DOI: 10.7860/IJARS/2023/57762.2872

Original Article

Anatomy Section

Perception of Medical Faculty about Online Teaching During COVID-19 Pandemic, Telangana, India: A Cross-sectional Study

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ABSTRACT

Introduction: The recent Coronavirus Disease (COVID) pandemic disturbed the medical education and training all over the world. Online education program is increasing rapidly, and the faculty need to be more competent for better student outcome. Faculty may be reluctant to embrace different forms of online teaching due to fear of change, concerns about reliability of technology, skepticism about outcome.

Aim: To determine the perceptions of medical faculty about online teaching during pandemic and to identify the barriers faced by them.

Materials and Methods: It was a cross sectional study , carried out at Osmania Medical College, Hyderabad, Telangana, India, between March 2021 to August 2021. The faculty involved in regular online teaching, were given pre-validated questionnaire consisting of 15 questions through Google forms . A Total of 80 faculty members responded to the questionnaire. The data was entered in Microsoft Excel and responses were recorded in terms of frequency and percentages.

Results: Amongst the total 80 participants of the study, it was observed that 74 (92.5%) felt that technical training is needed prior to online teaching, 70 (87.5%) agree that absence of face to face interaction with students is a disadvantage of online teaching and 60 (75%) disagree that online teaching can replace traditional teaching in future.

Conclusion: Online teaching demands more technical training for medical faculty. There is more apprehension and anxiety in faculty members towards technical issues and more time is required for online class preparation.

Keywords: Coronavirus disease-2019, Feedback, Medical education, Traditional teaching, Questionnaire

INTRODUCTION

The COVID pandemic disturbed the medical education and training all over the world. Online education program has been extensively used during the pandemic period. Over the last 5 years, even prior to pandemic, online education has become a major instructional modality due to improvements in technology and connectivity [1]. Online education is found to have a broader reach than traditional teaching. Atreya A and Acharya J, found that among medical students in Kathmandu university, many challenges were faced by both students and faculty due to lack of basic computer knowledge and digital learning skills, slow or nonexistent internet connections, etiquette with volume control and video background etc. [2].

A study done by Singh K et. al at All India Institute of Medical Sciences, Jodhpur, found that majority of faculty could easily adjust to online classes after couple of online classes [3] Almarzooq ZI et al., studied among cardiology residents in United States of America (USA), and found that one of the major challenges is faculty willingness to embrace the new technology, due to technical issues involved in online teaching [4]. The main obstacle to implement an effective virtual learning environment is the lack of information technology infrastructure and difficulty in sustaining academic integrity and getting optimal student outcome [5]. Most of the faculty may be reluctant to embrace different forms of online teaching due to fear of change, concerns about reliability of technology, skepticism about outcome [6,7].

The faculty perceptions, user friendliness and ease of using the technology , needs to be understood to make necessary changes for improvement of online education system [8-10]. There is a definite need to collect feedback and perceptions from faculties about online teaching, and this information will be useful, to make changes in policies and protocols at the institute level for a more robust educational system in future. Hence, the present study was carried out , with an aim to determine the perceptions of medical faculty about online teaching during pandemic in Telangana area and to identify the barriers faced by them.

MATERIALS AND METHODS

This was a cross sectional study that has been carried out from March 2021 to August 2021 in Osmania medical college, Koti, Hyderabad, Telangana, India. The study included medical faculty who have experience in taking online classes for Undergraduate students. Ethical committee clearance has been taken prior to start of the study (IEC/OMC/2021/M.NO. (02)/Acad-42. Informed consent has been taken from study participants before sending the questionnaire.

The sampling was done by Purposive sampling. Out of 120 participants invited for the study, 80 participants have responded.

Inclusion criteria: Faculty who have been regularly teaching online, those who gave consent to participate in the study were included.

Exclusion criteria: Those faculty not involved in online teaching and not willing to participate in the study were excluded.

Procedure

Faculty including Assistant professors, Associate professors and Professors working in preclinical and clinical departments of Osmania medical college were given pre validated questionnaire. The questionnaire was designed in English and approved by our Medical Education Unit. Questionnaire was entered in Google forms and sent to participants via whatsApp and email. To prevent duplicate entries, only one response from a single email id was accepted in the Google Forms. A pilot study was undertaken from 20 faculty members to check the validity of the questionnaire and minor corrections as suggested by the members were incorporated in the final Questionnaire. These 20 faculty members were not included in the final study.

Questions were related to perceptions about online teaching and learning and student-faculty interactions. First section deals with

demographic data, second section has 15 questions related to attitude and perceptions towards online classes. The 5-point Likert scale was used, along with the options of strongly disagree, disagree, neutral, agree and strongly agree.

STATISTICAL ANALYSIS

The data was collected and entered in Microsoft excel and later analysed using Statistical Package for Social Sciences (SPSS) version 21.0. Results were expressed in terms of frequency and percentages.

RESULTS

Out of 80 faculty members, 32 responders (40%) were female and 48 responders (60%) were male. The faculty members included 20 Professors (25%), 17 Associate professors (21.25%) and 43 Assistant professors (53.75%) The Anatomy department had highest response with 21 out of 80 and least response was from Obstetrics and Gynecology 1 out of 80 [Table/Fig-1].

S. No.	Department	Responses
1.	Anatomy	21
2.	Microbiology	14
3.	Physiology	10
4.	Pharmacology	6
5.	Pathology	7
6.	Ear Nose Throat (ENT)	6
7.	Community Medicine	5
8.	Biochemistry	3
9.	Forensic Medicine	5
10.	Pediatrics	2
11.	Obstetrics and Gynaecology	1

[Table/Fig-1]: Department wise response to Questionnaire (Total N=80).

It was observed that 74 (92.5%) felt that technical training is needed prior to online teaching, 70 (87.5%) agree that absence of face to face interaction with students is a disadvantage of online teaching and 60 (75%) disagree that online teaching can replace traditional teaching in future. [Table/Fig-2].

DISCUSSION

The present study highlights the perceptions of faculty about online teaching and mentions the problems faced by them regarding basic computer knowledge, acquiring skills and usage, interactions with students, and comparison with traditional teaching in medical education.

Out of 80 faculty members, 58.8% agreed that faculty have apprehension and anxiety towards technical issues before and during the online class. Also 58.8% of participants felt that the time spent in preparation for online class is more when compared to traditional classes. When asked to compare with traditional teaching, 81.3% felt there are chances of academic dishonesty like cheating and copying by students in online assessment. While 77.5% agree that video presentation helps in better understanding in online teaching. The details of similar studies have been mentioned in [Table/Fig-3].

Motte-Signoret E et al., did a study involving 26 faculty members and found that 69% of faculty could not teach equivalent to their usual offline classes. Among faculty ,66.7% felt online classes should not continue after pandemic ends [11]. According to the present study, 75% of faculty agree that offline teaching is better than online teaching. In the present study 81.25% felt online teaching is not adequate to meet all student needs.

A study was done by Vishwanathan K et al., and Tuma F et al., conducted in Gujarat on 104 faculty members in 2021. It was

Question No./response	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
1. For adequate online Teaching, computer facility at work place is required.	1 (1.25%)	1 (1.25%)	0 (0%)	19 (23.75%)	59 (73.75%)
2. Faculty has access to internet at work place for effective online teaching	4 (5%)	2 (2.5%)	4 (5%)	14 (17.5%)	56 (70%)
3. Faculty has apprehension/ anxiety towards technical issues before and during the class.	2 (2.5%)	3 (3.75%)	5 (6.25%)	47 (58.75%)	23 (28.75%)
4. Faculty spend more time in preparation for online class.	0 (0%)	17 (21.25%)	16 (20%)	28 (35%)	19 (23.75%)
5. Technical training of faculty is needed prior to online teaching	1 (1.25%)	2 (2.5%)	3 (3.75%)	41 (51.25%)	33 (41.25%)
6. Online teaching is adequate to meet all student's needs.	18 (22.5%)	47 (58.75%)	11 (13.75%)	3 (3.75%)	1 (1.25%)
7. Absence of face to face interaction with students is disadvantage in Online teaching.	3 (3.75%)	1 (1.25%)	6 (7.5%)	33 (41.25%)	37 (46.25%)
8. Online teaching methods facilitate positive impact on student outcome.	4 (5%)	37 (46.25%)	30 (37.5%)	9 (11.25%)	0 (0%)
9. Online class can have a role in competency based medical training.	4 (5%)	16 (20%)	26 (32.5%)	30 (37.5%)	4 (5%)
10. Proper supervision of students during online class is possible.	25 (31.25%)	42 (52.5%)	7 (8.75%)	5 (6.25%)	1 (1.25%)
11 There is academic dishonesty by students (cheating, copying) in online assessment.	2 (2.5%)	3 (3.75%)	10 (12.5%)	39 (48.75%)	26 (32.5%)
12. Students interact well in online teaching.	11 (13.75%)	41 (51.25%)	20 (25%)	8 (10%)	0 (0%)
13. Proper Student feedback is possible in Online teaching.	8 (10%)	32 (40%)	22 (27.5%)	17 (21.25%)	1 (1.25%)
14. Clinical case presentations and video presentations during lecture helps in better understanding in online class.	3 (3.75%)	8 (10%)	15 (18.75%)	36 (45%)	18 (22.5)
15. Online teaching can Replace traditional teaching in future.	27 (33.75%)	33 (41.25%)	10 (12.5%)	8 (10%)	2 (2.5%)

[Table/Fig-2]: Tabular representation of responses by the faculty to all questions (Total N=80 responses for each questions).

Author	Place of study (number of faculty included in the study)	Major conclusions	Online/offline comparison
Alokatreya A and Acharya J [2]	Nepal	Challenging to both faculty and students	
Motte-Signoret E et al., [11]	(26)	69%(online teaching inferior)	66.7%(online to be discontinued)
Vishwanathan K et al., [12]	Gujarat(104)	92%(faculty satisfied with online teaching)	79.8%(online teaching useful)
Tuma F et al., [13]	USA (81)	Worthwhile option	
Gupta S et al., [14]	Delhi(23)	Challenging option	
Joshi KP et al., [15]	Mahbubnagar(107)	82.5%(acceptable online skills)	56%(poor interactions)
Present study	Telangana(80)	58.8%(anxiety towards technical issues)	65%(poor interaction)

[Table/Fig-3]: Summary of studies published in literature on perception of faculty towards online teaching.

found that 92.2% of the faculty were satisfied with the e-teaching method adopted by the institute and 79.8% professed the e-teaching method to be suitable modality during the lockdown period [12,13]. According to present study, 75% disagree that online teaching cannot replace traditional teaching in future. In the present study, 51.25% disagree that there is a positive impact on student outcome due to online classes while 37.5% were neutral.

A study done by Gupta S et. al., involving 23 faculty members in New Delhi in 2021, concluded that application of e-learning is sure to be challenging; however, it remains the only solution during COVID-19 imposed lockdown for continuing the chain of learning [14]. In the present study, 75% felt online teaching cannot replace traditional teaching in future.

Joshi KP et al conducted a study about perceptions of online teaching which included 107 faculty members in Mahbubnagar, Telangana and found that 82.5% had good knowledge about online teaching after an orientation course but only 44% felt they had satisfactory student interactions during online classes [15]. The present study shows 92.5% faculty felt technical training is needed prior to online teaching. Also 87.6% agree that absence of face-face interaction with students is a disadvantage of online teaching.

Limitation(s)

The present study had the limitation that only 80 faculty responded to our questionnaire and a response bias may be present and non-uniformity of clinical and para clinical faculty in responding to our questionnaire. Finally, to generalize the findings in the existing literature, replication studies should be undertaken in a variety of settings with increased sample sizes.

CONCLUSION(S)

Online teaching demands more technical training for medical faculty. There is more apprehension and anxiety by faculty towards technical issues and more time required for class preparation. There is a chance of academic dishonesty by students during online assessments. Online teaching cannot replace traditional teaching in medical education in near future.

REFERENCES

[1] Carr S. As distance education comes of age, the challenge is keeping 537 the students. The Chronicle of Higher Education. 2020;A39-A41. https://www.chronicle.com/article/as-distance-education-comes-of-age-the-challenge-is-keeping-the-students/

[2] Atreya A, Acharya J. Distant virtual medical education during COVID-19: Half a loaf of bread. Clin Teach. 2020;17(4):418-19.

[3] Singh K, Srivastav S, Bhardwaj A, Dixit A, Misra S. Medical education during the COVID-19 pandemic: A single institution experience. Indian Pediatr. 2020;57(7):678-79.

[4] 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):2635-38.

[5] Croxton RA. The role of interactivity in student satisfaction and persistence in online learning," Journal of Online Learning and Teaching. 2014;10(2):314-24.

[6] Rubin B ,Fernandes R. The teacher as leader: effect of teaching behaviours on class community and agreement," International Review ofResearch in Open and Online Learning, 2013;14 (5):1-26.

[7] Richardson E, Besser, A. Koehler, J. Lim, and M. Strait, "Instructors' perceptions of instructor presence in online learning environments," TheInternational Review of Research in Open and Distributed Learning, 2016;17(4). https://doi.org/10.19173/irrodl.v17i4.2330

[8] Rome B. Moralista1, Ryan Michael F,Oducado. Faculty Perception toward Online Education in a State College in the Philippines during the Coronavirus Disease 19 (COVID-19) Pandemic Universal Journal of Educational Research. 2020;8(10):4736-42.

[9] Saiyad S, Virk A, Mahajan R, Singh T. Online teaching in medical training: Establishing good online teaching practices from cumulative experience. Int J ApplBasic Med Res. 2020;10(3):149-55.

[10] Kazi MM, Shidhore AA. Google classroom sessions as a modern e-learning tool for the second year undergraduate dental students-a questionnaire feedback study. Int J Med Sci Public Health. 2020;9:401-06. https://www.ejmanager.com/mnstemps/67/67-1593538480.pdf?t=1672565296

[11] Motte-Signoret E, Labbé A, Benoist G, Linglart A, Gajdos V, Lapillonne A, et al. Perception of medical education by learners and teachers during the COVID-19 pandemic: a cross-sectional survey of online teaching. Medical education online. 2021;26(1):1919042.

[12] Vishwanathan K, Patel GM, Patel DJ. Medical faculty perception toward digital teaching methods during COVID-19 pandemic: Experience from India. Journal of Education and Health Promotion. 2021;10: 95 doi: 10.4103/jehp.jehp_805_20. eCollection 2021.

[13] Tuma F, Nassar AK, Kamel MK, Knowlton LM, Jawad NK. Students and faculty perception of distance medical education outcomes in resource-constrained system during COVID-19 pandemic. A cross-sectional study. Annals of Medicine and Surgery. 2021;62:377-82. doi: 10.1016/j.amsu.2021.01.073. eCollection 2021 Feb.

[14] Gupta S, Dabas A, Swarnim S, Mishra D. Medical education during COVID-19 associated lockdown: faculty and students' perspective. medical journal armed forces india. 2021;77:S79-84. doi: 10.1016/j.mjafi.2020.12.008. Epub 2021 Feb 2.

[15] Joshi KP, Jamadar D, Dixit R. Perception of faculty towards online teaching and learning in the undergraduate medical students during corona virus 19 disease pandemic. Int j med sci and public health. 2020;9(8):484-87.

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PLAGIARISM CHECKING METHODS: [Jain H et al.]

- Plagiarism X-checker: May 24, 2022
- Manual Googling: Aug 24, 2022
- iThenticate Software: Aug 27, 2022 (5%)

ETYMOLOGY: Author Origin

AUTHOR DECLARATION:

- Financial or Other Competing Interests: None
- Was Ethics Committee Approval obtained for this study? NA
- Was informed consent obtained from the subjects involved in the study? Yes
- For any images presented appropriate consent has been obtained from the subjects. NA

Date of Submission: **May 13, 2022**
Date of Peer Review: **Jun 23, 2022**
Date of Acceptance: **Aug 29, 2022**
Date of Publishing: **Mar 01, 2023**