

THE IMPACT OF COVID-19 ON THE EDUCATION OF MEDICAL STUDENTS OF FEDERAL MEDICAL COLLEGE, ISLAMABAD, PAKISTAN

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ABSTRACT

Objective: The objective of this study was to assess the impact of covid-19 on the learning of medical students of Federal Medical College, Islamabad.

Materials and Methods: This descriptive cross-sectional study was conducted on 215 medical students of Federal Medical College, Islamabad from October to December 2021. A pretested validated tool was used to collect primary data from medical students via random sampling. SPSS version 25 was used for data analysis. The chi-square test was used to see the association between various variables.

Results: This study included 54.9% (118) females and 45.1% (97) males. 188 (87.4%) students reported that they were taking online classes. Most of the students, 181 (84.2%) thought that COVID-19 affected their study durations. The pandemic has caused wastage of time was reported by 155 (72.1%) students and 60 (27.9%) stated pandemic had given them extra time to clear their concepts. More than 2/3rd of the students (78.6%) were concerned about their professional examinations due to the present situation of the pandemic. Among all the respondents, 177 (82.3%) were not satisfied with this method of learning and also 184 (85.6%) students have lost interest in their studies. Most of the students 173 (80.5%) were facing difficulty in establishing the boundary between their work and home and 180 (83.7%) were missing classroom engagement.

Conclusion: Covid 19 has severely affected medical education. E-learning is not suitable for medical students as most of their learning involves practical performance and interaction with patients.

Keywords: Covid-19, medical students, medical education, online learning

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INTRODUCTION

The covid-19 outbreak was declared a pandemic by the world health organization on 11th march 2020. This deadly disease not only took the lives of millions of people globally but also disrupted the social, economic, and healthcare functioning worldwide. Worldwide lockdown and social restrictions brought unprecedented change in our lives, especially with the closure of educational institutions. To continue the educational process, learning was shifted to the online system. Traditional Medical education and clerkship were also subjected to this change in a desperate time. A US study on the impact of Covid 19

on medical education showed that the majority 74.7% of students believed that their study was adversely affected by the pandemic. Similarly, a Pakistani study conducted in various medical colleges indicated that 75.4% of students agreed that the pandemic caused time wastage in terms of their education. 76% of medical students were having online classes in a study conducted in Karachi. Delay and uncertainty of examination and clinical rotation/residency was significant stressor for medical students during this time. Clinical exposure was suspended for almost all medical undergraduates across the globe to minimize exposure to the deadly covid-19. The majority (59%) of the medical students were willing to serve in the hospitals in the wake of this pandemic in a KAP study conducted in Libya. Half of the medical undergraduates agreed to volunteer for clinical service during the pandemic in an Indonesian study. 59.7% of students were satisfied with the e-learning mode and considered it as a substitute for on-campus learning since it was less time-consuming. On the other hand, most medical students didn't find e-learning much effective since it lacked teacher-student interaction. Most of the medical students discouraged the idea

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of the online examination and preferred to stick to the traditional pattern (62.8%). About 73.6 % of students were unable to continue online classes smoothly due to technical glitches making it unfeasible for students coming from rural areas. Connectivity issue was a major hurdle faced by medical students (70%) of Rawalpindi medical university during e-learning. Internet issue was a major problem for medical students during online classes in a Pakistani study. Some students (36.4%) were worried about the distracting environment at home during online learning. A study assessing anxiety levels of medical students during covid 19 showed a higher score among those with a covid positive friend or relative. A Japanese study conducted on the same lines showed that 58.1% students were apprehensive about covid 19. A study conducted by students of Rawalpindi medical college showed that students (46.67%) from low-income family backgrounds were more likely to develop mental health issues which can be linked to the economic crisis faced during the pandemic. The objective of this study was to assess the impact of covid-19 on the learning of medical students of Federal Medical College, Islamabad.

MATERIALS AND METHODS

This descriptive cross-sectional study was conducted on medical students who were studying at a Federal Medical College in Islamabad. The sample size was 215 (calculated by the WHO calculator with a confidence level of 95%) and the study duration was three months (from October to December 2021). The sample was selected through simple random sampling (drawing lots). A pretested validated tool was used in the study. The objectives of the research were explained to each participant. The Structured questionnaires were handed over to each participant and the same was collected on the next day. Ethical approval for the study was granted by the Ethical Review Board of Shaheed Zulfiqar Ali Bhutto Medical University, Islamabad. Informed consent was taken from all the participants and the anonymity of all the participants was ensured by not collecting any personal information. Data were secured by the Principal Investigator. SPSS version 25 was used for data analysis. In Descriptive Statistics, frequencies and percentages were computed and in Inferential Statistics, the Chi-square test was used to see the association between various variables.

RESULTS

The study constitutes 215 students of the federal medical college with equal representation of 43 each from 1st to 5th year. There were 54.9% (118) females and 45.1% (97) males. Most of the students 175 (81.4%) were from urban areas and the remaining 40 (18.6%) were representing rural areas.

Overall, most of the students, 181 (84.2%) thought that COVID-19 affected their study durations. The pandem-

ic has caused wastage of time reported by 155 (72.1%) students and 60 (27.9%) stated pandemic had given them extra time to clear their concepts. More than 2/3rd of the students 169 (78.6%) were concerned about their professional examinations due to the present situation during the pandemic. The clinical work also suffered due to no ward rotations severely reported by 83 (38.6%) students followed by 69 (32.1%) who reported moderate effect, 31 (14.4%) said mild effect and 32 (14.9%) respondents who said clinical work had not suffered at all. There were 141 (65.6%) students who said that they should do clinical service in this situation. Most of the students 179 (83.3%) thought clinical service would impact their medical education. The information about the disease was adequately given by teachers to 106 (49.3%) students. Among all the respondents, 177 (82.3%) were not satisfied with this method of learning and also 184 (85.6%) students have lost interest in their studies.

The transition increased social media usage and so affected studies among 187 (87%) students and 165 (76.7%) students thought e-learning was not a real substitute; physical examinations could not be replaced by online as reported by 190 (88.4%) students and 192 (89.3%) concerned about future performance in the clinical rotations. Most of the students 173 (80.5%) were facing difficulty in establishing a boundary between their work and home and 180 (83.7%) were missing classroom engagement. E-learning was suitable for rural areas among only 42 (19.5%) students. The human connection with your instructors was missed by 184 (85.6%) students. Various fears by students like burnout due to overabundance of information were reported by 61 (28.4%) students, deterioration of psychological state due to negative news and events by 60 (27.9%) students, 74 (34.4%) students had difficulty studying at home in the current situation, fear of getting sick or passing on the disease to others was feared by 60 (27.9%) students. Only 05 (2.3%) students feared losing scholarships or funding, 15 (7%) students feared losing the support from their parents and 40 (18.6%) students feared losing their loved ones living abroad due to the closure of borders.

DISCUSSION

Our study showed that Covid 19 massively impacted the education (84.2%) of medical students at Federal medical college. This finding is similar to the results of a study conducted in the USA which showed 74.7% of students' medical education was affected by the pandemic.³ Majority 87.4 % of students reported that they were taking online classes as the learning shifted from physical to online globally during the pandemic³⁴⁵. 72 % of students in this study believed that covid 19 pandemic caused a waste of time in line with the findings of a similar Pakistani study (75.4%).⁴ More than 2/3rd of the students were worried about their professional exams and clinical rotation

Table 1: Association of various factors affecting Education with the gender of the students (n=215)

		Male (%)	Female (%)	Chi/p-value
Concerned about Professional Exams	Yes	70 (72.2)	99 (83.9)	4.358/0.037*
	No	27 (27.8)	19 (16.1)	
The pandemic has affected clinical work due to no ward rotations	Severe	36 (37.1)	47 (39.8)	0.047/7.995*
	Moderate	24 (24.7)	45 (38.1)	
	Mild	19 (19.6)	12 (10.2)	
	No Affect	18 (18.6)	14 (11.9)	
Online Classes	Yes	92 (94.8)	96 (81.4)	0.003/8.882*
	No	05 (5.2)	22 (18.6)	
Satisfied with E-Learning	Yes	24 (24.7)	14 (11.9)	0.014/6.068*
	No	73 (75.3)	104 (88.1)	
Students Interest in Studies	More Interested	20 (20.6)	11 (9.3)	0.019/5.506*
	Lost Interest	77 (79.4)	107 (90.7)	
E-Learning would be real substitute	Yes	33 (34)	17 (14.4)	0.001/11.475*
	No	64 (66)	101 (85.6)	
Feasible for Rural Area Students	Yes	27 (27.8)	15 (12.7)	0.005/7.746*
	No	70 (72.2)	103 (87.3)	
Difficulty of Studying at Home in current Situation	Yes	26 (26.8)	48 (40.7)	0.033/4.54*
	No	71 (73.2)	70 (59.3)	
Total		97 (100)	118 (100)	

*p-value<0.05

Table 2: Association of various factors according to the Studying Class of the students (n=215)

		1st (%)	2nd (%)	3rd (%)	4th (%)	5th (%)	Chi/p-value
Concerned about Professional Exams	Yes	37 (86)	35 (81.4)	35 (81.4)	36 (83.7)	26 (60.5)	10.857/0.028*
	No	06 (14)	08 (18.6)	08 (18.6)	07 (16.3)	17 (39.5)	
The pandemic has Effectuated clinical work due to no ward rotations	Severe	17 (39.5)	11 (25.6)	16 (37.2)	19 (44.2)	20 (46.5)	26.945/0.008*
	Moderate	12 (27.9)	10 (23.3)	14 (32.6)	15 (34.9)	18 (41.9)	
	Mild	05 (11.6)	08 (18.6)	06 (14.0)	08 (18.6)	04 (9.3)	
	No Effect	09 (20.9)	14 (32.6)	07 (16.3)	01 (2.3)	01 (2.3)	
Online Classes	Yes	38 (88.4)	39 (90.7)	41 (95.3)	41 (95.3)	29 (67.4)	21.009/<0.001*
	No	05 (11.6)	04 (9.3)	02 (4.7)	02 (4.7)	14 (32.6)	
Effective is the E-Learning	Quite a Lot	03 (7)	03 (7)	0	02 (4.7)	0	18.673/0.017*
	Somehow Effective	23 (53.5)	24 (55.8)	15 (34.9)	15 (34.9)	13 (30.2)	
	Not Effective at all	17 (39.5)	16 (37.2)	28 (65.1)	26 (60.5)	30 (69.8)	
Transition increased use of social media affected study	Yes	41 (95.3)	36 (83.7)	37 (86.0)	41 (95.3)	32 (74.4)	11.744/0.019*
	No	02 (4.7)	07 (16.3)	06 (14)	02 (4.7)	11 (25.6)	
E-Learning would be real substitute	Yes	13 (30.2)	14 (32.6)	11 (25.6)	09 (20.9)	03 (07)	9.903/0.042*
	No	30 (69.8)	29 (67.4)	32 (74.4)	34 (79.1)	40 (93)	
Total		43 (100)	43 (100)	43 (100)	43 (100)	43 (100)	

*p-value<0.05

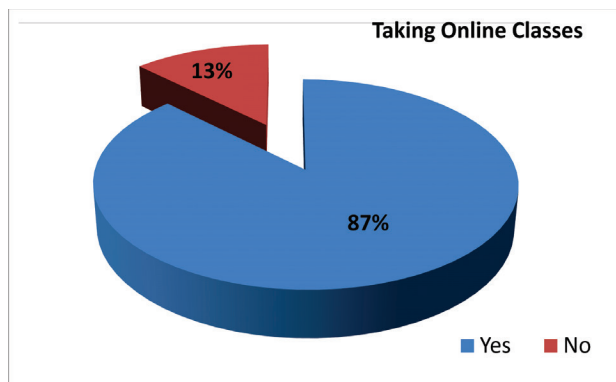


Fig 1: Frequency of students taking Online Classes

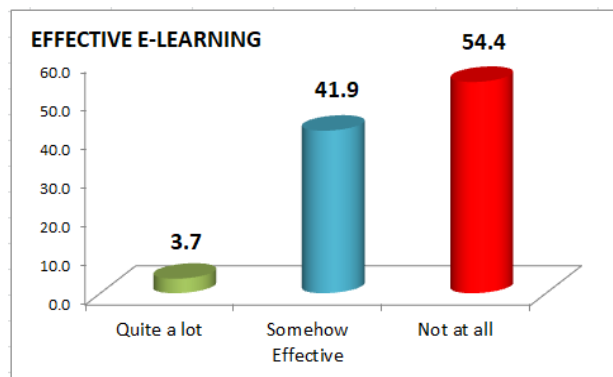


Fig 2: Perception of Effectiveness of E-Learning among Students (%)

which increased anxiety about Covid 19 in medical students similar to the conclusions of a study conducted at the University of South Carolina.⁵ Majority 85.1 % of the students especially of clinical years had no clinical rotations which were similar to the situation of medical students worldwide.^{7,8} 82.3% students were not satisfied with e-learning and 76.7% of students didn't consider it as a possible mode of learning in future contrary to 59 % students who believed e-learning was less time-consuming and efficient in a survey conducted in a medical university in Saudi Arabia.¹⁰ Our findings are similar to the results of a study carried out on UK medical students which did not approve of e-learning as it lacked teacher-student interaction.¹¹ 81% of students considered online learning ineffective for students belonging to rural areas, this can be attributed to technical glitches and internet connectivity issues making it unfeasible to study online.^{16,17,18} 34.4% of students had difficulty in maintaining a studying atmosphere at home in accordance with 36.4% of medical students experiencing the same distraction in a research conducted in Jordan¹⁹. A great number of students (87%) believed they were wasting more time on social media amidst covid pandemic hence affecting their studies, similar to the results (90.5%) of a study conducted in multiple medical colleges in Punjab.²² 60% of the students were fearful of catching covid or transmitting it to their friends/family which corresponds to the findings on the psycho-

logical impact of covid 19 on medical students in various studies.^{20,21} Fear of income loss, scholarship, and funding were also causing stress among the students relating to the results of Rawalpindi Medical University study.²¹

This indicates that the pandemic adversely impacted the mental health of students due to uncertainty and fear of the deadly disease itself. 83.7% of students missed classroom interaction and 85.6% missed human connection with their teachers in line with 80.7% and 82.7% findings respectively of a study conducted recently.²² Pakistani students had a huge transition in terms of the mode of learning because online learning was very uncommon until Covid 19 was declared a pandemic.

CONCLUSION

The educational system shifting to online learning in the wake of covid 19 pandemic has posed a challenge for all levels of learning especially medical/clinical education which relies hugely on practical demonstrations and patient interaction. Alternative methods should be devised to continue medical education in times of pandemic, especially in third-world countries like Pakistan where there is a scarcity of resources and technology. The quality of medical education should not be compromised in any situation due to the delicacy of their profession.

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AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under

Bukhari GMJ:	Conceptualization of study design, literature search, data analysis, data interpretation, write up, proof reading
Saleem HB:	Literature search, collection of data, drafting of the article
Saleem J:	Data analysis and interpretation
Batool M:	Data analysis and interpretation
Majeed F:	Drafting of the article, critical revision of the article
Batool H:	Collection of data, drafting of the article

Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.



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