

Discontents and Blessings of Emergency Distance Learning During Covid-19: A Qualitative Study in Two Universities of Karachi, Pakistan

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ABSTRACT

Objective: The purpose of this research was to investigate the perceptions of undergraduate medical students, faculty and administrators, regarding their experience of emergency distance online teaching, the challenges faced, and future opportunities digital learning.

Study Design and Setting: A qualitative study design was used with a phenomenology approach. This study was conducted in two public sector universities in Karachi in November and December 2021.

Methodology: In-depth-interviews (IDIs) were used to assess the perceptions of administrators and faculty, and focus group discussions (FGDs) for perceptions of medical students. Qualitative data was analyzed by thematic analysis.

Results: Participants reported unpreparedness of institutions, internet connectivity and technological expertise issues, lack of student-teacher engagement, untrained faculty, lack of practical and clinical exposure, loss of learning environment and infrastructure issues, as the barriers, while appreciating the convenience, flexibility, time-efficiency, accessibility and continuity of medical education as the advantages of distance learning.

Conclusion: The new dictum of education is digital learning and it is here to stay. The consensus opinion seems to be for blended learning, with theoretical component of curriculum being delivered online and practical and clinical, face-to-face.

Key words: Covid-19, medical education, Online learning

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INTRODUCTION:

As the World Health organization (WHO) declared Covid-19 as a pandemic on March 11, 2020, the world came to a standstill and educational institutions closed down in most countries, including Pakistan.¹ Continuing medical education was a challenge. In Pakistan, face-to-face traditional lecture was the dominant mode for teaching.² In developing countries, the cost of technology, such as computers, IT equipment and internet access are a major barrier to online teaching.³ Most faculty members were not trained in digital technology and distance learning strategies.⁴ It was difficult and stressful

to implement the change in view of inadequate human and financial resources.⁴

Distance online education (both synchronous and asynchronous) was implemented as per directives of Higher Education Commission (HEC) of Pakistan.⁵ This resulted in exposing lack of preparedness for the distance online teaching.⁶ A systematic review and meta-analysis by He L et al showed that synchronous distance education is effective as it provides an opportunity for real-time student-teacher interaction.⁷

As the world witnessed disruption of healthcare systems and health professionals' education during the pandemic,^{8,9} academic institutions initiated online remote teaching for continuity. In terms of achieving educational outcomes, this type of emergency remote teaching cannot be compared to a well-planned system of high-quality online education where technological expertise and infrastructure are already in place.¹⁰

A systematic review has showed use of virtual reality e.g. virtual ward rounds can allow students to interact with patients without any risk of infection. Virtual web-based platforms for case discussions, journal clubs, cadavers for learning anatomy, patient interviews, can help in enhancing student engagement.¹¹ Tabatabai S has reported the Virtual University of medical Sciences (VUMS) in Iran provides educational content and resources, free of cost, in the form

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of Massive Open Online Courses (MOOCS) through the national LMS to all medical schools of the country.¹² De Ponti R et al also highlight the effectiveness of using simulated clinical scenarios and virtual reality (VR) during DL.¹² VR is a broad concept that has many different tools and applications. VR simulators can be classified into surgical VR simulators, 3D anatomical models, virtual dissection tables, virtual worlds or environments, and mobile VR. Surgical VR simulators consist of an interface connected to mechanical devices or haptic units and can be displayed on any screen but most commonly using a desktop.¹³

Following the HEC directives, the Dow University of Health Sciences (DUHS) and Jinnah Sindh Medical University (JSMU) started converting teaching programs to distance learning (DL) programs. A new department of distance learning was established, faculty training started and simultaneously synchronous and asynchronous online lectures were started. The aim of this research is to identify the challenges faced in two medical universities of Karachi, posed by sudden implementation of distance learning strategies. This study explored the perceptions of faculty, administration and students, their experiences of online teaching, the problems faced, and its advantages, so that we can inform stakeholders about the challenges and opportunities of DL in medical education. During lockdown, HEC advised all universities for online education and provided technical support for learning management system (LMS), internet connectivity, and arranged Coursera MOOC courses for training the faculty in online teaching. So, the objectives of this study were to know about, what are the perceptions of faculty, administration and students regarding the challenges faced during emergency online distance learning, implemented during Covid-19 at DUHS and JSMU.

METHODOLOGY:

A qualitative study design with a phenomenology approach was used. Data collection was done by means of In-Depth Interviews (IDIs) for perceptions of faculty and administrators, and Focus Group Discussions (FGDs) for perceptions of medical students.

The study was conducted at two medical colleges of Dow University, i.e., Dow Medical College (DMC) and Dow International Medical College (DIMC), and one medical college of JSMU, Sindh Medical College (SMC). Ten IDIs were conducted with administrators and faculty members and five FGDs with groups of students from all three medical colleges.

A semi-structured interview guide was developed after searching the literature and discussion with experts. The same interview guide was used for both IDIs and FGDs. The questions on the interview guide are given below:

1) How was your experience with distance learning during Covid-19? (advantages/disadvantages)

2) How do you compare it with traditional face-to-face teaching?

3) What do you think is the future applicability of distance learning?

4) What would be your recommendations to improve distance learning?

Informed verbal consent was obtained from participants of all IDIs and FGDs after telling them the purpose of the research. Participation was voluntary and students could leave at any time. Ethical approval was taken from IRB of JSMU (JSMU/IRB/2021/581) and DUHS (IRB-2362/DUHS/Approval/2022/674).

Data was collected and analyzed by two researchers (1st & 2nd author) in November and December 2021. We conducted semi-structured interviews with open-ended questions from participants of both IDIs and FGDs. Over all 10 IDIs and 5 FGDs were conducted in both universities.

In-Depth Interviews (IDIs): Five interviews were conducted by each researcher. The participants of IDIs were approached through phone calls to explain the purpose of study and take consent for the interview. Five IDIs were conducted online over zoom and five, face-to-face, with an average duration of 25 minutes (between 15 and 35 minutes). The online IDIs were both audio and video-recorded whereas face-to-face IDIs were only audio-recorded.

Participants of IDIs were experienced faculty members as well as administrators, like Principal/Vice Principal, Director DL program, Director quality enhancement, Director professional development, and Manager student affairs.

Focus-Group Discussions (FGDs): The participants of FGDs were approached through the manager of student affairs. Two FGDs were conducted via Zoom and three face-to-face with number of participants ranging from 6 to 9. The face-to-face FGDs were conducted in one of the researcher's office, each with first year, second year and third year students respectively. The two online FGDs were conducted one each by the two researchers and these consisted of mix of students from the three clinical years i.e. third year, fourth year and final year. Duration of each FGD varied from 31 to 60 minutes and all FGDs were both audio and video-recorded. Students were asked to address themselves as 1,2,3 etc to maintain confidentiality.

All audio and video-recordings were transcribed verbatim by the concerned researcher who had conducted that particular IDI or FGD. Transcriptions were done manually by two researchers to achieve familiarization with data. The data analysis was performed in two consecutive phases to ensure the conformability. A Qualitative reflexive thematic analysis¹⁴ was undertaken. The transcriptions were read and discussed for initial codes. These preliminary codes were developed inductively from the ideas raised by the participants as manifest codes (i.e., actual words) so that we remain close

to participants' lived experiences. In the next step, the similar and overlapping codes were merged to form subthemes and grouped together according to their conceptual similarities. In this step, the codes were interpreted and reviewed to identify recurring themes. Themes were then discussed with the third and fourth author and finalized with consensus. In the final step, new themes were generated for each conceptual category after discussion between all four authors.

A total of seven themes were initially generated which were later reviewed and merged into 4 broad themes; Discontents of distance learning, Blessings of distance learning, Tug of war, battle of nerves, Future prospects.

Triangulation between responses of IDIs and FGDs was performed for each theme and sub-theme. This was done first independently, and then together, to ensure rigor of study and reliability of data.

RESULTS:

Results are presented in four sections according to the four broad themes. Triangulation has been shown between FGDs and IDIs in Tables 3.

1. Discontents of distance learning:

This theme highlights the disadvantages of DL and has three sub-themes: a) one-way communication, b) cognitive overload and no hands-on, c) Lost environment (Table 3)

a) One-way communication:

Most participants of IDIs and FGDs felt, the teachers were not able to engage the students.

"...the faculty tried to adapt but the faculty was not trained, reading slides" (FGD 5, Student 2).

"....Some people joined from outside, played obscene videos, set some audios and texts, so they disabled our chat box...." (FGD 1, Student 6)

"....I'm a visual learner and an auditory person, so I cannot learn online. I literally missed the classes so much, it was the most terrible two years of my life...." (FGD 3, Student 4)

"...In distance learning we cannot utilize all our expressions, everything is disturbed...." (IDI 2, Faculty member + Administrator)

On the other hand, a few students actually enjoyed online classes

"...I really like online classes. Yes, initially teething issues and teachers were struggling but later everything became very smooth." (FGD 4, Student 3)

b) Cognitive overload and no hands-on:

Participants of IDIs and FGDs agreed that patient interaction cannot be taught effectively through online teaching.

"...Knowledge was good, but skills and attitudes were not up to the mark, no hands on, motivation...." (FGD 5, Student 5)

".... the patient interaction, body language you cannot learn that in online education, no matter what...." (IDI 3, 36-37, Faculty member + Administrator)

c) Lost environment:

Students missed their friends, colleagues, group mates, and the whole academic and social environment of the campus.

".....I felt the learning environment where there is collective learning as groups, and as adults....that was lacking" (FGD 4, Student 6)

".....It ruined our social life. There was no way of interacting with friends," (FGD 3, Student 4)

2. Blessings of distance learning:

3. This theme is about the reported advantages of DL and consists of 3 sub-themes: a) Convenience, feasibility, time-efficiency, b) Accessibility, and c) Continuity of education (Table 3)

a) Convenience, feasibility, time-efficiency:

Most participants agreed that convenience, feasibility and time saving are the most positive aspects of DL.

b) Accessibility:

"...it is perfect that you can access your class from anywhere. I'm in my car right now and I'm a part of this meeting...." (FGD 4, Student 9)

c) Continuity of education:

As the lock downs of covid-19 became prolonged, the option of distance learning was seen as a blessing for continuing education.

".....we were able to deliver ¾ of the course, and students were able to sit in exams, ..." (IDI 4, Administrator)

4. Tug of war, battle of nerves:

Table-1 Breakdown of IDIs and FDGs by university and position

In Depth Interviews n=10		
DUHS n=7		
Faculty Members n=3	Administrators n=2	Faculty Members + Administrators n=2
JSMU n= 3		
Faculty Members + Administrators n=3		
Focus Groups Discussions n=5		
DUHS Students n=4		JSMU Students n=1

Table-2 Themes and sub-themes

Theme	Sub-themes
Discontents of distance learning	One-way communication Cognitive overload and no hands-on Lost environment
Blessings of distance learning	Convenience, feasibility, and time efficiency Accessibility Continuity of education
Tug of war, battle of nerves	Infrastructure and policies Faculty development
Future prospects	Blended learning Advancement of technology

Table-3 Discontents (Theme 1) and Blessings of distance learning (Theme 2) with themes of Tug of war, battle of nerves (Theme 3) and future prospects (Theme 4)

Theme 1: Discontents of distance learning	
One-way communication/ Cognitive overload and no hands-on	
Students' perceptions FGDs	Examples: <ul style="list-style-type: none"> • technical knowhow is low (FGD 4, Student 4) • not favorable because we cannot ask questions (FGD 5, student 4) • clinical teaching cannot be imparted online. You cannot feel liver border online (FGD 4, Student 1)
Administrators/faculty's perceptions IDIs	<ul style="list-style-type: none"> • student-teacher interaction was missing.' (IDI 5, Faculty member + Administrator) • patient interaction could not be addressed (IDI 1, Faculty member + Administrator)
Theme 2: Blessings of distance learning	
Convenience, flexibility and time-efficiency/ Accessibility/ Continuity of education	
Students' perceptions FGDs	Examples: <ul style="list-style-type: none"> • recorded lecture you can do at your own pace/time and place (FGD 5, Student 2) • we can pursue other things like prepare for USMLE (FGD 4, Student 4)
Administrators / faculty's perceptions IDIs	<ul style="list-style-type: none"> • distance online teaching is convenient as it saves time, money and energy (IDI 5, faculty member + administrator) • the course was covered and students were able to take exam (IDI 4, Administrator)
Theme 3: Tug of war, battle of nerves	
Infrastructure and policies	
Students' perceptions FGDs	Examples: <ul style="list-style-type: none"> • LMS is a very good resource, however, it is not maintained properly" (FGD 1, Student 1) • Students leave meeting because teachers were unable to start zoom. (FGD 4, student 2)
Administrators/faculty's perceptions IDIs	<ul style="list-style-type: none"> • lectures postponed / cancelled due to connectivity issues (IDI 6, Faculty member + Administrator) • Some students didn't have internet or smart phones (IDI 4, administrator)
Theme 4: Future prospects	
Blended learning/ Technological resources & expertise	
Students' perceptions FGDs	Examples: <ul style="list-style-type: none"> • Blended system is the way forward, lecture-based classes online and skill labs and practical in-person" (FGD 2, Student 6) • 6 days a week gets exhausting, so the hybrid system was better (FGD 1, Student 2) • we should keep quizzes and questions, polls for effective learning (FGD 4, Student 1)
Administrators/faculty's perceptions IDIs	<ul style="list-style-type: none"> • blended learning has advantage, transfer of knowledge through online and patient interaction, physical. (IDI 3, faculty member + administrator) • effective platforms, software like AI, for skills, special software for simulation (IDI 4, Administrator)

This is about issues of institutional systems and policies for DL. It includes development of infrastructure, virtual learning platforms, information technology (IT) and faculty expertise (Table 3)

a) Infrastructure and policies:

".....We had barriers at all levels, students were not prepared, faculty was not prepared, administration didn't know what to do." (IDI 1, Faculty member + Administrator)

Faculty development:

"..... We have learned a lot from those MOOC courses; they also provided us online resources for the interactive sessions." (IDI 10, Faculty member)

5. Future prospects:

a) Blended learning:

"..... blended learning has advantage, for lecturing, for transfer of knowledge, also small group discussion, it can save time," (IDI 3, Faculty member +

Administrator)

b) Advancement of technology:

6. The participants agreed that continuity will require reliable internet connection, a better software portal for LMS, a strong IT department and continuous teacher training (Table 3)

DISCUSSION:

During the lockdowns of pandemic, distance e-learning emerged as the only option for continuity¹⁵. The results revealed that student-teacher engagement, technological expertise, internet connectivity, clinical exposure, and learning environment were the major issues of online teaching. Other studies have also highlighted similar issues with virtual teaching.^{16,17} A literature review by Aboagye E et al argued that the main issues with e-learning i.e., accessibility, teacher and student readiness, social support and learners' intrinsic motivation were all related to unpreparedness of institutions.¹⁸

The student-teacher non-engagement was highlighted very strongly in our study by the students. Kala PS et al from India also reported lack of student-teacher interaction and peer-interaction as a major concern of students.¹⁶ In contrast, Tayem et al reported positive interaction during their DL program, due to effective technical management of virtual learning management system (LMS).¹⁹ Otaki F et al also showed a higher satisfaction among students and faculty, but there was same limitation of clinical component of medical education.²⁰

Most of students felt it was passive learning as teachers just read their power point slides, with no interaction allowed. There is evidence that use of discussion forums, quizzes, wikis, debates, and peer to peer interactions can be instrumental for deep learning and conceptualization.²¹ Zalat MM et al suggested improving technological skills of faculty by online teaching courses.²² Other suggested techniques for improving student-teacher engagement include case-based learning (CBL), keeping videos and audios on, technology-enhanced learning (TEL) student response systems eg Mentimeter, Quizlet, Kahoot, Padlet, and polls.²²

Some of our students had positive perception of online teaching as they felt it helped them to become focused and take responsibility for their own learning. This may be due to personality differences due to internal motivation.²³

The major concern shown by students was the compromised learning environment in online teaching. Students experienced loneliness and social isolation. Peer learning has been reported to be an effective strategy to overcome the stressful times of Covid-19 and to stay in touch with friends and colleagues for motivation.²⁴ Social media and its learning strategies like discussion forums could improve peer collaboration as shown by studies.²⁵

The faculty and students in our study were struggling with technology. Faculty should be encouraged to improve their online teaching skills and technical expertise in order to improve interaction. AI, quizzes, polls, and gaming apps such as Kahoot to promote student motivation.

Our study provides in-depth exploration of perceptions of students, faculty and administrators about the emergency distance learning intervention in two universities during Covid-19. Triangulation was done to provide insight into the phenomenon of distance learning. Further, this research was carried out during Covid-19, while everyone had fresh memory and were able to accurately reminisce about their lived experiences. The limitation of this study is that our results cannot be generalized as we report data from only two public sector medical universities. The sample size for faculty members was small as majority of our IDs were with faculty members who were also performing duties of administration. The representation of students was not uniform for the three medical colleges.

CONCLUSION:

The new dictum of education is digital learning and it is here to stay. This digital boom was bound to be, but Covid just delivered it faster. Our study shows the transition from traditional face-to-face teaching to emergency distance learning was not smooth, with major barriers in educational, technological and infrastructural areas. In spite of initial reluctance, the institution, faculty and students adapted to change, realizing the benefits of distance online learning. The consensus opinion seems to be for blended learning, with theory being taught online and practical and clinical component as face-to-face teaching.

Authors Contribution:

Nusrat Shah: Concept & Design of Study, Drafting, Revisiting Critically, Data Analysis, Final Approval of version.

Nighat Shah: Concept & Design of Study, Drafting, Revisiting Critically, Final Approval of version.

Mehjabeen Musharraf: Concept & Design of Study, Revisiting Critically, Final Approval of version.

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