



E-mail :info@kistmcth.edu.np | www.kistmcth.edu.np

Journal of KIST Medical College

Perspective of Undergraduate Students on Virtual Teaching in Medical Education

Kabita Hada Batajoo¹, Sneha Pradhanaga¹, Trishna Shrestha¹, Manjita Bajracharya¹, Bindu K.C Pandey¹

¹ Department of General Practice and Emergency Medicine, KIST Medical Teaching Hospital

ABSTRACT

Introduction: Global pandemic of Novel corona virus (Covid 19) has become a public health emergency with multidimensional effect including education system. World has implemented physical distancing by “lockdown” strategy leading to disruption of normal routines of academic institutions. Medical students are bound to adapt web based online education system however; virtual teaching has both opportunities as well as challenges that needs to be explored for better medical education ahead.

Methods: This is an observational cross sectional survey conducted on 9th batch MBBS 4th year students of KIST medical college and teaching hospital. The online survey was done by google form via emails and responses were compiled on Microsoft database Excel program.

Result: Out of 93 students 88(95.44%) responded comprising 63.6% female and 36.4% male. Among them 54.5% were from within the valley whereas 45.5% were from outside the valley. 26.1% found virtual teaching was very effective with several opportunities however 58% thought online classes were slightly effective. 65.9% found 45min duration is appropriate per session..

Conclusion: During the Covid pandemic, virtual online teaching has been alternative mode for continuity of medical education which can be attended from safe environment of home with proper utilization of time.

Keywords: Covid19, Virtual Teaching, Medical Education, Challenges, Opportunities.

Citation: Batajoo KH , Pradhanaga S, Shrestha T, Bajracharya M, Bindu K.C Pandey .Perspective of Undergraduate Students on Virtual Teaching in Medical Education..JKISTMC 2020;2(2)4: 79-84.

Correspondence

Prof. Dr Kabita Hada Batajoo

Head of the Dept. General Practice and Emergency Medicine

KIST Medical College Teaching Hospital

Email: batajook@gmail.com

Conflict of interest: None

Source of support: None

Article info

Received: 11 May, 2020.

Accepted: 29 May, 2020.

Published: 31 July, 2020.

Copyright

JKISTMC applies the Creative Commons Attribution- Non Commercial 4.0 International License (CC BY) to all works we publish. Under the CC BY license, authors retain ownership of the copyright for their article, but authors allow anyone to download, reuse, reprint, distribute, and/or copy articles in JKISTMC, so long as the original authors and source are cited.



INTRODUCTION

Corona virus Disease 2019 (COVID 19) which was first detected in Wuhan, China has now become pandemic affecting 213 countries around the globe. Global lockdown has disrupted all the sectors not sparing the medical education either.¹⁻³ All academic activities like clinical postings, ward rounds and classroom based theory lectures have been jeopardized. The virtual teaching via online platforms has been better alternative which has provided roadmap to learners to track themselves in university curriculum. Many medical schools have shifted from traditional classroom based teaching to other modes, employing online, distance or electronic learning.⁴⁻⁶ Innovative transformation to virtual teaching poses various challenges and opportunities to educators as well as learner.

The aim of the study was to explore perception of students on virtual teaching in medical education and to evaluate its opportunities and challenges. By the constructive feedback of the undergraduate learners, medical educators can do best possible modifications in medical education by the appropriate use of technology

METHODS

The observational cross sectional survey was conducted on 9th batch MBBS (4th year students) of KIST medical college and teaching hospital. The online survey was done by google form via emails. Non probability sampling technique was used after the approval of institutional review committee (IRC). After going through the consent form those who voluntarily agreed to participate went through preformed questionnaires which comprised of open ended questions about online teaching versus traditional classroom based teaching. It also included their feedback regarding opportunities and challenges of virtual teaching.

Data collection was done by google form. Closed ended questions were designed on Likerts scale. Frequency and percentage were calculated by Microsoft excel database.

With a formal directive of Tribhuvan University its affiliated medical colleges have started online classes from May 2020 during the lockdown period. Our institute has adapted compatible free version of Zoom for virtual online class on basic as well as clinical

sciences, which allow maximum of 100 participants with time limit of 40 minutes.

RESULTS

There were 88 respondents out of total 93 students, comprised of 56 female (63.6%) and 32 male (36.4%). Among them, 48 (54.5%) were from within the valley . Regarding the effectiveness of online class 58% thought it is slightly effective whereas 26.1% found it very effective while 14.8% were not sure about its effectiveness. 65.9% found 45min duration is appropriate per session whereas 35.2% wanted it to be an hour long. Only 36.4% considered adequate interaction between teachers and learners but 27.3% disagree with the statement and 31% were not sure about it. In contrary 90.9% of the students agreed traditional classroom teaching is more interactive than virtual online teaching out of which 14.8% strongly believed. The opportunities they found in virtual teaching are given in figure 1

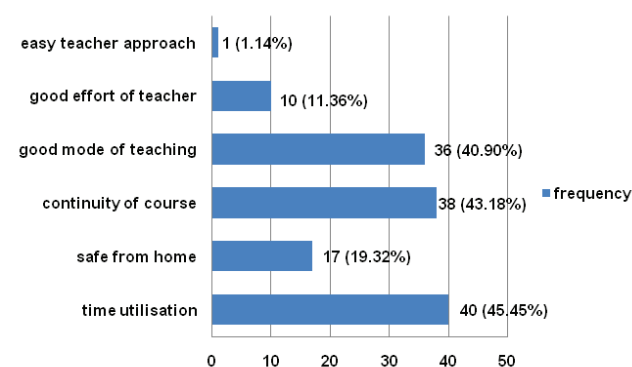


Figure 1. Opportunities of virtual teaching

Students faced various challenges during newly adapted virtual online classes are mentioned in figure 2.

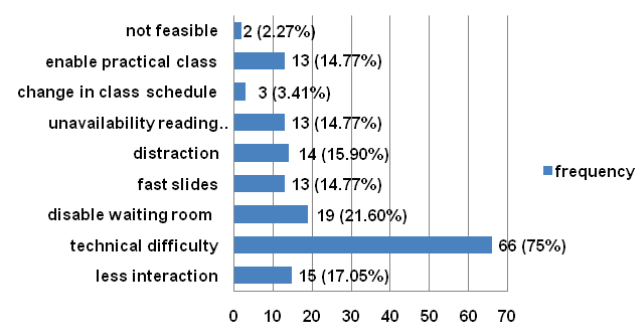


Figure 2. Challenges of virtual teaching

Nearly two third of the participants encountered technical difficulties like problem in internet access, interruptions, power cut, poor audio and others like enable waiting room in Zoom as shown in Figure.3

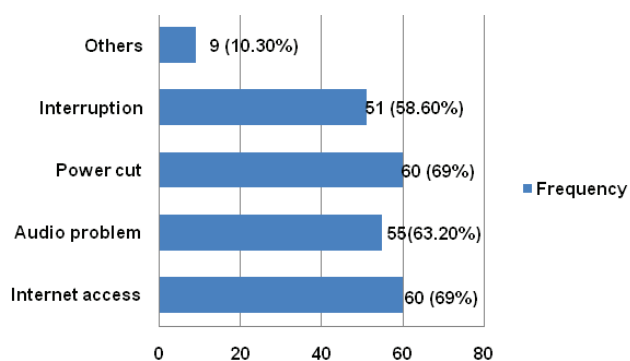


Figure 3. Technical Difficulty

DISCUSSION

Global pandemic Covid 19 is emerging exponentially, posing a great challenge on health services as well as to medical education.^{1,3} To prevent community transmission of disease government has announced “lockdown” policy in the country which has disrupted the academic environment of institutions.⁷⁻⁹ Center for Disease control and prevention (CDC) has recommend not to conduct large conferences and discouraged large group meetings, person-to-person educational didactic lectures, and chalk talks.⁶ The crisis situation of Covid 19 has warrant a breakthrough change in medical education by digital technology, a better alternative mode of teaching.^{4,6} The immediate use and successful application of digital technology to tackle a major global public-health challenge in 2020.¹⁰ The new technologies like Zoom, Microsoft Team and Google Handouts application has optimized educational endeavors.^{6,10,11} These are sustainable, readily available at no cost and are invariably used for video conferences, anchoring large number of participants.^{6,12} A innovative way of delivering interactive learning activities by massive open online courses (MOOCs) are proved to be more efficient and effective in the field of medical education worldwide.¹³

Over the last several years, many medical schools have shifted from traditional forms classroom based teaching to other modes, employing online, distance or electronic learning.² But it is still at infancy in our part of world for both educators and learners.¹² In our institute, educators have adapted free version of Zoom for both dental and medical undergraduate teaching which limit 100 participants for 40 minutes per session. It has bridged the gap between teachers and students and had facilitated in learning according to university curriculum. In our study 45.45% agreed on proper utilization of time during lockdown period

and 43.18% accepted that live online lectures have provided them trail to curriculum based systematically learning rather than self-learning without guidance. Synchronous format of face-to-face and online web-based learning technologies has provided safe learning environment to mitigate the spread of covid-19.^{7,10} Likewise 19.32% of our students found safe to be engaged in teaching learning activities from home, preserving social distancing and risk of exposure.³

Imperial college of London has given alternative to clinical placement through online repository of patient interview recordings and cases, which showed excellent student attendance and interaction.¹ Similarly three month attendance records of online classes (May to July 2020) showed remarkable average attendance to be above 80% although there might be possibility of diversion to other activities after getting the sign in.¹² Nevertheless 14.77% assumed, virtual teaching mode is not an ultimate substitute for medical education because of lack of clinical posting in hospital which is the integral part of medical education. Face to face sessions not only draw attention of the learners but also anchor the focus by more interactions and brainstorming activities .Studies have found that interaction with telemedicine technologies during undergraduate medical training contribute to improved core competency, medical knowledge, overall learning ³ But the cancellation of clinical clerkships, ward posting and real patient interaction has deprived the students to enhance their clinical skills. It is definitely irreplaceable entity of tradition core of medical education which cannot be completely fulfilled by virtual teaching. Many educators emphasized the importance of clinical posting, in person classroom teaching and real time feedback and collaborative interactions are hard to replicate by technology.^{2, 3, 14} Likewise in our study overall effectiveness of virtual teaching was accepted by 48.8% and 39.8% of them were not sure about its complete effectiveness however 11.4% were dissatisfied.

Blended learning methods consider being more effective as it integrate both traditional classroom based learning and web based.¹¹ The participants recommended to incorporate web based learning as a part of academic curriculum. ^{7, 10} The study done by Agrawal and et al stated post-graduate students

found the blended learning sessions to be relevant and enjoyable to their learning needs and clinical practice.⁷ Likewise in our study 40.90% felt virtual teaching to be the good mode of learning.

In the open comments on opportunities and challenges of virtual online teaching; participants stated favorable comments like proper utilization of time, continuity of curriculum from safe home environment and appreciable effort of institution and educators during the unavoidable crisis situation. They were content with e-learning where they can clearly understand the displayed slides, take snapshot for future reference, felt like one to one teaching and easy approach with the teacher to interact rather than facing a mass in lecture hall. Moreover many considered e-learning to be feasible, cheap and innovative alternative mode of education.^{4, 5, 10, 15}

On the other hand, about the challenges majority had technical hurdles like poor internet service, server problem leading to interruptions that cause nuisance in learning.^{3, 9, 12} They recommend the simultaneous need of practical sessions to break monotonous flow of theory classes. Since nearly half of the students are from out of valley, they emphasized the need of text books, library access and other learning materials. There were 15.9% who had distractions from unfriendly study environment of home, disturbance from family members and social obligations; some were even drifted apart by social Medias and internet search during the class.

Although faculties and educators emphasized it is not the replication of tradition clinical hospital based medical education.^{1,5,14} In one of the Chinese medical school, online problem-based learning techniques were implemented which proved to be popular.¹ Successful pedagogical use of technology depends upon understanding and acceptance of teachers toward technology. Allan and et al found 68% of teachers accepted to use e-learning system.¹⁴ Teachers need to be empowered and encouraged to be active adult learners themselves as they act with critical power in their world, and to take charge of their own learning.⁴ A wide range of technology options like digital libraries, distance learning networks, multimedia software, learning management system virtual simulation, webinars, video conferences.^{5,16} Educators and institutions must identify feasible e-learning tools to enhance the digital teaching

modalities for the better outcome and satisfaction of both educator and learner.¹⁶ Distance learning (E-learning) is popular in medical schools mostly in training of procedures and practices whereas tele-education is a blended learning method of tele-education technology and traditional instructor-led training which are found more effective.⁵ For the establishment of competency based learning models, teachers and educators need opportunities to explore the ways and innovative techniques to transform their existing pedagogies to student centered teaching.⁴

CONCLUSION

Innovative technology based virtual online teaching is a challenge to learners along with educators. Technical difficulty is the major problem faced during online teaching. During the Covid pandemic, virtual online teaching has been alternative mode for continuity of medical education which can be attended from safe environment of home with proper utilization of time.

ACKNOWLEDGEMENT

The authors would like to appreciate all the 9th batch MBBS students for their sincere participation and especial thanks to Abhipsa KC Basnet for her kind co operation and co ordination.

REFERENCES

1. Ahmed H, Allaf M, Elghazaly H. COVID-19 and medical education [published correction appears in Lancet Infect Dis. 2020 May;20(5):e79]. Lancet Infect Dis. 2020;20(7):777-778.
2. Mian A, Khan S. Medical education during pandemics: a UK perspective. BMC medicine. 2020;18(1):1-2.
3. Ferrel MN, Ryan JJ. The impact of COVID-19 on medical education. Cureus. 2020;12(3).
4. Baran E, Correia A-P, Thompson A. Transforming online teaching practice: Critical analysis of the literature on the roles and competencies of online teachers. Distance Education. 2011;32(3):421-39.
5. Masic I. E-learning as new method of medical education. Acta Inform Med. 2008;16(2):102-117.
6. Almarzooq ZI, Lopes M, Kochar A. Virtual Learning During the COVID-19 Pandemic: A Disruptive

- Technology in Graduate Medical Education. *J Am Coll Cardiol.* 2020;75(20):2635-2638.
7. Agarwal S, Kaushik JS. Student's Perception of Online Learning during COVID Pandemic. *Indian J Pediatr.* 2020;87(7):554.
 8. Rose S. Medical student education in the time of COVID-19. *Jama.* 2020.
 9. Chatterjee S. The COVID-19 Pandemic Through the Lens of a Medical Student in India. *International Journal of Medical Students.* 2020;8(1):82-3.
 10. Ting DSW, Carin L, Dzau V, Wong TY. Digital technology and COVID-19. *Nature medicine.* 2020;26(4):459-61.
 11. Moszkowicz D, Duboc H, Dubertret C, Roux D, Bretagnol F. Daily medical education for confined students during COVID-19 pandemic: A simple videoconference solution. *Clinical Anatomy.* 2020.
 12. Atreya A, Acharya J. Distant virtual medical education during COVID-19: Half a loaf of bread. *The Clinical Teacher.* 2020.
 13. de Jong PG, Pickering JD, Hendriks RA, Swinnerton BJ, Goshtasbpour F, Reinders ME. Twelve tips for integrating massive open online course content into classroom teaching. *Medical Teacher.* 2020;42(4):393-7.
 14. Yuen AH, Ma WW. Exploring teacher acceptance of e-learning technology. *Asia-Pacific Journal of Teacher Education.* 2008;36(3):229-43.
 15. MacLean J, Scott K, Marshall T, Asperen P. Evaluation of an e-learning teaching resource: what is the medical student perspective? Focus on Health Professional Education: A Multi-disciplinary Journal. 2011;13(2):53.
 16. Frehywot S, Vovides Y, Talib Z, Mikhail N, Ross H, Wohltjen H, et al. E-learning in medical education in resource constrained low-and middle-income countries. *Human resources for health.* 2013;11(1):4.