



Research Article

THE COVID-19 OUTBREAK: AWARENESS AMONG MEDICAL STUDENTS OF MAHARASHTRA

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ABSTRACT

Introduction: The Corona virus seems to be very contagious and has quickly spread globally. There is no specific antiviral treatment and no vaccine is currently available for the management of COVID-19. Management at community level includes recognizing and sorting patients and practicing home quarantine and hospital isolation methods.

Objectives: 1) To check the awareness about the new pandemic in medical students of Maharashtra.

2) To create awareness amongst them regarding COVID-19.

Methods: A questionnaire based study was conducted among medical students in Maharashtra from both preclinical and clinical phases of the course.

Results: Medical students were averagely aware about signs of infection and were well informed about general aspects of COVID-19. The awareness regarding medical aspects was found to be below satisfactory.

Conclusions: The overall awareness regarding various aspects of COVID 19 was found to be average. The application of the study would be to improve knowledge based on correct scientific information. Healthier and knowledgeable health care workers will increase awareness in community, and it will help to stop the spread of the disease. Thus this study of knowledge, attitude, practise can be adopted in teaching institute for all levels of health care workers. This method is economical, less time consuming and has ease of doing.

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INTRODUCTION

According to the World Health Organization (WHO), viral diseases continue to emerge and pose a serious threat to public health all over the globe. In the last twenty years, the world has witnessed several viral epidemics such as the Severe Acute Respiratory Syndrome Coronavirus (SARS-CoV) in 2002-2003, and H1N1 influenza in 2009. Among the most recently encountered are the Middle East Respiratory Syndrome Coronavirus (MERS-CoV), which was first identified in Saudi Arabia in 2012, followed by the COVID-19 pandemic last year which originated from China. A large number of patients presented with lower respiratory infections of unknown etiology in Wuhan, the largest metropolitan area in China's Hubei province. The same was first reported to the WHO Country Office in China, on December 31, 2019[1].

The medical staff was unable to identify the causative agent, the first case was classified as a case of 'Pneumonia of unknown etiology'. In the last twenty years, the world has faced two other coronavirus epidemics. This new virus seems to be very contagious and has quickly spread globally.

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In a meeting on January 30, 2020, the International Health Regulations (IHR, 2005), WHO declared the outbreak as a Public Health Emergency of International Concern (PHEIC) as it had spread to majority of the countries globally with almost all nations reporting human-to-human transmission of the agent by then. The CoVs have become pathogens that can be held majorly responsible for causing respiratory disease outbreaks. They belong to a large family of single-stranded RNA viruses (+ss RNA) that can be isolated from different animal species [2].

CoVs are positive-stranded RNA viruses. They have been identified to have a crown-like appearance under an electron microscope (coronam, Latin- crown) due to the presence of spike glycoproteins on the envelope. The subfamily is Orthocoronavirinae of the Coronaviridae family (order Nidovirales). This subfamily is further classified into four genera of CoVs: Alphacoronavirus (alpha CoV), Betacoronavirus (betaCoV), Deltacoronavirus (delta CoV), and Gammacoronavirus (gammaCoV). The beta CoV genus is further divided into five sub-genera [3]. Members of this large family of viruses are found to cause respiratory, enteric, hepatic, and neurological diseases in different species of camels, cattle, cats, and bats. These Viruses are responsible for 5% to 10% of Acute respiratory infections found globally and 2% population can be the carrier for the agent[4]. Patients with

COVID-19 infection showed elevated levels of leukocyte number along with abnormal respiratory findings on X-Ray and increased levels of plasma pro-inflammatory cytokines[5]. The principle pathogenesis of the infection as a respiratory system targeting pathogen included severe to moderate pneumonia, RNAemia, combined with the incidence of ground glass opacities and acute cardiac injury. Few of the intensive care unit cases showed elevated levels of pro-inflammatory cytokines which promote disease severity [6].

In humans, the transmission of SARS-CoV-2 has been found to occur via respiratory secretions (directly through droplets from coughing or sneezing, or indirectly through contaminated objects or surfaces as well as close contacts). Nosocomial (through hospital) transmission has been described as an important driver in the epidemiology of SARS and MERS and has also been documented in COVID-19. Current estimates of the incubation period of COVID-19 range from 2-14 days, and these estimates will be refined as more data become available. Most common symptoms include fever, fatigue, dry cough and breathing difficulty. Upper respiratory tract symptoms like sore throat, rhinorrhoea, and gastrointestinal symptoms like diarrhoea and nausea/ vomiting are seen in about 20% of cases. Due to paucity of scientific literature based derived from community based studies, the available data on host factors is skewed towards cases requiring hospitalization. As per analysis of the biggest cohort reported by Chinese CDC, about 81% of the cases are mild, 14% require hospitalization and 5% require ventilator and critical care management. The deaths reported are mainly among elderly population particularly those with co-morbidities[7][8].

There is no specific antiviral treatment and no vaccine is currently available for the management of COVID-19. The treatment is symptomatic. Management at community level includes recognizing and sorting patients with severe acute respiratory disease as well as practicing home quarantine and hospital isolation methods. Most efficient techniques for protective care includes mechanical ventilation and high-flow nasal oxygen (HFNO) or non-invasive ventilation (NIV)[9][10][11]. The functional status of the organs in a patient is analysed using the sequential organ failure assessment score while the patient is in an ICU.[12] A total of six criteria reflecting the function of an organ system are used (respiratory, cardiovascular, renal, neurological, hepatic and haematological) and a score of 0-4 is assigned to each. The score so achieved is used to predict mortality.[13]

The WHO and other organizations have issued general precautions for prevention strict hygiene measures for the prevention and control of infections. [14].

All students use Social media, the information of such media at times is wrong, students should know scientifically accepted information, There is need for instantenous correction, there is need to give correct information.

Therefore we took this project of finding out the status of knowledge, attitude and practise (KAP) of medical students, developed methodology for scientific feed back by instantaneous correction in the areas where either knowledge is lacking or erroneous information is thought correct by the students, based on scientific knowledge in areas where knowledge was inaccurate. We tried to update this knowledge. Students being Health care professions, they should have accurate knowledge, up to date virus details, and as time

passes we will get mammoth information of virus, which should be known by them.

MATERIALS AND METHODS

A cross sectional questionnaire based study was conducted among medical students in Maharashtra from both preclinical and clinical phases of the course. Informed consent was obtained from the students who volunteered to participate in the study. Confidentiality of the collected information and anonymity of the participants was maintained throughout the conduct of the study. The validated questionnaire was circulated online using Google forms to ensure the completeness of the information. We used a self administered questionnaire comprising of four sections.

Section 1 included information on sociodemographic variables such as gender, phase in the MBBS, native place.

Section 2 comprised information dealing with general awareness regarding COVID-19.

Section 3 included questions related to precautions that need to be taken to prevent COVID-19 infection.

Section 4 was based on awareness regarding diagnosis, line of treatment in cases of COVID-19 infection.

The questionnaire comprised of 15 questions. Each correct answer was given 1 point each. So awareness regarding COVID-19 infection was assessed based on the score secured by each of the participant. The minimum score was 6 and the maximum score was 380. Participants who scored in the range 10-15 were considered good, those between 5-10 were considered average and those participants who scored in the range of 0-5 were graded poor. Instantaneous correction of wrong answer was done and explanation for correct answer was immediately posted to the respondents so any misconception was removed. Therefore knowledge and awareness about the emerging virus was accessed. The responses were calculated using Microsoft Excel 2010 and data was analyzed.

RESULTS

Sociodemographic Characteristics

Of the 447 respondents, 60.17% (n=269) females and 39.82% (n=178) males. Majority were from Rest of Maharashtra (80.30% n=259) followed by Marathwada (14.34% n=64) and Vidharbha (5.36% n=24). 31.77% (142) students were from clinical phase and 68.23% (305) from preclinical phase.

Awareness regarding COVID-19 (As shown in the figure)

Of the 447 respondents, 62.63% (n=280) respondents secured a score in the range of 5-10 out of total 15 points, while 36.01% (n=161) participants scored in the range of 10-15. Rest of the participants 1.3% (6) scored in the range of 0-5. The awareness can hence be commented upon as being average among the responding population of 447 which was surveyed for this study.

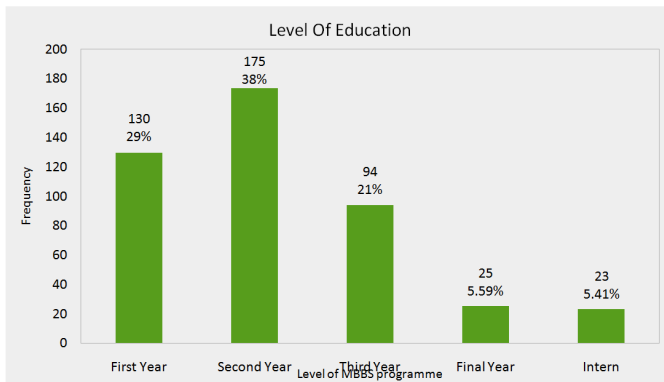


Figure 1 Level of respondents in MBBS programme (n=447)

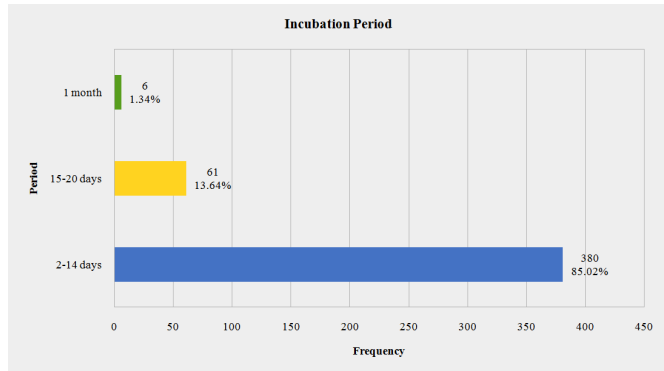


Figure 2 Awareness regarding Incubation period of the virus (n=447)

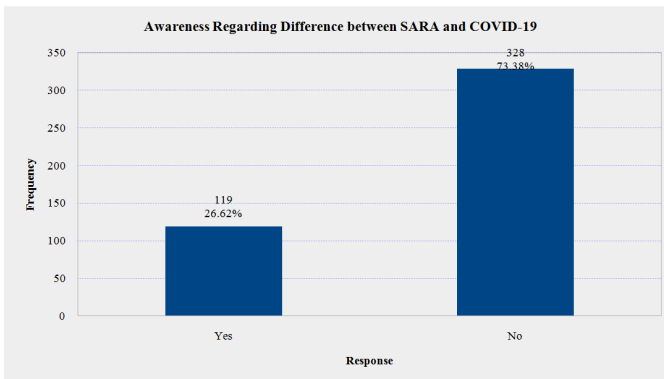


Figure 3 Awareness regarding difference between SARS and COVID-19 (n=447)

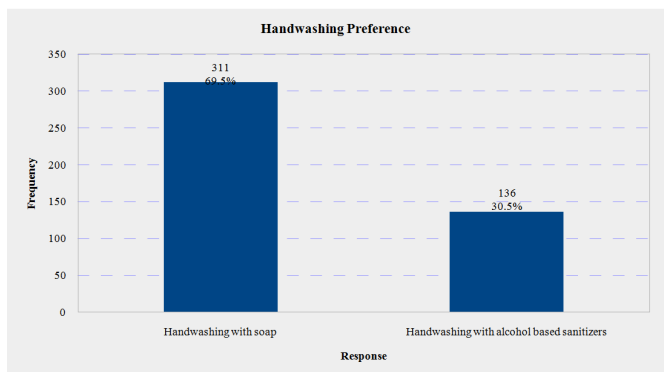


Figure 4 Handwashing Preference of the respondents- The participants were asked whether they would prefer using soap or alcohol based sanitizers to clean hands when they have soil and dirt on them.(n=447)

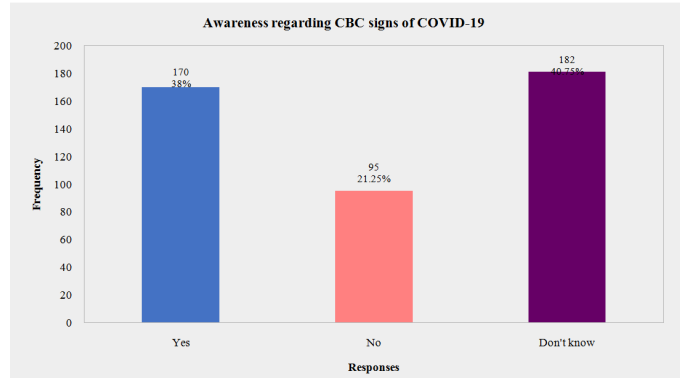


Figure 5 Awareness among respondents regarding signs of COVID-19 on Complete Blood Count(CBC); viz lymphocytopenia and leucocytopenia (n=447)

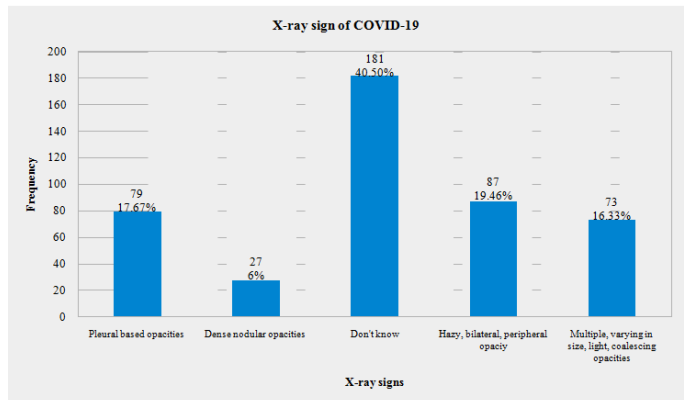


Figure 6 Awareness among respondents regarding signs of COVID-19 on X-ray (n=447)

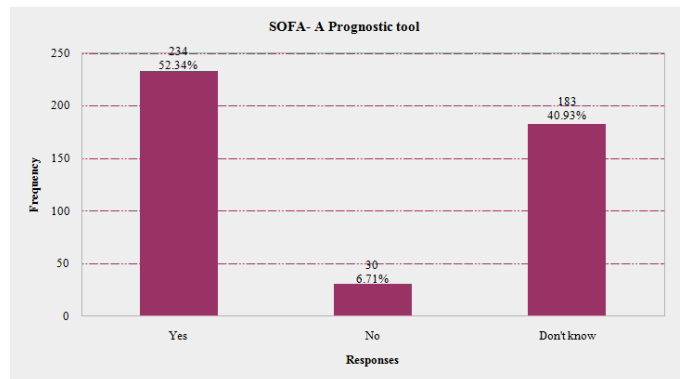


Figure 7 Awareness among respondents regarding use of Sequential Organ Failure Assessment (SOFA) score as a prognostic tool (n=447)

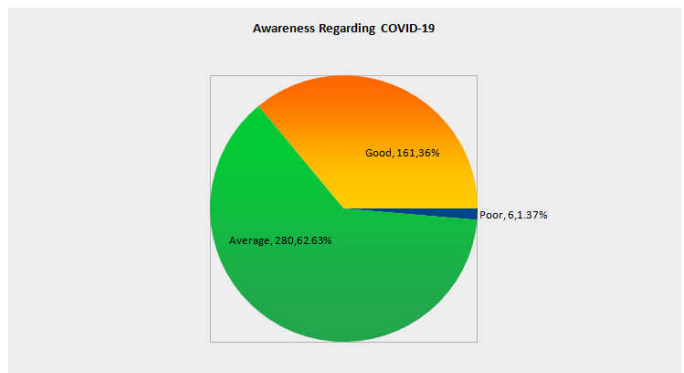


Figure 8 Awareness regarding COVID-19 (n=447)- The participants were asked 15 questions and the gradation was done as follows: A score of 0-5 was considered poor, 5-10 as average and 10-15 as good.

DISCUSSION

The COVID-19 infection, a ravaging illness, is spreading at an alarming rate across the globe. COVID -19 is a deadly virus, It has a mutant risk. If it had an air borne spread, then its control would have been very difficult, but as the spread is by droplets the containment measure are good and effective. Social isolation is a primary prevention for the spread.

This study, aims at understanding the level of awareness among the population- our prima-facie amour against the disease, is an attempt to evaluate the knowledge of the population regarding various aspects of the nCOV and the pandemic. The study also aims at increasing awareness in the medical population which can help in curbing the spread of the disease.

Out of 381(85.23%) were aware of the incubation, to be 2-14 days. Of the 447 respondents 312(69.79%) knew that SARS and COVID-19 are two different entities and it was also noted that 411 respondents of the participating 447, were cognizant of the fact that there is no association between COVID-19 and cats. 415 (92.84%) respondents knew that in conditions where the temperature is 37° C for 120 minutes, the virus remains in infectious form, it's not killed. 73.37% (n= 328) participants were sure that the first positive case of COVID-19 in India was reported from Kerala which appears to be a good estimate of the high alertness of the population regarding the spread of the infection. It can hereupon be concluded, based on the above pattern of the responses, that medical students are well informed about basic information regarding the novel coronavirus itself, barring on fact only about which the medical personnel were relatively unapprised was that regarding the duration of survival of the COVID-19 virus on stainless steel, which is known to be 2-3 days

312 participants out of 447(69.79%) preferred washing hands with soap instead of sanitizers when their hand were soiled or had dirt on them. Also 276(61.74%) respondents were of the opinion that complete isolation of people who test positive for COVID-19 infection is prudent. Both these points reflect good apprehension regarding precautionary measures to be taken and of social distancing as a key to curb the spread of infection within the population.

The unawareness of 276 (61.74%) respondents towards signs of COVID-19 on a complete blood count (CBC) and that of 213 (47.65%) participants towards the fact that SOFA score can be used as a prognostic tool for the infection are in concert with the fact that there is sheer need of increasing the awareness regarding signs of the infection in the learning counter parts of our healthcare system. Only 87 of the 447 (19.46%) respondents were aware of hazy bilateral peripheral opacities being an x-ray sign of COVID-19 which reflects a poor level of awareness. Of the said respondents, 300 were in support of the fact that various co-morbidities (Diabetes mellitus, Chronic Obstructive Pulmonary Disorder and Cardiovascular Disorder) accounted for a poor prognosis, which suggests that there is good knowledge regarding even the factors influencing prognosis. In addition, 368 respondents were aware of the symptoms of the infection thereby signifying a good understanding of the symptomatology of the disease being present within the responding population.

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CONCLUSIONS

The overall awareness can be graded as being average (n=280). The awareness regarding certain parameters was found to be good (Incubation period, hand washing preferences), while MBBS students seem to be less aware about some aspects, which with proper measures, we could change that immediately.

By use of personal protection equipment and sanitization as primary prevention, spread can be controlled. For doctors selfcare is necessary and they can give health care to community provided they themselves have correct knowledge which should be accurate and scientifically correct.

Thus this finding of knowledge, attitude, practise can be adopted in teaching institute for all levels of health care workers. Its application is to improve knowledge based on correct scientific information. A healthier and more knowledgeable healthcare workforce will increase the health standard and awareness within the community and it will help to make people aware of the virus and in stopping the spread of the disease. This method is economical, less time consuming and has ease of doing.

Interventions and methods are required to be devised in order to increase awareness regarding signs of infection among medical students. Online webinars, conferences and interactive sessions could indeed go a long way in increasing the awareness. Increasing awareness about the lesser known facts regarding the virus, encouraging people to follow social distancing are of crucial importance in the fight against COVID-19 and would help drastically in curbing the spread of disease.

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