID-19	Respiratory droplets	12	9.8
	Contact with contaminated surfaces	8	6.9
	All of the above	112	93.1
	No idea	2	2
Diagnostic tests for COVID19	RT-PCR	6	5
	Rapid Antigen detection test	1	1.2
	Both	113	94.1
	Don't know	0	0

Perception about COVID-19

A high majority of the participants (74.1%) believe that wearing a surgical mask is a considerable approach to prevent COVID-19 while some (22.5%) of the participants do not agree with the statement. A large number of the participants (80.8%) incorrectly believe that it is not safe to receive a package from areas where a case of COVID-19 has been reported. More than half of the students (62.5%)

were found to have a correct perception that antibiotics are not effective in COVID-19 treatment as well as 15.8% stated that vaccines are not sufficient to prevent COVID-19 transmission at present. Few participants (27.13%) rightly believed that COVID-19 can primarily occur round the year and the infection is not bound to any specific climatic condition. The rest of the information about the perception of students about COVID-19 is detailed in Table

Table 3:

Perception on		Frequency	Percentage
Protection against covid19 by wearing a surgical mask	Yes	89	74.1
	No	27	22.5
	No idea	4	3.3
A package from any areas where a case of Covid 19 has been reported can be received	Yes	15	12.5
	No	97	80.8
	No idea	8	6.6
Effectiveness of antibiotics in preventing COVID 19	Yes	18	15
	No	75	62.5
	No idea	27	22.5
Climatic condition in which COVID 19 infections can primarily occur	Winter	44	36.6
	Spring or fall	7	5.8
	Round the year	50	41.6
	Don't know	19	15.8

Discussion

Assessing the worldwide burden and the mass media attention on the virus, the present study has been designed to assess the knowledge and perceptions about COVID-19 among the medical students in AMCH, Dibrugarh. Our study revealed that, the majority of students obtained knowledge about COVID-19 from social media 65.17%. Similarly, a study carried out by Bhagavathula AS et al. revealed that the participants' main source of information was official government websites (33%) followed by social media (30%) [7]. Another survey conducted in Pakistan reported that the Social Media (87.68%) remained the primary source of information among healthcare professionals. Currently, a wide range of information is available on the internet, including

unsubstantiated misleading evidence, which can easily misguide the public. Emphasis should be put on to educate and provide authentic information to the health science students so that the right information could be conveyed to the community.

Large proportion of study participants were aware and had general knowledge about COVID-19 except for symptoms of severe condition and category of people more prone to COVID-19. About 70% of participants correctly identified novel Coronavirus and gave the correct answer about its incubation period. Our study conducted among medical students showed that about 95% correctly identified the incubation period of COVID-19 i.e. 2-14 days. Other cross-sectional surveys conducted in Pakistan, China and Iran reported 96.38%, 66.40% and 85.4% correct

responses about the incubation period respectively [8,12] Information about the incubation period would be useful to identify the suspected cases and to provide medical care at an early stage. In this study, more than half (93.1%) of the students knew about the modes of transmission of COVID-19. In resemblance to that, studies carried out by Zhong BL et al., Abdelhafiz AS et al. and Bhagavathula AS et al. stated that 98.85%, 95.9% and only 39% respondents correctly recognized the transmission modes of novel Coronavirus.[7] Nearly 28% participants in our study believed that old/geriatric or person with co-morbidities are more prone to COVID-19. In contrast to that, a study conducted among Egyptian public verified that around 95% of study participants believe that COVID-19 is more dangerous for the elderly and patients with chronic diseases.[9] A brief research report of a large survey carried out among general public of the United States (US) and United Kingdom (UK) showed that 96.3% and 97.5% people believe that older adults are most likely to die from the novel Coronavirus infection.[10]

About half of participants (49.5%) in our study had partial knowledge (either selected only respiratory, enteric or neurological symptoms) about the symptoms of severe COVID-19 cases. On the other hand, 98.63% and around 90% of respondents of a Chinese and Egyptian survey accurately identified the symptoms of COVID-19 which is higher than our study results.[9,11,12] It is very essential that individuals should be well-versed about the most common as well as severe symptoms of COVID-19 infection through authenticated sources to avoid the misapprehension.

At present there is no clear evidence about the origin of COVID-19. Of late, a study conducted in Bangladesh reported that 37.22% of participants gave an incorrect response about the COVID-19 origin.[13] In contrast to that, 18.3% of participants from our study gave correct responses and are found to have a good knowledge about the origin which is yet unknown as stated by WHO. Considering the asymptomatic behaviour of COVID-19, about 98% of students in our study rightly believed that a person infected with novel Coronavirus can remain asymptomatic. Also, 81.8% participants of a survey conducted in Egypt correctly responded that COVID-19 could be transmitted from asymptomatic person as well.[12]

Almost all of our study participants (91.1%) knew about the measures that should be adopted for the prevention of COVID-19 such as, maintaining 1 m distance, cleaning hands with soap water, use of alcohol based sanitizer and avoiding personal contact. This finding is in line with the reported rate in studies conducted among healthcare workers (85.6% and 98.31%)[7,8] and students (98.6% and 93.8%).[11]

Majority of participants (74.1%) believe that wearing a surgical/face mask can protect people from getting infected with COVID-19. Opposite to our results, only 37.8% and 29.7% of people from the US and UK agree with the statement. (14) More than half of the students rightly stated that, at present the antibiotics (62.5%) are not effective in preventing or treating COVID-19 but roughly 25% respondents also thought that antibiotics or vaccines might be useful which is a wrong perception. Likewise, in a survey conducted among healthcare workers, around 90% believed that flu vaccination is not sufficient in preventing COVID-19.[7] A cross-sectional study conducted among medical and non-medical students in Jordan reported that, 89% and 78.9% respondents knew that there is no vaccine or specific treatment available for COVID-19.[15] Few discrepancies were also noted in the perception of our study participants. As an example, around 10% of students believed that the use of herbal medicines and eating garlic can protect against COVID-19 infection. Similarly, 33.1% Egyptian public also incorrectly stated that eating garlic could prevent spread of disease.[4,12] Considering the association of climatic condition and COVID-19 infection, more than half of participants (42.4%) believe that it either occurs in winter or spring/fall which is an incorrect perception as it could occur round the year as per available evidence.

Conclusion

The global pandemic state stresses substantial awareness about the clinical presentation, spread, preventive measures and management of COVID-19. Resurgence of Covid 19 has occurred in some countries. We revealed that the students from different semesters are having adequate awareness about COVID-19. Also, it has been observed that majority of participants acquired the information from social media which is an unauthentic resource of obtaining evidence about diseases. Students should be informed about the authentic sources of information as provided by global health authorities and health ministry of respective countries. Our study finding also highlights the specific aspects of knowledge and perception where the partial or incorrect responses were noted and these areas should be addressed in future through webinars, leaflets and educational campaigns to improve understanding and to correct the myths about COVID-19 considering the gravity of situation.

Limitations of the study

In present study, the questionnaire was developed based on the information available on WHO, CDC websites.

Besides highlighting the facts about the knowledge and perception about COVID-19, this study has few limitations which can't be ignored. First and

foremost, as this is an online cross-sectional survey, there are chances of recall bias which relies on the memory as well as it is likely that the students may have observed the answers to some of the questions before answering. Secondly, the survey was directed only among the students from medical science background so the findings cannot be extrapolated to the general population.

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