Implementation Plan and Solutions to the Challenges Faced by Medical Faculty During COVID-19 Pandemic: Transition to the New Normal

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ABSTRACT

Objective: To assess faculty perception regarding the transition from traditional to online classrooms and highlight the problems and devise possible solutions for these problems.

Study Design: Cross-sectional study.

Place and Duration of Study: Two Public and five Private Sector Medical Institutes in the month of September 2020.

Methodology: An online questionnaire comprising three sections, including consent, personal information and questions related to the experience regarding online teaching, was designed. The questionnaire was posted online, and medical faculty of public and private sector medical universities in Karachi were invited to participate in the study. As a result, the MBBS, BDS, and DPT teaching faculty of two public sectors and three private sector medical colleges/universities who took the online classes participated in the study.

Result: 41.2% response rate was recorded. 42 (61.8%) participants felt training given by their institutes was satisfactory. 67 (98.5%) of participants felt that a user-friendly system was employed for online teaching. 61 (89.7%) participants changed teaching strategy, although 49 (72.1%) were unprepared. 67 (98.5%) participants felt student feedback was essential, and 86.8% felt the interaction was vital. 66 (97.1%) participants said clinical teaching was compromised. Student behavioural issues were identified by 22 (32.3%) of faculty members. Problems with technology was faced by 33 (48.5%) participants.

Conclusion: Online teaching and learning is expected to continue in the new normal post-COVID-19 era. The transition was difficult, but faculty training programs promise improvement to continue this strategy in future.

Keywords: COVID-19, Education, Medical, Medical faculty.

INTRODUCTION

The demand of the day is the increasing use of the internet and computer. Most of the faculty of medical colleges were not used to taking online lectures, and many were not fluent with the use of the computer. To accommodate this expansion of online classes, there was a need for instructors who demonstrated teaching effectiveness in an online environment. This can be achieved by guidance from faculty mentors, feedback from student and peer evaluations, sharing of best practices among faculty in established e-college (online) communities or forums, and orientation programs for instructors transitioning into an online role.[1] To design and deliver meaningful professional development programs for faculty who teach online, the unit responsible for these activities should have a clear idea of what content participants might find most beneficial to their practice and what can improve instructor and student satisfaction.[2,3] The faculty development and refresher courses are mandatory for

effective online teaching. It is mandatory to take faculty perception and make sure they develop online teaching skills. Faculty skills in creating e-learning may differ from those needed for traditional teaching.[4]

This study was carried out to know how the faculty perceives the transition, whether they are willing to continue it in the future and whether they know ways to improve this teaching and learning method when we enter a new normal post-COVID era.

METHODOLOGY

The cross-sectional study was conducted in the month of September, 2020 after approval from the ERC Department (ERC number 62/2020). Teaching faculty from two Public and five Private Sector Medical Institutes participated in the study. The sample size was calculated using the sample size calculator available at: http://www.raosoft.com/samplesize.html.

Considering margin of error=5%, confidence interval=95%, and response distribution=50%.[5] To overcome incomplete information, 10% extra were included in the study and a sample size of 165 was considered.

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Inclusion Criteria: All the medical, dental and physiotherapy faculty members taking the online lectures were included in the study.

Exclusion Criteria: All the non-medical faculty members and those medical faculty members not taking online lectures were excluded from the study.

An online survey was developed using Google forms. The questionnaire was designed after a thorough literature review and sent to the medical education experts for content validation. After that questionnaire was further refined and piloted on some faculty members to observe their responses. The questionnaire comprised three sections, including consent, personal information and questions related to the experience regarding online teaching. The last section included 11 quantitative questions, assessed based on a 3-point Likert scale. One open-ended question regarding the opinion concerning the ideas for online teaching improvement was also included.

The questionnaire was posted online, and medical faculty of public and private sector medical universities in Karachi were invited to participate in the study by sharing the link to the questionnaire. As a result, the MBBS, BDS and DPT teaching faculty of two

RESULTS

Initially, the response rate was 40%, so a motivational workshop for faculty was organized via zoom, in which the benefit of conducting this survey and how the survey results will help us devise a plan for improvement in online teaching was highlighted. After the workshop, the response rate was 41.21%.

In the online survey, a total of 41.2% response rate was recorded. 55 (80.9%) participants were females and 13 (19.1%) male. 12 (17.5%) affiliated with a public sector institute, and 56 (82.5%) belonged to a private sector institute. The mean age of the study participants was 41.4 ± 3.33 years. 43 (63.3%) participants belonged to the MBBS teaching faculty, 14 (22%) belonged to the BDS teaching faculty, and 10 (14.7%) belonged to the DPT teaching faculty. In addition, 6 (8.8%) of study participants were professors as per their designation, 13 (19.1%) were Associate Professor, 13 (19.1%) were Assistant professors, and 36 (52.9%) were Senior Registrar/ Lecturer.

Table showed the distribution of the frequency of responses to the eleven assessed components. An open-ended question was used to take input from the faculty for improvement in online teaching.

Table: Medical faculty's insight on online teaching.

Assessed Item	Yes n (%)	Do not Know n (%)	No n (%)
Do you feel the training given to faculty for online classes before beginning was satisfactory?	42 (61.8%)	3 (4.4%)	23 (33.8%)
Does your institute use user friendly system for teaching online?	67 (98.5%)	1 (1.5%)	-
Do you feel you had to change your teaching strategies during this transition from traditional to online lecture?	61 (89.7%)	1 (1.5%)	6 (8.8%)
Do you feel you were prepared for this sudden transition to online teaching?	16 (23.5%)	3 (4.4%)	49 (72.1%)
Do you feel feedback by students is needed for delivering these lectures effectively?	67 (98.5%)	1 (1.5%)	-
Do you feel internet connectivity is an issue?	60 (88.2%)	8 (11.8%)	-
Do you feel student interaction is compromised during online lectures?	59 (86.8%)	1 (1.5%)	8 (11.8%)
Do you feel medical students clinical and technical training is compromised online?	66 (97.1%)	-	2 (2.9%)
Would you like to continue the online classes along with face to face in future as well?	37 (54.4%)	10 (14.7%)	21 (30.9%)
Do you face issue with use of technology?	33 (48.5%)	-	35 (51.5%)
Is there need for faculty development workshops for this online classes to be made more effective?	63 (92.6%)	1 (1.5%)	4 (5.9%)

public sectors and five private sector medical colleges/ universities, who were taking the online classes, participated in the study.

Statistical Package for Social Sciences (SPSS) version 22.0 was used for the data analysis. The data was presented in the form of frequency and percentages. Pearson's chi-square was used to analyse the categorical data and the *p*-value of ≤0.05 was considered statistically significant.

The Figure showed eight themes identified by the study participants.

Moreover, the study participants were asked about other issues adapting to the online teaching system. Student behavioural issues were identified by 32.3% of the faculty members (n=22). Problem with the use of technology was faced by 48.5% of the study participants (n=33). Internet connectivity problem was an issue faced by 8.8% of the faculty members (n=6).

One study participant (1.4%) identified student behaviour and use of technology as a problem. 8.8% of the study participants found no issues (n=6).
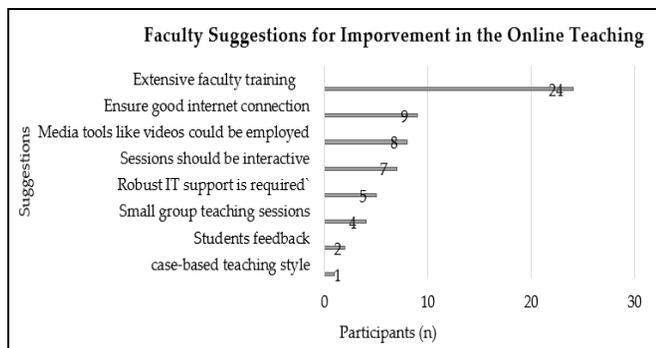

Figure: Faculty suggestions for imporvement in the online teaching.

DISCUSSION

Online teaching and learning during the COVID-19 pandemic were a sudden transition, and most medical faculty and students suffered. Faculty was forced to change their teaching strategies to online. Most medical educators only knew patient care, and clinical teaching was easier as they behaved as role models and continued their usual medical practice, ward rounds etc., and teaching was still as effective.[6] Although faculty training was given by all institutes and the system used was user-friendly, most of the medical educators are clinicians and are not the computer savvy so have little knowledge regarding the use of computer and web-based software; hence there was an issue in teaching online.[7,8]

The primary objective of our study was to assess the faculty perception regarding the transition from traditional to online classrooms. The secondary objective was to highlight the problems and devise possible solutions for these problems. This will help to improve online teaching strategies. According to our study, faculty workshops or faculty development programs should be conducted according to the issues the medical faculty faces, and this will also help to analyze ways to enhance student learning through this transition phase of online classes during the pandemic.

Internet access was also one of the major problems, as, without uninterrupted internet, it was near impossible to complete an online syllabus during the lockdown.[9] Faculty face issues of student behaviour it was easier to cause distraction online.[10]

In the light of our study, some plans have to be implemented for a smooth adjustment to the new normal, including extensive and mandatory faculty training workshops for e-learning and teaching techniques to be held monthly. The main ideas of the training should include why it is necessary to keep e-learning as a part of future medical education despite face-to-face teaching going on. Faculty training should include methods to make online lectures more effective. Faculty should be trained on making clinical training possible, what videos and sites are recommended and what virtual techniques can be implemented for clinical teaching. Institutes should start developing VLE (virtual learning environment) and moodle and train faculty to utilize it efficiently.

Moreover, E-learning has to be included in the syllabus as well as a study guide to ensure its presence, and hence we prepare for the unforeseen future gap in education like the one we just faced. It should be ensured that each online lecture delivered is Case-based, problem-based and interactive to make online teaching more effective. Disturbances due to student behaviour should be dealt with on the spot.

Lastly, student feedback must be considered mandatory for all e-learning activities. Some other effective ways to improve the quality of e-learning would be to ensure interactive sessions and student motivation and engagement. Techniques such as gamification, student polls, breakout rooms and whiteboard teaching would help student engagement.[11] Certain courses must be recommended for faculty available online for free to know about the various teaching dynamics specifically of online teaching and create engaging sessions for the students.[12] Furthermore, there are quite a few technology-enhanced innovative ways of taking online assessments available and the faculty should be made aware and get used to them,[13] Those institutes that were involved in virtual teaching and distance learning long before the current pandemic should advise and keep training sessions for other institutes to make this new normal of teaching and learning a better experience for the students and faculty and so it can be improved universally. More research must be done to find issues and solutions to handle the situation better. Institutions will have to invest in establishing better IT departments and get more tools for e-learning to improve their technique of e-learning. Low-cost alternatives and free sources such as Moodle can be considered.[14] We hope to convert this boon into a bane by introducing improved e-learning and Hybrid system and blended learning into the curriculum and try to convert this COVID-19 from a

universal educational tragedy, specifically in medical education, into a new and improved system of hybrid education assessable to all.

The concept of E-Learning cannot be limited to internet use solely. It has been previously identified to enhance student satisfaction and involvement.[15] Health professional faculty reexplored it during this pandemic. The Covid-19 pandemic has changed everything in our daily lives; nothing is the same as in the pre-COVID-19 era. These changes have impacted medical teaching as well. Now, the entire medical faculty and students have recognized E-learning as a mode of learning tool. When it comes to medical education, E-learning has its challenges, a lack of real-life patient interaction and patient examination being the most noticeable ones.[16] Discussion boards, blogs, virtual patient encounters, video demonstrations, narrated presentations, case writes up, podcasts, online training modules are some of the E-learning components that can be utilized to enhance the student learning. The process of E-learning has evolved drastically over the past year during the pandemic. Robust faculty training focusing on E-learning strategies and tools is the cornerstone of more successful online teaching. With continuous training, it is possible to implement a system with minimal flaws.[17]

More studies have been done to explore faculty perception and relate teachers' and students' issues to help improve the teaching strategies.[18] A similar study compared student and faculty perceptions and showed that students and faculty both believe that for online lectures to be successful, students must be more willing to teach themselves.[19] Another study was done to examine the faculty investment and distribution of teaching time by assessing faculty experience, the number of students and course duration.[20] Another study showed faculty perception of gadgets and smartphones for teaching.[21]

Another study claims that student feedback is vital as it lets the faculty know whether efforts are being effective or not.[22] Student feedback is strongly encouraged by all educators and has its benefits, especially in online classes. Feedback evaluation is an integral part of the improvement of distance learning.

Medical education has certain limits, especially in clinical teaching, as it is best done in the actual workplace and is more of a role modelling with a hidden curriculum.[23] Online teaching and learning especially lacked this aspect as online teaching and the inability to access actual patients negatively impacted the medical learning of future doctors. According to a study, the medical faculty believed this to be one aspect which could not be covered online. Although webs have certain online videos and simulation-based and virtual environments for certain procedures and clinical examinations, they could not provide a substitute for real-time clinical undergraduate training.[24]

Another similar study claimed that there is a need for more faculty training programs and e-learning techniques for medical educators to get the maximum gain from online teaching in the future, as this is the new normal post-COVID period.[25]

CONCLUSION

Online teaching and learning will continue in this new normal post-COVID time. The transition was difficult, but faculty training programs promise improvement to continue this strategy in the future. Further research must be done after conducting faculty training and online teaching classes for medical educators.

Disclosure

The study was presented as an e-poster at the 4th Educational Research Day at Agha Khan University, Karachi, on 25-27 November 2020.

Conflict of Interest: None.

Author's Contribution

AH:, SF: Study conception, design, approval of synopsis, collection of data, interpretation and analysis of data, writing manuscript draft and review of manuscript, SA: Study conception, design, approval of synopsis, interpretation and analysis of data, review of manuscript.

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