



Original Article

Challenges of Online Medical Education During the COVID-19 Pandemic Faced by 3rd and 4th Year Medical Students of Sir Salimullah Medical College, Dhaka

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Abstract

Background: Online education is a form of education where students use their home computers through the internet staying away from academic institutions. Due to the emergence of the pandemic of COVID-19, the whole world is experiencing number of huge deaths along with widespread panic and uncertainty. Countries of the world are trying to fill the gap and minimize the losses of students caused by the ongoing pandemic. **Objective:** This study mainly explores the challenges of online medical education during COVID-19 pandemic faced by 3rd and 4th year medical students of Sir Salimullah Medical College, Dhaka, Bangladesh. **Materials and Methods:** This Descriptive cross-sectional study was conducted in Sir Salimullah Medical College, Dhaka from January 2021 to December 2021. A weblink of survey was shared with 439 3rd and 4th year medical students and 309 responses were obtained. Data were collected by using pretested semi structured questionnaire by face-to-face interview and by online google form due to COVID-19 pandemic situation and sample were collected by purposive sampling. **Result:** Among 309 respondents, 60.2% were female and 39.8% were male, 95.8% respondents were Bangladeshi, 46.3% respondents' family income were around 30000 taka, 64.4% respondents lived in city, 22% respondents faced some challenges regarding internet connection, 8.41% respondents faced knowledge about internet browsing, 5.18% respondents faced problem regarding time management and 3.8% respondents faced problem about the adaptation of new method of learning. Despite these challenges 59.2% of the respondents reported positive response about beneficial effect of online classes and half (52.8%) of the respondents were satisfied with online classes. **Conclusion:** In medical education face-to-face education is essential. But due to lockdown there was no scope of practical and face to face education during COVID-19 pandemic situation. This study showed that there were some positive and negative impacts of online education.

Key words: Online medical education, COVID-19, Medical students.

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Introduction

Coronaviruses are important human and animal pathogens. At the end of 2019, a novel coronavirus was identified as the cause of a cluster of pneumonia cases in Wuhan, a city in the Hubei Province of China. It rapidly spread, resulting in an epidemic throughout China, followed by a global pandemic¹. In February 2020, the World Health Organization designated the disease COVID-19, which stands for coronavirus disease 2019¹. The virus that causes COVID-19 is designated severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2); previously, it was referred to as 2019-nCoV².

The COVID-19 pandemic has impacted all aspects of our lives, including education and the economy. Governments have issued directives to stay at home.

As a result, educational institutions have been shut down. Hence, online classes have become a key component in the continuity of education³. The whole world is fighting the coronavirus, which has spread to nearly every point of the globe over the first three months of 2020⁴. At the end of May, the death toll crossed 369,124, while the total quantity of infected was over 6 million across the world⁴. To control this quick spread, many countries were prosecuted for lockdown that caused a significant impact on all aspects of our daily lives⁵.

Face to face interaction is the traditional teaching method across the world. The implementation of social distancing to prevent contamination of COVID-19 forced educational institutes to empty

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their classrooms and keep the students away from the institution. So, there has been a general shift from traditional face to face instruction to online teaching³. Across the globe, the spread of novel coronavirus (COVID-19) has led to profound changes in social interaction and organization and the education sector has not been immune. While the primary student population appears to be at a lower mortality risk category compared to older adults, pandemic precautions called “social distancing” or “physical distancing” have attempted to reduce interpersonal contact and there by minimize the kind of community transmission that could develop quickly in dense social networks like the university campus⁶.

In the case of medical education, it is more challenging. For preclinical teaching that usually does not involve patient interaction. But in the case of clinical teaching where the students need and spend most of their time in in the clinical setting⁷. During the pandemic, face-to-face sessions are not allowed, so there is no clinical exposure, no bedside teaching, no hands on for physical examination, no hands on for history taking and no hands on to do clinical procedures. Assessment of students are also affected by the pandemic⁸.

Digital education is a sort of education where students use their home computers or laptops or smartphones through the internet, staying away from their academic institutions⁹. In the present time, digital teaching-learning has become a buzzword in the sector of education because no other substitutes provide education to the students in the institutes¹⁰. Ongoing COVID-19 widespread is making a psycho-emotional chaotic circumstance as nations have been reporting a sharp rise of mental wellbeing issues, counting uneasiness, discouragement, stretch, sleep disorder, fear among the citizens¹¹.

Online distance education can potentially hinder interpersonal contact and interaction between medical students and the faculty members, while at the same time it limits the students’ opportunities to practice interviewing and thus cultivate the necessary communication and empathy skills for interacting with patients and their colleagues¹². Indeed, restricted access to clinical environment is a main obstacle to students’ preparation for clinical practice, thus lowering their self-confidence¹³. Online media can ensure multiple benefits for both students and teachers in supporting teaching and learning⁸. Different studies reveal that online courses have been found to be conducive to students who favor self-regulated learning⁷.

It is the first time in Bangladesh the online trend of education has been introduced at a wide scale. Data expressed by students and teachers regarding online

classes that they are experiencing several challenges. First, it is their first experience to get connected with online class, so they are found to be struggling with the proper adaptability with this trend as switching from traditional classroom to computer-based training in a virtual classroom makes the learning and teaching experience entirely different for them¹⁴.

Secondly, during the shutdown most of the students are staying home in different areas of the country as still in the rural area’s internet facilities are hardly found, students use mobile internet which interrupts the online connectivity due to poor internet signal. Besides the internet is still expensive in our country.

Thirdly, there are some technical issues like poor literacy on handling computers and smart phone. Moreover, students and teachers must download some apps like Zoom, FoxFi, Audioboo, etc., sometime seem challenging due to not having prior experiences and these apses have limited time to be connected online.

Fourthly, time management has been a crucial thing, such as for example Zoom can connect people online for 40 minutes each time, but students take time to respond to the class due to some technical interruptions. When students join in the middle of the class, they have the chance to understand a little.

Fifthly, it is difficult for the teachers to manage feedback from every individual as well as to let them engage in materials. Adapting to an online environment can be a challenge for both facilitators and students¹⁴.

In this study, we explore the impact of the COVID-19 pandemic on the education and assessment of undergraduate medical students, the repercussions on their mental health and future career plans, while exploring their experience as ‘frontline workers’, along with the institutional responses to these challenges. We also focus on how this unique period could act as a catalyst for substantial changes and further implementation of the ‘evidence-based’ approach in medical education.

Materials and Methods

This Descriptive type of cross-sectional study was conducted in Sir Salimullah Medical College, Dhaka from January 2021 to December 2021 with ethical approval from IERB. A total 384 sample were selected purposively but 309 data was collected according to inclusion and exclusion criteria. Data were collected by using pretested semi structured questionnaire by face-to-face interview and by online google form due to COVID-19 pandemic situation and sample were collected by purposive sampling. Collected data were edited and analyzed

with the help of SPSS (version 25). Categorical variables were expressed as frequency and percentage. Continuous variables were expressed as mean and standard deviation. Then the results were depicted in the forms of tables and figures.

Results

A total of 309 individuals responded to survey: 186 (60.2%) were female and 123 (39.8%) were male, 183 (59.2%) age were 15-20 and 126 (40.8%) age were 21-25, 272 (88.0%) religion were Islam and 37 (12.0%) religion were Hinduism, 143 (46.3%) family income were ≤30000 Tk, 126 (40.8%) family income were 30000 to 60000 Tk and 40 (12.9%) family income were >60000 Tk. Among them 239 (77.3 %) live in pacca house, 44 (14.2%) live in semipacca house and 26 (8.4%) live in kaccha house. 296 (95.8%) students’ nationality were Bangladeshi, 5 (1.6%) were Pakistani, 4 (1.3%) were Indian, 2 (0.6%) were Italian, 1 (0.3%) were American, 1 (0.3%) were Nepali. Among the participants 199 (64.4) students live in city, 108 (35.0%) lives in village and 2 (0.6%) lives in hilly area. The characteristics of the study respondents are depicted in Table-I.

Table-I: Socio Demographic Characteristics of the Respondents (n=309)

Characteristics	Group	Frequency	Percentage(%)
Age	15-20	126	40.8
	21-25	183	59.2
Gender	Male	123	39.8
	Female	186	60.2
Religion	Islam	272	88.0
	Hinduism	37	12.0
Monthly family income	≤30000 Tk	143	46.3
	30000-60000 Tk	126	40.8
	>60000 Tk	40	12.9
Type of Residence	Kaccha	26	8.4
	Semi pacca	44	14.2
	Pacca	239	77.3
Nationality	Bangladeshi	296	95.8
	Pakistani	5	1.6
	Indian	4	1.3
	Italian	2	0.6
	American	1	0.3
	Nepali	1	0.3
Area of Living	City	199	64.4
	Village	108	35.0
	Hill tract	2	0.6

Table-II: Preference of teaching among the respondents (n=309)

Preference	Frequency	Percentage (%)
Combination of online and traditional teaching instruction	165	53.39
Traditional teaching instruction	102	33.02
Online instruction	42	13.59

Among the respondents, 165 (53.39%) preferred combining online with traditional face to face instruction, 102 (33.02%) preferred traditional teaching instruction and 42 (13.59%) preferred online instruction (Table-II).

Table-III: Challenges to online education during the COVID-19 pandemic (n=124)

Challenges	number (%)
Internet connection	68 (22)
knowledge about internet browsing	26 (8.41)
Time management	16 (5.18)
Adapting new methods of learning	12 (3.88)
Language	2 (0.64)

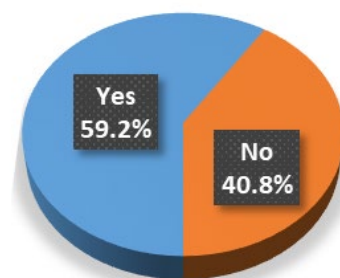


Figure-1: Pie chart showing the beneficial effects of online classes.

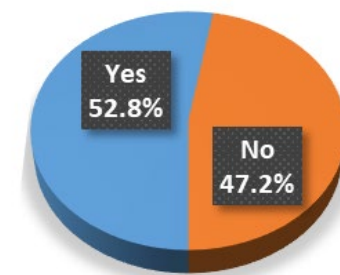


Figure-2: Pie chart showing the satisfaction of respondents with online classes.

The reported challenges to online education during the COVID-19 pandemic, 185 (59.87%) respondents did not face any challenge. The rest 68 (22%) respondents faced some challenges regarding internet connection, 26 (8.41%) respondents faced knowledge about internet browsing, 16 (5.18%) respondents faced a problem regarding time management, 12 (3.8%) respondents faced problem about the adaptation of new method of learning and 2 (0.64%) respondents faced language problem (Table-III).

Despite all these challenges 59.2% of the respondents reported positive response about beneficial effect of online classes and half (52.8%) of the respondents were satisfied with online classes (Figure-1 & 2).

Discussion

The coronavirus disease 2019 (COVID-19) pandemic has impacted all aspects of our lives, including education and the economy. Governments have issued directives to stay at home. As a result, educational institutions have been shut down. In the case of medical education, it is more challenging. There is no scope of face-to-face education. The present cross-sectional study was conducted during January 2021 to December 2021 to assess the challenges of online medical education in covid-19 pandemic faced by 3rd and 4th year students in Sir Salimullah Medical College, Dhaka, Bangladesh.

The mean age of the respondents was 21.75±0.92 years with minimum and maximum age of the respondents were 19 and 24 years respectively. This is inconsistent with some previous study conducted in Uganda where median age was 23 (18 to 40) years¹⁵. This current study showed that maximum (60.2%) respondents were female and remaining (39.8%) of the respondents were male. This finding is also similar with another study^{15,16}. The present study demonstrated that, among 309 respondents, most (88.0%) of the respondents' religion were Islam and rest (12.0%) of the respondents' religion were Hinduism.

In this study it was found that almost half (46.3%) of the respondents' monthly family income was less than or equal to 30000 takas, followed by 40.8% respondents' monthly family income were between 30001 and 60000 taka and only 12.9% respondents' monthly family income was more than 60000. As per BBS report, monthly family income is 11,479 BDT (BBS, 2012b). There is similarity between the present study findings and BBS report regarding income distribution¹⁷.

Almost 77.3% of the respondents' houses were *pacca*, followed by 14.2% respondents' houses were *semi pacca* and 8.5% respondents' houses were

kaccha. It is also revealed that most (95.8%) of the respondents were Bangladeshi and rest (4.2%) of the respondents were Pakistani, Indian, Italian, American and Nepali. Maximum (64.4%) of the respondents live in the city, on the other hand 35.0% of the respondents live in village and only 0.6% respondents live in hill tract.

Among the respondents, 165 (53.39%) preferred combining online with traditional face to face instruction, 102 (33.02%) preferred traditional teaching instruction and 42 (13.59%) preferred online instruction. This study reported that 124 (40.1%) respondents face some challenges regarding internet connection 68 (22%), knowledge about internet browsing 26 (8.41%), time management 16 (5.18%), Adapting new method of learning 12 (3.88%) and language 2 (0.64%).

The reported challenges to online education during the COVID-19 pandemic, 185 (59.87%) respondents did not face any challenge. The rest 68 (22%) respondents faced some challenges regarding internet connection, 26 (8.41%) respondents faced knowledge about internet browsing, 16 (5.18%) respondents faced a problem regarding time management, 12 (3.8%) respondents faced a problem about the adaptation of new method of learning and 2 (0.64%) respondents faced language problem. Language problems was due to foreigner students.

In another study, barriers were classified under 5 (five) categories: technological, individual, domestic, institutional and community barriers³. A study conducted in Sudan reported that, technical issues, including connectivity and communications infrastructure, cost of accessing the infrastructure that is in place and lack of adequate number of competent academic staff are considered as the most significant factors in restricting E-learning¹⁸.

The current study shows that 59.2% of the respondents reported a positive response about the benefit of online classes. Respondents gave their opinion that there are some benefits like staying at home, it is possible to attend online classes without classroom; through online system social and physical distance maintain is possible; theoretical classes and syllabus has completed; online medical education keeps students busy as a result they are not affected by depression; online classes are always better than no classes at all. About 40.8% of the respondents reported negative responses about the benefit of online classes and mentioned that learning real medical education is not possible in online classes¹⁹. Besides, half (52.8%) of the respondents were satisfied with online classes. Another study stated that (54.8%) were extremely satisfied and quite satisfied with the online teaching-learning

modalities¹⁹. It was reported in a Romanian study that, most students (71.5%) thought the pandemic had an overall negative impact on their professional development²⁰.

The opinions made by the respondents were disparate, nevertheless. Due to the removal of several traditional teaching obstacles that did not benefit all students, some students praised blended education. With access to modern tools and resources, schools may customize the learning experience for each student. Students also thought that the transition to an online environment had not diminished the quality of instruction. Others claimed that the first few online sessions were difficult. Both academic staff and students had to adapt to the online world. Others found the online learning process to be disappointing. After the pandemic, they were eager to resume traditional face-to-face instruction.

Limitations of the Study

The study had several limitations. We conducted the study during the first phase of the COVID-19 pandemic. The sample was collected purposively, so the study findings did not reflect the actual picture of the whole student community. The study was conducted in a single institute and involved 3rd and 4th year students only. So, the study didn't reflect properly the overall situation. Students might not give true information.

Conclusion

In medical education face-to-face education is essential. But due to locking down there is no scope of practical and face to face education. The present study showed the positive and negative impact on online education. Most of the people found a satisfying and very useful education system during the lockdown period. Challenges brought about by the pandemic included those related to communication, use of technology tools, online experience, time management etc.

Conflict of interest

The authors declared that they have no conflict of interest.

References

1. World Health Organization. Director-General's remarks at the media briefing on 2019-nCoV on 11 February 2020. Available at: <https://www.who.int/director-general/speeches/detail/who-director-general-s-remarks-at-the-media-briefing-on-2019-ncov-on-11-february-2020> [Accessed on February 12, 2020].
2. McIntosh K. COVID-19: Epidemiology, Virology and Prevention. 2022; 1: 1-25.
3. Rajab MH, Gazal AM, Alkattan K. Challenges to Online Medical Education During the

- COVID-19 Pandemic. *Cureus*. 2020; 12 (7): e8966. DOI:10.7759/cureus.8966.
4. Khan MM, Rahman SMT, Islam STA. Online Education System in Bangladesh during COVID-19 Pandemic. *Creative Education*. 2021; 12: 441-52. doi: <https://doi.org/10.4236/ce.2021.122031>.
5. Abdulmir AS, Hafidh RR. The Possible Immunological Pathways for the Variable Immunopathogenesis of COVID-19 Infections among Healthy Adults, Elderly and Children. *Electron J Gen Med*. 2020; 17 (4): em202. doi: <https://doi.org/10.29333/ejgm/7850>.
6. Weeden KA, Cornwell B. The Small-World Network of College Classes: Implications for Epidemic Spread on a University Campus. *Sociol Sci*. 2020; 7: 222-41. doi: 10.15195/v7.a9.
7. You JW, Kang M. The role of academic emotions in the relationship between perceived academic control and self-regulated learning in online learning. *Computers & Education*. 2014; 77: 125-33. doi: <https://doi.org/10.1016/j.compedu.2014.04.018>.
8. Graham CR, Misanchuk M. Computer-Mediated Learning Groups: Benefits and Challenges to Using Group work in Online Learning Environments. 2004; 1: 181-202. doi:10.4018/978-1-59140-174-2.CH008.
9. Anastasiades P, Fillppousis G, Karvunis L, Siakas S, Interactive Video conferencing for Collaborative Learning at a Distance in the School of 21st Century: A Case Study in Elementary Schools in Greece. *Computers and Education*. 2010; 54: 321-39. doi: <https://doi.org/10.1016/j.compedu.2009.08.016>.
10. Baiyere A, Li H. Application of a Virtual Collaborative Environment in a Teaching Case. 22nd Americas Conference on Information Systems, San Diego. 2016; 1: 1-8.
11. Gritsenko V, Skugarevsky O, Konstantinov V, Khamenka N, Marinova T, Reznik, et al. COVID-19 Fear, Stress, Anxiety and Substance Use Among Russian and Belarusian University Students. *Int J Ment Health Addict*. 2021; 19 (6): 2362-8. doi: 10.1007/s11469-020-00330-z.
12. Rallis KS, Allen-Tejerina AM. Tele-oncology in the COVID-19 Era: Are Medical Students Left Behind? [Published correction appears in *Trends Cancer*. 2020 Oct 24]. *Trends Cancer*. 2020; 6 (10): 811-2. doi: 10.1016/j.trecan.2020.08.001.
13. Shehata MH, Abouzeid E, Wasfy NF, Abdelaziz A, Wells RL, Ahmed SA. Medical Education Adaptations Post COVID-19: An Egyptian Reflection. *J Med Educ Curric Dev*. 2020; 7: 2382120520951819. doi: 10.1177/2382120520951819.
14. Jaques D, Salmon G. Learning in Groups: A Handbook for Face-to-Face and Online

- Environments, 4th ed. London: Routledge; 2006. p16. doi: <https://doi.org/10.4324/9780203016459>.
15. Olum R, Atulinda L, Kigozi E, Nassozi DR, Mulekwa A, Bongomin F, et al. Medical Education and E-Learning During COVID-19 Pandemic: Awareness, Attitudes, Preferences and Barriers Among Undergraduate Medicine and Nursing Students at Makerere University, Uganda. *J Med Educ Curric Dev.* 2020; 7: 2382120520973212. doi: 10.1177/2382120520973212.
 16. Gismalla MD, Mohamed MS, Ibrahim OSO, Elhassan MMA, Mohamed MN. Medical students' perception towards E-learning during COVID 19 pandemic in a high burden developing country. *BMC Med Educ.* 2021; 21 (1): 377. doi: 10.1186/s12909-021-02811-8.
 17. Statistical Yearbook of Bangladesh 2012. Bangladesh Bureau of Statistics, Statistics Division, Ministry of Planning. Government of the People's Republic of Bangladesh, Dhaka. Available at: <http://203.112.218.65:8008/WebTestApplication/userfiles/Image/SubjectMatterDataIndex/YB2012.pdf> [Accessed on February 12, 2020].
 18. Suliman AAE, Fie DYG, Raman M, Alam N, editors. Barriers for Implementing ICT on Higher Education in Underdeveloped Countries “Sudan: Case Study”. CONF-IRM 2008 Proceedings; 2008. Available at: <https://core.ac.uk/download/pdf/301341274.pdf> [Accessed on February 15, 2020]
 19. Vishwanathan K, Patel GM, Patel DJ. Impact and perception about distant online medical education (tele-education) on the educational environment during the COVID-19 pandemic: Experiences of medical undergraduate students from India. *J Family Med Prim Care.* 2021; 10 (6): 2216-24. doi: 10.4103/jfmpe.jfmpe_2306_20.
 20. Sutoi D, Bazavan CO, Sutoi M, Petrica A, Marza AM, Trebuian CI, et al. The Learning Experience of Romanian Medical Students During the Online Teaching Imposed by the COVID-19 Pandemic. *Adv Med Educ Pract.* 2023; 14: 1077-86. doi: 10.2147/AMEP.S418563.

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