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A questionnaire based study to assess the knowledge, attitude and practices on COVID-19 amongst medical students

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Abstract:
Background*: :Assesment of Knowledge attitude and practices of medical students of 2nd year and final year students toward COVID 19 infection are essential for explaining students adherence for preventive measure to control spread of covid infection. Also this information can be utilized for appointing various duties during covid crisis to medical students.*
Aim*:-To assess the knowledge, attitude and practices of MBBS students regarding COVID-19.*
Objective*:-1.To determine difference in the knowledge, attitude, and practices of regarding COVID-19 between 2ndMBBS and final MBBS students.*
2.To assess awareness and health behaviour related to COVID-19.
Materials and Methods
The study was conducted using an online questionnaire disseminated to all students in 2nd and final MBBS, via Google forms.we included 100 students from each group.The data collected will be analysed usinng microsoft excel .We will calculate knowledge score , attitude score and practice score of 2nd and final year MBBS students. We till compare these score by calculating p value.
Results*: After analysing response of Knowledge attitude and practice questionnaire from both the group, there was significant difference in knowledge and attitude between 2nd year and final year MBBS students. The average Knowledge score was calculated 7.5±1.02 and 7.82±0.88, the average Attitude score was 5.3±0.9 and 5.43±0.7 and the average Practice score was 8±1 and 7.84±1.74, for 2nd year and final year respectively.*
Conclusion:*. In this study, after analysis we can conclude that final year MBBS students have better knowledge and attitude in comparison to 2nd year MBBS students.*
Key Word*: knowledge, attitude, practices, COVID-19, Medical students*

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I. Introduction

In late December 2019, a number of cases of pneumonia-like disease caused by a new coronavirus were reported in Wuhan, China. and named coronavirus disease 2019 (COVID-19) by the World Health Organization (WHO).The virus is a member of the coronavirus family that are zoonotic pathogens, i.e. viruses that cause and transmit illnesses between human and several animal species such as cattle, camels, cats, and bats.{1}

The SARS-CoV-2 virus is similar to Middle East Respiratory Syndrome coronavirus (MERS-CoV) and Severe Acute Respiratory Syndrome coronavirus (SARS- CoV), which have their origins inbats.{2}

The presentation of the disease can range from mild symptoms like common cold tosevere acute respiratory syndrome (SARS CoV- 2), which presents with symptoms like fever, cough, shortness of breath, muscle pain, sputum production, sore throat, diarrhoea, abdominal pain and loss of smell. With increase in severity, it can lead to viral pneumonia and multi-organ failure. This virus spreads through respiratory droplets and by close contact from people to people.{3}

Soon after the first case report, COVID-19 has rapidly spread across the world and was declared a global pandemic on March 11, 2020, by the World Health Organization (WHO) [4]. Ever since, knowledge regarding this new disease has been constantly evolving. A lot of false information has been circulating on social media, influencing a vast majority of the population, including medical students, in their attitude and practices regarding COVID 19.

The most effective way of preventing transmission has been strictly following the preventive measures. This study was conducted with an aim to evaluate the knowledge, attitude and perception about COVID 19 and its preventive measures, amongst medical students.The third MBBS part 2 students are expected to have better

knowledge and understanding of the disease vis-à-vis the second MBBS students, since the former will soon be directly involved in the treatment of patients. The study also aimed to determine how different or similar the knowledge, attitude and practices of MBBS students are, between two years.

II. Material And Methods

Sample and Data Collection

This cross-sectional survey was conducted among the medical students at our teaching hospital, in Pune (Maharashtra), from 1st September to 30th November 2020, the 3 months of the 2nd unlock period of India. The study was conducted using a questionnaire validated by review within the department. The questionnaire was disseminated to all students in second MBBS and final MBBS. Keeping the idea of social distancing in mind, data was collected by means of an online survey using Google forms, instead of conducting a community-based survey. Ethical clearance was taken from the institutional ethical committee. The study participants were informed about the details of the study objectives for filling the questionnaire and confidentiality at the beginning of the survey, and informed consent was obtained from each participant. All participants were informed that their identity will be kept confidential and the results will be used only for research purposes.

A questionnaire was designed and validated within the department to collect details of the participants' profile along with KAP towards COVID-19. The questions were established on the basis of published literature regarding COVID-19 and the authors' experience of KAP. After preparation of the questionnaire, it was sent to experts for their inputs regarding the validity of the questionnaire followed by a small pilot study to test its simplicity and difficulty. However, the results of the pilot study were not included in the actual samples used for the study. The first part of the questionnaire covered information of the participants' profile and the second part contained questions for KAP assessment. Participants' profile variables included age, gender and MBBS batch (as per year of admission in the institution). The self-designed questionnaire comprised of 10 questions regarding knowledge, 06 for attitude, and 10 for practice. Knowledge questions mainly dealt with the participants' knowledge regarding clinical symptoms, transmission routes, prevention, prophylaxis and control of COVID-19. These questions were responded on a yes/no basis with an additional "May be" option. The true answer was assigned with 1 point and false/I don't know answers were assigned with 0 point. Higher scores represented a better knowledge of COVID-19. Similar options were assigned for the questions related to attitude while only two options namely 'Yes' and 'No' were assigned for the questions related to practice towards COVID-19.

Statistical analysis

Statistical analyses were performed using SPSS, version 22. Knowledge, attitude, and practice measurement data was expressed as mean ± SD and categorical data was expressed as frequency and percentage. Parametric test (independent samples t-test) was used for comparison between different groups of the participants. Comparisons of KAP scores among the students with respect to gender and age group are done using independent samples t-test, as appropriate. The statistical significance level of the test was expressed as ($p=0.05$).

III. Result

The study population was 2nd and final MBBS students of our teaching hospital. Out of which there were 80 males and 20 females in 2nd MBBS, 82 males and 18 females in final MBBS.

Knowledge

The result of the knowledge survey is presented in Table 1. 91 percent of the participants in 2nd MBBS had accurate information about the clinical symptoms of COVID 19 disease, whereas it was 100 percent in final MBBS students. However, 77 percent of 2nd year students were of the opinion that COVID-19 infection is mostly asymptomatic in comparison of 98 percent of final year students. 93 percent of 2nd MBBS were aware that COVID-19 spread by droplet infection whereas 100 percent final MBBS students were aware of this fact.

93 % of 2nd MBBS and 98% of final MBBS were aware that social distancing is an effective method of prevention. Awareness regarding the effect of prophylactic medication to prevent COVID- 19 was noted in 38 % of 2nd MBBS and 56 % of final MBBS students. Maximum student of both years showed correct knowledge that the risk of severity is high in certain group of patients. Knowledge regarding effectiveness of remdesvir and tocilizumab drug in treatment of COVID-19 was noted in 68% of 2nd MBBS and 88% percent of final MBBS students.

Table no 1 : Shows Response of knowledge questionnairesby 2nd MBBS and Final MBBS students.

S.No	Questionnaire	Response 2nd MBBS			Response final MBBS		
		yes	No	Maybe	Yes	No	Maybe
1	The main symptoms of COVID-19 are fever, dry cough, body ache and breathlessness.	89	02	07	100	0	00
2	COVID-19 can be asymptomatic.	75	10	15	98	0	02
3	All persons contracting COVID-19 do not develop severe illness.	86	04	10	93	04	03
4	COVID-19 spreads through droplet infection.	93	02	05	100	0	0
5	Social distancing is an effective method to prevent transmission.	93	03	04	98	01	01
6	Prophylactic medication is effective in preventing COVID-19.	38	27	35	56	19	25
7	The risk of severity increases in certain groups.	98	0	02	100	0	0
8	High risk groups include	98(all of the above)	02 old age	0	95(all of the above)	05(old age)	-
9	Remdisivir and Tocilizumab are drug effective in curing COVID-19	68	08	24	88	02	10

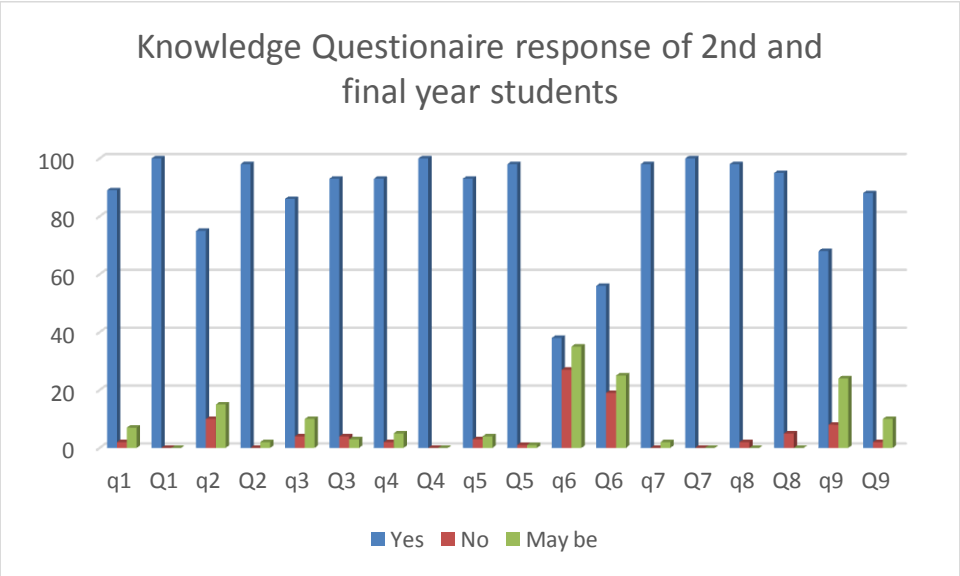

FIG 1 :-Illustrates Answer of Knowledge questionnaire by 2nd year and Final year MBBS students (q1-q9 = Questionnaire response of 2nd year students Q1-Q9 = Questionnaire response of Final year students)

Table 2:-Shows Response of Attitude questionnaires by 2nd MBBS and Final MBBS students.

S.No	Questionnaire	Response 2nd MBBS			Response final MBBS		
		yes	no	No opinion	yes	no	No opinion
1	Awareness regarding COVID-19 is insufficient.	59	28	13	65	24	11
2	If a vaccine is available, people should get vaccinated compulsorily.	79	15	06	90	04	06
3	Restrictions should be placed on political rallies & religious gatherings	98	01	01	99	0	01
4	In the wake of rising cases, lockdown and movement restrictions should be placed in cities.	92	02	06	93	04	03

5	Persons who came in contact with COVID-19 positive patients, should be isolated.	96	01	03	96	0	04
6	Test, trace and isolate are effective ways to reduce spread of COVID-19.	99	0	01	99	0	01

Table 2 shows the results of the survey related to attitude of both groups. 59 % of 2nd MBBS and 65% of final MBBS students felt that the awareness regarding COVID 19 infection was insufficient in society. Majority were of the opinion that the isolation of COVID-19 positive patients and restriction of gatherings could possibly control the spread of virus. However only 79 percent of 2nd MBBS student have positive attitude towards compulsory vaccination in comparison to 90 percent of final MBBS students.

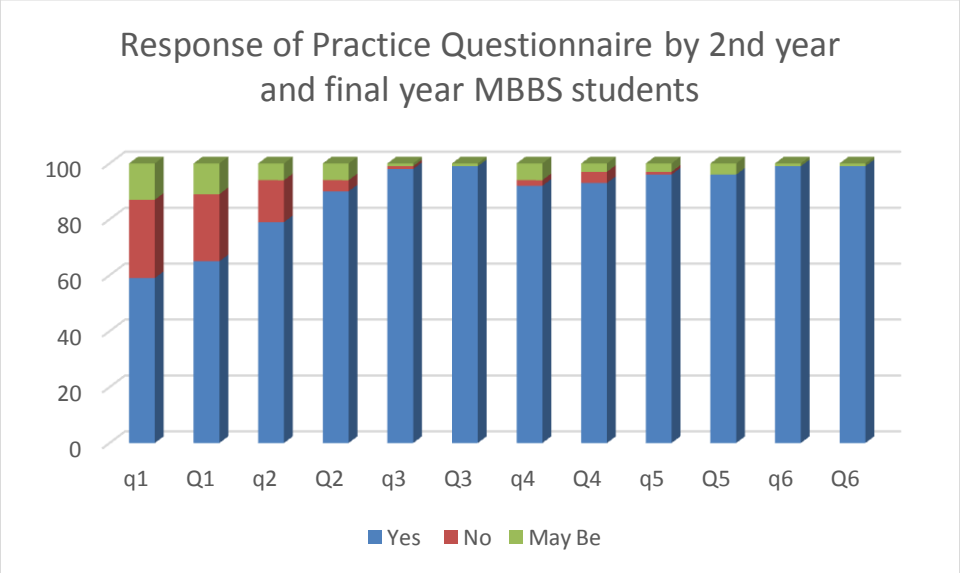

Fig 2 :- Illustrates Response of Practice questionnaire by 2nd year and Final year MBBS students (q1-q6 = Questionnaire response of 2nd year students Q1-Q6= Questionnaire response of Final year students)

Table 3:-Shows Response of Practice questionnaires by 2nd MBBS and Final MBBS students.

S.No	Questionnaire	Response 2nd MBBS			Response final MBBS		
		Yes	No	Maybe	Yes	No	Maybe
1	I avoid stepping out of my home/accommodation unless absolutely necessary.	93	02	05	80	09	11
2	I always step out with masks on.	97	01	02	96	0	04
3	I avoid greeting with handshakes/hugs.	87	07	06	87	05	08
4	I avoid public transportation.	95	0	05	93	07	0
5	I avoid social gatherings/parties	84	07	09	83	10	07
6	I avoid consumption of food from outside	57	30	13	44	32	24
7	I frequently sanitize/wash my hands.	93	05	02	91	03	06
8	I take vitamin supplements	30	64	06	18	69	13
9	Have you been vaccinated? If yes, how many doses? If no, state reasons why.	98	02 0ne dose		100(2 doses)	0	0
10	What is your main source of COVID-19 related information?	37 (NEWS)	22(Med jrnl) 07(F&F)	34 (social media)	42 (NEWS)	15(Med jrnl) 04(F&F)	39 (social media)

Table 3 presents preventive practices of the participants during the COVID-19 pandemic.93% of 2nd MBBS students avoided stepping out of home/accommodation unless absolutely necessary in comparison to 80 percent of final MBBS. Majority from both the terms wear masks whenever stepping out. Majority among both the term avoided handshake and hugs, public transport and public gatherings.57 percent of 2nd MBBS and 44 percent of the final MBBS students also avoided food consumption from outside. Also, majority of the students carry hand sanitizers. 30 percent of 2nd MBBS student started taking vitamin, whereas only 18 percent of final MBBS student started it. All the students in both groups were vaccinated.

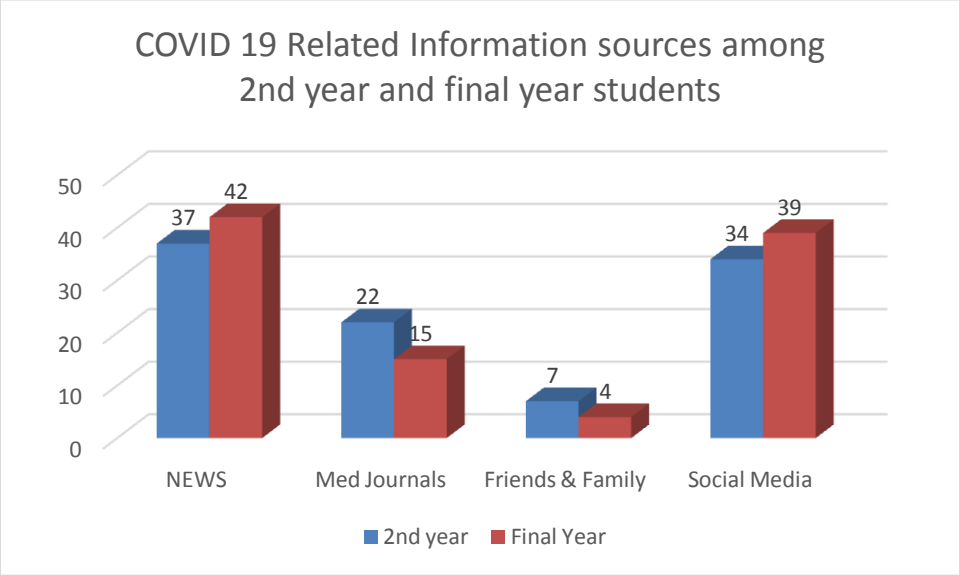

Fig 4 Illustrates various sources of information related to COVID 19 among 2nd year and 4rth year MBBS students

Table 4:-Mean with standard deviation of Knowledge, Attitude and practice score comparision between 2nd year and final year MBBS students.

Variable		Knowledge score		Attitude score		Practice score	
	N	Mean±SD	P value	Mean±SD	P value	Mean±SD	P value
2nd MBBS	100	7.5±1.02	0.009	5.3±0.9	<0.001	8±1	0.22
final MBBS	100	7.82±0.88	Significant	5.43±0.7	Highly significant	7.84±1.74	Not significant

Table 4 shows knowledge, attitude and practice score of MBBS students of 2nd MBBS and final MBBS. After statistical analysis, mean score of knowledge among 100, 2nd MBBS and final MBBS students were noted as 7.5±1.02 and 7.82±0.88 respectively. The mean score of attitude among 100 2nd MBBS and final MBBS student was noted as 5.3±0.9 and 5.43±0.7 respectively. Regression analysis showed significant difference in Knowledge and attitude among 2nd MBBS and final MBBS students. The mean practice score among 100 2nd MBBS and final MBBS student was noted to be 8±1 and 7.84±1.74 respectively with no statistically significant difference, with p value of 0.22.

IV. Discussion

In this study, the knowledge, attitude and practice regarding COVID 19 was analysed in 2nd year and final year MBBS students. The number of students participated in 2nd year and final year were 100 each. We calculated Knowledge score, Attitude score and Practice score in both the groups. We found that there was significant difference between 2nd year and final year student regarding knowledge and attitude score, however there was no significant difference in practice score.

During the crisis of COVID pandaemic Indian health ministry had proposed to provisionally permit medical undergraduate to treat COVID 19 patients.{5}

Many countries were left with this option of accepting medical undergraduates as their option for treating COVID 19 patients in various emergency and non-emergency situations, to cover the acute shortage of doctors in different countries.{6}

Hence we included 2nd year and final year students in our study to see knowledge attitude and practices by these two groups, so that best strategies can be prepared as per the competency of these

undergraduates. Since appropriate information regarding pathogenesis, management and prevention of COVID 19 is very limited, it is very essential to provide appropriate knowledge to particular year of students, which will be more relevant in dealing this pandemic.

In our study, regarding Knowledge of COVID related symptoms, final year students have high level of understanding in comparison to 2nd year students with a significant difference in knowledge score between them (p value of 0.009). This difference may be because of more clinical exposure due to rotation in the various departments in final year MBBS.

Taghrir et al{7} served in Iran , Joshi et al{8} in Telangana state of India showed that majority of participants in the medical fraternity had high level of understanding regarding the novel disease.

In our study 98 % of 2nd year MBBS student and 100 percent Final year students were aware that co morbidity is a major risk factor in COVID 19 cases. In comparison the study conducted by Arash Nemat et al{9} more than three quarters (80%) of study participants knew that patients with underlying chronic illnesses are at higher risk of getting COVID-19.

Similarly, in a study conducted among students of the University of Sharjah, >80% of the students were able to identify the elderly and those with comorbidities as being at higher risk of getting COVID-19.{10}

Another study conducted among medical students in India reported that 40% of participants knew that persons with comorbidities were more prone to COVID-19.{11}

Awareness regarding the effect of prophylactic medication to prevent COVID- 19 was noted in 38 % of 2nd MBBS and 56 % of final MBBS students. Knowledge regarding effectiveness of remdesvir and tocilizumab drug in treatment of COVID-19 was noted in 68% of 2nd MBBS and 88% percent of final MBBS students.

In reference to prophylactic medication the knowledge of final year students was significantly higher than 2nd year MBBS students. One reason may be that the final year students felt like they need to be better prepared for the pandemic since they would soon start treating patients during their internship. Also, final year students generally tend to be prepared with such knowledge from an academic perspective too, in preparation for their upcoming exams and viva voce. Similar observation was made in a study done in 2017 by Meghna et al, where interns were found to have better awareness regarding cardiovascular-pharmacology, drugs in emergency use as well as chemotherapy.{12}

David R et al published in 2021, regarding the knowledge on use of tocilizumab in COVID-19, 69% final year MBBS students (n=200) and 70.7% interns (n=116) scored right, and about antiparasitic drugs in the prophylaxis, 53.5%, 107 (n=200) final year MBBS students and 69.8%, 81 (n=116) interns answered correctly ($p<0.004$).{13}

Attitude

Table 2 shows the results of the survey related to attitude of both groups. 59 % of 2nd MBBS and 65% of final MBBS students felt that the awareness regarding COVID 19 infection was insufficient in society. Majority were of the opinion that the isolation of COVID-19 positive patients and restriction of gatherings could possibly control the spread of virus. However only 79 percent of 2nd MBBS student have positive attitude towards compulsory vaccination in comparison to 90 percent of final MBBS students. Final year student results were comparable with study done by Pham Le An et al. in which 83.3 % student were ready to have vaccine.

Pham Le An et al. conducted an online-based cross-sectional survey amongst all students at the University of Medicine and Pharmacy in Ho Chi Minh City (UMP), Vietnam, between June and August 2020. Almost all had sufficient knowledge (86.6%) and good preventive practice (92.8%) towards COVID-19; however, there was also a rather low level of positive attitude recorded, at 68.8%{14}

Practice

Table 3 presents preventive practices of the participants during the COVID-19 pandemic. 93% of 2nd MBBS students avoided stepping out of home/accommodation unless absolutely necessary in comparison to 80 percent of final MBBS. Majority from both the terms wear masks whenever stepping out. Majority among both the term avoided handshake and hugs, public transport and public gatherings. 57 percent of 2nd MBBS and 44 percent of final MBBS students also avoided food consumption from outside.

96.8% of the participants avoided unnecessary travel or outing during the outbreak. Maintaining social distance during the outbreak was the second most prevalent behaviour reported by the participants. A high percentage of were following all the preventive practices.{3}

94.47% medical students answered yes for practicing preventive behaviour in a study done on Iranian medical students by Taghrir et al. {7}

Also, majority of the students carry hand sanitizers. 30 percent of 2nd MBBS student started taking vitamin, whereas only 18 percent of final MBBS student started it.

Conclusion

Although there are many studies conducted among medical students, we could not find a study analysing the COVID-19 knowledge among young medical students where a comparison has been made,

between 2nd year and final year MBBS students. In this study, after analysis we can conclude that final year MBBS students have better knowledge and attitude in comparison to 2nd year MBBS students. This analysis will be very crucial in dividing work between 2nd year and final year students and training them to face upcoming challenges with regards to the COVID-19 pandemic.

V. Conclusion

Although there are many studies conducted among medical students, we could not find a study analysing the COVID-19 knowledge among young medical students where a comparison has been made, between 2nd year and final year MBBS students. In this study, after analysis we can conclude that final year MBBS students have better knowledge and attitude in comparison to 2nd year MBBS students. This analysis will be very crucial in dividing work between 2nd year and final year students and training them to face upcoming challenges with regards to the COVID-19 pandemic.

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