

ONLINE TEACHING OF MEDICAL STUDENTS DURING COVID -19 PANDEMIC – TEACHERS' PERSPECTIVE: A CROSS-SECTIONAL STUDY.

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Abstract

Background

The COVID-19 pandemic forced educational institutions to transition from traditional in-person teaching to online learning environments. In medical education, this shift posed unique challenges due to the reliance on hands-on and clinical teaching methods. The rapid switch to digital platforms was essential to ensure the continuity of medical education, despite the limitations and lack of preparedness. This study assessed the faculty's perceptions of online teaching during the COVID-19 lockdown.

Methodology

A cross-sectional observational study was conducted among the teaching faculty of Dr. Y. S. Parmar Government Medical College (DYSPGMC), Nahan. Feedback was collected via online Google Forms from April 2020 to September 2020. A total of 50 faculty members were invited to participate, and 29 responses were received. The survey utilized a Likert scale to evaluate comfort with online teaching tools, feedback on effectiveness, interaction with students, syllabus completion, and content delivery.

Results

75.9% of the faculty preferred PowerPoint presentations, with 37.9% incorporating narrative audio. Additionally, 44.8% used online videos, and 27.6% shared PDF notes. 44.8% of the teachers rated student interaction during live lectures as moderately good, while 37.9% found it very good. Only 27.6% of the faculty reported that lectures were completed within the stipulated time. 44.8% of respondents found the online teaching tools convenient, but 10.3% reported poor audio-visual quality due to network issues.

Conclusion

The study concluded that online classes were generally accepted by the faculty, but challenges such as limited student interaction and technological difficulties were prevalent. Although online teaching helped maintain the continuity of education during the pandemic, faculty members expressed that it cannot fully replace traditional classroom and clinical instruction.

Recommendation

To improve the online teaching experience, institutions should provide better IT support, including high-speed internet, premium access to online teaching platforms, and dedicated teaching spaces.

Keywords: Online Learning, COVID-19, Pandemic, Medical Education, Teachers.

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Introduction

With the emergence of the COVID-19 pandemic, there was a shift in the role of medical teachers entirely towards the care of patients and the community instead of teaching medical students. [1] The most effective preventive strategy for COVID-19, social distancing, disallows students from gathering in lecture halls or small group rooms. [2, 3] Hence all medical colleges across the country suspended all classroom teachings to avoid further spread of the pandemic. But, even in this uncertain environment, it was important that the learning continued,

even if it was not possible face-to-face. So, the COVID-19 pandemic brought a huge change in medical education as it shifted the focus from traditional in-house lectures and bedside teachings to technology-driven online classes. Over the past few years, some colleges have been using online or electronic learning more frequently as

compared to traditional forms of 'in-person' lecture-based teaching as an add-on to the traditional form of classroom lecture-based learning. [4] Still, in almost all medical schools of the country, students used to convene in

physical settings. [3] Online learning can be defined as the use of electronic technology as a teaching-learning method, which involves interaction with teachers and learners. It provides easy and effective information to students.

Technology-assisted E-learning gives flexibility to the learner in today's fast dynamic world. The need for the hour is to have many digitally literate teachers and students incorporate this teaching-learning method into the existing curriculum. Due to the coronavirus pandemic, classroom lectures and clinical training were stopped. Hence, the need for online classes was felt and online learning platforms were explored. As virtual classes started, we wanted to get feedback and improve the teaching-learning process. It was also important to address the challenges faced. [5]

Although a lot of information is available to students on the internet for learning, online teaching by teachers guides the student learning in the proper context of their curriculum. Keeping this in mind, a regular schedule of online teaching was planned in various departments using different modes of online teaching such as PowerPoint presentations with and without narratives from teachers, online videos by the faculty, study notes in the form of portable document format (pdf) and live online lectures for all 417 students of MBBS at DYSPGMC, Nahan. We will not know the full impact of COVID-19 on medical education for quite some time. As such it will be important to record and study the full extent of the changes in medical education being made in response to this national emergency to clarify how we recover from this pandemic. [2]

The paper discusses the results of an online survey of 29 teachers about their experiences using online learning technologies during the COVID-19-induced college closures. An online survey instrument was created on Google Forms and a link was distributed to the teachers through WhatsApp groups and Email. Quantitative data were presented through frequency tables and figures. The results of the survey indicate that mobile devices remained the primary computing device used to access academic information. The study was undertaken to understand the extent of acceptance and gather feedback on the teacher's perspective, level of comfort, feedback, completion of topics, level of interaction, and effectiveness concerning online classes.

Objectives of the study

This study was conducted to find out:

1. The faculty's perception of these online classes after conducting them for six

Months (April 2020 – September 2020) during the lockdown regarding:

- 1) Level of comfort dealing with the tools of online teaching
- 2) Feedback regarding the effectiveness of teaching
- 3) Completion of topics in the stipulated time
- 4) Level of interaction with the students
- 5) Effectiveness in terms of delivering the content

Methodology

Study design

Cross-sectional observational study.

Study setting

The study was conducted at Dr. Y. S. Parmar Government Medical College (DYSPGMC), Nahan, Himachal Pradesh, India. The feedback was taken for the online teaching done during the past six months (April – September 2020)

Participants

Feedback forms were sent to 50 teaching faculty members who were involved in online teaching during the COVID-19 pandemic.

Inclusion criteria

All the teaching faculty of DYSPGMC, Nahan who were involved in online teaching and who are willing to give feedback

Exclusion criteria

Faculty with less than a specified amount of teaching experience (e.g., less than one year), faculty who started but did not complete the feedback form, faculty who faced significant technical problems that hindered their online teaching participation, and faculty teaching non-relevant subjects or primarily involved in administrative roles were excluded.

Bias

To mitigate response bias, the study ensured anonymity in feedback collection, encouraging honest and uninfluenced responses from faculty regarding their experiences with online teaching.

Data collection and procedure

Feedback forms (online Google forms) were sent to all the faculty of DYSPGMC, Nahan who were involved in online teaching and who were willing to give the feedback. The forms did not bear the name of the respondent (to avoid any ethical issues) - Annexure 1

Statistical analysis

A review pertaining to different aspects of online teaching was taken in the form of a Likert Scale. Following that, the result was taken out in percentages.

Ethical consideration

Ethical procedures were upheld by ensuring participant anonymity and obtaining informed consent before collecting feedback through anonymous online surveys, thereby safeguarding the privacy and rights of faculty members.

Result

29 responses

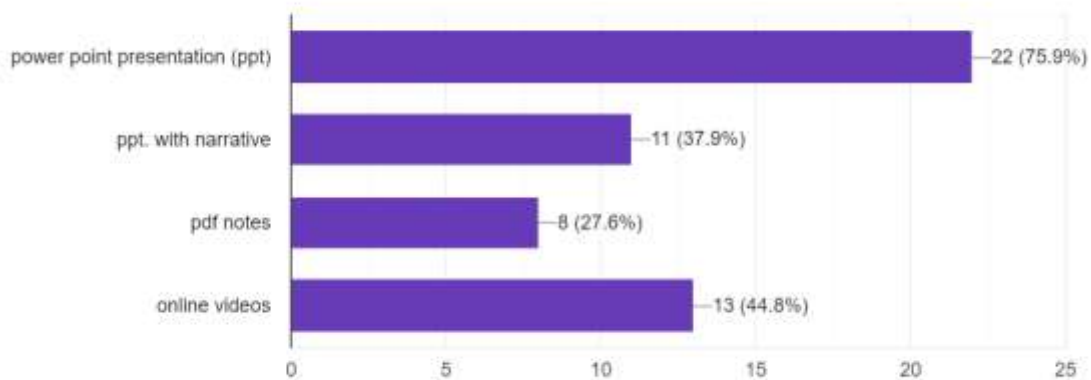
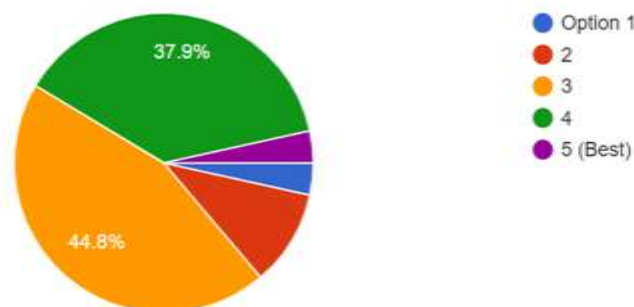


Figure 1: Mode of online teaching used

29 responses



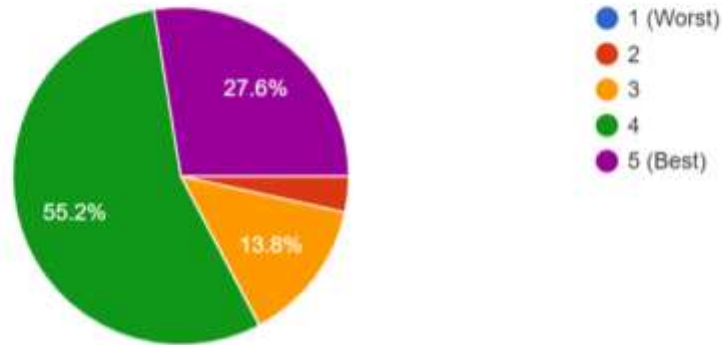
In our study an online survey was done in which 50 teachers were included and feedback forms (online Google forms) were sent to all the faculty of DYSPGMC, Nahan who were involved in online teaching and who are willing to give feedback out of which 29 teachers had given feedback regarding online learning.

75.9% of teachers choose power point presentation as the mode of online teaching used, 37.9% of them even added narratives to the ppt. 27.6% used pdf notes and 44.8% of the teachers used online videos.

44.8% of teachers reported that the interaction with the students during a live lecture was moderately good. 37.9% teachers found the interaction with the student was very good. Only 27.6% commented that the lecture was completed in stipulated time.

44.8% teachers found the tools and system for online teaching convenient and easy to use. 13.8% reported the best experience using the same tools and system.

Figure 2: In case of live online classes, the interaction with the students during the class
29 responses



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Figure 3: The lecture was completed in stipulated time
29 responses

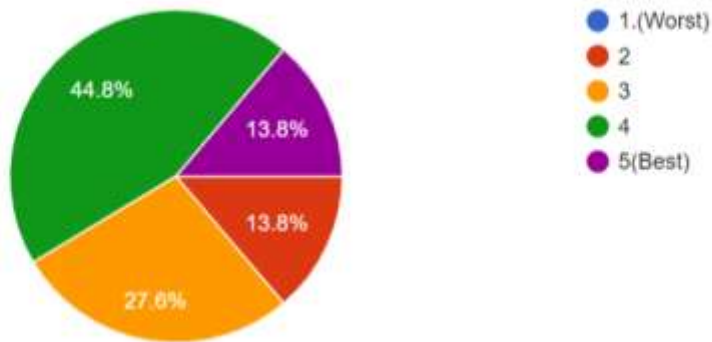


Figure 4: Tools and systems were easy to use and accessible for all
29 responses

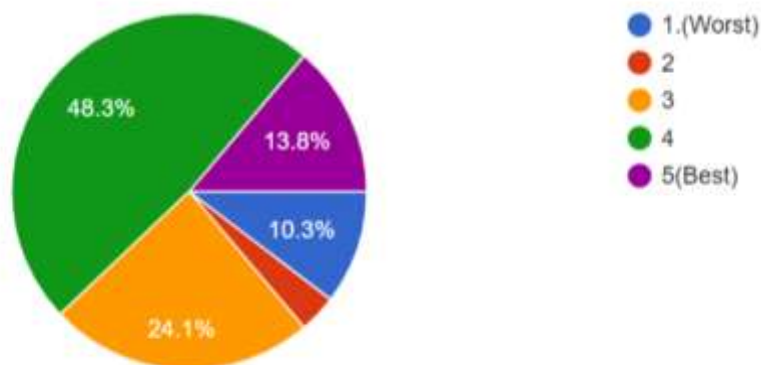


Figure 5: The audio and visual connection was good

10.3% of the teachers reported the audio and visual connection to be very poor not enough to understand the content of the lecture. This result could be attributed to the poor network in these cases.

Discussion

The study gathered feedback from 29 out of 50 faculty members regarding their experiences with online teaching

during the COVID-19 pandemic. The results indicated a strong preference for using PowerPoint presentations, with 75.9% of faculty choosing this method, while 37.9% enhanced their presentations with narrative audio. Additionally, 44.8% utilized online videos, and 27.6% provided PDF notes to facilitate learning. These findings suggest that faculty relied heavily on familiar tools to maintain instructional effectiveness and engagement in a virtual setting.

Faculty perceptions of student interaction varied, with 44.8% rating the interaction during live lectures as moderately good and 37.9% rating it as very good. However, only 27.6% felt that lectures were completed within the scheduled time. This discrepancy highlights challenges in maintaining student engagement and managing time effectively in online formats. Furthermore, while 44.8% of the respondents found online teaching tools convenient, 10.3% reported poor audio-visual quality due to network issues, indicating that technical difficulties significantly impacted the teaching experience and effectiveness.

Overall, the study revealed that while online teaching was generally accepted by faculty members, there were notable challenges, such as limited interaction and technological issues, that hindered the teaching and learning process. The results imply that, despite the necessity of online education during the pandemic, faculty members recognized its limitations compared to traditional classroom and clinical teaching. These insights emphasize the need for better IT support and resources to enhance the online teaching experience in the future.

Medical graduates and teachers of the 21st century are expected to be up to date with the latest technology. Medical Council of India, Vision 2015, advises the use of online learning to make the students lifelong learners.[6] The success of online learning depends on many factors. Both students' and teachers' perspectives are important to make it effective.[7] "Cultural resistance" of staff toward E-learning is identified as a barrier to student engagement with technology-based education. Hence, initiatives in favor of faculty orientation and training in respect of E-learning are necessary to successfully introduce E-learning programs.

Technology now plays an important role in educational transformation. The online learning platforms provide a reasonable combination of accessibility of knowledge with learner flexibility and interactivity. This learner-centered approach, also called asynchronous E-learning,[8] can help to balance professional development with personal and work commitments. E-learning systems can be used to increase all learning fields, including cognitive, psychomotor and affective learning. In the cognitive area, classroom community instruction may be improved by offering online resources such as pre-reading

assignments and audio-video clips during sessions. And students may be equipped with virtual resources such as audio-video clips, podcasts, videos, and web-links for self-directed learning designed to be used at home or as part of Flipped lectures. Psychomotor abilities, while better learned with actual experience, can also be improved by technology, at least up to the 'know-how' stage.

Audio-visual illustration of treatments, diagnostics and therapies can be given. Students can read through the descriptions and display the procedural skills checklists before actually practicing the same under supervision in clinical posts or in specialist laboratories. In the affective domain, videos of scenarios depicting good and bad communication-skills, role-playing and counselling sessions, and self-recording - can be used to promote learning.

Other modalities include multimedia case reports and patient records, health decision support services, interactive patients, medical video games, e-books, e-atlases, instructional libraries, and digital editions of online journals.[9] The adoption of the online learning within medical colleges is expected to promote self-directed and lifelong learning. Thus, it will benefit both the teachers as well as the students.[10]

Flexibility of E-learning provides information to the students beyond the specified timings of teaching in class and gives them freedom to read and learn whenever they feel the need for the same. It is wonderful that technology has enabled millions of students to keep learning even when direct contact was impossible.

Conclusion

Online classes were found acceptable by most of the faculty. The positive feedback and suggestions helped in the planning of E-learning classes in the existing curriculum for future. In a low- and middle-income country (LMIC) like India, the internet connectivity and global access to it is still not a universal privilege. Learning of these new skills by the senior faculty members was though difficult and time-intensive, but it has yielded a significant impact in decreasing the psychosocial trauma and anxiety the student community faced. The faculty perceived the online classes on a positive note, during the present pandemic situation, within limitations. But they also felt that such classes cannot replace the classroom teaching after the present emergency gets over. Present study concludes that the perception of faculty for these live online classes for medical undergraduate students concluded that this endeavor is a welcome stop gap arrangement in the time of COVID pandemic, so that the learning continues.

Limitations

The study's results may have been limited by the small sample size of 29 respondents, which may not represent the broader faculty population's experiences. Additionally, reliance on self-reported data could introduce bias, as faculty members might have been influenced by their personal perceptions or external pressures when providing feedback.

Recommendation

To improve the online teaching experience, institutions should provide better IT support, including high-speed internet, premium access to online teaching platforms, and dedicated teaching spaces. Additionally, continuous training for faculty on digital tools is essential to enhance the effectiveness of online medical education.

Teacher's feedback as received:

1. The institute should provide IT support in form of proper internet connection and buy premier plans of online modes like zoom or Google meet to accommodate 120 students. Because most platforms allow only 100 students and reaching the students thru live you tube most of the time doesn't work due to low speed internet.
2. College should support departments for online classes by providing dedicated online teaching rooms equipped with high speed internet and other logistics. Still accessibility at level of students cannot be ensured.
3. The system available for online teachings needs lot of improvements both at the level of teachers (providers) and recipients (students) with quality, uniform availability, and time management.
4. Internet connection should be improved in this area. Please have talk with different network providers like airtel, Jio etc.
5. Online drawing options for explaining diagrams and reactions might be missing due to less features in some online platform.
6. However, mostly the faculty felt that teleteaching cannot totally replace the actual classroom contact and even the patient- student contact in clinical teaching.
7. Developing the interpersonal skills and clinical acumen was a difficult task through this type of teaching learning. The questionable attention of students due to structured interaction as well as the monotony of conducting the class were other factors responsible for this point of view of the faculty.
8. The limitations of these classes, that the faculty experienced were limited interaction with the students as compared to a real classroom, monotony of delivering their lecture in a closed

room and occasional technical issue of slow internet connection. There was a mixed response to the question of continuing these types of classes after the pandemic got over.

9. The timetable for all four batches was planned and everyday each batch was subjected to two live lectures across their subjects of study. The institute faculty were sensitized for using the software and online teaching modus operandi prior to launch of these classes. It involved training of faculty about how to use the software followed by conduction of two trial classes for the teaching faculty itself. Once the faculty was trained, two video conferencing relay stations were set up in a designated area and live online classes were taken by these faculties for all four years of MBBS.

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Conflicts of Interest

The authors declare no conflict in interest.

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