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Contents

Editorial

- ▶ DNA Sequencing: From Medicine to Personalized Medicine 5-7
Dr. DM Arifur Rahman, Dr. Fahim Uddin Ahmad, Dr. Md. Matiur Rahman

Original Article

- ▶ Comparison of Serum Uric Acid Concentrations in Patients with Lichen Planus and other Dermatoses 9-15
Dr. Farah Safa Huq, Dr. Mohammed Saiful Islam Bhuiyan, Dr. Emily Akter, Dr. Khyrun Nahar Shaila
- ▶ COVID-19 and Online Medical Education Perspective; A Study in TMSS Medical College 17-23
Dr. Mst. Nadira Parvin, Dr. Md. Matiur Rahman, Professor Dr. Md. Anup Rahman Chowdhury
- ▶ Assessment of Clinical Characteristics and FNAC Findings of Different Thyroid Lesions in a group of Bangladeshi patients 25-29
Dr. Mehdi Ashik Chowdhury, Dr. DM Arifur Rahman, Dr. A K M Maruf Raza, Dr. Syeda Noorjahan Karim, Dr. Md. Neaz Nowsher, Dr. Zerin Shabnam Rahman, Dr. Mohammad Mahabubul Hoque
- ▶ Efficacy of Mineral Trioxide Aggregate and Calcium Hydroxide as Root Canal Sealer in Non-vital Permanent Tooth 31-37
Dr. Mst. Dilruba Khatun, Dr. Evan-E-Alam Emtakamul Haque, Dr. Musfiqa Aman, Dr. Mostofa Mohammad Ekramul Hasan, Dr. Md. Rakibul Hassan Khan, Professor Dr. Md. Shamsul Alam
- ▶ Clinical Profile of 306 Patients with Chronic Low Back Pain in a Tertiary Care Hospital 39-42
Dr. Ferdousur Rahman Al-Mahmud, Dr. Muhammad Alamgir Mandal, Dr. Mst. Shamina Khatun, Dr. Mohammad Azizur Rahman

Case Report

- ▶ Benign intra-renal lipoma in two years old girl 43-45
Dr. Md. Mofazzal Sharif, Dr. DM Arifur Rahman
- ▶ Sigmoid mesocolon cyst : Case report 46-48
Professor Dr. Md. Rezaul Islam, Dr. A.H.M Shahnewaz Shoubho
- ▶ Abnormal Extension of Sacral Hiatus- A Case Report 49-51
Dr. Rawshon Ara Naznin, Dr. Md. Moniruzzaman, Dr. Afsana Khanam, Dr. Maskura Benzir, Dr. Taslima Akter



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Original Article

COVID-19 and Online Medical Education Perspective; A Study in TMSS Medical College

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Corresponding Author*Abstract**

Background: The Corona virus disease 2019 (COVID 19) pandemic has become a global public health issue and had a serious impact on medical education. Due to the COVID 19 pandemic, the sudden closure of educational institutions had produced a historical effect on the educational system all over the world, the situation in undergraduate medical education was more complicated. It was difficult to switch seamlessly from a traditional educational environment to a virtual platform overnight. **Objective:** In this study our main goal is to evaluate the understanding on online medical education amidst COVID-19. **Materials and Methods:** A cross-sectional descriptive study was conducted from 18 June 2020 to 25 June 2020 on MBBS and BDS students and their teachers at TMSS Medical College, Bogura. An online questionnaire was supplied to both MBBS & BDS students and their teachers after one month of the beginning of online class. 461 MBBS students participated in the study with 45% response rate, 30 BDS students participated with 90% response rate. 146 MBBS teachers participated with 41% response rate and 27 BDS teachers participated with 89% response rate. **Results:** During the study, according to student's online class perceptions and suggestions where 52% students satisfied with online teaching methods and lecture materials, 76% faced difficulties during online class, 94% were happy about the student-teacher interaction during online teaching and learning, 88% students were regular in online classes. Also, according to online class perceptions and challenges of their teachers, 60% teacher preferred training for conducting online classes, followed by 96% teachers thought online tools were easy to handle, in 67% cases teachers found student's interaction satisfactory, 61% teachers preferred google meet for online class platform, 56% teachers found passive students were major issues during online class. **Conclusion:** Our study revealed that there has been a positive impact of the COVID-19 on online medical education at TMSS Medical College. Challenges brought about by the pandemic included those related to communication, use of technology tools, online experience, time management etc. Despite these challenges, the medical students and teachers have increased their skill and confidence in the effectiveness of online medical education.

Keywords: Online medical education, COVID-19, perceptions.

Introduction

In 216 countries, coronavirus disease (COVID-19) has been identified and has infected over 5.4 million individuals.¹ This disease was declared a pandemic by the World Health Organization (WHO) on March 11, 2020.² On January 30, 2020, the first case of COVID-19 in India was confirmed.³ Health care staff continues to be on the front line for the treatment and prevention of COVID-19 disease even with increased pathogen exposure, additional working hours, stigma and abuse. Due to the lock-down, educational

institutions were shut down; however, many medical students across the globe were engaged in voluntary duties to address COVID-19. Bangladesh government closed all educational institution due to this pandemic situation since 18th March 2020. In this situation medical institution started online teaching to ensure continuous academic activities. Medical undergraduate education (MBBS) is a five-year program with a one-year obligatory hospital internship. Comprehension of complex pathologies and procedures requires more

contact with teachers and discussions. Without clinical rotations, this is not feasible. The final year undergraduates spend much of their time in hospital wards, prior to university tests, perfecting their history-taking and examination skills. The use of technology in education is imminent and the only rational option during the lockdown appears to be online education. Contact is now mainly from web-based live video conferencing platforms and teaching web platforms through the development of emails and connections through Whats App groups (Google Classrooms). Online education's success depends on addressing the gap between learning resources, the use of technology, communication tools, and the ability to understand data from sources such as computers and mobile phones.^{4,5}

College and hospitals are open to support treatment and other services to patients and community. Another area is to in flux required medical manpower to mainstream as service provider. To address the need, online medical education is the necessity.

In this study our main goal is to evaluate the web-based survey exploring own views of pre-clinical and clinical MBBS, BDS students and their teachers of medical college and hospital regarding the online classes attended and conducted by them. Perspectives of students may also bring out recommendations for further development in this field for the same study site.

Objective

To evaluate the understanding on online medical education amide COVID-19.

Materials and Methods

This was a Cross sectional descriptive type of study at TMSS Medical College, Bogura from 18 June 2020 to June 25, 2020. A questionnaire based survey was conducted among the respondent. 461 MBBS students participated in the study with 45% response rate, 30 BDS students were participated with 90% response rate (to whom questionnaire was sent are population and who responded are participant), 146 teachers participated with 41% response rate and 27 BDS teachers participated with 89% response were included in the study. During the study period the potential confounding variables were age, gender, perceptions of online class. Result of the study was calculated and analyzed by standard statistical package for social sciences version 23.0 for windows (SPSS Inc, Chicago, Illinois, USA) and was presented in forms of tables and graphs.

In table-I: shows distribution of students among phases where 145 and 112 students enrolled in Phase-I (both batches) followed by 130 in Phase-II, 130 students in Phase-III also 130 in phase-IV. The following table is given below in detail:

Table- I: Distribution of students (MBBS) among phases

Phases	Batch	Total No of Students	Study population	No. of Responded	Male	%	Female	%
Phase -I	TMC-12	145	127	93	66	42%	90	58%
	TMC-11	112	101	63				
Phase -II	TMC-10	130	73	15	07	47%	08	53%
Phase -III	TMC-09	130	75	20	11	55%	09	45%
Phase -IV	TMC-08	130	85	18	10	56%	08	44%
Total		647	461	209	94		115	

Table-II shows distribution of students (BDS) among phases where 61 students enrolled in Phase-I (both batches) followed by 35 in Phase-II, 20 students in Phase-III & 32 in phase-IV. The following table is given below in detail:

Table-II: Distribution of students (BDS) among phases

Phases	Batch	Total No of Students	Study population	No. of Responded	Male	%	Female	%
Phase-I	BDS-08	47	29	27	04	15%	23	85%
	BDS-07	14	01	00				
Phase-II	BDS-06	35	00	00	00	0%	00	0%
Phase-III	BDS-05	20	00	00	00	0%	00	0%
Phase-IV	BDS-04	32	00	00	00	0%	00	0%
Total		148	30	27	04		23	

Table- III: shows distribution of teachers (MBBS) among phases. The following table is given below in detail:

Table-III: Distribution of teachers (MBBS) among phases

Phase	Study Population	No. of Responded	Male	%	Female	%
Phase-I	32	16	10	63%	06	37%
Phase-II	17	08	05	63%	03	37%
Phase-III	21	18	11	61%	07	39%
Phase-IV	76	18	15	83%	03	17%

Table-IV: shows distribution of Teacher (BDS) among phases. The following table is given below in detail:

Table-IV: Distribution of teachers (BDS) among phases

Phase	Study Population	No. of Responded	Male	%	Female	%
Phase -I	03	02	01	50%	01	50%
Phase -II	06	04	02	50%	02	50%
Phase -III	03	03	01	33%	02	67%
Phase -IV	15	15	08	53%	07	47%

Table-V: shows distribution of the participants according to online class perceptions and challenges where 67% cases teachers found student's interaction satisfactory, 61% teachers preferred goggle meet for online class platform, 56% teachers found passive students were major issues during online class. The following table is given below in detail:

Table-V: Distribution of the participants according to online class difficulties or challenges

Variables	Outcomes	Percentage
Satisfactory interaction of student-teacher in online class	Satisfactory	67%
	Not Satisfactory	33%
Opinion about necessary logistic support	Satisfactory	67%
	Not Satisfactory	33%
Other preferred tools without Zoom	Google Meet	61%
	Microsoft team	3%
	Others	3%
Motivating learners in an online class	Make scope for interactivity	79%
	Create an open & accessible environment for students	39%
	Presenting short multimedia contents like video	32%
Online classes of TMC can be improved by	Increasing interactivity	47%
	Incorporating multimedia	30%
	Using multiple platforms	27%
	Others	14%
Main challenges for teachers in online class	Technical difficulties	40%
	Passive students	56%
	Lack of interactivity	28%
	Inappropriate behavior of students	1%

Results

A questionnaire based survey was conducted among the respondent.

Figure-1: shows distribution of the students according to online class perceptions and suggestions where 52% students satisfied with online teaching methods and lecture materials, 76% faced difficulties during online class, 94% happy about the student-teacher interaction during online teaching and learning, 88% students were regular in online classes. The following figure is given below:

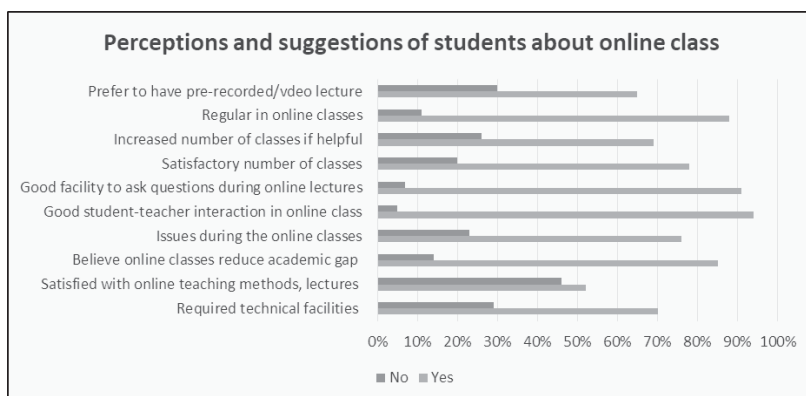


Figure 1: Distribution of the students according to online class perceptions and suggestions.

Figure-2: the pie chart is showing the percentage of the internet services used by the students to join the online classes. Maximum students (69%) use mobile internet and only few students (4%) uses broadband internet service. See the figure below-

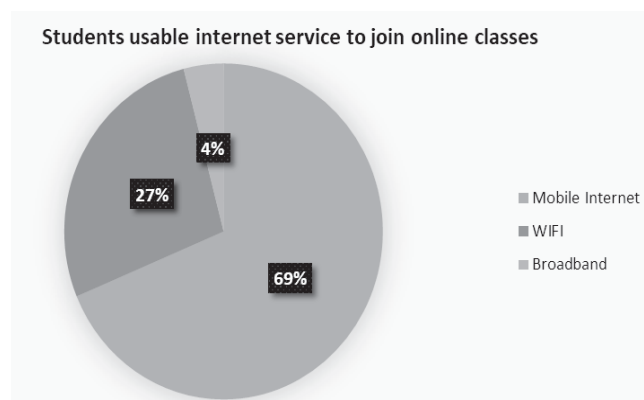


Figure 2: The internet services used by the students.

Figure-3: Shows the percentages of participant's preferable online platforms for doing online classes. Here, maximum participants (73%) preferred Zoom for their online classes. See the figure below-

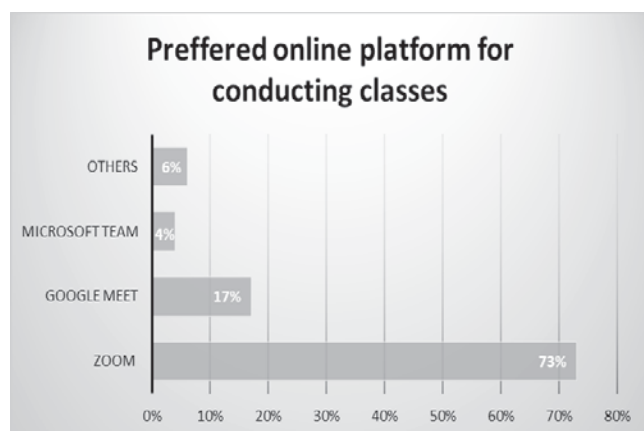


Figure 3: Preferable online platforms for doing online classes.

Figure-4: Shows the distribution of the teachers' perceptions according to online class. 89% have sufficient computer knowledge and IT skills followed by 60% teachers preferred training for conducting online classes, 96% students thought online tools were easy to handle, 90% were motivated during online classes, and 80% said paid subscription is better. See the figure below-

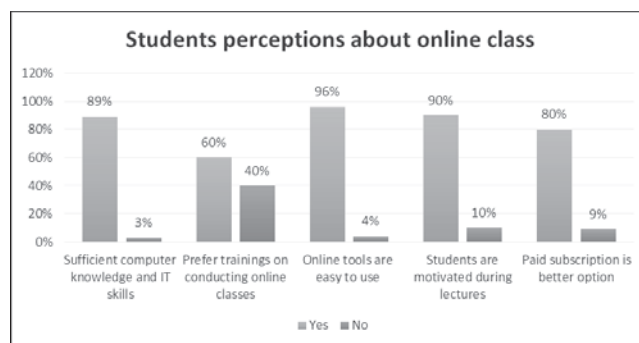


Figure 4: Distribution of the students according to their perception about online classes.

Discussion

Because of low network coverage in remote areas, online education is difficult in developing countries. There is no access to the Internet for almost half of the population of Bangladesh.⁶ During lockdown, medical students have access to a large variety of learning materials. In remote or smaller institutions, students may look at complicated procedures and illnesses that cannot be seen. The pros and cons of different mediums that can be used by medical students have been analyzed by Khurana et. al.⁶

In one survey reported that, though the topics of online classes were selected following the existing curriculum, there had been gaps in replacing practical classes and clinical placements.⁷ Almost similar responses came from majority of both pre-clinical and clinical students regarding sound and visibility; they stated it clear 'sometimes 'in the class.⁸ Notably, all teachers (both pre-clinical and clinical) used in-campus facilities including laptop and internet for online classes in the institution under study. Mobile has become one of the most common and popular devices among students for e-learning as compared to laptops and tablets.⁹ In one of the studies conducted on university students,¹⁰ it was found that 66% use mobile devices for e-learning, which is similar to our study that shows 68% students prefer mobile device and internet.

Lacking the impact of face-to-face class, online classes need to be more interactive to keep the students awake and to bring out an effective outcome. While in our study we found that, majority of both pre-clinical and

clinical students mentioned having appropriate device; a wide range of variation in responses came in regarding internet connectivity, which was supported by some studies.^{11,12}

In a study performed among 382 students of a private medical and dental college in Pakistan through e-mail communication, 77% participants had negative perception towards e learning during the lock down due to COVID 19 pandemic.¹³ the necessary component in online communication is the "Interaction". A study conducted in Singapore revealed that e-teaching methodology limits student-teacher interaction.¹⁴ This finding was not similar to our study where 94% students rated that they are happy about student-teacher interaction during online teaching and learning.

Singh A, Min AK did a study on the efficacy of conducting digital lectures on gross anatomy. The study investigated student's satisfaction level towards e-learning and it was found that majority of the students accepted digital learning.¹⁵ Raymond Selorm also revealed in his paper that in comparison to face to face learning students were satisfied with e-learning.¹⁶ However, in our study 52% students were satisfied about online learning.

There is already an advancement in the notion of online courses. All the problems faced by the students should be discussed. Scheduling classes in advance will strengthen experiences by training about conducting online classes. It is appropriate that after the lockdown phase, educational institutions stick to the "new normal"- blended learning method.

Conclusion

Our study revealed that there has been a positive impact of the COVID-19 on online medical education at TMSS Medical College. Challenges brought about by the pandemic included those related to communication, use of technology tools, online experience, time management etc. Despite these challenges, the medical students and teachers have increased their skill/confidence in the effectiveness of online medical education.

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