Perceptions of faculty towards online teaching for undergraduate medical education: An interview-based qualitative study

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ABSTRACT

Background. The Covid-19 pandemic drastically affected medical education. One consequence was the shift of teaching–learning process to the online mode. This left many teachers unprepared. Our medical education department of a large teaching hospital did a qualitative analysis of the perceptions of the faculty towards this forced change.

Methods. We conducted in-depth interviews with 10 of the nearly hundred undergraduate faculty of a teaching hospital in southern India, with a strength of 100 students per batch. The participants were chosen by purposive sampling so as to include all phases and seniority levels. Seven categories related to the topic of research were decided. These were given to the participants to then speak freely about. Standard methods for recording and transcribing were followed. Deductive content analysis was done to obtain the emergent themes.

Results. The faculty had a definite negative perception of online teaching. Lack of interaction, absence of immediate feedback and concerns about attendance were uniformly the biggest issues. Practical and clinical teaching was deemed nearly impossible to be taught online. The positives were the gradual comfort factor with online teaching, and the mental preparation for the long haul with this modality.

Conclusion. In-depth interview and its qualitative analysis proved useful in getting a deeper understanding of the perceptions of the medical faculty towards online teaching–learning. The negative and positive perceptions thus obtained have proved useful as feedback to the medical education department to suggest changes to improve the online teaching programme.

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INTRODUCTION

Students and teachers are the two most important stakeholders in the field of education, or the spectrum of teaching–learning (TL) experience. Any change in the TL method should be subject to study involving the two groups. In the pandemic situation, an unexpected forced shift to online TL happened in 2020. Reports from various parts of the world have mentioned the drastic changes that resulted, along with the possibilities of a positive paradigm shift in medical education.[1–3] As faculty of the medical education department of a teaching hospital in the southern part of India, we felt the need to assess the perceptions and attitudes of the two groups. These are best studied by qualitative methods.[4] As students were not available on campus, a questionnaire-based study was done. However, the teaching faculty were available for direct interaction. Hence, it was decided to interview a cross-section, so as to get a better feel of their perception of the forced change. Since the total number was not large, we decided to conduct a mixed study, viz. questionnaires for all and in-depth interview (IDI) of a select few. Our article is an exploration of the perceptions of teaching faculty of various seniorities and phases towards online teaching during the pandemic, by analysing the output from the IDIs.

METHODS

The proposal for our study was presented in the Institutional Review Board. The Scientific Committee approved the work and gave directions to begin the interviews. The study was exempted from Ethics Committee review as it belonged to one of the exceptions, viz. 'Comparison of instructional techniques, classroom methods and curricula', in accordance with Section 4 (sub-section 4.8) of the ICMR (Indian Council of Medical Research) Guidelines for Biomedical Research.

Research team

The eight faculty members (3 men, 5 women) of the medical education department (MEU) formed the research team. They were from various specialties representing the different phases of the undergraduate (UG) curriculum. As per the mandate of the national regulatory body, all were trained in ME techniques and research methodologies. The latter includes small research projects involving UG students and teaching faculty. The first author has experience in conducting qualitative research (focus group discussion [FGD]), with the others having assisted in the same. For the present IDI, teams of two conducted each interview. The team consisted of one faculty from the same phase as the interviewee for familiarity and another from a different phase to make it unbiased.

Participants

Faculty for the IDI were chosen by purposeful (purposive)

sampling technique so as to cover all phases and experience levels, and as many specialties as possible. Sample size was fixed as 10. It was also decided to adhere to this number even if data saturation was achieved, in the interest of adequate coverage as stated above. Initially, a brief telephonic conversation was made to obtain a readiness to be interviewed. This call was made by a member of the team who was from the same phase and/or familiar with the participant. Of the initially planned set, one participant refused an IDI, and so was replaced with another from the same department. There were two faculty from phase I, three from phase II, one from phase III part 1 and four from the final phase with an equal mix of senior (Professor and Associate Professor grades) and junior (Assistant Professor and Tutor) faculty. An inclusion criterion of minimum five online lecture classes during May 2020 to April 2021 was kept. This was followed by a face-to-face interaction with the participants to confirm venue and time of the interview to suit their convenience and ensure no disruption of academic or clinical work. The time limit was tentatively kept to 30–45 minutes for each face-to-face interview.

Setting

All interviews were conducted in the workplace (office or outpatient clinic room). Adequate prior information was given to the participants, so as to ensure that there would be minimal disturbance during the interview period. There were no non-participants in any of the interviews.

Selection of categories

Based on the questionnaire, which was the other tool for the study, and after team discussion, we decided on a few categories which had to be covered in the interviews. The thinking was to have those aspects which required more detail and individual thoughts, and hence, not addressed in the questionnaire (Table I).

This was printed and two copies made for each interview. After informing the study objective and taking consent of the participant, one copy of the printout was given to the participant for him/her to get an idea about the primary information sought. Then, free flowing conversation was allowed. All the IDIs were audio-recorded on a smartphone system of the interviewers. One researcher also made handwritten notes of important points, as a means to double check, if needed. Data saturation was not discussed. At the end of the interview, the field notes were shown to the participant for any clarification or correction. No repeat interviews were conducted.

Analysis

The deductive content analysis method was used. Transcription of each IDI was done verbatim, and entered in separate Word files. Coding was done in two sets—one by a single member of the team, another by the principal investigator (PI)-led team discussion. After the interviews, we met as a team to listen to the audio recordings, and familiarize with the data. We then divided ourselves into groups to transcribe these. Next, we colour coded the relevant text in the transcripts, using specific colours for each aspect of the theme (Table II). Next, all the coloured (coded) words and text were assembled into a separate Word file and labelled. Thus, a 'coding tree' was created. All the transcripts were then *re*-grouped theme-wise. Thus, the 10 IDI transcripts were redeveloped into seven theme transcripts. This was refined by cross-checking between the groups, to ensure accuracy and conciseness. Team discussion was done to identify patterns and trends relating to the predefined themes. All relevant quotes were also identified such as to be used for reporting the study. Finally, the emergent themes were summarized. No software was used for the analysis.

The participants have not yet been provided feedback of the analysis findings.

TABLE I. Categories of information sought in the interviews

Category	Information sought
Familiarity	Any awareness or practice with online teaching–learning (TL) methods?
Differences	Perceptions about the differences between traditional teaching (physical classes and books) and present distance/online teaching
Anticipation and preparation	Early planning by self or in the department for the new modality
Comfort factor	Perception of ease and comfort of conducting online classes
Clinical/practical classes	Were any of these classes taken? If no, department decision? If yes, perception of effectiveness
Assessment	Perception about reliability of sessional theory examination method
Improvement/future	Whether looking forward to continue this? If yes, then thoughts on improving the TL methods

TABLE II. Colour coding scheme for the categorization of responses

Category	Colour coding scheme
Familiarity	Not familiar, Familiar
Differences	Negative perceptions, Positive perceptions, others/neutral
Anticipation and preparation	No, Yes
Comfort factor	No, Yes, reason for choice
Clinical/practical classes	Not taken, Taken, Suggestions
Assessment	Negative perception, Positive perception, Neutral
Improvement/future	Not to continue, to continue, Suggestions

RESULTS

Theme 1. Familiarity with the concept and technology of online teaching, before onset of the pandemic

None of the faculty had actual experience in online teaching. However, some of them had taken part in either webinars or as learners during online classes as part of their medical education fellowship programme. Almost all the interviewees were aware of the concept of online classes. Technology-wise, none were aware of the Zoom platform. One senior faculty made the specific point about the age divide, a definite disadvantage for the older generation in the use of such modalities. However, it was interesting to note that all the faculty agreed that familiarity developed over a period of few months.

Theme 2. Perception of differences between online and offline TL

One common thread was the helplessness felt by teachers at the lack of physical, especially visual, interaction with students. No eye contact, no guarantee of attendance and no

personalized interaction were the most common points against the online lecture method. There was also the difference pointed out about lesser time taken for any given session. One senior faculty said that he 'missed walking around among the students'. One junior faculty expressed the difficulty in 'looking at a screen and simultaneously at other notes'. Some also chose to differentiate between books and classroom teaching.

Theme 3. Prior anticipation and preparation

Only one participant had a positive response to this, mentioning that his department did discuss about this. The resultant planning became 'a self-directed learning for me'. Most others denied any prior preparation. One junior faculty who had not anticipated the turn of events, said that she later tried to 'prepare for change for myself to include reading up on online TL methods, learning of online platforms and preparations for better network connectivity'. All the faculty agreed and were appreciative of the fact that the institution was well prepared in view of the pre-existing infrastructure for telemedicine.

Theme 4. Perceived comfort factor in online teaching

The general consensus was in two parts on this theme. On the one hand, most expressed discomfort corresponding to the dissatisfaction of taking online classes. On the other hand, some of the interviewees appreciated the fact that later on, the process became comfortable. The main reason was the flexibility of taking classes in a comfort zone. One elderly faculty was happy that he 'did not have to walk from his work station to the lecture halls' (being in a different building at the campus). A junior faculty who was crowd conscious was happy that she did not have to worry about this aspect in an online session. However, the overall perception was definitely of 'no comfort' in online teaching.

Theme 5. Clinical and practical classes

At least one faculty was dismissive of the utility of teaching clinical skills online. Some of the clinical departments had not attempted these at all. A phase I faculty felt that 'maybe we can take 50% online and 50% as onsite in practical classes'. Few faculty had taken practical classes with some difficulty. Some of them suggested possible methods: 'demonstrate myself and then ask the student to do' and 'show clinical videos'.

Theme 6. Perception about online assessment

Some of the departments had not conducted this at all, so did not opine. The faculty who had been invigilators or were part of conduct of the online theory examination did not have a favourable opinion. The main concern was the uncertainty in ensuring fair practice. A few faculty suggested ways to ensure fair practice. These included 'using two cameras', 'we can have one of the students on board, to get their concepts of online assessments, and get clues into how they might try to fool'. One clinical faculty opined that 'one on one viva voce is a good assessment option'.

Theme 7. Suggestions to improve online TL, and future of the same

There were some clear and useful comments on these. The need to have better hardware, connectivity and also an online platform was stressed by one. Another suggested teaching only smaller groups, and also regular training in online TL methods. One faculty was impressed by the concept of online teaching, especially the facility to 'consider outside faculty (national, international), as they can spare 1–2 hours'. One faculty stressed the need for feedback, and also 'to take parents also into confidence'. A junior faculty suggested the use of Google Forms, Classroom, etc., and also 'to provide students with laptops from first year onwards'. One faculty wanted to use digital platform to 'improve my language skills', as part of improving online teaching. Two of the senior faculty felt that the way forward was the use of a hybrid modality. There was also the suggestion to let students have access to the recorded classes later on. Every faculty stressed on devising means to improve the interaction with students during classes. Also, all were agreed that this modality would definitely be needed in the future, with similar pandemic-like situations more and more likely.

SUMMARY OF EMERGENT THEMES

- Over a period of one year of online teaching, the faculty had a definite negative perception about the modality.
- The main difference perceived, which is also the main cause of concern, is the lack of interaction between teacher and students. The lack of eye contact, direct communication, and inadequate visibility of the entire class are all components of this.
- As with all human endeavour, with the passage of time, the faculty got more comfortable with the physical attributes of online teaching. The main component of this has been the ease of venue and flexibility of timing of delivery of lectures.
- There has been a uniformly poor view of online clinical classes and theory assessment.
- All the faculty are aware and conscious that the modality of online TL will have to be maintained, going ahead. Pandemic, and any such other factors, are likely to keep students away from campus. As such, the need of online TL is only likely to increase. With this in mind, both junior and senior faculty are keen to look at ways to improve its effectiveness.

DISCUSSION

Our qualitative study revealed largely expected results. However, the IDIs helped to add information, gained from the companion quantitative study (questionnaire), with respect to the perceptions of the faculty. Their apprehensions, fears and hopes about the new modality of teaching were brought out in a direct manner. Indeed, this is the singular advantage of qualitative studies such as FGDs and IDIs. As per one text on the topic, 'qualitative research methods are preferable when the investigation is oriented to determine motivation, perceptions or beliefs, and when there is no need to generalize the results'.[5] Our choice of IDI, as against FGD, was based primarily on the logistical difficulty in assembling a group of clinical teaching faculty, as also on the small numbers involved. At least one marketing-related study reports that IDIs are superior to FGDs in 'uncovering important underlying issues'.[6] Another study on faculty perception to online education in alternative systems of medicine, using surveys and additional interviews, reports the added depth gained by the latter modality.[7] Regarding numbers, the sample size is not deemed to be of much relevance for IDIs. Crouch and McKenzie point out that 'a small number of cases will facilitate the researcher's close association with the respondents, and enhance the

validity of fine-grained, in-depth inquiry in naturalistic settings'.[8] Of nearly 100 faculty involved in UG teaching in our institution, our study had 10 as the sample size, but we ensured that maximum representation was achieved.

The overall perception of the interviewed faculty was that of lack of enthusiasm for the ongoing method of delivering medical education online. The feeling of despondence, and a certain level of helplessness, about the effectiveness of online theory classes was quite apparent. The tone of responses indicated that these feelings were worse in the more senior faculty. A similar study from the Philippines has reported similar findings.[9] The main concern was about the lack of interaction with students and the immediacy of a physical class. A qualitative study to explore faculty perception in the online classroom details these parameters, viz. interactivity, immediacy and intimacy.[10]

Regarding the imparting of practical and clinical knowledge and skills online, all the interviewees were sceptical of the effectiveness, at least with the present platform. However, some of them did suggest the use of clinical videos. This method has been advocated even from pre-pandemic times, as a means of ensuring active learning and standardization across institutions.[11]

Comfort was one aspect that threw up interesting themes. All the interviewees reported getting increasingly comfortable with the online theory classes, despite the expressed lack of conviction. The reasons ranged from flexibility of venue to escape from stage consciousness. It is debatable whether this adaptation is a positive development. Be that as it may, this combination of contrasting perceptions of inefficiency and comfort has been reported in other studies.[12–14]

However, not all studies show negative perceptions. Two articles published in 2021, both on medical education, one from India and the other from Iraq, have reported largely positive outlook by the faculty.[15,16] Here, it is relevant to discuss the role and relevance of institutional preparation. In our case, most faculty made the point of being satisfied with the infrastructure available from the pre-existent telemedicine facility. There was at least one article which mentioned the lack of institutional preparedness as a factor in online medical education.[17]

Online assessment had no takers among the interviewed faculty, except for the suggestion that one on one viva voce could be effective. An article on this topic, from 2015, discusses the various aspects, including the inevitability in developing countries, and advantages.[18]

Looking ahead, the collective outlook was of inevitability of the need for distance education and online teaching–learning in the near future. This has prompted introspection about better preparation for the modality, and need for better techniques and infrastructure. Almost all agreed that there would have to be a mix of online and physical classes in medical education (the so called 'blended learning'). This has echoed in many study findings.[19,20]

Conclusions

IDI proved useful in getting a deeper understanding of the perceptions of the medical faculty towards online TL. The present method of delivering online theory classes is perceived as being inefficient and unsatisfactory. Practical and clinical skills teaching, and assessment, are not presently viewed as compatible with the online modality. Faculty anticipate the need for this modality in the future, and are prepared to make the required adjustments to meet this challenge.

All these findings can be placed in perspective with an understanding of the various aspects of online medical education, covered in an excellent integrative review in *BMC Medical Education*, published in the pre-pandemic time.[21]

Our study has effectively used the ability of IDIs to garner individual perceptions regarding a topic of great concern in the local medical education context. Few such studies have been reported from India. However, it is limited by the fact of being representative of a single institution.

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