

The Impact of COVID-19 Pandemic on Undergraduate Medical Students of Bangladesh

Fatema Johora¹ Asma Akter Abbasy² Fatiha Tasmin Jeenia³ Mithun Chandro Bhowmik⁴ Priyanka Moitra⁵ Jannatul Ferdoush^{6*}

ABSTRACT

Background: The Coronavirus Disease 2019 (COVID-19) pandemic has caused unprecedented disruptions worldwide including education system. While the necessary focus has been on patient care, safety of healthcare professionals as well as economic aspect, the impacts on medical education need to be warranted. The purpose of the study to find out the impact of COVID-19 Pandemic on Medical students of Bangladesh.

Material and methods: This cross-sectional comparative was conducted to evaluate the impact of COVID-19 pandemic on paraclinical (3rd & 4th year) and clinical (Final year) students of seven medical colleges of Bangladesh in October 2020. A structured questionnaire survey linked in the google form was used as study instrument and was distributed among study population through email, messenger, whatsapp and other social media. Total 1020 students were participated in the study.

Results: In the present research, total number of paraclinical (3rd & 4th year) and clinical (Final year) students were 718 (70.4%) and 302 (29.61%) respectively. Respondents of current research strongly agreed about disruption of ongoing education and more concern was expressed by clinical students. A fear of concern about losing clinical skill and competency was expressed specially by the clinical students. Clinical students were also more worried about the influence of COVID 19 on their future career plan and the financial impact due to the prolongation of course length. Both paraclinical and clinical students disagreed about achieving positive learning from this pandemic which was marked among paraclinical students. Rather they agreed that this pandemic crisis has increased their stress and anxiety. Most of the students are feared of getting infected with coronavirus when they will return for clinical placement as most of them expressed impossibility of maintenance of social distancing in campus.

Conclusion: Undergraduate medical students of Bangladesh has expressed their concern about losing of clinical skill, imposed financial burden, increased level of anxiety and stress, changing aspect of future career plan and fear of getting infected whenever return to clinical placement and significant concern was observed among clinical students.

Key words: COVID-19 pandemic; Medical education; Bangladesh.

Introduction

For last several months, COVID-19 pandemic has caused major disruption of every aspects of human life including abrupt closure of medical schools worldwide^{1,2}. For the past few months, medical students have been forced to transit their intensive learning environments to an online

format³. At present, undergraduate teaching is being conducted by various methods using various online platforms by many medical colleges without any uniformity^{4,5}. However, with the beginning of online education, students and educators have faced challenges. In addition to that students are also facing challenges in communicating teachers, adjusting new online assessment methods and workloads and dealing with many online education issues like unavailability of electronic devices, no internet access, high cost of internet, etc^{6,7,8}. There is a distinguished difference between medical institutions with other public institutions. Chance of getting infected with COVID is more in medical students as they are supposed to learn clinical skills through their rotatory placement in hospital³. On the other hand, virtual learning might be helpful for theoretical knowledge but its effectiveness for preparing future physicians as competent clinicians is still questionable.

Considering the health issue, Government of Bangladesh has also closed all institutional activities due to COVID-19 pandemic since 18th March, 2020⁹. In Bangladesh, total 112 medical colleges (36 public medical colleges, 70 private medical colleges and 06 medical colleges run by Bangladesh Armed Forces) are assigned to provide the formal

1. Associate Professor of Pharmacology & Therapeutics Army Medical College Bogura, Bogura.
2. Associate Professor of Pharmacology & Therapeutics Brahmanbaria Medical College, Brahmanbaria.
3. Assistant Professor of Pharmacology & Therapeutics Chattogram International Medical College, Chattogram.
4. Lecturer of Pharmacology & Therapeutics Rangpur Medical College, Rangpur.
5. Lecturer of Pharmacology & Therapeutics Colonel Malek Medical College, Manikganj.
6. Associate Professor of Pharmacology & Therapeutics BGC Trust Medical College, Chattogram.

*Correspondence: **Dr. Jannatul Ferdoush**
Cell: +88 01856 18 99 77
Email: jannat_fkh@yahoo.com

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Medical education with the aim of making graduate competent under the guidance of BMDC¹⁰. MBBS course comprises of five years of study followed by a mandatory one-year clinical internship¹¹. In view of the prolonged closure of institutions and the uncertainty of re-opening, Bangladesh Government took decision to switch onto online education from conventional face-to-face education. However, virtual teaching being a new experience in almost all medical colleges; sudden shifting of teaching methodology has imposed challenges to both the faculty and students in adopting the new virtual class^{9,12}.

Hence, the present study was carried out with the attempt to find out the impact of COVID-19 pandemic on medical students of Bangladesh.

Material and methods

A cross-sectional comparative study was designed to meet the study objective. The study population comprised of para-clinical (3rd & 4th year) and clinical (Final year) students of seven medical colleges of Bangladesh including government (Colonel Malek Medical College, Manikganj and Rangpur Medical College) and Non-Government Medical Colleges (Army Medical College Bogura, Army Medical College Chattogram, BGC Trust Medical College, Brahmanbaria Medical College and Chattogram International Medical College) in October 2020.

A structured questionnaire consisted of 08 Likert scale (Five-point) questions were developed and questionnaire was validated before survey.

Permission was taken from college authorities and informed consent was taken from the participants of the Structured Questionnaire Survey. Researchers explained the nature and purpose of the survey to the students during a virtual class. This self-administered questionnaire was linked in google form and was distributed among study population through email, messenger, whatsapp and other social media who gave consent. To assure the quality, students filled and submitted the questionnaire quickly during end of class. Later, this web-based questionnaire was sent to students who were absent in the class through email. A reminder mail or message was given on 7th day and 15th day of the primary one. The response generated by the students was received through google drive, and it did not accept double response from same participant.

Data was compiled, presented and analyzed using SPSS version 22, and was expressed as percentage and mean values. Unpaired t-test was done to determine the significance of difference between the mean values. Statistical analysis was performed at a 95% confidence interval and significance was determined at $p < 0.05$.

Results

One thousand and twenty respondents were covered during the study period, of which 330 (32.35%) were males and 690 (67.64%) were females. Total number of para-clinical (3rd & 4th year) and clinical (final year) students were 718 (70.4%) and 302 (29.61%) respectively.

Table I : Demographic Information.

Demographic Information	Particulars	Frequency	Percentages (%)
Gender	Male	330	32.35%
	Female	690	67.64%
Year of MBBS	Para clinical	718	70.4%
	Clinical	302	29.61%

Among the paraclinical students, majority (60.03%) of the students strongly agreed that their medical education has been significantly disrupted by the pandemic, majority (52.51%) agreed that pandemic is going to limit their clinical skills and competency and it will influence the career plan of most (49.86%) of them. Most (62.53%) of the students strongly agreed that their academic career is going to be lengthen by this pandemic which will increase the financial burden of their family and many (34.54%) of them disagreed on the issue of finding a meaningful learning from this pandemic. Rather majority (41.36%) strongly agreed that their stress and anxiety level has been increased. Most (43.04%) of the students don't think that maintenance of social distancing in classroom, ward and hostel is possible and majority (37.47%) has agreed to accept the risk of getting infected with COVID 19 while returning to clinical ward placement.

Table II : Responses of paraclinical students to the questionnaire.

Question	Response (n=718)									
	Strongly agree		Agree		Neither agree or disagree		Disagree		Strongly disagree	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%
My medical education has been significantly disrupted by the pandemic	431	60.03	253	35.24	14	1.95	19	2.65	1	0.14
The pandemic is going to limit my clinical skills and competency	283	39.42	377	52.51	39	5.43	18	2.51	1	0.14
COVID 19 will definitely influence my future career plan	244	33.98	358	49.86	65	9.053	43	5.99	8	1.11
As this pandemic is going to lengthen my academic career, it would be a financial burden for my family	449	62.53	208	28.97	36	5.01	19	2.65	6	0.84
I have been able to find meaningful learning opportunities in the pandemic	46	6.41	173	24.09	187	26.04	248	34.54	64	8.91
My stress and anxiety level has been increased in this pandemic	297	41.36	295	41.09	54	7.52	64	8.91	8	1.11
It is possible to maintain social distancing in classroom, ward and hostel.	51	7.10	86	11.98	40	5.57	309	43.04	232	32.31
I accept the risk that I may be infected with COVID 19, if I return to clinical ward placement	206	28.69	269	37.47	60	8.36	95	13.23	88	12.25

Among the clinical students, majority (64.90%) of the students strongly agreed that their medical education has been significantly disrupted by the pandemic and it also going to limit the clinical skills and competency of majority (61.59%) of them. It will also influence the career plan of most (57.28%) of them. Majority (77.81%) of the students strongly agreed that their academic career is going to be lengthen by this pandemic which will increase the financial burden of their family and many (47.35%) of them disagreed on the issue of finding a meaningful learning from this pandemic. Rather majority (63.25%) strongly agreed that their stress and anxiety level has been increased. Most (57.62%) of the students don't think that maintenance of social distancing in classroom, ward and hostel is possible and majority (49.34%) has agreed to accept the risk of getting infected with COVID 19 while returning to clinical ward placement.

Table III : Responses of clinical students to the questionnaire.

Questions	Response (n= 302)									
	Agree		Neither agree or disagree		Disagree		Strongly disagree			
	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%
My medical education has been significantly disrupted by the pandemic	196	64.90	104	34.44	1	0.33	1	0.33	0	0
The pandemic is going to limit my clinical skills and competency	186	61.59	113	37.42	1	0.33	2	0.66	0	0
COVID 19 will definitely influence my future career plan	173	57.28	114	37.75	8	2.65	6	1.99	1	0.33
As this pandemic is going to lengthen my academic career, it would be a financial burden for my family	235	77.81	67	22.19	0	0	0	0	0	0
I have been able to find meaningful learning opportunities in the pandemic	18	5.96	51	16.89	41	13.58	143	47.35	49	16.23
My stress and anxiety level has been increased in this pandemic	191	63.25	99	32.78	7	2.32	5	1.66	0	0
It is possible to maintain social distancing in classroom, ward and hostel.	11	3.64	19	6.29	9	2.98	174	57.62	89	29.47
I accept the risk that I may be infected with COVID 19, if I return to clinical ward placement	128	42.38	149	49.34	7	2.32	15	4.97	3	0.99

Table IV showed statistically significant difference present between paraclinical and clinical students in all questions.

Table IV : Comparison between the responses of paraclinical and clinical students.

Questions	Response		
	Paraclinical students Mean ± SD (n=718)	Clinical students Mean ± SD (n=302)	p value
My medical education has been significantly disrupted by the pandemic	4.52± 0.68	4.64± 0.51	0.006
The pandemic is going to limit my clinical skills and competency	4.29± 0.69	4.60± 0.54	< 0.0001
COVID 19 will definitely influence my future career plan	4.10 ± 0.87	4.50± 0.68	< 0.0001
As this pandemic is going to lengthen my academic career, it would be a financial burden for my family	4.50± 0.78	4.78± 0.42	< 0.0001
I have been able to find meaningful learning opportunities in the pandemic	2.85 ± 1.08	2.49± 1.13	< 0.0001
My stress and anxiety level has been increased in this pandemic	4.13 ± 0.96	4.58± 0.63	< 0.0001
It is possible to maintain social distancing in classroom, ward and hostel.	2.19 ± 1.31	1.97± 0.95	0.009
I accept the risk that I may be infected with COVID 19, if I return to clinical ward placement	3.57 ± 1.35	4.27± 0.81	< 0.0001

Unaired t-test was done, $p \leq 0.05$ = Statistically significant. 1= Strongly disagree, 2= Disagree, 3= Neither agree or disagree, 4= Agree, 5= Strogly agree.

Discussion

For several months, a global crisis is going on due to outbreak of Corona Virus Disease (COVID-19) and well-established systems such as healthcare and education have been facing enormous challenges worldwide. Current study was conducted in this context to assess the the impact of COVID-19 pandemic on medical students of Bangladesh.

Medical education is a dynamic process, begins at undergraduate level and continues until a physician retires from active practice. The years spent in medical school are formative for future physicians as it is expected that medical schools should equip the students with knowledge, attitude and skills required for the clinical practice throughout their life to serve the fundamental purposes of medicine¹³. In the last few months, the world has been overwhelmed by COVID 19 pandemic and it's deleteriously affecting education and healthcare system¹⁴. Closing of health institutions, distance learning tactics, compliance to virtual learning, loss of clinical experience and classroom learning experience, no proper examination, disruption of professional development all leads to disruption in the education of future physicians^{15,16}. Respondents of current research agreed about disruption of ongoing education and more concern was expressed by clinical students although

medical schools in Bangladesh adapted virtual teaching-learning from the very beginning of the pandemic^{9,17}. A particularly challenging aspect of education during the pandemic is the sustainable restriction of clinical learning experiences for medical students. The combination of reduced exposure to clinical sessions and the suspension or cancellation of attachments will have noticeable impacts on medical education, particularly on final year students, who are expected to gain certain structured competencies and skills before starting their careers^{18,19}. And similar concerns were expressed by medical students of Bangladesh, especially clinical students perceived more fear about losing clinical skill and competency. Although COVID-19 pandemic has been considered as a source of disruption, it is likely that it will also be viewed as a catalyst for the transformation of medical education as the pandemic provided an opportunity for learners to realize the dynamic nature of medical knowledge and medical students not only continued to learn through alternative ways but in many circumstances, also contributing to efforts to reduce the impact of the pandemic and accelerating their attainment of the types of competencies that 21st century needs^{15,20,21}.

Medical education is expensive worldwide. Digital device or infrastructure required for online learning putting extra cost on medical students belonging to low socioeconomic status^{15,16}. Prolongation of course length due to postponing of exams for an indefinite period can have significant financial implications and it was expressed by participants of this study. Clinical students were more concerned about financial implications of COVID-19 pandemic as delay in graduation is a serious matter of fact as paid internship affords them the financial security for the future^{22,23,24}. Sudden changes in curricular delivery, struggling with virtual learning, fear of losing clinical skill, loss of peer interaction, social isolation, uncertainty, ambiguity around future prospects and subsequent financial stress all are negatively affecting mental well being of medical students and putting anxiety and stress on medical students of Bangladesh^{24,25}. COVID-19 pandemic causing uncertainty, confusion and significant concerns about future career planning of medical students of Bangladesh and similar kind of viewpoint was observed in a study conducted in US²⁶. High rate of infection and mortality of physicians in Bangladesh during the pandemic might be influencing future career plan of young graduates²⁷. Most of the students feared of getting infected with coronavirus when they will return for clinical placement as most of them expressed impossibility of maintenance of social distancing in campus, and similar views were expressed in a study conducted among medical students²⁸.

COVID-19 pandemic has imposed a myriad of diversities on medical education worldwide. Disruption of medical education, losing of clinical skill and competency, increased level of anxiety and stress, imposed financial burden,

changing perspective of future career plan and fear of getting infected whenever return to clinical placement were expressed by both paraclinical and clinical students participated in this study but statistically significant concern was observed among clinical students as they were supposed to graduate if this pandemic did not exist.

Conclusion

COVID-19 pandemic has caused unprecedented disruptions in medical education worldwide. Undergraduate medical students of Bangladesh expressed their concern about losing of clinical skill, imposed financial burden, increased level of anxiety and stress, changing aspect of future career plan and fear of getting infected whenever return to clinical placement. Innovative transformations are needed to overcome the impact COVID-19 pandemic on medical education of Bangladesh.

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Disclosure

All the authors declared no competing interests.

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