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Knowledge, attitude and practices associated with COVID-19 among undergraduate medical students of Rajasthan

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ABSTRACT

Background: COVID-19 is a pandemic that has taken over the entire world and its KAP is important for medical students in order for them to be well-versed future health workers. To evaluate the adequacy of knowledge of medical students to deal with the ongoing pandemic and their attitudes and practices towards the prevention and control of the pandemic.

Methods: A KAP study was conducted in the Undergraduate Medical Students of Rajasthan. A questionnaire was sent via Google forms through social media platforms to the participants. Statistical analysis done by ANOVA, student t-test

Results: The mean \pm SD scores attained for knowledge, attitude and practices were 6.63 ± 1.447 , 16.45 ± 2.589 . The scores attained by different age groups, batches, colleges and genders were comparable. The knowledge of the students in regard of main symptoms (98.8.%), mode of spread (92.53%), time taken for the manifestation of the disease (97.35%) and precautions to prevent the spread of the virus (99.02%) is satisfactory, however, regarding the type of mask WHO advices for the general people in areas of widespread transmission with limited capacity for implementing control measures (31%), whether a COVID-19 positive mother should breastfeed her new born (43%), the knowledge isn't adequate. 86% of the students are confident about being able to take care of symptoms. 72% students are positive about working as frontline workers.

Conclusions: Positive attitude and practices are seen in medical students of Rajasthan, the knowledge is adequate and they can be a vital asset to spreading awareness about COVID-19.

Keywords: Attitude, COVID-19, Knowledge, Medical students, Practices

INTRODUCTION

Corona Virus disease-19 (COVID-19) is a respiratory illness which has given rise to a worldwide ongoing pandemic and its causative agent is a positive sense single stranded RNA virus known as SARS-CoV2 (Severe Acute Respiratory Syndrome Corona Virus-2). It is spread in the community through respiratory droplets

from one person to another. The common symptoms include fever, cough, fatigue, shortness of breath, and loss of smell and taste. As of today, no vaccine has been approved for the prevention or treatment of the disease yet, according to World Health Organisation. It was first identified in Wuhan, China in December, 2019 and has since spread throughout the world. The WHO declared it as a pandemic on 11 March 2020.

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The first case of COVID-19 in India was identified on 30th January, 2020 while the first case in Rajasthan was reported on 2nd March, 2020. As of today, the number of cases in India is more than 1.5 million, while the number of fatalities is more than 35,000.² The case fatality of COVID-19 in India is at 3.17% which is better than the world case fatality at 5.16%. India, the second most populous country in the world with a population of 1.352 billion, according to the 2019 revision of the world Population Prospects is the worst hit Asian country by the pandemic while it stands as the 3rd most affected country worldwide in the number of cases.³

Starting on 24th March, 2020, a 21-day lockdown was imposed that limited the movement of a population of a billion people in order to decrease the spread of the disease while the number of cases were approximately 500. The lockdown consisted of measures such as: Banning people from stepping out of their homes unless for essential services; closure of services barring essentials like hospitals, pharmacies, Grocery stores, etc.; Closure of places of worship, suspension of educational institutions such as schools, colleges and research institutions; Closure of Private and commercial establishments (only work from home allowed). The lockdown was further extended in 3 more phases extending till 31st May, 2020 after which a phased manner of resumption of the above activities was started from 8th June, 2020 and termed as "Unlock 1.0", while in containment areas, the lockdown continued. With various services being allowed to resume, there is a need for the safety measures, such as use of face shields, masks, good hand hygiene, social distancing to be followed in order to prevent spread of the virus. According to a study by ICMR, the adherence to social distancing measures would reduce the incidence of new cases by 62% and thus cause the flattening of the epidemic curve and thus spread cases over a longer duration than in the case with no adherence to this practices.4

As this disease is still at a stage where it is being studied, there are a lot of myths related to its spread and many facts are being changed with new discoveries. The opening of many establishments has led to a steady rise in the daily number of cases. With this, few states have started including final year medical students as part of their COVID-19 dealing workforce, thus this study evaluates the knowledge of medical students to deal with the ongoing pandemic in case of an all hands on deck condition arises requiring medical students to step up for dealing with the pandemic. The study assesses the attitude of the medical students, as they have been forced to stay at home as medical colleges like other educational institutions has been on a standstill since the lockdown started and the only means of education has been through online platforms depriving students of practical classes and ward postings; and their practices regarding the adherence to social distancing protocols required to limit the spread of the virus.

METHODS

The cross sectional study was done between 1st and 20th June just as "Unlock 1.0" was commencing. The study population consists of medical students ranging from 2015 batch (medical interns) to 2019 batch (first year students). The selection criterion for the sample was only the inclusion of medical students of five batches in medical colleges across Rajasthan. A questionnaire based survey was conducted. Since it was not feasible to do a sampling survey in person due to the pandemic, an online survey was done. The questionnaire was self designed along with some help from published literature.^{5,6} "Google Forms", an online platform that allows users to make and conduct surveys, was used for the responses to be submitted. The link to the questionnaire based survey was sent to the author's network of contacts through online social networking platforms such as "Whatsapp" and "Facebook".

The questionnaire consisted of three parts. The first part was the demographics part which included the variables: Name, age, gender, college and batch of the medical student. The second part included the knowledge assessment which consisted of 10 questions in form of multiple choices with three options with one correct answer among them that followed 2020 WHO guidelines regarding COVID-19 and/or CDC guidelines for COVID-19.^{1,7} The third part included the attitude and practices assessment which consisted of 10 questions in form of multiple choices with three options which signified a positive, neutral and negative attitudes. The Knowledge part, consisting of 10 questions was calculated on the basis of 1 score on correct answer and 0 for incorrect answer. The Attitude and Practices part consisting of 10 questions was calculated on basis of 2 score on positive response, 1 score for neutral response and 0 score for negative response. This gave a total Knowledge score of 10, Attitude and Practices score of 20, and thus a total score of 30. The data was analyzed using SPSS version 20.0. The sample was compiled in form of Mean and standard deviations and the categorical data were converted to frequencies and percentages. The analysis was done by ANOVA for the batch wise comparison while t-test was used for the comparison between gender; and our college and other colleges. The statistical significance was set at p<0.05.

RESULTS

The total number of participants in the survey was 415. Out of these, 203 (48.9%) were females while 212 (51.1%) were males (Table 1). The number of entries from our college was 362 (87.22%) while the entries from other colleges were 53 (12.73%). The batch wise distribution is as follows: Batch 2015 (Intern year) – 42 (10.12%), Batch 2016 (Fourth Year) – 85 (20.48%), Batch 2017 (Third Year) – 69 (16.62%), Batch 2018 (Second Year) – 91 (21.93%), Batch 2019 (First Year) – 128 (30.84%).

Table 1: Demographic representation of the survey.

	Gend	Gender					
Batch	Fema	Female					
	N	%	N	%			
2015	22	52.4	20	47.6			
2016	34	40.0	51	60.0			
2017	37	53.6	32	46.4			
2018	57	62.6	34	37.4			
2019	53	41.4	75	58.6			
Total	203	48.9	212	51.1			

Knowledge

The result of the knowledge survey has shown that the knowledge of the students in regard of main symptoms (98.8.%), mode of spread (92.53%), Time taken for the manifestation of the disease (97.35%) and precautions to prevent the spread of the virus (99.02%) is satisfactory, however, some information that wouldn't be considered general, such as the type of mask WHO advices for the general people in areas of widespread transmission with limited capacity for implementing control measures (31%), whether a COVID-19 positive mother should breastfeed her new born (43%) hasn't been upto mark.

Attitude and practices

A high percentage of students have shown a positive response in terms of attitude as well as practices. 86% have said that even though they are worried, they are confident of protecting themselves by applying preventive health measures. 67% are positive that even though the situation is grim, they believe there are better times in the future while 27% prefer not going through social media and news because of the constant rise of cases. It has been observed that only 25% of the students are able to study diligently while 47% and 28% students have said that they try to study as and when possible, and haven't studied much during the lockdown, respectively. Even with the adversities of the job, 72% students are positive about working as frontline workers if required.

Since the main preventive measures include maintaining social distance and wearing mask, 76% ALWAYS wear mask and maintain social distancing while 22% have mentioned that they follow these measures most of the times. 86% of the students are confident about how the symptoms are to be managed if they develop the same, 10% say that they would pay no attention to the symptoms while 4% feel that they wouldn't know what to do. 76% of the students would try to get back to normal life once the situation is under control while still following preventive measures while 11% are wary about how the regular life is going to work out.

Analysis of KAP scores with respect to demographics

Table 2 describes the comparison between male and female gender of the Knowledge, Attitude and Practices scores. The knowledge scores of males seem to be

slightly higher than females while the attitude and practices scores of females seem to be slightly higher than males. However, the p value is not <0.05, thus the difference do not seem to be statistically significant.

Table 2: Comparison of knowledge, attitude and practices scores between male and female gender.

	Female (N=203)		Male (N=212)		P	
	Mean	SD	Mean	SD	value**	
Knowledge score	6.56	1.386	6.70	1.503	0.337	
Attitude and practices score	16.50	2.650	16.40	2.534	0.704	
Total score (out of 30)	23.06	3.140	23.10	2.973	0.894	

Table 3: Comparison of knowledge, attitude and practices scores between MBBS batches.

		N	Mean	Std. Deviation	P value*	
	2015	42	6.81	1.38		
	2016	85	7.09	1.29	0.001	
Knowledge	2017	69	7.06	1.54		
Score	2018	91	6.62	1.53	0.001	
	2019	128	6.05	1.25		
	Total	415	6.63	1.45		
	2015	42	15.98	2.77		
Attitude and Practices	2016	85	16.60	2.35	0.483	
	2017	69	16.71	2.52		
	2018	91	16.60	2.60		
Score	2019	128	16.25	2.71		
	Total	415	16.45	2.59		
	2015	42	22.79	3.03	0.003	
Total Score	2016	85	23.69	2.78		
	2017	69	23.77	3.28		
	2018	91	23.22	3.03		
	2019	128	22.30	2.98		
	Total	415	23.08	3.05		

^{*}ANOVA test

Analysis of KAP scores with respect to batch

Table 3 describes the comparison between MBBS batches 2015 through 2019 of the knowledge, attitude and practices scores. The Knowledge scores are higher for 2015, 016 and 2017 batch (Interns, Final Year and Third Year students) as compared to 2018, 2019 batch (Second Year and First Year Students) which might simply be because of the greater exposure to clinical aspect of medicine, greater zeal to attain knowledge regarding the disease because of the possibility of the same being asked in their upcoming exams for the former. The differences are statistically significant since p=0.001. While there has

been a significant difference in regard of knowledge, it seems that the attitude and practices are comparable across various batches due to the social awareness about the disease.

Analysis of KAP scores as a comparison between colleges

Table 4 describes the comparison between the students of Our college and other college in regards of the Knowledge (p value=0.001), Attitude and Practices scores (p value=0.009). It is seen that Knowledge is higher for other colleges, while Attitude and Practices scores are significantly more in ours. In order to improve the Knowledge of students of our college, there needs to be additional workshops and classes to increase awareness regarding this topic.

Table 4: Comparison of knowledge, attitude and practices scores between our college and other college students.

	Our college (N=362)		Others (N=53)		P value*
	Mean	SD	Mean	SD	*
Knowledge score	6.50	1.38 3	7.51	1.577	0.001
Attitude and practices score	16.57	2.29 3	15.58	3.997	0.009
Total score (out of 30)	23.08	2.75 9	23.09	4.617	0.970

^{**} Student T test

Table 5: Knowledge, attitude and practices scores for the study.

	N	Mean	SD
Knowledge score	415	6.63	1.447
Attitude and practices score	415	16.45	2.589
Total score (out of 30)	415	23.08	3.052

DISCUSSION

In the study, the knowledge, attitude and practices of the students of medical colleges of Rajasthan were assessed towards COVID-19 post lockdown. Table 5 shows that mean Knowledge score was 6.63 out of 10 and the mean attitude and practices score was 16.45 out of 20, showing that the knowledge, attitude and practices of medical students although appreciable, can still be improved. There was no significant difference in the scores when compared between the genders which in a similar study done in students of Doon Medical College, Dehradun showed that the practice scores were affected by gender.⁸

Another study done on medical students of Lucknow, showed that nearly 70% students were reluctant to attend clinics from fear of getting infected or passing on to others, while in our study, 72% students are positive

about working as frontline workers, if required.⁹ The difference in result may possibly be attributed to the fact that the study was conducted earlier as compared to ours while the virus was still new and not much was known about it, leading to greater fear about it in the minds of the survey participants.

A comparison made with a study conducted in Hubei, China shows that nearly all of the participants (98.0%) wore masks when going out in recent days while in our study, 76% mentioned that they always wore mask and maintained social distancing while 22% have mentioned that they followed these measures most of the times, but not always. ¹⁰ The difference may be credited to the fact that Hubei being one of the earliest places affected has dealt with the pandemic for a longer period of time and more people have been directly affected by it.

Exclusive Breast feeding is recommended by WHO for mothers who are suspected or confirmed cases of COVID-19. In our study, 43% of the participants had replied in affirmative of this fact. In a study done on general public of India, the percentage of people who had this knowledge was 15%. In A reason for this disparity is probably because of the medical knowledge of medical students obviously being higher than that of general public.

Limitations include the sample size being limited to medical students of Rajasthan. Another limitation maybe due to report bias as the survey was filled individually, thus the participant may inaccurately produce information.

CONCLUSION

In conclusion, Positive attitude and practices are seen in medical students of Rajasthan and the knowledge is adequate. This study may be used as an indicator for increasing the KAP of medical students as well as the general public through them since in order to contain this pandemic, the whole country needs to step up and follow preventive measures.

Although the government has been making a lot of efforts to spread awareness, special awareness programs and workshops can be introduced for medical students and henceforth, a chain of information can be started using them as an easy yet cost effective method of increasing the awareness in general population.

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Institutional Ethics Committee

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