Original Article

Perception of faculties on Online Medical Education-A Questionnaire based study

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Abstract

Background: This study evaluates the benefits and drawbacks of online medical education. **Materials and Methods:** This is a cross-sectional observational study. A pretested semi- structured survey on perceptions of online medical education was distributed via Google Form to all faculty members following informed consent. **Results:** 121 faculty members participated in the study. The average age was 40.8 years, with a standard deviation of 8.95. Even though 56.2% of faculty members had more than five years of teaching experience, 75.2% had no online teaching experience before COVID-19. According to 90.9% of faculties, the main anticipated benefits are that students can take classes whenever it is convenient for them, that holidays and vacations can be used to finish courses, and that a little illness won't be an excuse for missing class. However, 73.6% of respondents cite a lack of computer skills among teachers, the ineffectiveness of online practical classes, and the unavailability of high- speed internet on both ends as the main obstacles. **Conclusion:** A few takeaways from this survey include the inclusion of a hybrid mode of medical education in the curriculum and the conduct of workshops for faculty members interested in taking online courses.

Keywords: Online Medical education, Medical college faculty, Perceptions, Hybrid mode.

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Introduction

During the COVID-19 pandemic, like all other forms of education, medical education was also shattered due to the cancellation of traditional classroom teaching and bedside clinical teaching.[1,2] Online education evolved as an option at this difficult juncture, which, however, managed the situation.[3] Google Meet and Zoom were among the most commonly used platforms by medical faculties for online teaching in India.[4] The abrupt transition of medical education from the classroom to online learning had special difficulties for the faculties. While online teaching offered flexibility and safety, concerns arose regarding its effectiveness, student engagement, and the ability to deliver clinical and practical content adequately.[5] Due to the pressure to deliver the content on different platforms than the regular one, the timely preparation and delivery was problematic. Despite these adversities, the situation was well tackled by the faculties of medical colleges throughout the country. The lessons learnt from this catastrophic event can be utilized for future medical education. Further to compensate for the time lag that the batches during this pandemic have faced, some innovations must be made. A hybrid mode of education consisting of both online and offline, whichever is preferable, can be one of the options to solve the problem. Therefore, the advantages and disadvantages of online education as perceived by the faculties at a medical college like ours need to be found out, so that the advantages can be utilized and the disadvantages can be taken care of to increase efficiency. So, a questionnaire-based study among our faculties was planned and undertaken to know their perception regarding this online mode of medical education.

Materials and Methods

A cross-sectional observational study was conducted from October 2022 to November 2022 to assess the perceptions of online teaching among faculties of medical colleges during the COVID era. The study was undertaken after getting the approval from the Institutional Ethics Committee. Convenient sampling technique was used to find the study participants. The study included faculty members who had prior expertise in traditional

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classroom teaching and involved in online teaching. An online semi- structured questionnaire with an annexed informed consent form was created as a Google form in the English language. The questionnaire comprised 5 sections with a set of questions appearing in sequential order as regards socio-demographic variables, details of teaching experience including any online teaching experience prior to the pandemic and tools used for online teaching, concerns of online teaching practice, perceived self-efficacy and training and support received. Few questions had a provision for inviting suggestion from the faculties. The survey link generated was sent through online platforms like emails and WhatsApp to the faculties. After consenting to participation, faculty were directed at first to screening questions as regards the experience in both classroom and online teaching methods and then to the actual questionnaires in the google form. Basing on the responses to the screening questions, faculties who did not have experience in both modes of teaching were excluded from the study. All the questions were mandatory for the participants. The anonymity of participants was ensured. Complete responses were taken into consideration for further analysis.

Results

121 faculty members participated in the study. The mean age was found to be 40.8 years with an SD of 8.95. 56.3% were male and 46.7% were female 56.2% had more than 5 years of teaching experience. 81.8% were married. 59.2% of the faculty members were from the clinical departments, and 78.5% were senior resident or assistant professor by designation. [Table-1] The faculty who have more than 5 years of teaching experience are labelled as senior faculty, and those with less than 5 years of teaching experience are labelled as junior faculty. The perception regarding online teaching and examination is compared among junior and senior faculties. [Table 2]. Preparedness and mindset of faculties at the time of transition to take online classes are depicted by the pie chart. [Figure 1] 39.7% of participants were ready to shift to an online mode of teaching. However, 52.5% of the faculty believed that the institute's slow internet was a significant barrier to online classes. About two-thirds (75.2%) of our participants had no experience of online teaching before COVID-19. 57.9% had an opinion that the time required to prepare for an online class was more than a traditional physical class. 83.3% of faculty members agree that discipline and integrity of students are more important in online classes than in conventional classes. 81% of participants opine that the lack of face-to-face interaction reduces the enthusiasm of both teachers and students during online classes. The perception regarding interaction & integrity of students during online classes was depicted in a pie chart. [Figure 2] 91.5 % of the facilities felt the need for a workshop on online teaching and examinations for the improvement of online skills. 91.7% of participants think that a hybrid mode of teaching can be helpful to complete the course in less time. [Figure 2] 94% of faculties had an opinion that practical classes, which are an essential part of MBBS study, are difficult to teach through online mode. Classes can be taken at one's convenient time, holidays and vacations can be used for completion of courses, and minor illness of a student will not be a factor for absence are the main perceived advantages (90.9%) whereas non-availability of high-speed internet at both ends, difficulty in conducting practical classes and lack of computer skills among teachers are the main perceived disadvantages (73.6%) of online classes. However, 21.4% faculty do not consider computer skills and internet speed to be major issues for taking online classes. [Figure 3] 76.9% of faculty members think that online examinations are not effective. Students' integrity, difficulty in evaluation of answer sheets and difficulty in conducting practical examination are the major perceived drawbacks of online examination (75.6%) [Figure 3] However, the relaxation in requirement of physical presence of external examiners and feasibility during the pandemic period are the main advantages as perceived by 84.2% of faculties.

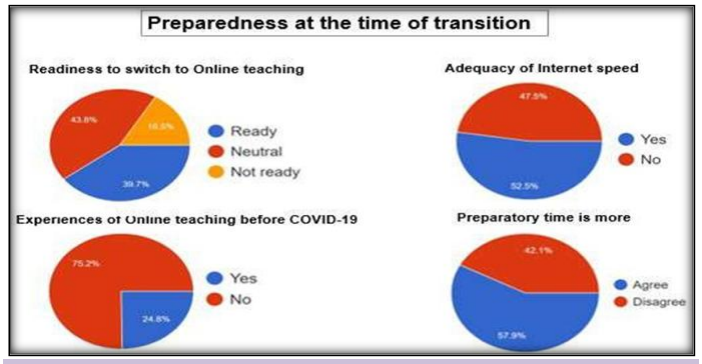

Figure 1: Preparedness of faculties to take online class

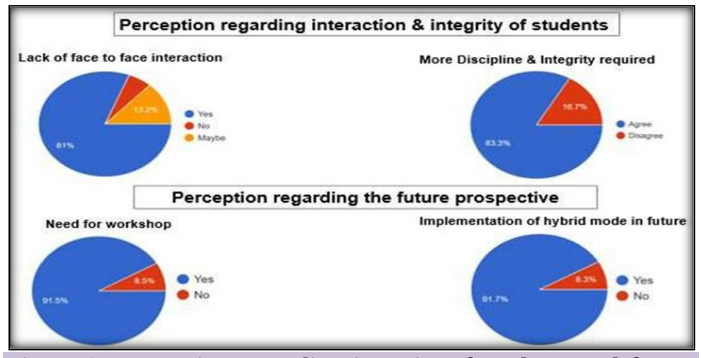

Figure 2: Perception regarding integrity of students and future perceptive of online class

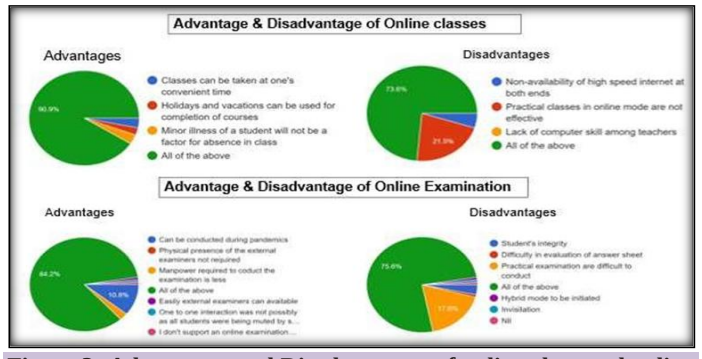

Figure 3: Advantages and Disadvantages of online class and online examination

Table 1: Demographic, Professional and Teaching Experience Details

Variable		No of Participants(n=121)	Percentage
Age	<40 years	56	46.3
	>40 years	65	53.7
Sex	Male	65	53.7
	Female	56	46.3
Marital status	Married	99	81.9
	Single/Widow	22	18.1
Department	Preclinical	21	17.4
	Paraclinical	28	23.1
	Clinical	72	59.5
Designation	Senior Resident	43	35.5
	Assistant Professor	52	43.0
	Associate Professor	16	13.2
	Professor	10	8.3
Teaching experience	Less than 5 years	53	43.8
	More than 5 years	68	56.2

Table 2: Comparison of Perception among Junior and Senior Faculties

Response to Questions	Percentage (%) of Junior Faculties(n=53)	Percentage (%) of Senior Faculties(n=68)
Ready to switch to online class	54.7	26.4
Had experience of online teaching before COVID-19	28.3	22.0
Preparatory time for online classes is more than conventional teaching	67.9	50.0
Practical classes are not effective in online mode	84.9	94.1
Online examinations are effective	35.8	13.2
The only drawback of online examinations is the difficulty in conducting practical examinations.	24.5	11.7
Workshop on online teaching is required	90.5	88.2
Favoured Hybrid mode of teaching	90.5	91.1

Table 3: Comparision of Demographic Data and Teaching experience of the faculties with previous study

Parameter	Galidevera J et al (2021)	Rohila et al (2022)	Keshavarzi MH et al (2019)	Kim KJ et al (2023)	Present study
Place	India	India	Iran	Korea	India
Age	25-50 Years (69.7%)	41-50 Years (36.9%)	32-59 years	Forties (57.8%)	Mean age- 40.8 years SD=8.9 5
Sex distribution	Male ~ Female	Female>Male	Female>Male	Male>Female	Male>F emale
Teaching experience (>5 years)	32.6%	36.2% (Professor) 32.3% (Asst. Prof)	85.7%	73.3%	56.2%
No experience of online teaching before COVID-19	83.1%	43.8%	All have virtual education experience	All have e learning experience	75.2%

Discussion

The Internet and artificial intelligence have revolutionized the education system of India. In this smart learning environment, teachers are regarded as facilitators for knowledge rather than educators. Medical education is also no exception to this. The current study investigated how medical faculty members felt about online medical education. The COVID-19 pandemic was a blessing in disguise for the faculty of the medical colleges to get acquainted with online teaching. To cope with the digital platform, the faculty members need to be well-versed with the online method of medical education. Most of the faculty in the medical colleges of developing countries, like India, are used to traditional classroom teaching. Similar scenario was found in the present study where 75.2% of faculties had no online teaching experience before the COVID-19 pandemic. The mean age of our faculty members is 40.8 years, which is consistent with previous studies.[6–9] A larger number of faculty members are male in our study, unlike Rohila et al. (2022) and Keshavarzi MH et al. (2019), where female participants predominate.[7,8] Eighty-nine percent of our faculty members were married, and over half of them worked in the clinical department. Therefore, shifting to online teaching was a challenge in their busy professional and personal schedule. Table 3 shows the comparison of the present study with earlier studies from Iran, Korea, and India concerning variations in faculty age, sex distribution, teaching experience, and digital readiness. Our study found that only 56.2% of participants had more than five years of experience, but Keshavarzi et al. (2019) reported 85.7%. This could be because of demographic disparities in recruitment or establishment of institution.[8] Moreover, while studies from Iran and Korea showed greater digital readiness, Indian faculty continue to trail in terms of e-learning technology exposure, highlighting the need for structural upgrades in training and infrastructure. In the present study, only 43.2% of faculty were ready to shift to online mode, and 57.9% believed that online teaching required more preparation time than conventional classes. These findings are consistent with Mukhtar et al. (2020) and Singh et al. (2021), who also noted that digital teaching demands new skills, more time investment, and significant effort in preparing for class.[10,11] Hybrid modes of education are increasingly viewed as

sustainable long-term solutions that combine the best of both in-person and virtual learning.[12,13] In our study, the majority of our faculty (91.7%) supported hybrid methods of learning, indicating a forward-looking attitude. To enhance their online teaching skills, 91.5% of faculty members expressed a desire for workshops and the necessity of formal faculty development programs. A similar need for institutional support and skill- building has been emphasized in other studies across various developing countries.[14] The Majority of participants (90.9%) in our study appreciated the flexibility offered by online teaching. Classes being possible at convenient times, utilizing holidays, and accommodating minor student illnesses were widely acknowledged advantages. Similar benefits have been highlighted in Rajab et al. (2020), where online platforms allowed continuity of education without physical constraints.[15] Despite these benefits, several significant barriers to effective online teaching were perceived by our faculty. Most notably, 73.6% of participants cited poor internet connectivity, ineffectiveness of practical teaching, and limited computer skills among faculty as major obstacles. These perceptions of our faculties are consistent with Singh et al. (2021) and Dost et al. (2020), who also reported that digital illiteracy and infrastructural deficiencies limited the success of online medical education, particularly in resource- constrained settings. [11,16] 94% of faculty members opined that practical or clinical teaching is not effective in online methods. This is consistent with the literature emphasizing that medical education heavily depends on hands-on clinical training, physical examination skills, and interpersonal interactions, which are difficult to simulate virtually.[17,18] So far, online assessment of students is concerned, the majority of our faculty found logistical advantages like reduced manpower and ability to assess remotely; however, integrity issues and difficulty in evaluating practical skills remained major concerns. This aligns with concerns raised in several publications regarding academic honesty and effective outcome measurement in online assessments (Pei & Wu, 2019; Sandhu et al. 2020).[12,19] Interestingly, the senior and junior faculty members showed some perceptual differences. Junior faculty were more willing to switch to online classes (54.7% vs 26.4%), possibly due to greater adaptability to technology or fewer entrenched teaching habits. Conversely, senior faculty were more critical about online examinations, with only 13.2% agreeing they are effective, compared to 35.8% of junior faculty. These differences may reflect varying levels of comfort with digital tools and assessment frameworks. The need for faculty training was another prominent theme as 91.5% advocated for this. Here it can be emphasized that faculty development programs can significantly improve the quality and confidence of online education (Chakraborty & Nafukho, 2020).[14]

Limitations: This study was carried out from a specific regional context in a single medical college. So, faculties of more institutions need to be included to generalize the results effectively.

Conclusion

This study underscores a strong faculty interest in leveraging online platforms for theoretical teaching, provided that technological and training barriers are addressed. While online methods cannot replace practical, hands-on training, they can complement traditional education in a hybrid model. Institutions should invest in infrastructure development, faculty training, and curriculum redesign to incorporate digital education effectively, ensuring resilience against future disruptions and enhancing the overall learning experience.

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Conflicts of interest

There are no conflicts of interest.

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