

Medical Education during COVID-19 Pandemic - Experience of Medical Teaching Faculty of SHKM, GMC, Mewat, Haryana - A Cross-Sectional, Questionnaire-Based Survey

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ABSTRACT

BACKGROUND

Since March 2020, after coronavirus outbreak and nationwide lockdown, medical education in India has experienced a major disruptive change. Measures to prevent the spread of infection and hence to ensure social distancing have led to the closure of medical colleges and starting of online teaching. This study was planned with a purpose to investigate and assess the experience of medical teachers of SHKM, Government Medical College, Mewat, Haryana towards online teaching during COVID-19 pandemic.

METHODS

This was a cross-sectional, self-administered, questionnaire-based survey in which data about their experience with online teaching was gathered by interviewing fifty Medical Educators of SHKM, GMC, Mewat, Haryana. As a part of questionnaire validation process, we invited six faculty members to pilot-test the initial draft and it was modified based on their feedback. Survey was done from July 2020 to Dec 2020.

RESULTS

Majority of the faculty were happy with the starting of online lectures. Maximum faculty were conversant with the use of online apps, had all the equipment required for making and taking online lectures, felt that taking online lectures was not as comfortable as classroom lectures, found it convenient to use laptop / mobiles / tablets for lectures, faced network problems, technical glitches while taking their online lectures, could complete the online lecture within the prescribed time limit, did not tend to spend more time on social sites while preparing for online lectures ; used multimedia, gave electronic study material to their students, did not feel comfortable, while interacting and asking questions, experienced few students leaving classes in between and joining back again only while marking attendance, experienced few students hesitating to reply to questions asked and gave excuses about technical faults.

CONCLUSIONS

Educators can help document and analyse the effects of current changes to learn and apply new principles and practices to the future.

KEYWORDS

COVID-19, Online Teaching, Medical Faculty

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BACKGROUND

The coronavirus (COVID-19) outbreak has rapidly transitioned into a worldwide pandemic. This development has led to serious implications for public institutions and raises particular questions for medical schools.¹ Schooling and medical education is taking place over screens rather than in classrooms and hospitals. In the distant future, where our cars are to be solar-powered and daily lives with artificial intelligence (AI) integrated; the outbreak of coronavirus has made some unprecedented changes.² Since March 2020, medical education in India has experienced a major disruptive change as a consequence of the COVID-19 Pandemic and nationwide lockdown.

Measures to prevent spread and hence to ensure social distancing have led to the closure of medical colleges. All undergraduate students of medical colleges are relocated to their homes thus leaving behind routine didactic lecture classes, practicals, tutorials, seminars, clinical [ward, outpatient department (OPD), and OT] postings and internal assessment examinations. The uncertainty of situation during this period of COVID-19 pandemic has led many medical colleges and health universities to initiate steps to start teaching and learning using various online platforms on their own.³

Online education, also called distance education or online learning, generally refers to a network-based learning activity, by which the teachers and students can carry out teaching and learning through internet even thousands of miles apart.⁴ The majority of teachers are bravely navigating the uncertain waters of online teaching since the start of online teaching during COVID-19 and getting in sync with the idea of holistic teaching.⁵

COVID-19 has forced us to examine all elements of our medical program. This is an opportunity, where after taking feedback of online classes by medical educators, alternative plans need to be made in case another lockdown-like situation arises, so as to minimize the shortcomings and any challenges during a crisis could be addressed in the future. The COVID -19 lockdown would surely end someday.

However, their stresses and scars will remind India's teachers of their own coronavirus battle for a long time to come. Previous studies have shown student's experiences on online learning and extensive review of literature shows that no such study has been conducted on experience of medical faculty regarding online teaching. Here in we share our initial experience of online teaching by medical faculty. Keeping in view of the above facts this study was planned with a purpose to investigate and assess the experience of medical teachers of SHKM, GMC, Mewat, Haryana towards online teaching during COVID-19 pandemic.

METHODS

This survey was conducted by interviewing Medical Educators of SHKM, GMC, Mewat, Haryana. This was a cross-sectional, self-administered, questionnaire-based survey in which data about their experience with online teaching was gathered. The study questionnaire was

developed under the guidance of expert faculty members and with the help of previous literature. In addition to questions about their general profile, questions related to feedback about general awareness, technical problems, use of technology and experience with students while conducting online teaching were asked. Appropriate instructions about filling the questionnaire were given to them. Hard copies of questionnaire were distributed. Consenting participants anonymously completed the questionnaire with pens and submitted it back to us. As a part of questionnaire validation process, we invited six faculty members to pilot-test the initial draft and it was modified based on their feedback. Survey was done from July 2020 to Dec 2020.

Ethical Considerations

All the relevant principles of ethics in research were followed. The Institutional Ethical Committee approved the study protocol (EC / OA – 25 / 2020). Participant's consent was obtained after informing about their right to participate, refuse, or withdraw at any time. Total confidentiality of any obtained information was ensured. The questionnaire didn't entail any harmful effects on the participants.

Statistical Analysis

Data was gathered and entered in Microsoft excel sheet and analysed using appropriate statistical tools like total number and percentage calculation.

RESULTS

In this survey, total 50 medical teachers who were taking online classes took part, out of which 25 were males and 25 females. The mean age of the participants has been shown in Figure 1. They were divided into four age groups and number of males and female participants in each age group has been shown in Figure 2. Of 66 % (33) faculty members, [68 % (17) males and 64 % (16) females] were happy with the starting of online lectures, whereas, 34 % (17) faculty members [32 % (08) males and 36 % (09) females], were not very happy with the starting of online lectures. 84 % (42) faculty members [80 % (20) males and 88 % (22) females] could complete the online lecture within the prescribed time limit whereas, 16 % (08) faculty members [20 % (05) males and 12 % (03) females] could not because of some technical issues and poor Internet connectivity. 92 % (46) faculty members [92 % (23) males and 92 % (23) females] were of the view that out of classroom and online lectures, Classroom lectures were more beneficial for students and 8 % (04) faculty members [8 % (02) males and 8 % (02) females] were supporting both modes equally whereas none supported only online teaching as the only way to teach students of medical college. Five Questions were asked to take feedback related to general awareness about E-Teaching. 94 % of faculty were conversant with use of Internet / online apps, 84 % were aware about academic websites and 92 % had all the equipment required for

making and taking online lectures. 80 % faculty members felt that taking online lectures was not as comfortable as classroom lectures. Only 84 % faculty members found it convenient to use laptop / mobiles / tablets for lectures. Medical faculty had never been trained about academic websites. (Table 1). Three Questions were asked for feedback on technical problems. Majority faculty faced network problems (92 %) and technical glitches (68 %) during online lectures. Fifty percent faculty felt uncomfortable, as they had to do account switching every time while taking a class or while opening websites, as it wasted some time. (Table 2) Four Questions were asked for feedback on use of technology. Almost half i.e. 52 % (26) faculty members [56 % (14) males and 48 % (12) females] of faculty did not tend to spend more time on social sites while preparing / collecting material for online lectures. Majority i.e. 72 % (36) faculty members [60 % (15) males and 84 % (21) females] used multimedia like audio, video, animations etc. while talking online lectures. Majority i.e. 84 % (42) faculty members [80 % (20) males and 88 % (22) females] gave electronic study material related to online lectures to their students. But majority i.e. 90 % (45) faculty members [88 % (22) males and 92 % (23) females] thought electronic study material would not be sufficient for students. (Table 3) Three questions were asked to take feedback related to e-teaching experience with Students.

More than half of faculty (54 %) did not feel comfortable, while interacting and asking questions, with students during online lectures. Majority (94 %) experienced that a few students tend to leave online classes in between and joined back again only while marking attendance. 90 % experienced that a few students were hesitating to reply to questions asked and gave excuses about technical faults with the system. (Table 4)

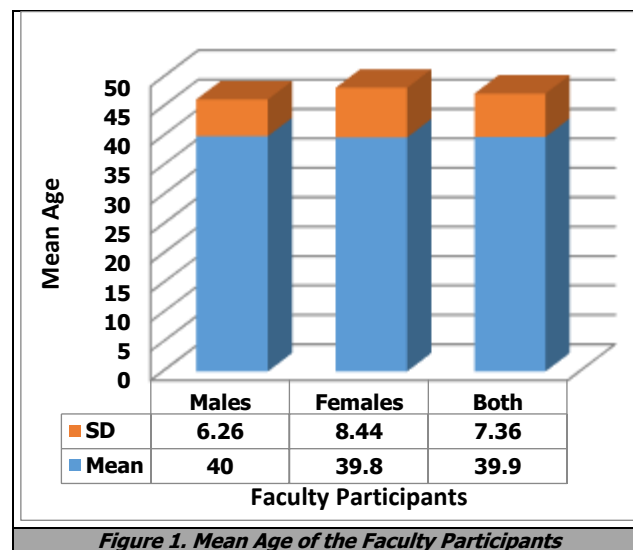


Figure 1. Mean Age of the Faculty Participants

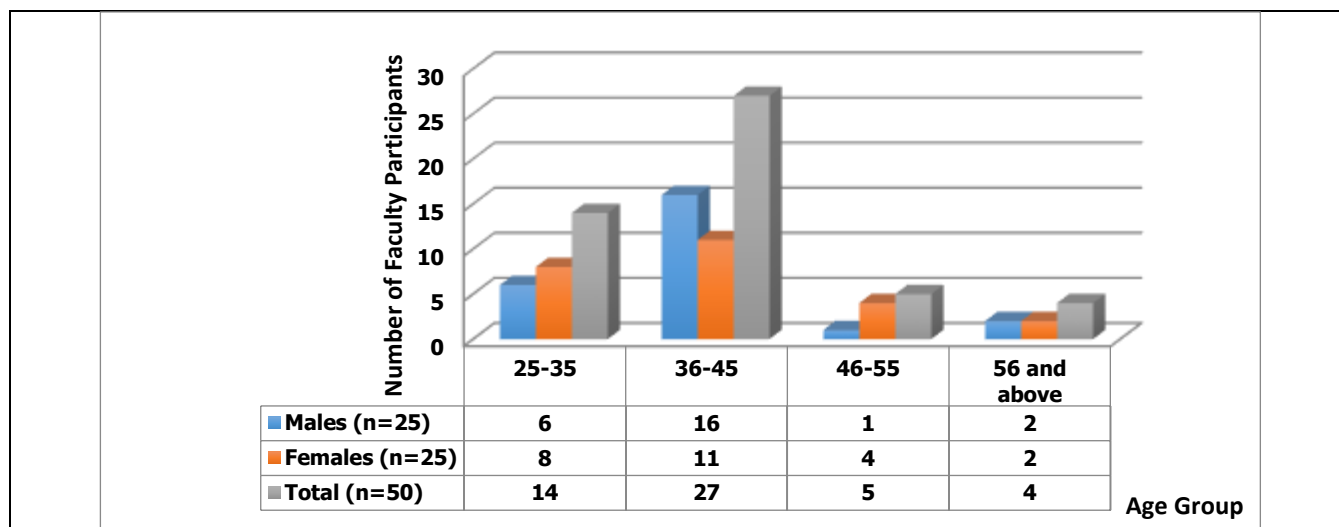


Figure 2. Age-Wise Distribution of Male and Female Faculty Participants

	Males (N = 25)		Females (N = 25)		Total (N = 50)		Males (N = 25)		Females (N = 25)		Total (N = 50)	
	N	%	N	%	N	%	N	%	N	%	N	%
Are you Conversant with use of Internet / online apps etc.?	23	92	24	96	47	94	02	08	01	04	03	06
Are you aware about academic websites?	20	80	22	88	42	84	05	20	03	12	08	16
Did u have all the equipment required for making and taking online lectures	22	88	24	96	46	92	03	12	01	04	04	08
Is taking online lectures as comfortable as classroom lectures	07	28	03	12	10	20	18	72	22	88	40	80
Is it convenient for you to use laptop/ mobiles/ tablets etc. for online lectures?	23	92	21	84	44	88	02	08	04	16	06	12

Table 1. Feedback Regarding General Awareness about E-Teaching

	Males (N = 25)		Females (N = 25)		Total (N = 50)		Males (N = 25)		Females (N = 25)		Total (N = 50)	
	N	%	N	%	N	%	N	%	N	%	N	%
Do you face network problem during the online lectures?	23	92	23	92	46	92	02	08	03	12	05	10
Do you face other technical glitches during the online lectures?	17	68	17	68	34	68	08	32	08	32	16	32
Are you comfortable with account switching during the online lectures?	12	48	13	52	25	50	13	52	12	48	25	50

Table 2. Feedback on Technical Problems While E-Teaching

	Yes				No							
	Males (N = 25)		Females (N = 25)		Total (N = 50)		Males (N = 25)		Females (N=25)		Total (N=50)	
	N	%	N	%	N	%	N	%	N	%	N	%
Do you tend to spend more time on social sites while preparing/collecting material for online lectures?	11	44	13	52	24	48	14	56	12	48	26	52
Do you use multimedia like audio, video, animations etc. while talking online lectures?	15	60	21	84	36	72	10	40	04	16	14	28
Do you give electronic study material related to online lectures to your students?	20	80	22	88	42	84	05	20	03	12	08	16
Do you think electronic study material will be sufficient for students?	03	12	02	08	05	10	22	88	23	92	45	90

Table 3. Feedback on Use of Technology during E-Teaching among Studied Medical Teaching Faculty

	Yes				No							
	Males (N = 25)		Females (N = 25)		Total (N = 50)		Males (N = 25)		Females (N = 25)		Total (N = 50)	
	N	%	N	%	N	%	N	%	N	%	N	%
Do you feel comfortable while interacting and asking questions with students during online lectures?	11	44	12	48	23	46	14	56	13	52	27	54
Did you experience that a few students tend to leave online classes in between and join only while marking attendance?	25	100	22	88	47	94	Zero	Zero	03	12	03	06
Did you experience that a few students are hesitating to reply giving excuses about technical faults with the system.	23	92	22	88	45	90	02	08	03	12	05	10

Table 4. Feedback on E-Teaching Experience with Students

DISCUSSION

The long lockdown for the COVID- 19 pandemic has closed the schools, colleges and other educational institutions including medical education colleges. Online classes have replaced traditional classrooms. Tens of thousands of students in cities and towns are glued to the electronic devices like computers and smartphone screens and teachers to the online apps for lectures, tutorials and assessments.^{5,6}

In our study, majority of faculty were happy with the starting of online lectures as they were of view that it was better to have teaching in some way (online teaching) than totally discontinuing for long period during this pandemic situation when everything was under lockdown. This way students would not lose their lectures and crucial time as the saying holds true here "Something is better than nothing". Few were not happy and they thought that medical teaching couldn't be justified by just taking online - lectures. Similarly authors in their study mentioned that the online classes were started with an intention not only to complete the course but also to remain in continuous touch with the students, to increase the confidence and faith of the students in their faculty during COVID-19 pandemic.⁷

Maximum faculty were conversant with the use of internet / online apps, had all the equipment required for making and taking online lectures, felt that taking online lectures was not as comfortable as classroom lectures, found it convenient to use laptop / mobiles / tablets for lectures. Some were aware of academic websites. Medical faculty has never been trained about academic websites. Majority faculty faced network problems, technical glitches while taking their online lectures. Fifty percent faculty felt uncomfortable, as they had to do account switching every time while taking a class or while opening websites, as it wasted some time too. Majority faculty could complete the online lecture within the prescribed time limit, whereas few of them could not because of some technical issues and poor Internet connectivity.

There were many challenges faced by the teacher: The digital need had especially been highlighted in this pandemic. Internet is no more a privilege, but a necessity.

If you don't have it, teacher can't teach and a student risks missing out altogether. But at a time when many are of the opinion that online classes will transform education as we know it, not all is rosy, especially in India, where problems like lack of technology, of digital training and bandwidth are posing challenges for many students and teachers.⁵ Sitting for a few hours in front of a computer is a great challenge for both students and teachers, especially when having a traditional format class delivered online. Some did not have a spare computer at home and could not buy one because of the lockdown. Some had to use smartphones to take lectures, on which they had to struggle to even see the students. Many students too only had basic smartphones to access the Internet and the online learning content.^{8,9} Also, households with one laptop faced issues, especially if there were kids in house as the classes tend to clash and faculty might have to reschedule classes and if students had siblings they didn't show up. Teacher's felt that online classes were ideal when the class strength was less than fifteen and then only a student teacher connect could be maintained. Even few teachers needed time to adapt to digital learning, as some concepts needed visual aids and innovative ideas to make students understand topics. Teachers felt that vigilance might be a problem while conducting the online exams.⁵ Our findings were in concordance with other studies in which respondents said that preparation of online lectures was a time-consuming activity and could be specified as a negative factor. Educators with more teaching experience (more than ten years) were less inclined towards online teaching materials.¹⁰ The faculty was of opinion that lack of technical support and adequate equipment were the major barriers during online teaching.¹¹ Respondents chose technical problems with IT equipment as the main disadvantage of online teaching.¹² Some other studies also mentioned about hardware and software issues as reason for hurdles during online teaching: The technological infrastructure in form of hardware and software is compulsory to run online teaching program. The issues related to the hardware are cost, shortage of units, and lack of technical knowledge to operate them. The software issues include the need to obtain licenses, and frequent up-gradation of hardware required to

support them. Round-the-clock access at both home and off-campus is necessary for online teaching to have maximum impact.¹³

More than half faculty did not tend to spend more time on social sites while preparing / collecting material for online lectures. Majority faculty used multimedia like audio, video, animations etc. while taking online lectures. They give electronic study material related to online lectures to their students but thought that electronic study material would not be sufficient for students of Medical field.

Most teachers and students were digitally literate and tech savvy, but full-time distance education was still a new experience. Educators all over the world are spending a lot of time and energy in moving to online education and are struggling to make online learning work. It is important to just embrace this new reality and work within its limitations and use the opportunities. Teachers alternate between prepared video and PowerPoint lessons and hosting live teaching via Google Classrooms and other such platforms. Teachers are sharing subject's assignments, videos & other reference materials with students, conducting live classes through google meet. com like platforms where students can join during the schedule given earlier. Through this, they can share documents, present all materials, and can communicate through chat box during the meet.^{1,2,8}

A lot of preparatory work has to be done by the teachers before they give a study plan or conduct online sessions. They are unable to see students' work visually to get an idea of where they are struggling. They feel that during live classes, few students are hesitating to reply giving excuses about technical faults with the system. As teachers, they were used to respond to a lot of non-verbal cues, which used to be valuable informal feedback during classroom lectures.^{1,2,8} Some teachers felt it difficult to keep track as to which students were actually attending the class.^{8,9} A teacher on a computer screen would hardly make sense to students. Some teachers had to do late hour lecture preparation almost every night. During the classes, they had no idea of who was paying attention and who was not.⁹ Our findings were in concordance with some other studies. In one study authors concluded that to some extent, online learning might not compete with aspects of other learning, such as interactive knowledge building between teacher and students ;¹⁴ the level of interaction of students with the faculty is less as compared to classroom teaching ;⁷ and students are less active during online teaching.¹² The challenges and common issues of online education highlighted by other studies were lack of interactive teaching, easy distraction and technical issues,¹⁵ issues relating to time management, use of technology tools, students' assessment, communication. Besides, online education may not be equitable in terms of access and the quality of teaching.¹⁶ Similarly one study reported online teaching reduced the lecture attendance.¹⁷ Students during online teaching have to be highly motivated and responsible. Those with low motivation or bad study habits may fall behind.¹⁸ One study mentioned that In addition, many faculty have been emphasizing the irreplaceable value of attending class in person, lauding the real-time feedback and back-and-forth that develop in class that are hard to

replicate in online forums.¹⁹ Identifying and working on these challenges may assist in recognizing online teaching and learning practices that can enhance classes even when we return to conventional face-to-face instruction.¹⁶

CONCLUSIONS

COVID 19 teaching experience is crucial and may serve as a baseline data for academic educational committees. Educators can help document and analyse the effects of current changes to learn and apply new principles and practices to the future. This experience can be used for forward thinking and scholarly approach as practical solutions are implemented. There are many examples whereby learning from difficult experiences (e.g. emergence of HIV, response to disasters) changed discovery, science, patient care and medical teachings. While pandemics have historically created challenges, identifying these challenges is the first step in converting them into opportunities. One of the chief opportunities is to engage medical students and faculty in transforming the current pandemic-imposed remote medical education into an evidence-based paradigm. We believe the study provides relevant insights into the challenges facing online medical education in a time of healthcare crisis.

Data sharing statement provided by the authors is available with the full text of this article at jebmh.com.

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