

Perceptions and Experience of Medical Students Regarding E-learning during COVID-19 Lockdown: A Cross-sectional Study

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ABSTRACT

Introduction: Medical education has been adversely affected during Coronavirus Disease-19 (COVID-19) pandemic. Imparting medical education through e-platforms exclusively was a novel experience both for students and teachers. Even though online classes have been ongoing since almost one and half year, not much data on perception and experience about e-learning among medical students is available from India.

Aim: To evaluate perceptions, experiences and challenges faced by medical students regarding e-learning during lockdown period owing to COVID-19 along with their future preferences.

Materials and Methods: The present study was a questionnaire based cross-sectional survey regarding use of e-learning during COVID-19 pandemic among 340 Bachelor of Medicine and Bachelor of Surgery (MBBS) and Bachelor of Science Nursing (BSc-NUR) students. It was conducted in the Department of Pulmonary Medicine at Shri Lal Bahadur Shastri Medical College and Hospital Mandi, Himachal Pradesh, India from May 2021 to July 2021. Students perceptions' of e-learning were assessed using the validated Technology Acceptance Model (TAM) model and responses were measured on 5-point Likert scale. Quantitative data was expressed by mean and standard

deviation and significant level of differences between means were tested by Student's t-test (unpaired). Proportions were compared by Chi-square test or Fisher's-exact test. A p-value of <0.05 was considered statistically significant.

Results: Out of 400 students, 340 responded of which 225 were females. Of the total 340 students, (n=333; 97.9%) respondents, had an idea of e-learning and more than half (n=188; 55.3%) had used any type of e-learning platform prior to onset of COVID-19. More number of MBBS students had used e-learning than BSc-NUR students (55% v/s 41%; p=0.033). Cell phone was the most common device (n=324; 95.3%) used. The quick sharing of material (n=258; 76%) and flexibility (n=233; 68.5%) were top rated benefits of e-learning. The key disadvantages were suboptimal practical training (n=222; 65.3%) and lack of face-to-face interactions (n=146; 43%). Majority of students voted for traditional learning (n=156; 45.9%) closely followed by blended learning (n=140; 41.2%).

Conclusion: The students had an overall positive attitude towards e-learning and wanted to continue e-learning alongside traditional teaching i.e., blended learning. Exploration of merits and barriers to e-learning during pandemic can act as a guide to implement blended learning in medical curriculum for enhanced teaching/learning experience.

Keywords: Alternative learning, E-platforms, Hybrid learning, Online classes, Pandemic

INTRODUCTION

Coronavirus Disease-2019 (COVID-19), a highly infectious disease caused by Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2), was declared as pandemic by World Health Organisation (WHO) on 31st March, 2020 [1]. In view of lack of specific treatment/vaccine for the disease, measures like social distancing, wearing masks and repeated hand washing were implemented worldwide to stop the human to human transmission [2]. On similar lines, lockdowns were announced across 107 countries including India that led to closure of all public places including medical institutions across the country which adversely affected teaching and learning activities for a considerably long period [3,4]. In a survey on 440 medical students in 33 United Kingdom (UK) medical schools, it was found that 77.3% respondents had their electives cancelled and 43% of assistant placements were postponed [5].

New modes and tools of delivering education were discovered which helped to continue and impart learning in these unprecedented times. E-learning supposedly turned out to be the powerful medium to mitigate gaps in learning [6]. Medical universities like Harvard and Yale considered e-learning as a reasonable alternative during pandemic [7]. In a quantitative survey, 65.21% healthcare professionals perceived that e-learning played a major role in minimising the impact of pandemic on medical education [8]. Research by Dost S et al., on 2721 medical students across 39 medical schools in the UK also pointed out that integration of

technology can enhance teaching/learning experience coupled with benefit of flexibility of time and space [9]. Baćzek M et al., echoed similar benefits of e-learning in a study among polish medical students during COVID-19 lockdown [10].

Most of the literature on e-learning during pandemic has been generated from western studies [5,9,10]. With difference in infrastructural facilities as well as access, knowledge and awareness about these teaching modes, the results from these studies may not be applicable to Indian settings. Hence, this study was conducted to evaluate the experience, perceptions and challenges faced by medical students regarding e-learning during lockdown period owing to COVID-19.

MATERIALS AND METHODS

The present study was a questionnaire-based cross-sectional observational study conducted in the Department of Pulmonary Medicine at Shri Lal Bahadur Shastri Medical College and Hospital (SLBS GMCH), Mandi, Himachal Pradesh, India from May 2021 to July 2021. The confidentiality and anonymity of participants was maintained. The study was approved by Institutional Ethics Committee (IEC) (letter no. 50).

Inclusion criteria: The study population included all students in second year (batch of 120), third year (batch of 100) and final year (batch of 100) undergraduate medical students (MBBS) as well as second year (batch of 40) and third year (batch of 40) BSc-NUR students, who gave consent to participate in this study.

Exclusion criteria: Students in first year of MBBS and BSc NUR who joined the course in 2021 were excluded as they had no experience of online classes. Those students who refused to participate were also excluded. Moreover, survey forms with incomplete information were not included in analysis.

Sample size: A total of 400 students were enrolled in the study. Forty students did not give consent to participate in the study. In addition, 20 participants provided incomplete information. Therefore, a total of 340 participants were available for final analysis. Similar sample size was taken in previously published studies also [9,11,12].

Data Collection Tools

Questionnaire was developed by two investigators (MB and SK) comprising of 30 questions divided into four sections. The proforma included questions regarding perceptions towards e-learning from validated Technology Acceptance Model (TAM) model which was used in previously published studies also [10,13-15]. Pilot study was done and tested on 20 students (10 MBBS and 10 BSc-NUR) and modifications were done after incorporating suggestions from respondents. The questionnaire was finalised after inputs from senior medical faculty involved in medical education.

The type of questions included were as follows:

Initial three questions were Yes/No type, open ended and Multiple Choice Question (MCQ) type with multiple correct options. Questions 4-7 and 25-28 were MCQ type. Questions from 8-24 and 29 were 5-point Likert scale response type ranging from strongly disagree to strongly agree and last question was open end type. The yes/no type questions were scored as 0 for unattempted, 1 for no and 2 for yes as responses. For MCQ type, unmarked options were scored as 0 and marked options as 1. The questions regarding perceptions were analysed using 5-point Likert scale with scores 1 to 5 ranging from strongly disagrees to strongly agree. Median scores >2.5 indicated acceptance and below 2.5 indicated refusal. The internal validity of questionnaire was calculated by Cronbach's alpha coefficient which was 0.89. The open questions were largely pertaining to personal, demographic details and relevant information was added in the text. The last question was an open ended type inviting feedback/suggestions from students to improve learning/teaching experience which is elaborated in the results and discussion.

Each student was given a well-structured questionnaire pertaining to his/her experience and perceptions about e-learning during COVID-19 times when campus teaching was suspended for almost a year. The questionnaire was pertaining to four major parameters.

- I. Personal information and demographic details (First part).
- II. Knowledge and practices of e-learning before and after lockdown period (seven questions). Live classes were suspended in the institution from March 2020 to March 2021 which was taken as lockdown period where teaching activities were conducted primarily through online classes.
- III. Students' perception of e-learning was measured by four sub constructs (15 questions); perceived usefulness, perceived self-efficacy, perceived ease of use, perceived attitude and intention to use. The questions were based on validated TAM model for exploring factors that affect students' acceptance and use of e-learning as a teaching tool [14].
- IV. Experiences of institutional online classes during lockdown period including various facilitating and hindering factors for satisfactory experience and future preferences (eight questions).

STATISTICAL ANALYSIS

Data was recorded on a Microsoft (MS) excel sheet and analysed using Statistical Package for the Social Sciences (SPSS) trial version 20.0 (Chicago, IL). Quantitative data was expressed by mean and standard deviation and significant level of differences between means were tested by Student's t-test (unpaired). Proportions were

compared by Chi-square test or Fisher's-exact test. A p-value of <0.05 was considered statistically significant.

RESULTS

Demographic characteristics: Overall response rate was 85% (MBBS= 82.5%; BSc-NUR= 90%). The age of participants ranged from 18 to 25 years. The mean age was 20.5 years. Out of the total 340 participants, 264 were MBBS students, 72 were BSc-NUR students and 1.2% (n=4) students did not specify the course. Females outnumbered males in the ratio of 2:1 [Table/Fig-1]. Majority of participants were residents of Himachal Pradesh (n=266) followed by Rajasthan (n=22) and Kerala (n=18). The rest belonged to places as follows: Delhi (n=11), Haryana (n=7), Punjab (n=4), Telangana and Chandigarh (n=2 each), Uttar Pradesh, Uttarakhand, Maharashtra and Tamil Nadu (n=1 each). Four students did not mention their place of residence.

Distibution	n (%)
MBBS students	264 (77.6)
Nursing (BSc-NUR)	72 (21.2)
Not specified/mentioned	4 (1.2)
Mean age (years)	20.5
Gender distribution	
Males	115 (33.8)
Females	225 (66.2)
Idea of e-learning prior to COVID-19 onset	
Yes	333 (97.9)
No	7 (2.1)
Use of any type of online platform prior to COVID-19 onset	
Yes	188 (55.3)
No	152 (44.7)
Devices used for online learning*	
Mobile phones	324 (95.3)
Laptops	48 (14.1)

[Table/Fig-1]: Characteristics of participants.

*This question was MCQ type and response was not mutually exclusive

Knowledge about e-learning prior to COVID-19 lockdown:

Majority of the participants (n=333, 97.9%) had some level of knowledge about e-learning. Majority of students (n=258; 75.9%) thought that online learning is same as e-learning. Almost half of them (n=188, 55.3%) had used any type of e-learning platform prior to onset of COVID-19. Its use was more common among MBBS than BSc-NUR students (55% v/s 41%; p=0.033). Mobile phone was the most common mode of e-learning (95.3%; n=324) followed by laptop (14.1%; n=48). The question regarding use of devices was a MCQ type and responses were not mutually exclusive [Table/Fig-1].

E-learning during COVID-19 lockdown: Google-meet was the most common online platform (n=300; 88.2%) used for online teaching by the students followed by Zoom (n=213; 62.6%) (MCQ type question). There was no difference in the usage of Google-meet between MBBS students and BSc-NUR students (91.6% v/s 87.5%. p=0.40). The platforms were mainly used for online lectures (n=238; 70%) and online tests (n=206; 60.6%)

Perceptions about e-learning among the students: Perception of students about e-learning was evaluated using 15 questions based on 5-point Likert scale. The responses for each question were calculated and analysed separately. Ability to take tests and submit assignments electronically (mean 3.79), to study at any location (mean 3.78) and ability of interactive communication (3.73) were the top 3 ranked perceptions that influenced the overall perception. Details are given in [Table/Fig-2].

Mean score of the participant's perception was 3.29±0.65. On statistical terms, 145 (42.6%) subjects had a mean score above 3.40 indicating positive perception for e-learning. Moreover, there

S. No.	Question/Perception	Total responses (out of 340)	Score 1	Score 2	Score 3	Score 4	Score 5	AWV (Rank)
1	Provides flexibility in time	312	25 (8.0)	100 (32.1)	45 (14.4)	140 (44.9)	2 (0.6)	2.98 (13)
2	Enable people to study irrespective of location	336	11 (3.3)	36 (10.7)	27 (8.0)	199 (59.2)	63 (18.8)	3.78 (2)
3	Enable one to take tests and submit assignments electronically.	338	10 (3.0)	25 (7.4)	28 (8.3)	237 (70.1)	38 (11.2)	3.79 (1)
4	Enable interactive communication	337	10 (3.0)	42 (12.5)	16 (4.7)	230 (68.2)	39 (11.6)	3.73 (3)
5	Feel confident while using e-learning	337	30 (8.9)	89 (26.4)	71 (21.1)	126 (37.4)	21 (6.2)	3.05 (11)
6	Feel confident while operating e-learning functions.	336	12 (3.6)	75 (22.3)	59 (17.6)	168 (50)	22 (6.5)	3.33 (6)
7	Feel confident while using online content.	339	18 (5.3)	81 (23.9)	49 (14.5)	165 (48.7)	26 (7.6)	3.29 (7)
8	E-learning platforms are user friendly	338	16 (4.7)	64 (18.9)	52 (15.4)	177 (52.4)	29 (8.6)	3.41 (5)
9	Easy for me to find necessary information using an e-learning platform.	339	9 (2.7)	54 (15.9)	39 (11.5)	199 (58.7)	38 (11.2)	3.59 (4)
10	Simplify the-learning process	339	23 (6.8)	109 (32.2)	62 (18.3)	122 (36)	23 (6.7)	3.03 (12)
11	Compatible with the way I learn	338	30 (8.9)	145 (42.9)	51 (15.1)	96 (28.4)	16 (4.7)	2.77 (15)
12	Like the idea of e-learning	337	37 (11)	110 (32.6)	58 (17.2)	110 (32.6)	22 (6.5)	2.91 (14)
13	Innovative concept and must be encouraged	338	21 (6.2)	91 (26.9)	76 (22.5)	129 (38.2)	21 (6.2)	3.11 (10)
14	Fun to use	337	16 (4.7)	92 (27.3)	59 (17.5)	146 (43.3)	24 (7.2)	3.20 (9)
15	I will use e-learning in future	338	27 (8)	46 (13.6)	106 (31.4)	123 (36.4)	36 (10.6)	3.28 (8)

[Table/Fig-2]: Perceptions of e-learning among the students.

AWV: Average weighted value

was no difference in the mean score between MBBS and BSc-NUR students (MBBS mean score 3.30 ± 0.67 v/s BSc-NUR mean score 3.20 ± 0.53 ; $p=0.18$).

Experience of Institutional Online Classes during Lockdown

Advantages and disadvantages: Ability for easy and quick sharing of educational material and flexibility in time and space were among the most common advantages of e-learning perceived by 75.9% ($n=258$) and 68.5% ($n=233$) of the participants, respectively. The key disadvantages of e-learning were suboptimal practical training (65.3%, $n=222$) and lack of face-to-face interactions (43%, $n=146$). Details are given in [Table/Fig-3].

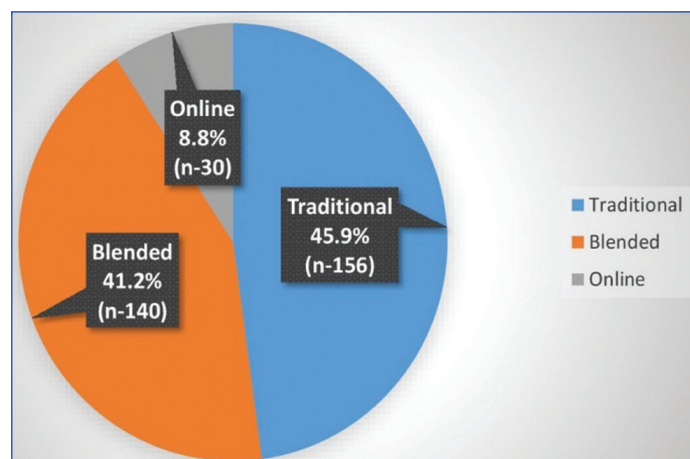
S. No.	Advantages	n (%)
1	Flexibility in time and space	233 (68.5)
2	Easy and quick sharing of educational materials	258 (75.9)
3	Improved collaboration and interactivity among students	61 (17.9)
4	Quick feedback	99 (29.1)
5	Access study resources effectively	122 (35.9)
6	Updated learning materials	187 (55)
7	Access to higher education for all applicants	111 (32.6)
8	Possibility of working with e-learning	61 (17.9)
9	Accommodates different types of learning styles	116 (34.1)
10	Wide and diverse interactions	85 (25)
S. No.	Disadvantages/Barriers	Value (%)
1	Need for face to face interaction	146 (42.9)
2	Practical training compromised	222 (65.3)
3	Accessibility (no access to computers/ long distance)	78 (22.9)
4	Low level of awareness (I was not aware of using e-learning concept for study)	85 (25)
5	Low level of English competency (I faced problem because my English is weak)	24 (7.1)
6	Low level of computer literacy (I faced problem because I don't know much about using computers)	34 (10)
7	Lack of assistance from lecturer	132 (38.8)
8	Lack of technical support from family	43 (12.6)
9	High cost access	72 (21.2)
10	Electricity issues	98 (28.8)

[Table/Fig-3]: Advantages and disadvantages/barriers to e-learning.

Challenges faced by the students: Poor internet signal (57.1%, $n=194$) was the topmost challenge reported by respondents while attending institutional online classes. A 144 (42.4%) of students felt that they had low motivation to use e-platforms while others reported lack of conducive atmosphere at home (55.9%, $n=190$) and distraction issues while using media apps (63.2%, $n=215$) which hampered their learning. A significant number of students (49.7%, $n=169$) reported health issues like headache and fatigue while using digital platforms for duration longer than their usual routine. A 57.1% ($n=194$) students admitted that they copied assignments and evaluation process was not upto the mark (63%, $n=214$) which hindered their preparation for future examinations.

Overall attitude towards e-learning: Overall, students had a positive attitude towards usage of e-learning. They felt that it was underutilised in medical education and would use it to assist learning in future. Though traditional teaching remained the favourite, a significant number liked the idea of hybrid education or blended learning. However, exclusive online learning was advocated by 30 (8.8%) of the participants only [Table/Fig-4]. One question pertaining to use of e-learning in module teaching was dropped from analysis as majority of participants did not attempt the question.

Feedback/Suggestions by students: The last question in the proforma was an open ended question inviting feedback/suggestions to improve online teaching/learning experience and is shown in [Table/Fig-5].



[Table/Fig-4]: Modes of learning as voted by the students.

14 students did not attempt the question

S. No.	Suggestions by students
1	Establishment of separate IT Department
2	Separate committee to monitor quality of online teaching
3	Installation of LMS and software packages in institution
4	Free Wi-fi facility in campus
5	Universal access to laptops/smartphones
6	Unique login IDs and passwords for LMS for all faculty/students
7	Proper scheduling of online classes
8	Time limit for online sessions

[Table/Fig-5]: Feedback by the participants.
IT: Information technology, LMS: Learning management system, ID: Identity

DISCUSSION

Institutional e-learning had to be made mandatory for the first time during the lockdown although it has also been sparingly utilised in medical field, previously. In this study, majority were female students. Similar findings have been reported by others also [10,15]. The reasons could be that all BSc-NUR students were females and more females opted for participation in the survey. The present study showed that majority of students (97.9%) had some knowledge about e-learning. A study by Olum R et al., revealed that the awareness rates were similarly high in Makerere University in Uganda (96%) [16]. However, Alqahtani N et al., reported that in a medical school in Saudi Arabia only 62% of students of health sciences had a concept of e-learning [17]. More than 90% of students reported use of smartphones in this study probably due to its multipurpose utility. So, it became obvious that new models of e-learning adopted at institutional level should be compatible with smartphones and or laptops.

The advantages reported by students such as quick sharing of educational material, flexibility of time and space corroborated with

findings of Buch AC et al., [18]. Lack of face-to-face interactions with patients was the major limiting factor observed in this study. Further, e-learning was perceived to be ineffective in acquiring clinical skills. Similar concerns were reported previously also; both before and during COVID-19 pandemic [10,19-21]. In this survey, students from both courses had an overall positive outlook towards e-learning as a teaching aid which was in line with other studies conducted during lockdown period [15,22,23]. However, parallel surveys by Abbasi S et al., from Pakistan and Olum R et al., from Uganda reported contradictory results [11,16]. The plausible reasons for difference in perceptions could be uniqueness of medical curriculum (blend of knowledge acquisition and skill training), sense of familiarity and comfort with traditional teaching methods, awareness and availability of gadgets, infrastructure or internet issues especially in developing nations [17,21,24].

The present study emphasised that blended learning was popular among medical students and closely followed traditional teaching as future preference. Similar findings were reported in previous studies from India and other countries [10,13,18,21]. Also, blended learning has an advantage of face-to-face interaction coupled with benefits of autonomy and flexibility associated with e-learning. Search of literature showed that when compared to exclusive online learning, traditional teaching is preferred over by a wide margin [8,9,15]. However, a study showed that digital lectures could be a satisfactory substitute to classroom teaching in the subject of anatomy [25]. The comparative review of literature from similar studies in medical students during COVID-19 pandemic has been summarised in [Table/Fig-6] [8-12,15,16,18,21-23,26,27].

E-learning has a potential to enrich teaching/learning experience in medical field [24]. But, inculcation of e-learning in medical curriculum requires meticulous planning and such surveys can help a great deal in identifying areas that need consideration for satisfactory

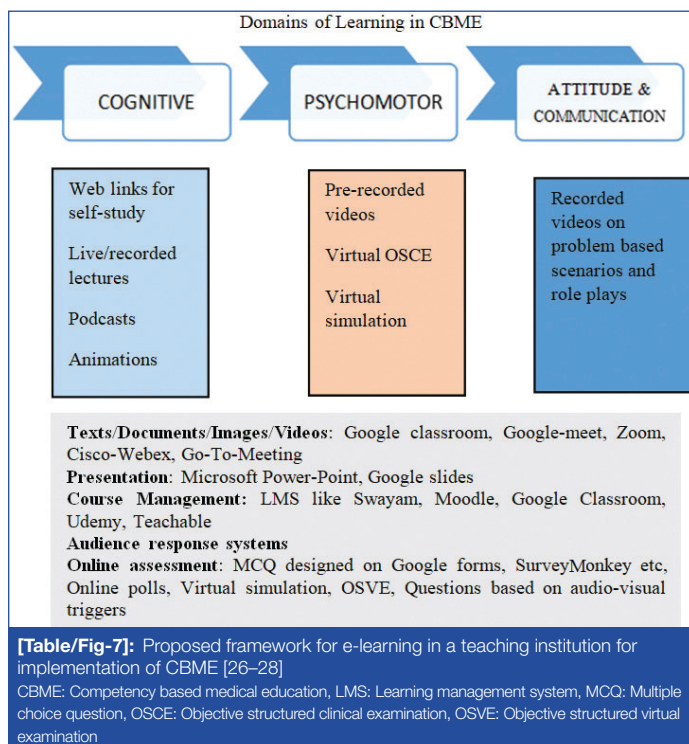
References	Place of study	Study design	Sample size	Advantages/Merits of EL	Challenges/Barriers to EL	Overall attitude towards EL/Recommendations
Gupta S et al., [15] 2021	New Delhi, India	C/S OS	Medical students (248) Faculty (23)	88.3% found online classes useful	- Poor internet connectivity - Lack of human interface	Positive 54.4% preferred BL for cognitive domain
Buch AC et al., [18] 2020	Pune, India	C/S OS	Health science students (905)	- Flexibility - Autonomy	- Internet connectivity - Infrastructure issues	Positive BL (50.47%) Only EL (9.93%)
Dost S et al., [9] 2020	Sudan, Africa	C/S OS	UG medical students (358)	- Saves time on traveling - Flexibility	- Family distractions - Poor internet connection	Positive Preference TL > EL.
Olum R et al., [16] 2020	Uganda	C/S OS	MBChB (172) and BNUR students (49)	Useful for sharing learning material	- Internet costs - Poor internet connectivity	Negative BL (75%)
Bączek M et al., [10] 2021	Poland	C/S OS	Medical students (804)	- Ability to stay home - Continuous access to study material	- Lack of interaction with patients - Technical problems with IT equipment	Positive Preference EL=TL
Abbasi MS et al., [21] 2020	Data from 11 countries	C/S OS	Healthcare students (1255)	EL is satisfactory in acquiring knowledge	Ineffective in acquiring clinical and technical skills	Positive Satisfaction with use of EL better in developed countries than developing countries
Alsoufi A et al., [26] 2020	Libya	C/S OS	Medical students (3348) across 13 medical schools	47.5% preferred electronic systems	- Poor internet services - Financial costs	Majority felt that EL cannot replace TL
Puljak L et al., [23] 2020	Croatia	C/S OS	Health sciences students (2520)	Higher satisfaction (3.7±1.1) out of maximum 5 with EL	Suboptimal practical training	Positive BL preferred by 55.7%
Essiffie AA et al., [27] 2020	New York	C/S	Orthopaedic attendings (100) and trainees (168)	EL has a supplemental role in residency/fellowship education	- Lack of stu-T interaction	Positive
Abbasi S et al., [11] 2020	Pakistan	C/S	MBBS and BDS (382)	Popular medium	- Lack of stu-T interaction - Practical training compromised	Negative 77% had negative perceptions towards EL
Syed S et al., [8] 2021	New Delhi, India	C/S OS	HCAP (3004)	- Reduction in travel - Wider reach	- Cyber security issues - Lapse in technical knowledge	Positive Preference TL > EL.
Gismalla MDA et al., [12] 2021	Sudan, Africa	C/S OS	UG medical students (358)	EL was best solution during COVID-19 lockdown	- Internet costs - Infrastructure issues	Positive

Alsaywid B et al., [22] 2021	Saudi Arabia	C/S OS	Medical students (300)	Role of EL as alternative mode of learning during pandemic was satisfactory	Infrastructure issues	Positive 77.67% felt EL should mandatory education tool
Present study, 2022	Himachal Pradesh, India	C/S OS	MBBS and BSc-NUR (340)	- Easy and quick sharing of educational material - Flexibility in time and space	- Suboptimal practical training - Poor internet signal - Lack of face to face interactions	Positive TL (45.9%) BL (41.2%).

[Table/Fig-6]: Review of literature.

BDS: Bachelor of dental surgery; BSc-NUR: Bachelor of Science-nursing; BNUR: Bachelor of nursing; BL: Blended learning; C/S: Cross-sectional; EL: Electronic learning; HCAP: Healthcare and allied professionals; MBBS: Bachelor of medicine and Bachelor of surgery; MBChB: Bachelor of medicine and surgery; OS: Observational survey; PG: Postgraduate; Stu-T: Student teacher; TL: Traditional learning, UG: Undergraduate

experience. Evidence from literature showed that students echoed similar feedback/suggestions for successful implementation of e-learning [8,15,18,22]. Competency Based Medical Education (CBME) which has been introduced in India for undergraduate level of MBBS course can set the stage for necessary changes to make e-learning/blended teaching an established pedagogic tool. It is learner-centered competency based training that allows vertical and horizontal integration of subjects for better understanding. Learning is divided into four domains (knowledge, skill, attitude, and communication) and five levels of competencies (knows, knows how, shows, shows how and performs). It also aims to boost communication skills [28,29]. There is an urgent need to restructure/modify the curriculum to make the e-learning a viable platform even for regular teaching and training sessions in different disciplines of medical sciences. The suggested framework for e-learning in a teaching institution for implementation of CBME is depicted in [Table/Fig-7] [18,26,30].



[Table/Fig-7]: Proposed framework for e-learning in a teaching institution for implementation of CBME [26–28]

CBME: Competency based medical education, LMS: Learning management system, MCCQ: Multiple choice question, OSCE: Objective structured clinical examination, OSVE: Objective structured virtual examination

Limitation(s)

Feedback from teachers regarding use of e-learning during COVID-19 pandemic was not taken in the study. It could have provided a comprehensive analysis of the issue. Further, deficiency in infrastructure and technical support including internet availability could have affected perceptions of students regarding use of e-learning as teaching aid. More surveys with larger sample involving students from other disciplines such as dentistry, physiotherapy, laboratory technology etc., can help in better understanding of scope of e-learning in various disciplines of medical sciences.

CONCLUSION(S)

E-learning became a popular pedagogical tool to minimise gaps in learning during COVID-19 pandemic. It allows quick sharing of

information and gives the advantage of flexibility of time and space. However, students missed face-to-face interactions and felt that practical training was compromised. The students had an overall positive attitude towards e-learning and wanted to continue e-learning alongside traditional teaching i.e., blended learning. It is high time that concrete steps are taken to formally incorporate e-learning in medical curriculum for enriched teaching/learning experience.

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