



# International Journal of Advanced Community Medicine

E-ISSN: 2616-3594  
P-ISSN: 2616-3586  
[www.comedjournal.com](http://www.comedjournal.com)  
IJACM 2020; 3(2): 01-05  
Received: 25-04-2020  
Accepted: 30-04-2020

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## Knowledge, attitude and practices regarding COVID-19 among medical students – A cross sectional study

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**DOI:** <https://doi.org/10.33545/comed.v.i.142>

### Abstract

**Background:** Corona virus disease (COVID-19) is an infectious disease caused by a newly discovered corona virus. The Corona virus (COVID-19) declared a pandemic by the World Health Organization in the month of March 2020. India is in the early stage of the COVID-19 epidemic & announced nationwide lockdown on 24th March 2020, to preventive & control it in early stage. This research paper deals with the KAP analysis about COVID-19 among Indian medical students during lockdown period.

**Aims and Objectives:** To assess the knowledge, attitudes and practices about COVID-19 among the medical students of SVS Medical college.

**Materials & Methods:** By non-probability convenience sampling method the sample size was 427. A pre-designed and pre-tested questionnaire was used in this study. Questions related to knowledge, attitude and practices. The participant was directed to complete the self-report by online either through their smart phones or email-id, the data was tabulated and analysed statistically.

**Results:** There was a positive correlation was observed between the Knowledge and attitude ( $r=0.16$ ,  $P<0.01$ ). And also we found that, there is a significant difference between the Knowledge and practices. The z - statistics was applied for the KAP and appropriate statistical tests were applied. The Statistical Package for Social Sciences (SPSS) version 22.0 used for all statistical analysis, statistical test of significance was tested at  $p<0.05$ .

**Conclusion:** There is a clear need for regular orientation & training programs to improve the updated knowledge regarding COVID-19 infections and prevention strategies. This would improve the confidence of medical students to provide the right care to their patients and protect them self. There a need for the implementation of public health efforts & reinforcement to improve knowledge, attitudes and practices skills for COVID-2019 infection among medical students during the outbreak.

**Keywords:** Corona virus (COVID-19), lockdown, outbreak, WHO, Medical students

### 1. Introduction

Corona virus (COVID-19) has become a global health concern, causing severe respiratory tract infections in humans. Corona viruses are a large group of viruses that are rather common throughout the community. Historically, evidence has shown that the virus is transmitted through birds and mammals, with humans being particularly vulnerable to infection and transmission of the virus <sup>[1]</sup>. The previous outbreaks of corona viruses such as Severe Acute Respiratory Syndrom-Coronavirus (SARS-CoV) and Middle East Respiratory Syndrome-Coronavirus (MERS-CoV) in 2003 and 2015 show similarities to the novel corona virus, which was first reported in December 2019, and is currently the disease in questions resulting in the worldwide Coronavirus disease-2019 outbreak, COVID-19 <sup>[2]</sup>. It was first reported by Chinese authorities in Wuhan city, the capital of Hubei province in China at the end of December 2019 <sup>[3]</sup>. Empirical clinical data have shown that the overall case fatality rate of COVID-19 is 2.3% in China, much lower than those of SARS (9.5%), MERS (34.4%), and H7N9 (39.0%) <sup>[4-6]</sup>.

The infection began to spread rapidly throughout many countries. The World Health Organization (WHO) declared that COVID-19 infection was a Public Health Emergency of International Concern. The WHO data was updated on 6 March 2020, there were 98,192 confirmed cases and 3380 deaths worldwide <sup>[7]</sup>. The World Health Organization declared COVID-19 a pandemic on 11 March 2020 <sup>[8]</sup>. The first case of the 2019–20 coronavirus pandemic in India was reported on 30 January 2020, originating from China. As of 28 April 2020, the Ministry of Health and Family Welfare have confirmed a total of 29,435 cases,

and 934 deaths in the country [9]. Experts suggest the 6,868 recoveries (including 1 migration) number of infections could be much higher as India's testing rates are among the lowest in the world [10]. The infection rate of COVID-19 in India is reported to be 1.7, significantly lower than in the worst affected countries [11].

The purpose of our study was to assess the knowledge, attitudes and practices (KAP) in the medical students of SVS Medical college during the COVID-19 outbreak in addition we tried to identify independent factors affecting.

**2. Materials and Method**

A cross-sectional study was carried out during the first phase of lock down period between 22nd March 2020 to 21st April 2020, at SVS Medical College, Mahabubnagar, Telangana State, India. By non-probability convenience sampling method the sample size was 427. Some students were excluded due to non-availability of their contact mobile numbers or email id's and participation confirmation was not received. All MBBS Students from first year to final year were involved in this study who were staying at their homes during this lockdown period. A predesigned and pretested questionnaire was used in this study. The questionnaire was prepared by facts given by WHO & ICMR. The questionnaire divided in three parts, question related to knowledge, attitude and practices. This questionnaire was administered by online survey through google doc.

After the approval of Ethics committee, informed consent was taken from the participants. Participants were directed to complete the online survey. All recorded data were entered in MS Excel and analyzed in the form of percentages and proportions. The z-score statistics was applied for the KAP scores and appropriate statistical tests were applied. The Statistical Package for Social Sciences (SPSS) software version 22.0 used for all statistical analysis, statistical test of significance was tested at p<0.05.

**Results**

It was observed from Table 1 that among the study population, 94.15% of the medical students knew that, the main clinical symptoms of COVID-19 are fever, fatigue, dry

cough, difficulty in breathing and 4.68% were not having knowledge. 99.53% knew that, COVID-19 is spread through respiratory droplets when an infected person coughs sneezes or speaks, People can also be infected by touching a contaminated surface and then their eyes, mouth or nose. Only 47.07% medical students knew Viruses cannot travel on radio waves or mobile networks remaining were don't know. 70.26% knew exposing yourself to the sun or to temperatures higher than 25C degrees does not prevent the corona virus disease (COVID-19) and 22.01% were said it prevents corona virus. 23.42% expressed their knowledge that, eating or contacting wild animals would result in the infection by the COVID-19 virus and were 64.17% no. 68.38% knew that hold your breath for 10 seconds or more without coughing or feeling discomfort does not mean you are free from the corona virus disease (COVID-19) and 31.31% don't know. 50.59% knew that spraying alcohol or chlorine all over your body kill the new corona virus were as 33.49% were said body kill the new corona by spraying alcohol or chlorine all over the body and 15.69% don't know. 81.0% knew that corona virus can live for hours to days on surfaces like countertops and doorknobs, how long it survives depends on the material the surface is made from and 12.6% not having knowledge about this. It was observed from Table 2 that among the study population, 93.68% and 97.67% were expressed their attitude towards control of COVID-19 that, complete lockdown in the country and with social distancing was the great measures in the control of COVID19. And also more than 95% of the medical students were expressed their attitude that, mask wearing and had practice of using sanitizer or hand wash for 20 seconds with soap. It was observed from Table 3 that among the study population, 97.89% were having practice of not going in the crowded places in the lock down period. 85.71% were greet the people by Namaste instead of shaking the hands. More than 95% were practices of social distancing and had practice of using sanitizer or hand wash for 20 seconds with soap. There was a positive correlation was observed between the Knowledge and attitude (r=0.16 and r=0.027, P<0.01). And negative correlation was observed between the Knowledge and practice (r=-0.06, p<0.01).

**Table 1:** Showing the frequency distribution of Knowledge about COVID-19 in the Medical students

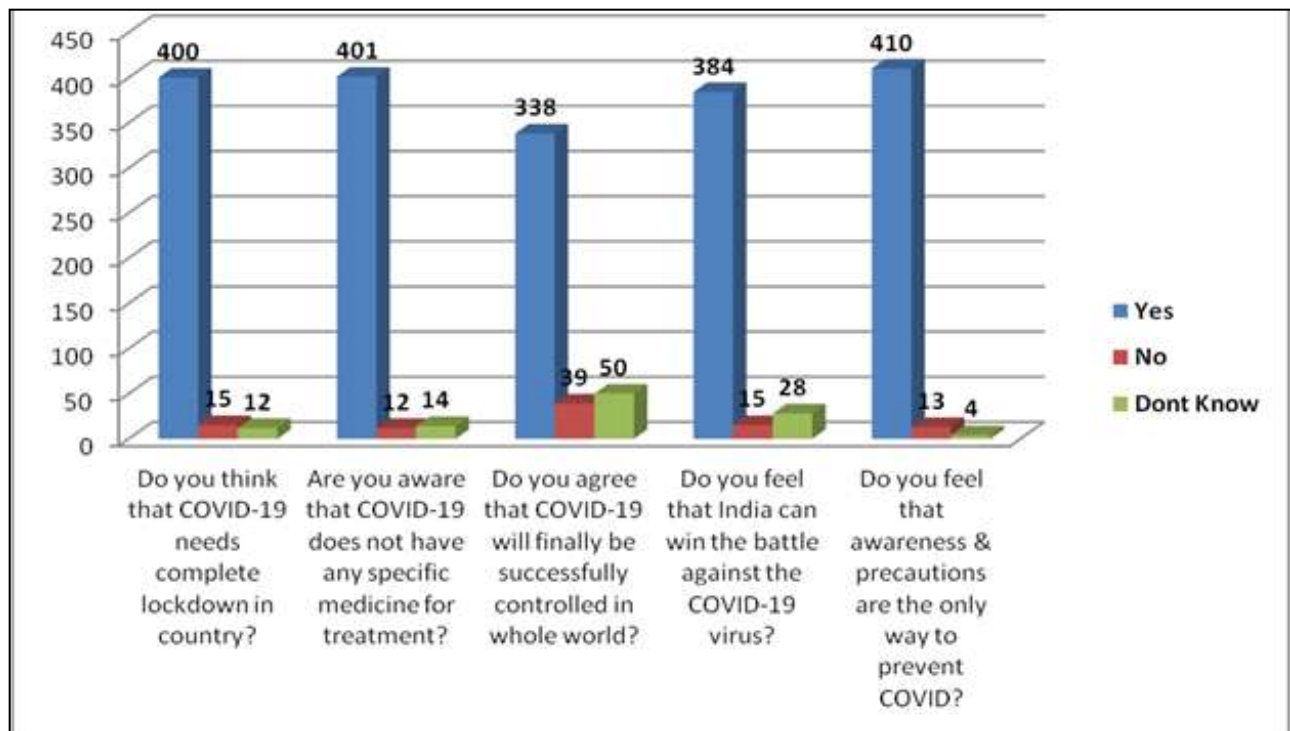
Sl. No.	Knowledge Questions	Frequency (N=427)		
		Frequency	%	
K1	Around 80% cases are asymptomatic. The main clinical symptoms of COVID-19 are fever, fatigue, dry cough, difficulty in breathing	Yes	402	94.15
		No	20	4.68
		Don't Know	5	1.17
K2	Viruses cannot travel on radio waves/mobile networks. COVID-19 is spreading in many countries that do not have 5G mobile networks	Yes	201	47.07
		No	140	32.79
		Dont Know	86	20.14
K3	COVID-19 is spread through respiratory droplets when an infected person coughs sneezes or speaks. People can also be infected by touching a contaminated surface and then their eyes, mouth or nose.	Yes	425	99.53
		No	1	0.23
		Dont Know	1	0.23
K4	Exposing yourself to the sun or to temperatures higher than 25C degrees DOES NOT prevent the corona virus disease (COVID-19)	Yes	300	70.26
		No	94	22.01
		Dont Know	33	7.73
K5	Eating or contacting wild animals would result in the infection by the COVID-19 virus	Yes	100	23.42
		No	274	64.17
		Dont Know	53	12.41
K6	Being able to hold your breath for 10 seconds or more without coughing or feeling discomfort DOES NOT mean you are free from the corona virus disease (COVID-19) or any other lung disease	Yes	292	68.38
		No	91	21.31
		Dont Know	44	10.30
K7	The COVID-19 virus spreads via respiratory droplets of infected	Yes	417	97.66

	individuals	No		
		Dont Know	8	1.87
K8	Drinking alcohol protect you against COVID-19 and can be helpful	Yes	24	5.62
		No	364	85.25
K9	Taking a hot bath can prevent the new corona virus disease	Dont Know	39	9.13
		Yes	73	17.10
		No	287	67.21
K10	To prevent the infection by COVID-19, individuals should avoid going to crowded places.	Dont Know	67	15.69
		Yes	421	98.59
		No	4	0.94
K11	The new corona virus CAN be transmitted through mosquito bites.	Dont Know	2	0.47
		Yes	3	0.70
		No	385	90.16
K12	Can an ultraviolet disinfection lamp kill the new corona virus?	Dont Know	39	9.13
		Yes	65	15.22
		No	186	43.56
K13	Can spraying alcohol or chlorine all over your body kill the new corona virus?	Dont Know	176	41.22
		Yes	143	33.49
		No	216	50.59
K14	Older people, and people with pre-existing medical conditions (such as asthma, diabetes, heart disease) appear to be more vulnerable to becoming severely ill with the virus.	Dont Know	67	15.69
		Yes	417	97.66
		No	1	0.23
K15	The corona virus can live for hours to days on surfaces like countertops and doorknobs. How long it survives depends on the material the surface is made from	Dont Know	10	2.34
		Yes	346	81.0
		No	55	12.6
		Dont Know	26	5.9

**Table 2:** Statistical analysis of knowledge, attitude and practices among medical students about COVID-19

KAP( scores)	Mean ± SD	R-Value	p-value
Knowledge	1.05 ± 0.23	0.161	P<0.01
Attitude	1.03 ± 0.18	0.027	P<0.01
Practices	1.04 ± 0.17	-0.068	P<0.01

\*P<0.05 is statistically significant



**Fig 1:** Distribution of attitude scores

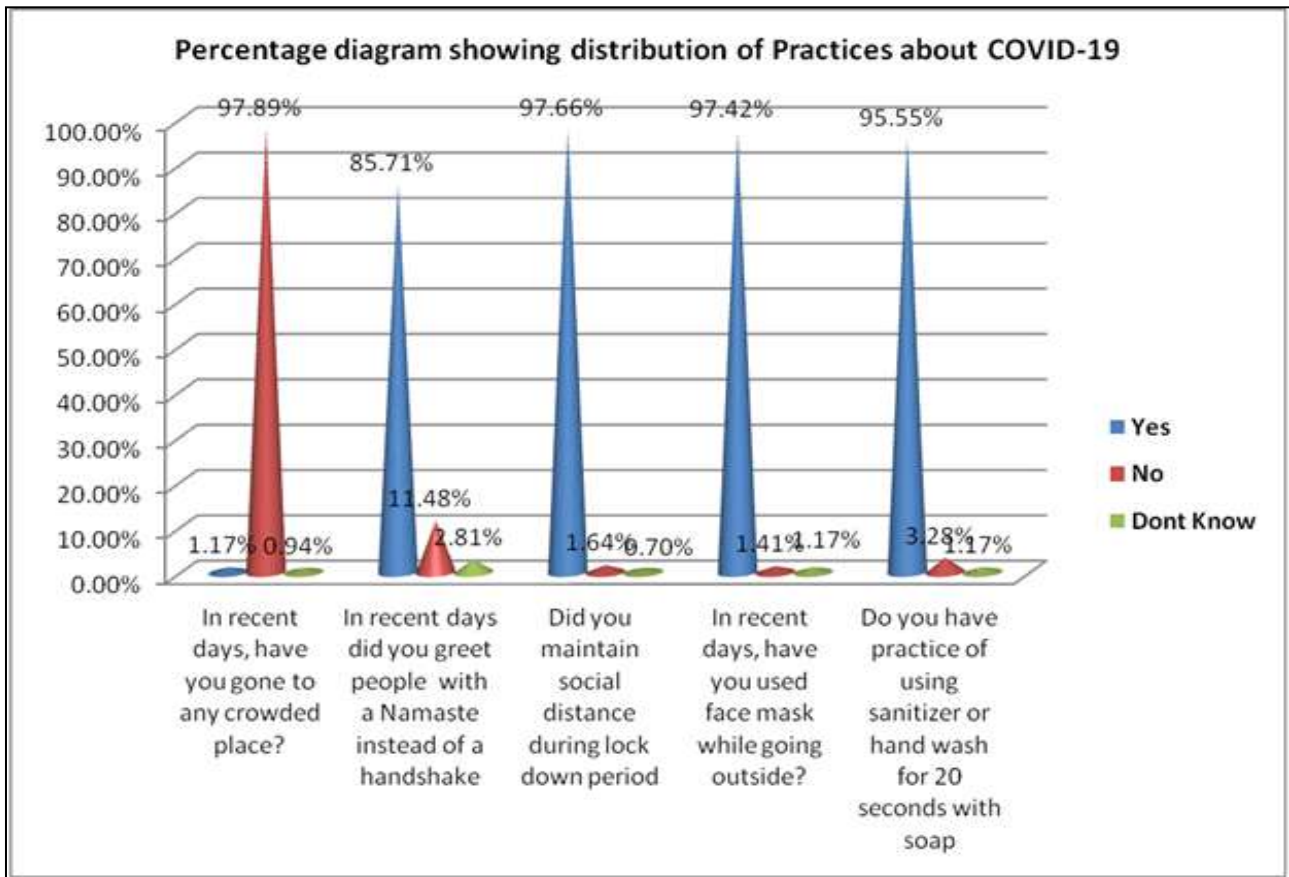


Fig 2: Percentage diagram showing distribution of Practices about COVID-19

**3. Discussion**

In this study, we found that, during the COVID-19 epidemic, 94.15% of the medical students had extensive knowledge of COVID-19. 93.68% expressed their attitude the lockdown was the best measure in control of COVID-19. The only few of the participants' knowledge about COVID-19 was not associated with their practices, this can be improved by repeated orientation programs. The medical students should need proper training about COVID-19, confidence to know the risk and how to protect themselves. 97.42% of our study participants used to put face masks when they go out during the current pandemic similar study done by Chinese [12].

There are several theories on how knowledge is eventually turned into a change in behaviour. Cervero (1985) suggests that a change in behaviour is affected by four sets of independent variables. These are: 1. The education programme. 2 The individual learner. 3 The proposed behaviour change. 4 The social system within which the individual operates.

Measuring change in practice is difficult due to the impact of continuing professional education, lack of consensus as to what constitutes use of knowledge, and application is influenced by many different interacting factors [13].

**4. Conclusion**

This study revealed that, the participants had a good knowledge about the disease and a positive attitude towards protective measures about COVID-19 during the outbreak. There is a clear need for regular training programs to improve the understanding of the risks of COVID-19 and prevention strategies in the medical colleges and hospitals. This should improve the confidence of medical students to

provide the right care to their patients and protect themselves also. This KAP study is mainly acquired through social media platforms and the internet, which has pros and cons. This study may extend to all the medical colleges of Telangana state.

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