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A CROSS-SECTIONAL STUDY ON THE PERSPECTIVE OF MEDICAL STUDENTS ON ONLINE TEACHING DURING THE CORONAVIRUS (COVID-19) PANDEMIC, HIMACHAL PRADESH, INDIA.

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ABSTRACT.

Background:
The COVID-19 crisis has propelled the educational sector into uncharted territories, necessitating the abrupt transition to online learning. Utilizing electronic technology for teaching and learning offers a promising avenue for continuous education, facilitating interactions between teachers and students. Despite its benefits, this shift has unveiled numerous challenges, impacting the efficacy of digital education.

Methods:
To explore these challenges, an online survey was conducted using Google Forms, aimed at gathering the experiences and opinions of students. The survey targeted 120 first-year MBBS students at DYSPGMC, Nahan, who had participated in online teaching. Out of these, 75 students responded and were willing to provide feedback on their online learning experience.

Results:
The survey revealed critical issues affecting online learning, including poor internet connectivity exacerbated by high traffic, and concerns about audio and video quality during live-streamed classes. Despite these challenges, online classes were generally well-received, with most students finding them acceptable and beneficial for their professional growth, given the extensive curriculum and time constraints.

Conclusion:
The study highlights significant obstacles in the implementation of online learning, such as connectivity issues and the quality of live-streamed classes. Nonetheless, the acceptance of online classes among students indicates a positive shift towards e-learning, emphasizing its potential role in facilitating continuous professional development.

Recommendations:
It is recommended to integrate e-learning into the existing curriculum, considering the positive feedback and suggestions from students. Efforts should also be made to address the identified challenges, particularly improving internet infrastructure and the quality of online delivery, to enhance the effectiveness of online learning in future educational settings.

Keywords: Online Learning, coronavirus, Pandemic, Medical Education, Students
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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 closing of universities, schools, public places, and any forms of social interaction beginning from 13th March, was just the silence before the storm. One of the communities hardest hit is the student body. Most universities had to cancel their examinations, the Undergraduate national examinations

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for premier medical and engineering institutes, the board examinations of senior secondary and high school, and internal school exams were postponed indefinitely. With the government's advisory on the immediate closing of institutions, the student and education bodies both were faced with the challenge of providing quality education via online platforms.[2]

The most effective preventive strategy for COVID-19, social distancing, disallows students from gathering in lecture halls or small group rooms. [3, 4] 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.[5] Still, in almost all medical schools of the country, students used to convene in physical settings.[4] 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. [6]

Although a lot of information is available to students on the internet for learning, but 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 120 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. [3]

The paper discusses the results of an online survey of 75 students 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 students through WhatsApp groups and Email. Quantitative data were presented through frequency tables and figures. The study was undertaken to understand the extent of acceptance and gather feedback on the Level of comfort dealing with the tools of online teaching, the effectiveness of teaching, completion of topics in the stipulated time, and the level of interaction with the teachers in respect of online classes.

Objectives.

This study was conducted to find out:

- The student's perception of these online classes after attending them for six months (April 2020 – September 2020) during the lockdown regarding:
- Level of comfort dealing with the tools of online teaching
- Feedback regarding the effectiveness of teaching
- Completion of topics in the stipulated time
- Level of interaction with the teachers

METHODOLOGY.

Study design.

Cross-sectional observation study.

Study setting.

The study was conducted at Dr. Yashwant Singh Parmar Government Medical College, Himachal Pradesh, India. The feedback was taken for the online classes during the past six months (March – September 2020).

Data collection.

Feedback forms (online Google forms) were sent to all the 120 students of M.B.B.S. Phase 1 at DYSPGMC, Nahan who were attending the online classes and who were willing to give the feedback. The forms would not bear the name of the respondent (to avoid any ethical issues) - Annexure 1

A review of different aspects of online classes would be taken in the form of a Likert Scale. Following that, the result was taken out in percentages.

Inclusion criteria.

All the students of M.B.B.S. Phase 1 at DYSPGMC, Nahan who attended the online classes and who are willing to give feedback.

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Exclusion criteria.

The students of M.B.B.S. Phase 1at of DYSPGMC, Nahan who either did not or could not attend the online classes and who are not willing to give feedback

Bias.

There was a chance that bias would arise when the study first started, but it was avoided by giving all participants identical information and hiding the group allocation from those who collected the data.

Ethical consideration.

The study protocol was approved by the Ethics Committee. Written informed consent was received from the participants before the study.

RESULTS.

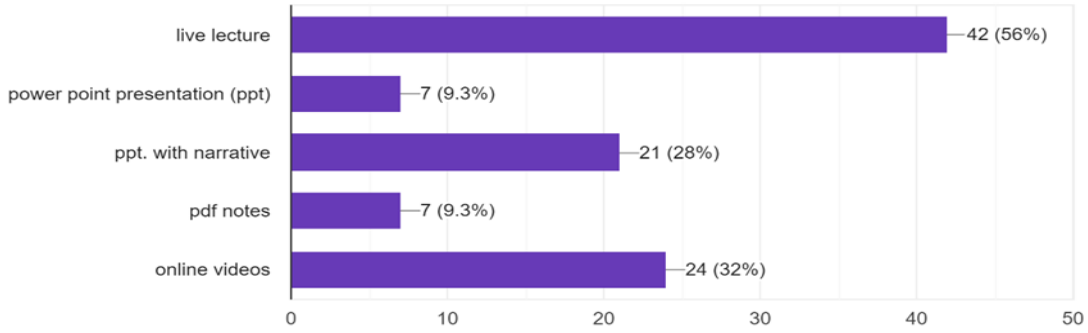

Figure 1: Mode of online teaching that was most comfortable.

In the study, 120 students participated. 56% of students choose live lectures to be the best option. 9.3%, 28%, and 9.3% answered PowerPoint presentations or PPTs with narrative, and pdf notes respectively to be the preferred method. 32% of the students selected online videos to be the most comfortable. (Figure 1)

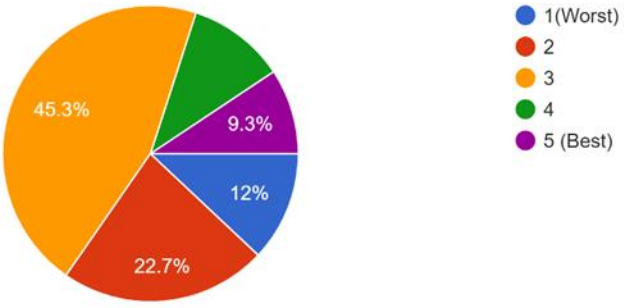

Figure 2: In the case of live online classes, the interaction with the teacher during the class.

Only 9.3% of the students reported that the interaction with the teacher during a live lecture was best. The majority of students found the interaction with the teacher moderately good (Figure 2).

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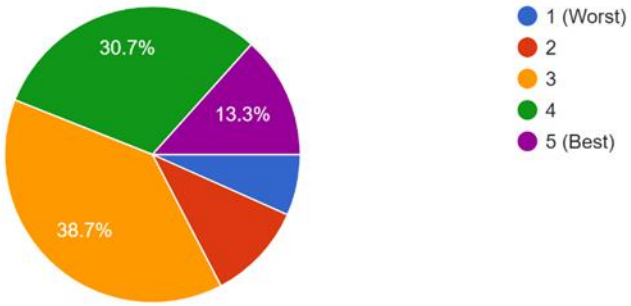

Figure 3: The lecture was completed in the stipulated time.

Only 13.3% commented that the lecture was completed in the stipulated time. (figure 3)

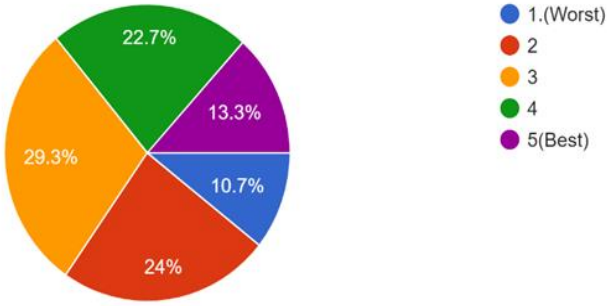

Figure 4: Tools and systems were easy to use and accessible to all.

13.3% of students found the tools and system for online teaching convenient and easy to use. 10.7% reported the worst experience using the same tools and system. this result could be attributed to the poor network in the latter cases. (Figure 4)

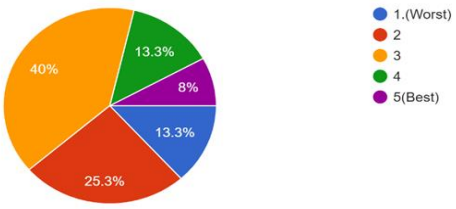

Figure 5: The audio and visual connection was good.

40% of the students reported the audio and visual connection to be good enough to understand the content of the lecture. (Figure 5)

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DISCUSSION.

The survey on online teaching methods and their effectiveness among medical students offers crucial insights into their preferences and challenges encountered. A significant majority (56%) expressed a preference for live lectures, signaling a strong desire for interactive and real-time engagement. Despite this preference, the quality of interaction with teachers during live lectures was rated as only moderately good by most, highlighting a need for improved engagement and communication strategies. Furthermore, the issue of not completing lectures within the allocated time was flagged by 13.3% of students, indicating potential inefficiencies in online content delivery. Technical aspects also presented challenges, with only 13.3% of students finding the online tools easy to use and accessible, often hampered by network issues. The audio and visual quality was satisfactory for 40% of the participants, pointing towards a requirement for better technical infrastructure to facilitate clearer understanding.

Integrating these observations, it becomes evident that while there is a clear inclination towards live lectures for their real-time interaction potential, the effectiveness of online learning is currently marred by engagement, technical, and time management issues. Addressing these areas—enhancing interactive components, ensuring content is delivered within stipulated times, and improving the technical delivery mechanisms—are crucial steps in refining online learning experiences. The insights suggest that with targeted improvements in these key areas, online learning can become more effective and satisfying for students, meeting their educational needs more comprehensively.

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 students lifelong learners.[7] The success of online learning depends on many factors students' and teachers' perspectives are important to make it effective.[8] "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 concerning 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,[9] 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. 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 experience, can also be improved by technology, at least up to the 'know-how' stage. Audio-visual illustrations 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 specialist laboratories. In the affective domain, videos of scenarios depicting good and bad communication skills, role-playing and counseling 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.[10] The adoption of 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.[11] Several factors act as barriers to online education, with a) academic skills, b) technical skills, c) cost and internet access, d) time and motivation for studies, and e) technical issues, being some of them. The student-centered approach needs to be implemented including doubt-clearing sessions via online portals, virtual bedside stimulation software, creative conceptualization, and student engagement, keeping in mind the 4 key pillars-skills, resources, institutional strategies, and support and attitude.[13] The flexibility of E-learning provides information to the students beyond the specified timings of teaching in class and gives them the freedom to read and learn whenever they feel the need for the same.

STUDENT'S SUGGESTIONS.

- Live online classes and teachers should randomly ask roll no's a question and that will add concentration and more learning ability.
- All the other methods are not helpful until a live online class with good student-teacher interaction is done and after that, if the PPT is sent to our groups, it will surely be helpful but just sending a PPT in the group is nothing but a waste.
- Online teaching platforms should be developed in our college which will be dedicated for this purpose only as is being done everywhere else then I think it will be engaging for the students otherwise it's just boredom needless to say offline classes were the same where nobody studied. Therefore, if any student wants to study he/she will study be it online or offline.

- PDFs with explanations are more comfortable and helpful as they exclude network issues and students can repeat the lecture, can make notes easily. Regular tests should be taken to keep a check on students as no matter how sincere the child is but Homely environment is quite linear.
- According to me, it would be better to record the lecture because every time it is not possible to have full access to online lectures for all students. Whereas recorded lectures could be a great help afterward also
- Should include tests routinely. Live classes are not good. Classes with video PPTs should be sent. So that we can see them according to our speed. Revise them again and again
- Online classes are okay for only some time but later they cannot match the live classroom setup!!
- Teachers can be more appreciated if they merely not read the slide only and I wish them to explain the concepts more thoroughly.
- Some students live in a remote area or backward area they do not have fast 3G /4G internet
- practical knowledge which cannot be attained at home
- Offline classes are the best
- Online classes are a myth in countries like India
- connectivity so in this situation PDF or PPT plays an important role.
- Classes should be live on video conference according to the timetable that we follow in college.
- Questions should be asked in between the lectures so that we are bound to listen and understand.
- We did not have any live lectures last year. Also, live viva should be taken to omit cheating in theory tests. It will help students a lot and we will not have to struggle at the time of exams.
- Please give online lectures pdf and PPTs are just of no use as nobody reads them and rather prefer books but without lectures, it takes too much time and some concepts are still not clear but better if the teacher takes live classes either via Zoom or Microsoft, etc.
- Online studies give time to improvise and study a topic in detail using online preference. But one thing which lacks is

GENERALIZABILITY.

The applicability of the study's results on medical students' experiences with online learning during the COVID-19 pandemic to other settings hinges on several factors, including the study's design, context, and the global shift towards online education prompted by the pandemic. These insights- highlighting preferences for live lectures, engagement challenges, and technical issues- may resonate across various educational fields and geographies undergoing similar transitions. However, the extent to which these findings can be generalized may vary based on technological infrastructure, disciplinary differences, and cultural education practices. While the study offers valuable insights likely relevant to broader contexts, the specific applicability and extent of these findings necessitate further investigation in diverse settings to understand their universal relevance and to tailor online learning strategies effectively.

CONCLUSION.

There is poor internet connectivity in some areas, which is partly even due to heavy traffic. Complaints ranging from the access, audio, and video quality to sometimes even about the background noises were raised regarding the live-streamed classes. The use of e-learning will help them accomplish the aim of continuous professional growth, given the vastness of the program, the shortness of time, and the often-overburdened schedule. Online classes were found acceptable by most of the students. The positive feedback and suggestions helped in the planning of E-learning classes in the existing curriculum for the future.

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LIST OF ABBREVIATIONS.

COVID-19: Coronavirus Disease 2019
MBBS: Bachelor of Medicine, Bachelor of Surgery
DYSPGMC: Dr. Yashwant Singh Parmar Government Medical College, Nahan
E-learning: Electronic Learning
MCI: Medical Council of India

CONFLICTS OF INTEREST.

The authors have no competing interests to declare.

SOURCE OF FUNDING.
No funding was received.

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