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ORIGINAL RESEARCH

Knowledge, Attitude and Practices regarding COVID 19 Infection among the Medical Students of a Tertiary Care Teaching Hospital of Eastern India

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Abstract

Background: COVID-19 caused by the SARS-COV-2; a novel corona virus is a highly contagious respiratory disease.

Objective: The Corona Virus disease 2019 (COVID-19) caused by the SARS-COV-2,a novel corona virus known as severe acute respiratory syndrome is highly contagious respiratory disease, transmitted by respiratory route. There is no specific treatment for COVID-19 and there is a constant need for updating knowledge since the related facts are evolving on day-to-day basis. Knowledge, Attitude, and practice (KAP) study was conducted among the medical students of a tertiary care hospital to assess their Knowledge, Attitude and practices regarding COVID-19.

As we never know how the novel virus may change its behaviour and pose a great public health problem to all in society where even the medical students may be one of the primary doctor and are provider.

Methods: A total no of 258 medical students from 3rd and 4th semester batch of SCB Medical College & Hospital were included in the study. They were provided with the predesigned questionnaire and their responses were collected by online survey keeping in view the COVID situation and minimizing the risk of viral transmission by paper being exchanging hands.

Results: Out of the 258 students 58% were from the 3rd semester and 42% from 4th semester, from them 99.22% do not have any previous training in COVID-19. Out of the 59.3% males and 40.7% females. 100% of students knew COVID-19 is a viral infection and transmitted by close contact with the infected person. About 96% knew that only patients with co morbid conditions progress to severe forms. Majority (96%) used mass media, Internet to update

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their knowledge 93% believed infected person should not donate blood while 88.7% were of the opinion the vaccination should not be given to pregnant ladies, Lactating mothers and children under 18 years of age. Majority (98%,) showed a positive response towards stringent lockdown, 94% gave the opinion that HCW should be immunized first with COVID Vaccination. Only 80% gave an optimistic response towards beneficial role of convalescent plasma therapy for managing moderately severe cases. Majority of medical students observed COVID appropriate behaviour that is to use masks (88%), sanitizer (94%) and observed social distancing (100%) supporting that the students showed expected levels of KAP regarding COVID-19.

Conclusion: The results of our study showed good, expected levels of knowledge regarding various aspects of COVID-19. As it is a novel virus and new concept are emerging every day, there is need to educate the Health care workers and students by regular training programmes, seminars and webinars in order to fight with this dreadful illness.

Keywords: Corona Virus, COVID-19, SARS-COV-2, rRTPCR, KAP study

Introduction

The Corona virus disease 2019(COVID-19) is caused by the SARS-CoV-2, a novel corona virus called Severe Acute Respiratory Syndrome Corona virus (SARS-CoV-2). It is a highly contagious respiratory disease, transmitted primarily by the respiratory route**.**[1]It was first identified in December 2019 in Wuhan, China. The emergence of COVID-19 was declared as a Public Health Emergency of International concern on January 30th, 2020. On 11th March 2020, it was declared as a pandemic by WHO.[2] This virus infects people of all ages. However, evidence to date suggests that two groups of people are at a higher risk of getting severe COVID-19 disease. These are older people (that is people over 60 years old); and those with underlying medical conditions (such as cardiovascular disease, diabetes, chronic respiratory disease, and cancer**.**[2] The presenting symptoms of this disease are fever, cough, shortness of breath, muscle pain, sorethroat, diarrohea, loss of smell, viral pneumonia and in severe cases multiorgan failure[3]. The virus is mainly transmitted by respiratory droplets and indirect contact**.**[4]

The time interval of exposure to onset of symptoms is between 2-14 days, with an average of 5 days.[5,6] The standard test to be conducted for the detection of the virus is reverse transcription polymerase chain reaction (rRT-PCR) from a nasopharyngeal swab[7,8]**.**Preventive measures to reduce the chances of infection include staying at home, wearing a mask in public, avoiding crowded places, keeping safe distance from others, ventilating indoor spaces, frequent washing of hands with soap and water and for at least 20 seconds, practicing good respiratory hygiene, and avoiding touching the eyes, nose, or mouth with unwashed hands. More people we come in contact, the more likely we are to be exposed to COVID-19. [9-12]

There is no specific, effective treatment or cure for coronavirus disease 2019 (COVID-19) as of now[13,14]**.** Thus, there is a constant need for updating knowledge.Since the facts about covid-19 are evolving on day-to-day basis, knowledge, attitude and practice (KAP)study is a useful survey methodology to assess the health care delivery which measures the knowledge, attitude, and practices of a community. It serves as an educational diagnosis of the community. It tells what people know about certain things, how they feel and how they behave.

Since medical students are one of the stake holders to implement and practice COVID 19 appropriate behaviour, the present study was taken up with the aim to assess the knowledge, attitude, and practice among the medical students of a premiere tertiary care teaching hospital of eastern India. with respect to SARS-CoV-2 infections and its prevention so that they can adhere to the different measures needed for controlling the spread of covid-19 infection.

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Material and Methods

Study design

This is a descriptive cross-sectional study.

Study Location

S.C.B Medical College and Hospital, Cuttack Odisha.

Study duration

Study conducted during the period from February 2021 to March 2021.

Ethical Clearance

Ethical clearance was taken from Institutional Ethical Committee. (IECAppln No-602 dated 11.02.2021.

Study participants

Study includes two batches of MBBS students namely third and fourth semester students at the institute.

Inclusion criteria

Third and fourth semester MBBS students of S.C.B. MCH.

Exclusion criteria

Students who were unwilling to participate in the study.

Study procedure

The study was conducted using predesigned and pretested questionnaire, which was developed based on thorough review of literature that included knowledge, attitude, and practice with regards to SARS-CoV-2 infection. We all are aware, the best way of prevention of COVID-19 is social distancing, so in the present study data was collected by online survey. The study participants were explained in detail the study objectives, the purpose of the study and KAP questionnaire, and were requested to give genuine response. Informed consent was obtained from each participant and confidentiality of their identity was ensured.
The questionnaire has four parts

1. Demographic profile of participants (4 questions)
2. Knowledge questionnaire (14 questions)
3. Attitude questionnaire (6 questions)
4. Practice questionnaire(6 questions)

Answering all the questions was mandatory . For questionnaires 2, 3 and 4 the response were to be given as true or false or I don't know options, where true was coded as 1, false was coded as 2, I don't know was coded as 3 and rest were assigned 0 point. For practice questionnaire there were only true or false responses.
Data collected was coded into the respective numbers and entered in Microsoft Excel sheet.

Statistical Analysis

It is a cross-sectional study and randomized simple sampling method is used. Sample size was calculated using the Population(N) are MBBS students of 3rd and 4th year. Confidence level is 95% and z score is 1.96.
SPSS version 23 and MS excel for data analysis was used. As the variables are in dichotomous form number (n) and percentage (%) are presented.

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Results

Out of 258 samples taken 58% are 3rd year MBBS students and 42% are 4th year MBBS students, from which 99.22% students do not have any previous training in COVID.

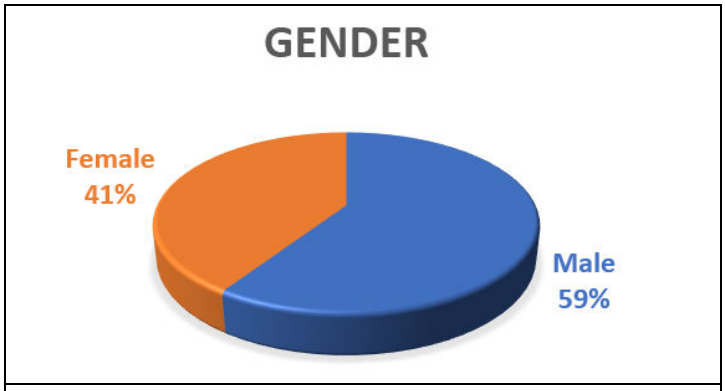

Figure 1- Gender of the participants

	N	Minimum	Maximum	Mean	Std. Deviation
AGE	258	19	29	21.36	1.284

Table 1- Age of the Participants in years

Table 1 is the age of participants in years.

Total number N is equal to 284 students.The minimum age of study participant was 19 years and maximum was 29 years, with a mean age ±SD was 21.36±1.

Gender	Number	%
Male	153	59.3
Female	105	40.7

Table 2- Sex of the Participants

Male students were 59.3% and female students were 40.7%.

Knowledge questions	True	False	I don't know
1. COVID 19 is a viral infection.	258	0	0
2. It is transmitted by close contact with the infectious person.	258	0	0
The main symptoms of COVID 19 are fever, dry cough and myalgia.	249(96%)	5	4
The virus spreads through respiratory droplets of infected persons	258	0	0
In case there is history of contact with infected persons, one should go for home isolation generally for 14 days.	246(95%)	6	6
6. Public places, meetings, gatherings, public transport should be avoided in order to prevent the spread of infection.	250(96%)	4	4
7. All cases of COVID 19 do not progress to severe infections, only patients having co morbid conditions progress to severe forms.	249(96%)	7	2

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8. There is no definitive cure for covid 19 infection.	254(98%)	4	0
Symptomatic supportive treatment is helpful in most of the patients .	254(98%)	0	4
Washing hands with soap and water and using face masks can help in the prevention of disease transmission.	250(96%)	2	6
11. Healthcare workers are at a higher risk of infection.	254(98%)	4	0
12. Infected patients should not donate blood.	240(93%)	2	16(6%)
13. Pregnancy ,lactating mothers and children less than 18years should not be vaccinated with covid vaccine.	229(88.7%)	8	21(8%)
. Were mass media, internet and other search engines ,the source of information and updates for covid19.	24896.1%)	4	6
Table-3 : Knowledge questions			

Table 3 Shows the results of the knowledge questions.

All the students had the knowledge that COVID 19 is a viral infection and transmitted by close contact with the infectious persons and spreads by respiratory droplets. Majority of the students knew that the health workers are at higher risk of infection and there is no definitive cure of COVID, and only symptomatic supportive treatment is helpful. Level of knowledge regarding symptoms of COVID is high. About 96% knew that only patients with co morbid condition progress to severe forms. Majority (96%) believed that the disease can be prevented by washing hands with soap and water and using face masks and avoiding public places, meetings, gatherings, and public transport. Majority (96%) utilized mass media, internet, and search engines to update their knowledge. 93% believed that infected persons should not donate blood, while 88.7% had this opinion that vaccination should not be given to pregnant ladies, lactatingmothers, and children less than 18 years.

Attitude questions	True	False	I don't know
Do you think covid 19 could be controlled to some extent by the the stringent lockdown and curfew in the selected zones and other guidelines issued by Indian government from time to time?	**255(98%)**	**3**	**0**
Do you think medical staffs need to be trained regarding the covid guidelines?	**255(98%)**	**2**	**1**
3 Do you think convalescent plasma therapy has got beneficial role in managing moderately severe covid 19 patients?	**207(80%)**	**40(15%)**	**11**
Do you think healthcare workers need to be immunised with covid vaccination first?	**244(94%)**	**12**	**2**
Do you believe that we will be able to control covid- 19 in future?	**219(84%)**	**35(13%)**	**4**
Would you prefer to keep the thing a secret, ifsomebody from your family become covid19 positive?	**143(55%)**	**100(38%)**	**15**
Table-4: Attitude questions			

Table 4 Presents attitude of medical students towards several queries.

Majority (98%) showed a positive response towards the stringent lockdown and other guidelines issued by Government of India for controlling COVID. 98% opined that medical staffs should be trained regarding COVID guidelines. 94% gave the view that health workers should first be immunized with COVID vaccination. Only 80% gave an optimistic response

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towards the beneficial role of Convalescent Plasma Therapy for managing moderately severe cases and 15% denied it. Only 80% showed a positive response towards controlling COVID in future, 13% were pessimistic towards it. 55% gave the opinion to keep the information secret if someone from their family comes out to be covid positive.

Practice questionnaire	True	False	I don't know
1. During covid 19 pandemic, have you followed the measures like social distancing?	258(100%)	0	0
2. Have you avoided unnecessary travelling during the pandemic?	251(97%)	6	1
Are you using gloves, masks, head caps and other personal protection equipments while working in the wards?	228(88%)	28	2
Do you carry a hand sanitizer with you always you move out?	245(94%)	12	1
Has the frequency of hand washing has increased now a days among your peer groups?	237(91%)	14	7
6. Has the frequency of offline meetings, gatherings, teachings, seminars etc have reduced during the pandemic?	249(96%)	9	0

Table-5: Practice questions

Table 5 Represents the practices followed by the medical students during COVID pandemic. All were following social distancing during the pandemic, and 97% students have avoided unnecessary travelling. 94% were carrying sanitizer with them while moving out. 91% reported that frequency of hand washing had increased during the pandemic. 88% were using gloves, masks, head caps and other personal protection equipment while working in wards. 96% agreed that frequency of offline meetings, teachings, seminars have reduced during the pandemic.

Discussion

COVID 19 gripped the world as a global pandemic, and all the countries are fighting with the disease. There is urgent need to take care of the health of many people. As such the health care workers are working for long continuous hours and are exhausted. There is a wide gap in the doctor is to population ratio in India. There comes the role of medical students whose services can be utilized, provided they have adequate knowledge, positive attitude, and practice with regards to COVID 19. During this crisis, the Indian health ministry has proposed to provisionally permit medical undergraduates of senior grades to treat COVID-19 patients**.**[15]So in the present study medical students were included, so that they can be a backup for the health care workers scarcity and reduce the doctor population ratio.

In the present study, 59.3% were males and 40.7%. were females. The minimum age of study participant was 19 and maximum was 29, with a mean age ±SD was 21.36±1. Out of 284 participants almost equal number of participants were from 3rd semester (58%) and 42% from 4th semester. 99.22% students do not have any previous training in COVID. Similarly in a study by Gahlot A et al [16] amongst medical students of Rama Medical College Kanpur (U.P), they found that out of 281 participants, 50.2% were males while (49.8%) were females; the majority of them 63.3% were ≥21 years old while only 36.7% were 17-20 years old. Almost equal number of participants were from 2018 (33.8%)and (33.5%)from 2019 batch rest 32.7% from 2017 MBBS Batch.

In a study by Vishwesh Agarwal et al[17] done in April 2020 had shown, that out of 616 undergraduates (age 21.5 years, 46.1% males) had recently completed (16.7%) or in the final year of their undergraduate training program (54.1%).

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Regarding the knowledge about COVID 19, majority of the participants in this study (96%) had correct knowledge about the main symptoms of COVID-19 whereas in the study of galhot et al it was 79.7%. In the present study 98% were aware that symptomatic treatment is helpful in recovering from infection. Whereas in the study of gahlot et al, 83.6% of the participants showed this response. In our study almost all the study participants knew the mode of transmission which is similar to the finding of Ambika Sharma[18]. In our study(96%) believed that the disease can be prevented by washing hands with soap and water and using face masks and avoiding public places, meetings, gatherings, and public transport whereas in the study of Gahlot et al ,88.7% were aware about the prevention and treatment of COVID 19. Similarly in a study by Modi et al [19], more than 75% of the responders were aware of the various infection control measures. In our study, 96.1% of study participants used mass media, internet and other search engines, the source of information and updates for covid19. Similarly in a study by M. Saqlain et al.[20] 87.68% of Health Care Workers used social media as their main source of information. 98% showed a positive response towards the stringent lockdown and other guidelines issued by Government of India for controlling COVID. Similarly in a study by Gahlot A et al, where 91% opined that covid 19 can be controlled by lockdown in major cities. In our study,80% showed a positive response towards controlling COVID in future which is comparable to study of Gahlot A et al where 73% showed similar attitude. The percentage of following all the preventive practices is very high in our study, which is similar to the study by Taghrir et al.[21]where 94.47% medical students answered yes for practicing preventive behaviour.

Conclusion

The results of our study were favourable, yet there is a need to update our knowledge regarding various aspects of COVID -19 as it is a novel virus and new concepts are emerging day by day. The medical students in Cuttack showed expected levels of knowledge, attitude and practice regarding COVID-19. As for information most of the students used mass media communication, so they should be properly guided to use the authentic sources of information during these times. To educate the health care workers and students, training programmes, seminars, webinars should be conducted regularly in order to fight with this dreadful disease.

Conflict of interest

None.

Sources of funding

None.

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