

Impact of Hospital Lockdown and Virtual Teaching During COVID-19 Pandemic on the Medical Student's Education at King Khalid University Abha, Saudi Arabia

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ABSTRACT

Study design: Cross sectional

Background: During the pandemic, doctors and other healthcare workers had limited patient care and bedside learning opportunities because they were required to focus on COVID-19 cases. As a result, students felt safe at home while adhering to social distance guidelines; they learned about the dynamics of patient interaction by interviewing patients, collaborating with treatment planners, assisting with paperwork, and counselling patients. There are several parallels between online and traditional education. Students must still attend class, learn new topics, turn in assignments, and work on group projects. While many studies found no significant differences between traditional and e-learning, others found the opposite.

Aim: Our aim of this cross-sectional study is to assess impact of COVID- 19 and hospital lock down on medical education and to assess student satisfaction towards E leaning like zoom and others. Specifically, those students who suffered Pandemic during clinical years.

Methods: The data for this cross-sectional study were gathered using a specially designed questionnaire. A questionnaire containing demographic information as well as questions about the impact of hospital lockdown and ZOOM in the PANDEMIC era on medical students' education. A questionnaire was created following a series of discussions between the panel of experts, which included a subject specialist, a researcher, and a language expert.

Results: Out of 157 total respondents (Students of the clinical phase of the MBBS program) 55.4% were male while 44.6% were females, 58.0% were agreed that their absence of clinical exposure will affect their educational learning,94.3% attended the zoom teaching,72.00% had success to the hospital, 86.0 preferred the integral approach or mixed model (consist of virtual and traditional teaching), almost half of the respondents (52.2%) were agreed that they have enough clinical exposure.

Conclusion: The pandemic had an impact on medical students' training, but the long-term impact has yet to be determined. As medical schools and teaching hospitals recover from the pandemic, more resources must be allocated to students whose education was harmed by the pandemic. While the use of novel virtual teaching methods has increased globally, more research is needed to investigate the efficacy of these novel teaching tools.

Keywords: Pandemic, Virtual, Education, Online, Traditional

INTRODUCTION

In early December 2019, the SARS-Cov-2 virus (COVID-19) outbreak began. The World Health Organization (WHO) declared COVID-19 a pandemic on March 11, 2020, and by November 2020, there were 53,164,803 confirmed cases and 1,300,576 deaths worldwide¹.

The Coronavirus Disease 2019 (COVID-19) pandemic has wreaked havoc on medical education and healthcare systems around the world. The disease has the potential to cause life-threatening conditions, and it presents challenges for medical education, as instructors must deliver lectures safely while maintaining the integrity and continuity of the medical education process. As a result, it is critical to evaluate the usability of online learning methods and determine their feasibility and adequacy for medical students^{2,3}.

The combination of reduced clinical exposure and the suspension or cancellation of attachments and electives had a significant impact on medical education, particularly on final-year medical students who were expected to acquire certain structured competencies and skills before beginning their careers.

Over 150 countries have temporarily closed colleges and educational institutions in March 25, 2020, affecting more than 80% of the world's student population. Health authorities, according to the Saudi Ministry of Education, have recommended "preventive and precautionary" measures to ensure that students and staff are adequately protected⁴. This has resulted in a shift in education in most academic departments, with learning shifting from traditional to online. As a result, colleges provided students with a variety of learning management systems.

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Scheduled live-online video lectures with interactive discussions using various applications or self-study online recorded lectures are two of the most popular approaches. Another approach to the suspension of clinical clerkship rotations was virtual clinical experience^{5,6}.

During the pandemic, doctors and other healthcare workers had limited patient care and bedside learning opportunities because they were required to focus on COVID-19 cases. As a result, students felt safe at home while adhering to social distance guidelines; they learned about the dynamics of patient interaction by interviewing patients, collaborating with treatment planners, assisting with paperwork, and counselling patients. There are several parallels between online and traditional education. Students must still attend class, learn new topics, turn in assignments, and work on group projects. While many studies found no significant differences between traditional and e-learning, others found the opposite^{7,8}.

Our aim of this cross-sectional study is to assess impact of COVID-19 and hospital lock down on medical education and to assess student satisfaction towards E leaning like zoom and others. Specifically, those students who suffered Pandemic during clinical years.

To determine which medium produces better student performance, the perceived benefits of both teaching techniques must be extensively outlined and assessed. Both strategies are generally advantageous.

METHODS

The data for this cross-sectional study were gathered using a specially designed questionnaire. A questionnaire containing demographic information as well as questions about the impact of hospital lockdown and ZOOM in the PANDEMIC era on medical students' education. A questionnaire was created following a series of discussions between the panel of experts, which included a subject specialist, a researcher, and a language expert. The questionnaire's Cronbach alpha was calculated. The research was carried out at the King Khalid University in Abha, Saudi Arabia's Aseer region. Data were coded and entered into the SPSS ver.20 software for descriptive statistics (mean standard deviation, frequencies, and percent s were computed), and the chi-square test was used to measure significance at the 5% level of significance. Data were gathered from clinical year medical students. King Khalid University in Saudi Arabia provided ethical approval. The study lasted from January to April of 2022.

RESULTS

The Cronbach alpha of the questionnaire was 0.84. out of 157 total respondents (Students of the clinical phase of the MBBS program) 55.4% were male while 44.6% were females (Figure 1).

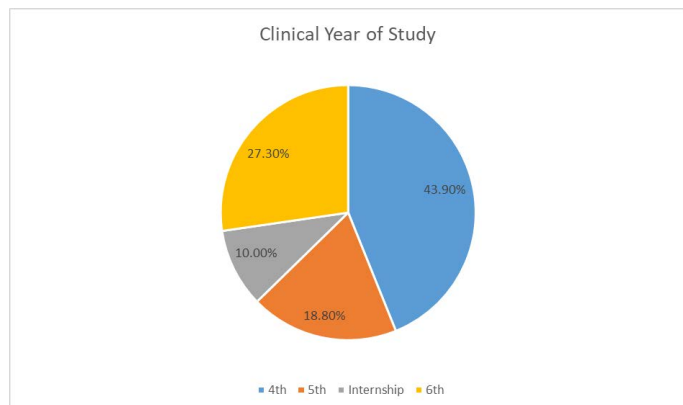


Figure 1: Gender distribution

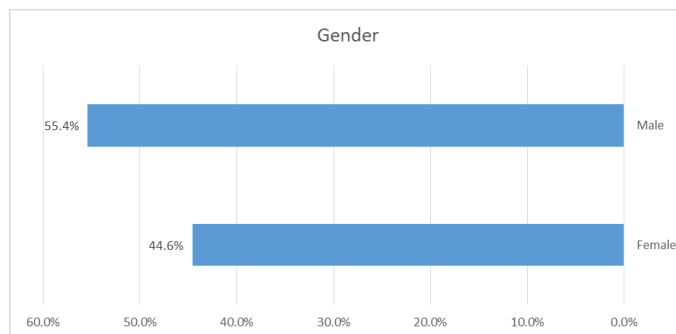


Figure 2: Clinical year of study

As per figure 2, 43.9% were in the 4th year of the MBBS program, 27.3%, 18.8% and 10.0% were respectively in 6th, 5th and internship classes respectively.

Table 1: Students views about items related to virtual mode of teaching

	Frequency	Percent
Did your absence of clinical exposure affect your educational learning?		
yes	91	58.0
no	66	42.0
Did you attend virtual ZOOM teaching ?		
yes	148	94.3
no	9	5.7
Did you benefit from ZOOM teaching?		
yes	119	75.8
no	38	24.2
Did you have access to hospitals?		
yes	113	72.0
no	44	28.0
Did you see enough clinical exposure affect your educational level ?		
yes	82	52.2
no	75	47.8
Do you prefer integrated approach of both ZOOM and traditional methods?		
yes	135	86.0
no	22	14.0
Do you prefer traditional teaching?		
yes	100	63.7
no	57	36.3
If pandemic is over would you like to continue with simulation or would you rather an inpatient's exposure?		
yes	118	75.2
no	39	24.8
If pandemic is over, would you prefer to continue ZOOM teaching?		
yes	84	53.5
no	73	46.5
Was simulation teaching a good alternative?		
yes	71	45.2
no	86	54.8
Was ZOOM the modality of teaching ?		
yes	138	87.9
no	19	12.1
Were you diagnosed with COVID-19 ?		
yes	49	31.2
no	108	68.8

As per table 1, 58.0% were agreed that their absence of clinical exposure will affect their educational learning, 94.3% attended the zoom teaching, 72.00% had success to the hospital, 86.0 preferred the integral approach or mixed model (consist of virtual and traditional teaching), almost half of the respondents (52.2%) were agreed that they have enough clinical exposure, 63.7% preferred only traditional methods of teaching. 75.5% were agreed that after pandemic they wish to continue simulation methods of teaching. 53.5% opted that will continue zoom methods of teaching even after pandemic, 45.2% agreed simulation is the best alternative methods of teaching. 31.2% of the respondents diagnosed COVID positive

As per figure 3, 73.2% of the respondents have increased in their academic grades while only 26.8% have decreased their grades.

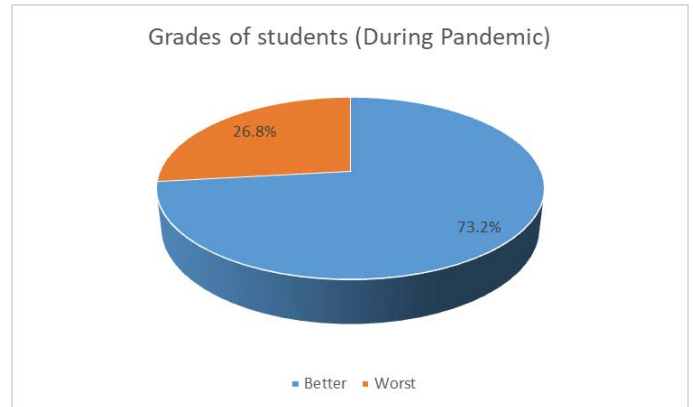


Figure 3: Impact of pandemic on student's grades

Table 3: Gender wise comparisons of virtual teaching experiences

		Did you absence of clinical exposure affect your educational learning?		Total	Chi-square value	p-value	
		Yes	No				
Gender	Female	Count	43	27	70	0.623	0.516
		%	61.4%	38.6%			
Gender	Male	Count	48	39	87	0.623	0.516
		%	55.2%	44.8%			
		Did you attend virtual ZOOM teaching ?		Total	0.0000	0.635	
		Yes	No				
Gender	Female	Count	66	4	70	0.0000	0.635
		%	94.3%	5.7%			
Gender	Male	Count	82	5	87	0.0000	0.635
		%	94.3%	5.7%			
		Did you benefit from ZOOM teaching?		Total	0.157	0.416	
		Yes	No				
Gender	Female	Count	52	18	70	0.157	0.416
		%	74.3%	25.7%			
Gender	Male	Count	67	20	87	0.157	0.416
		%	77.0%	23.0%			
		Did you have access to hospitals		Total	0.335	0.546	
		Yes	No				
Gender	Female	Count	52	18	70	0.335	0.546
		%	74.3%	25.7%			
Gender	Male	Count	61	26	87	0.335	0.546
		%	70.1%	29.9%			
		Did you see enough clinical exposure affect your educational level ?		Total	1.22	0.172	
		Yes	No				
Gender	Female	Count	40	30	70	1.22	0.172
		%	57.1%	42.9%			
Gender	Male	Count	42	45	87	1.22	0.172
		%	48.3%	51.7%			
		Do you prefer integrated approach of both ZOOM and traditional methods?		Total	0.18	0.554	
		Yes	No				
Gender	Female	Count	60	10	70	0.18	0.554
		%	85.7%	14.3%			
Gender	Male	Count	75	12	87	0.18	0.554
		%	86.2%	13.8%			
		Do you prefer traditional teaching?		Total	0.223	0.637	
		Yes	No				
Gender	Female	Count	46	24	70	0.223	0.637
		%	65.7%	34.3%			
Gender	Male	Count	54	33	87	0.223	0.637
		%	62.1%	37.9%			

In table 3, we have compared gender with opinion regarding the virtual teaching experience, these items were compared Did your absence of clinical exposure affect your educational learning? Did you attend virtual ZOOM teaching? Did you benefit from ZOOM teaching? Did you have access to hospitals, did you see enough clinical exposure affect your educational level? Do you prefer integrated approach of both ZOOM and traditional methods? Do you prefer integrated approach of both ZOOM and traditional methods? and Do you prefer traditional teaching? We did not observe any significant gender differences among these questions.

Table 4: Comparisons of traditional teaching with clinical years

			Do you prefer traditional teaching?		Total
			Yes	No	
Clinical year	4th	Count	45	24	69
		%	65.2%	34.8%	100.0%
	5th	Count	19	9	28
		%	67.9%	32.1%	100.0%
	Internship	Count	11	6	17
		%	64.7%	35.3%	100.0%
	6th	Count	25	18	43
		%	58.1%	41.9%	100.0%

p=0.835

Table 5: Comparisons of clinical years with post pandemic study strategies

			Do you prefer traditional teaching?		Total
			Yes	No	
Clinical year	4th	Count	54	15	69
		%	78.3%	21.7%	100.0%
	5th	Count	23	5	28
		%	82.1%	17.9%	100.0%
	Internship	Count	9	8	17
		%	52.9%	47.1%	100.0%
	6th	Count	32	11	43
		%	74.4%	25.6%	100.0%

p=0.133

In table 4, we have compared different level of classes with the item “Do you prefer traditional teaching?” and we did not observe any significant differences in table 5 we have compared different classes with “If pandemic is over would you like to continue with simulation or would you rather an inpatient’s exposure?” and we did not observe any significant differences.

Table 6: Comparisons of clinical years with views regarding the simulation mode of teaching

			Was simulation teaching a good alternative?		Total
			1.00	2.00	
Clinical year when pandemic started ?	4th	Count	32	37	69
		%	46.4%	53.6%	100.0%
	5th	Count	10	18	28
		%	35.7%	64.3%	100.0%
	Internship	Count	10	7	17
		%	58.8%	41.2%	100.0%
	6th	Count	19	24	43
		%	44.2%	55.8%	100.0%
Total	Count	71	86	157	
	%	45.2%	54.8%	100.0%	

P=0.504

As per table 6 “Was simulation teaching a good alternative?” have not have any significant relationship with the classes.

DISCUSSION

The COVID-19 pandemic has caused a significant shift in education and learning methods. COVID-19 has had an unexpected impact on medical education. In these uncertain times, students face a variety of unique challenges. Medical education is primarily focused on the patient. The students' disadvantage has been exacerbated by the understandable lack of patient interaction as a result of the unprecedented but necessary containment measures. The substitution of online lectures for in-person classes is a critical step in the pandemic situation; however, students are missing out on clinical encounters^{9,10}.

Online lectures and case simulations are delivered via video conferencing, tele-lectures, and webinars, using a variety of tools such as Zoom, Google Meet, Skype, Go to Webinars, and others. Our research focuses on the major issues that medical students face throughout their four professional years at King Khalid University Abha.

Our finding suggested that majority of the students preferred mixed methods of teaching, to deal with the complexity of online education, developing multimodal approaches to achieve course content objectives for better learning outcomes may be a better idea. Undaunted, governments must ensure the availability of dependable communication tools, high-quality digital academic experiences, and promote technology-enabled learning for students in order to bridge the gaps that existed in the education system before and after the COVID-19 disaster, which is also unavoidably required for continuous learning¹¹⁻¹³.

A meta-analysis comparing three types of instructional and/or media conditions designed into distance education (DE) courses known as interaction treatments (ITs)—student-student (SS), student-teacher (ST), or student-content (SC) interactions—to other DE instructional/interaction treatments was conducted in "A Meta-Analysis of Three Types of Interaction Treatments in Distance Education." The researchers discovered a strong relationship between the incorporation of these ITs into distance education courses and achievement when compared to blended or face-to-face learning modes. Based on these three interaction treatments, the authors hypothesised that this was due to increased cognitive engagement¹³⁻¹⁵.

According to the study's findings, there is no significant difference in performance between online and traditional classroom students based on modality, gender, or class rank.

Our findings indicate that the COVID-19 pandemic had a negative impact on the academic, psychological, and financial aspects of medical students' lives, particularly during their clinical training years. The main underlying factors were considered to be unsatisfactory, shorter, and less informative teaching rounds with no or fewer patients to examine, as well as decreased motivation and less effective feedback¹²⁻¹⁶.

Exams are another source of difficulty in the medical education process. During the COVID-19 pandemic, some schools, such as Imperial College in London, began to implement an online examination platform for final-year medical students in order to avoid further disruption and postponement of student graduations, in our study most of the respondents enhanced their academic grades during pandemic era examinations¹⁷.

As demonstrated by our findings, the quality of the virtual sessions delivered could have been influenced by a variety of factors, including

a poor internet connection, family distractions, and the timing of the tutorials¹⁸.

Future research into the same topic in the broader field of medical education, including the basic years, is required. Furthermore, more research is needed to identify alternative clinical exposure models that would be effective in compensation during situations similar to the COVID-19 pandemic. Finally, more research is needed to determine an appropriate and effective way to use e-learning alongside traditional learning¹⁹.

CONCLUSION

The COVID-19 pandemic has had a significant impact on medical students. Students are concerned about the current state of affairs and the future of medical education. To ensure the continuity of medical education, various modifications to online teaching methods have been implemented. The pandemic had an impact on medical students' training, but the long-term impact has yet to be determined. As medical schools and teaching hospitals recover from the pandemic, more resources must be allocated to students whose education was harmed by the pandemic. While the use of novel virtual teaching methods has increased globally, more research is needed to investigate the efficacy of these novel teaching tools.

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Competing Interest: None

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