

## How Do Saudi Medical Students Perceive COVID-19 Pandemic?



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**Abstract— Objective:** Corona virus disease 2019 (COVID-19), was first reported in Wuhan, China late December of the year 2019. Aim of our study is to find out how do Saudi medical students perceive the COVID-19 pandemic. It also aimed to investigate their positive attitudes, if any, towards their profession after this pandemic. **Methodology:** This was a perceptual questionnaire -based cross-sectional study that targeted medical students in Saudi Arabia. It took place via the distribution of an electronic questionnaire **Results:** The number of participants was 563 students. The number of male 243 (43,1%), female students were 320 (56,9%). Juniors years students were 197 (35%) Seniors years students were 366 (65%). **Conclusions:** Saudi medical students have satisfactory perception about the COVID-19 pandemic. Moreover, they have better intentions for career opportunities to serve their communities.

**Keywords:** COVID-19 , Medical students , Saudi Arabia , Coronavirus

### Introduction:

COVID-19 is caused by severe acute respiratory syndrome corona virus (SARS -CoV-2)<sup>1-2</sup>. It poses a great challenge to the global health services, since it was initially reported by the end of 2019<sup>2</sup>. It is still considered as an enigma with many obscure ideas as regards its nature, mode of transmission, prevention, pathology, clinical manifestations and management<sup>3-6</sup>.

It is accused for inducing different sorts of pathological and clinical disorders. These range from mild to serious illnesses within the body systems especially the respiratory tract.<sup>3</sup> Clear evidences have not yet been established as regards its mode of transmission. Some authors suggested its spread to occur via droplet infection, touching contaminated objects or even through the mucous membrane of the eyes.<sup>4</sup> In order to control the rapid propagation of this viral infection, the World Health Organization (WHO) has announced COVID-19 as a global pandemic threat to the population in March of 2020. This necessitates the adoption of special universal preventive guidelines.<sup>5</sup>

Accordingly, Saudi Arabia has implemented the scanning of infected individuals, in order to isolate them. Tracing for the contact, quarantine application, social distancing and acclimation of some hygienic habits (such as hand hygiene) were also practiced as a part of the comprehensive WHO guidelines. The aim of these strategies is to control the disease spread (flattening of the spread curve).<sup>6</sup> However, the population lockdown and curfew have posed a higher psychological stress to the community.<sup>7</sup> This may be attributed to the fact that curfew restricts the movements. It also accentuates the sense of being bored due to staying at home, inability or difficulty to secure the nutritional supplies may also add to such psychological burden.<sup>8</sup> The current study aimed to report the Saudi medical students' awareness and perception of COVID-19 pandemic and their willingness to serve their communities as regards this sense. It was also designed to evaluate their perception of the pandemic and its impact on their practice as future physicians.

**Methods:**

The study was conducted after being approved by the institute research board (IRB). And anonymous questionnaire based, cross-sectional study was conducted among Saudi medical students. It was electronically distributed.

It constituted three sections. The first section for demographic data (Age, Gender, marital status, academic year, Residence area). The second section of the questionnaire was composed of 6 questions about students' attitude before corona pandemic. The third section of the questionnaire was composed of 9 questions about students' attitude after corona pandemic. (Appendix 1)

Answers were collected on a special excel sheet for the purpose of statistical analysis. This analysis was performed using the Statistical Package for Software Sciences (SPSS) for Windows version 26.0 software program, Armonk, New York, IBM corporation. Analyzed data were reported as counts and percentages and expressed as tables and figures. The level of statistical significance was set at  $p < 0.05$ .

**Results:**

Five hundred sixty-three students have participated in the current study. They were 243 (43,1%), males, 320 (56,9%), females' medical students. The female to male ratio was 1.3 to 1. Participating medical students in the pre-clinical phase, were 197 (35%). While those in their clinical phase were 366 (65%), it is significant  $p < 0.05$ . (Table 1)

Respondents to this study belonged to different Saudi medical schools in different geographical locations. Those students from King Faisal University, Al-Ahsa constituted 18.4% of the whole sample size (104 student). Yet, those of Imam Abdulrahman Bin Faisal University, Dammam, were 73 students (12,9%), King Saud bin Abdulaziz University for Health Sciences, Riyadh, were 83 students (14,7%), Imam Muhammad Ibn Saud Islamic University, Riyadh, were 51 students (9,0%), King Abdulaziz University, Jeddah, were 66 students (11,7%), Umm Al-Qura University, Makkah, were 86 students (15,2%), Qassim University, Buraidah, were 62 students (11,0%), Students from other universities across Saudi Arabia were 38 students (6,7%). Number of participating clinical phase medical students, were 366 students out of the total 563 (65%). Whereas students in the pre-clinical phase, were recorded as 197.

Female respondents constituted 320 out of the total 563 participants (57%). However, their males counterparts were 243 (43%). Furthermore, most of the participations were singles (513, 91.1%). Married students were (49, 8.8%) Non the less, 0.1% were represented as divorced students.

Our study has shown that most of the participants were lacking basic knowledge about COVID-19, mode of transmission as well as, the proper protection methods against the virus. Those students collectively were represented as 322 participants (57.1%), ( $p < 0,05$ ). On the other hand, 147 (26.1%) participants have expressed satisfactory information about COVID-19. However, 94 students (16.6%) were not sure they have

satisfactory information about COVID-19. It was also observed that female students had better information regarding the virus than male students. They represented 34.6%, whereas male students with proper information were 14.8%. (Table 2)

The current study results have shown great number of medical students to be following the proper hand hygiene, as recommended by The World Health Organization(WHO). They were 148 students (75.1% ) in their pre-clinical phase out of a total 197. Fortunately, a large number of students in their clinical phase were committed to recommended ways of proper hand hygiene. They were 239 (65.3%) out of 366 students. Most of participants were following the properly recommended disinfecting tools. They were 512 (90.9%), ( $p<0,05$ ). Contrary, 37(6.5% ) students believed that they might be following the proper method of disinfecting their homes. Additionally, 14 (2.4%) were not committed to the proper methods of cleaning their household. Study respondents were following the preventative precautions in their schools and when visiting hospitals, for instance, applying a face mask, protective gowns and gloves. They represent 532 (94.4%) students ( $p<0,05$ ). Yet, 342 (60.7%) students were not acquainted about the importance of the preventative precautions, and their role in aborting the transmission of infections, ( $p<0,05$ ). Whereas, 221 (39.2%) students were knowledgeable about the importance of the precautions. (Table 3).

## **Discussion :**

COVID-19 pandemic is a newly emerging global health problem. The number of infections is constantly increasing worldwide.<sup>8</sup> Saudi health authorities have started strict measures to control COVID-19 pandemic since the announcement of the first infected patient in the kingdom.<sup>9-11</sup> The measures include national educational programs to create general population perception about the disease.<sup>12-14</sup> Guidelines were launched in accordance with WHO recommendation. Adequate information about COVID-19 infection were reported in 42.8% within the current study. This coincides with a previously published report that stated a positive relationship between the COVID-19 prevailed information and the duly implemented preventive measures.<sup>15</sup> The current study showed that, medical students in Saudi Arabia, were lacking some essential information about COVID-19. Only 26.1% participants expressed sufficient information about COVID-19. These data contradicted those of a previously published similar study. They reported 79.9% of their participants to have proper information about the virus.<sup>16</sup> It also, contradicted those of another study that reported 78.9% knowledge about the essential information of COVID-19.<sup>17</sup> This may be attributed to the time when the study was established as the data collections took place during the months of February and March 2020. At the time Covid -19 has not yet been announced as a pandemic in Saudi Arabia with less disease information among the public and medical students in particular. However, similar Saudi studies among the Saudi population in a later time period expressed a higher positive social perception and information about this viral pandemic.<sup>18-19</sup> Generally, 97.3% of the current study participants believed that, as medical students, and future physicians, by following healthy precautions for safer practices, would limit the preponderance of Covid-19 viral infection. This is coincides with other studies, that highlighted the role of following the recommended precautions in controlling the spreading of the infection<sup>17-19</sup>.

**Conclusion:**

Although Saudi medical students may have information shortage as regards COVID-19, it is believed that their current perceptions and knowledge about this viral infection have dramatically been raised. Nevertheless, their future perception of a better practice within the medical field and their outlook into attributing to their community is promising and seems to be unlimited. They expressed their beliefs on the Ministry of Health sources as the trusted informatics about the COVID-19 pandemics. Further future studies with increase medical students participants may be needed in order to add extra validity for the results. The current study may have added some information as regards where do we stand in relation to the current problem.

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**Table Legends :**

Table 1 The Basic Characteristic of Participants.

Table 2 Perception of Covid-19

Table 3 Future perspectives of Covid-19

<b>Table I: The Basic Characteristic of Participants.</b>			
		N	%
<b>Gender</b>	Male	243	43,1
	Female	320	56,9

<b>Age</b>	18 - 20	101	17.9
	21 – 23	357	63.4
	24 +	105	18,6
<b>Academic phase:</b>	Preclinical	197	35
	Clinical years	366	65

<b>Table II: Perception of Covid-19</b>			
		<b>N</b>	<b>%</b>
<b>Do you know about Coronavirus?</b>	<b>Yes</b>	<b>147</b>	<b>26,1%</b>
	<b>No</b>	<b>322</b>	<b>57.1</b>
	<b>Maybe</b>	<b>94</b>	<b>16.6</b>

<b>Are you following recommendation from The WHO for hand hygiene ?</b>	<b>Yes</b>	<b>387</b>	<b>68.7</b>
	<b>No</b>		
	<b>Maybe</b>	<b>176</b>	<b>32.2</b>
<b>Are you following preventative precautions in your school and when visiting hospitals ( wearing a face mask, protective gowns and gloves )</b>	<b>Yes</b>		
	<b>No</b>		
	<b>Maybe</b>		

<b>Are you following recommended</b>	<b>Yes</b>	<b>512</b>	<b>90.9</b>
	<b>No</b>	<b>14</b>	<b>2.4</b>

ways of disinfecting your homes?	Maybe	37	6.5
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Did you know about health preventative precautions and their role in preventing infection?	Yes	221	39.2
	No	342	60.7
	Maybe		

**Table III: Perception of Covid-19**

		N	%
Do you believe that COVID-19 pandemic, would help you to improve your skills in the future practice as physicians and medical student	Yes	529	93.9
	No		
	Maybe	34	6.0

Do you believe that following proper preventative precautions , percentage of infection transmission would be limited ?	Yes	548	97.3
	No		
	Maybe	15	2.7

After COVID-19 pandemic, Do you will participate in volunteer work to help against such a major health problem	<b>Yes</b>	<b>473</b>	<b>84.0</b>
	<b>No</b>	<b>45</b>	<b>7.9</b>
	<b>Maybe</b>	<b>45</b>	<b>7.9</b>

Do you considering conducting re- search papers and scientific studies regarding infections	<b>Yes</b>	<b>340</b>	<b>60.3</b>
	<b>No</b>	<b>100</b>	<b>17.7</b>
	<b>Maybe</b>	<b>123</b>	<b>21.8</b>

Do you considering of attending and participating health conferences and seminars in regarding to fight infec- tions in the future	<b>Yes</b>	<b>468</b>	<b>83.1</b>
	<b>No</b>	<b>5</b>	<b>0.8</b>
	<b>Maybe</b>	<b>90</b>	<b>15.9</b>



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