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EXPERIENCES OF MEDICAL AND DENTAL STUDENTS OF PAKISTAN DURING COVID-19 PANDEMIC LOCKDOWN: A QUALITATIVE STUDY

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EXPERIENCES OF MEDICAL AND DENTAL STUDENTS OF PAKISTAN DURING COVID-19 PANDEMIC LOCKDOWN: A QUALITATIVE STUDY

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ABSTRACT

Objective

The COVID -19 pandemic resulted in medical institutes being shut down. Face-to-face activities were shifted to online medium. The unpredictability of the situation impacted medical faculty and students alike, creating panic and anxiety. Since these students are to take hold of the healthcare system of the country soon, it is important to learn their perspective on how COVID impacted them. Therefore, this study aims to explore the lived experiences of Pakistani medical students in-depth by a qualitative observation of their personal and educational experiences.

Design

A phenomenological qualitative study interviewing medical students of Pakistan was conducted.

Participants/Methodology

This study was designed to interview medical and dental students from various cities in Pakistan using a semi-structured, open-ended questionnaire. A total of 34 interviews were recorded and transcripts were prepared. All authors (SI, SS, IA and MS) were involved in the thematic analysis of the data whereby, transcripts were read thoroughly, and codes were developed. Similar codes were then combined to generate themes.

Results

Three major themes emerged after the analysis of results. The students' ''diverse experiences'' of panic and anxiety or excitement were high initially but gradually reduced as time progressed. The ''unprecedented academic experiences'' of students included teaching/learning, communication, and technical challenges that they faced during online classes. Despite facing a lot of challenges, the students still saw ''light at the end of the tunnel'' and looked forward to going back to their college.

Conclusion

The effects of COVID-19 on the physical, psychological, social, and academic life of medical students were enormous. It is highly recommended that institutes and faculty provide support for personal and professional development of students in these unprecedented times in the form of counseling, provision of technical facilities, or leniency in fee process. Peer support is also considered crucial in reducing anxiety among students.

Keywords: COVID -19, Medical Education, Medical students, experiences, Pakistan

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ARTICLE SUMMARY

Strengths/Weakness:

- The study gains access to the in-depth knowledge about the direct and indirect impacts of the lockdown, because of the COVID pandemic, on various aspects of the life of a medical student in Pakistan
- A strength of this study lies in the diversity of the study population in terms of academic level, gender, institutional affiliation, and city of residence as no study on the impact of the COVID pandemic in Pakistan has achieved this, so far
- Because of the diverse study population, it took a long time to reach out to medical students from various parts of the country, schedule, record, and transcribe interviews, it took researchers more than a year to complete the study and submit for publication
- This study does not include health care professionals and allied health/nursing students from Pakistan and this may be considered a logistic limitation of the study

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INTRODUCTION

The COVID -19 pandemic has affected the lives of students and young adolescents in numerous ways. The medical students in Pakistan experienced unprecedented emotional, physical, and educational challenges like everyone else. The levels of stress, anxiety, and depression mounted up as they prepared themselves for the uncertain way of life(1, 2). The study aims to qualitatively explore the lived-in experiences of medical students in various parts of the country, during the lockdown in Pakistan.

To prevent the spread of the disease in the country, the government of Pakistan imposed a country-wide lockdown closing all educational institutes in March 2020. The lockdown showed significant changes in medical education. The face-to-face lectures or interactive activities like small-group discussions including problem-based or case-based learning were shifted to digital lectures while the clinical rotations of students were halted completely. The time was very crucial with respect to learning clinical skills, especially for final-year students. The unpredictability of the situation impacted medical faculty and students alike creating panic and anxiety(3). The supplementary examinations were postponed by medical universities, further spreading uncertainty among students.

The pandemic has markedly affected the experiences and opportunities of medical students but its impact needs to be determined. Sethi et al. have determined the impact of COVID 19 on personal and professional aspects of healthcare providers' lives, however an in-depth impact on students' life, both personal and academic, still needs to be determined(4). Studies have shown that the lockdown impacted the students' psychological well-being, resulting in students having low self-confidence, especially the final year students(1). Another study concluded that undergraduate medical students also had depression based on the self-rating depression scale(5).

This study aims to address the gap by a qualitative observation and analysis of the personal and educational experiences of medical students in Pakistan as they lived through this pandemic. There are a total of 176 medical and dental colleges in Pakistan which makes up to around 1600 students graduating from medical colleges every year and above five thousand undergraduate students(6). Since these students will take hold of the healthcare system of the country in the coming years so it is of utmost importance to get their perspective on how COVID impacted them.

METHODOLOGY

Study Design

This qualitative study was designed to conduct this phenomenological investigation. In-depth interviews were conducted by using a semi-structured guide to learn the experiences of medical students during the lockdown. The interviews were conducted online with the participants given various options of online or face-to-face meetings. All of the participants preferred to give interviews via WhatsApp video call.

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Study Participants

A purposive convenient sampling technique was used to enroll the study participants. Flyers were disseminated through various social media platforms inviting medical students in Pakistan students to participate in the study. Students contacted the researchers themselves on the information provided and were subsequently scheduled for interviews at a time of mutual convenience. A conscious effort was made to enroll medical and dental students through all years of study and from both public and private sector institutions. Care was also taken to include participants from the three largest provinces and the federal territory of Pakistan. A total of 34 interviews were conducted after which the investigators decided that saturation had been achieved as no new information was being shared. The decision was made after several reviews of the recorded interviews by all the researchers in the team. No further interviews were scheduled.

Procedure

Ethical approval from Shalamar Medical & Dental College-Institutional Review Board was sought on 20/7/2020 (IRB: 0206). All researchers (SI, SS, IA and MS) conducted participant interviews, it was ensured that more than one researcher was present during the interview to record non-verbal communication and to reduce bias. Participants were contacted half an hour before their scheduled time to confirm availability and on average 15 minutes, long interviews were then conducted. The interviews were recorded on an electric recorder/transcriber for transcription afterward. All the researchers have prior experience in qualitative interviews and/or formal/informal training in communication skills. A formal verbal consent with a clearly defined study purpose and permission to audio record was recorded before each interview. The information rendered by the participants was kept strictly confidential and the audio recording was shared only among the investigators of this study. The names of the participants were given codes to keep anonymity. No repeat interviews were carried out.

Data Collection and analysis

The data was collected from July 2020 to September 2021. The data consisted of two components: demographics and open-ended questions. No identifiable information like personal names, names of educational institutions, etc., were recorded. The demographics included the city from which the participant belonged, whether they were enrolled in a private or public university, and their year of study in medical school (Table 1).

Table 1. Demographics of participants

Province	
Punjab	20
Sindh	6
KPK	3
Islamabad	1

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Sector	
public	17
private	17
Gender	
Female	24
male	10
Education	
BDS	4
MBBS	30

The semi-structured interview contained the following broad questions:

1.   What is your experience of COVID 19?

2.   How has COVID 19 affected you academically?

3.   How has COVID 19 affected you personally?

4.   How do you feel about going back to college when the lockdown is lifted?

The prompts and further explanatory questions were asked during the interviews to get insight into the comments of participants. The interviews were done in Urdu or English depending on the participant's preference. The audio recording was done and field notes were taken. The interviews were transcribed and then translated into the English language. The transcription process and interviews continued side by side. The data was collected until it reached saturation. After 34 interviews the investigators decided that saturation had been achieved as no new information was being shared. The transcripts were then returned to the participants for comments and/or corrections. We received comments from only a few.

The data was then hand analyzed by all the researchers based on the simultaneous as well as iterative analysis of the data. The framework method was used to develop a table to handle a large amount of the gathered information. The coding of data was done based on the thematic areas as well as descriptions developed during the analysis process. The codes, themes, and sub-themes were discussed and agreed upon by all the investigators in order to avoid lone researcher bias. A backup of the entire data collection was made in the form of duplicate hard copies to ensure the safety of the data. Audio tape recordings and field notes were transcribed in detail into text data.

RESULTS

Three major themes emerged after analyzing the data.

1.   A diverse experience

2.   Unprecedented Academic Experiences

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3.   The light at the end of the tunnel

Theme 1: A Diverse Experience

This theme was further divided into sub-themes

a)   Unexpected Challenges

b)   The Transformation

Unexpected Challenges

It was a conflicting experience for the participants. Yet, all participants shared that the lockdown brought panic and anxiety to their lives. They were concerned about their studies as lockdown meant they could not go to libraries. One final-year student showed concern over delaying graduation:

"I could have started my house job but feel like I have wasted 4-5 months and I am just stuck"

A lot of participants stated that staying at home has changed their routines as they were waking up later in the morning. Some considered it a disturbance in their lives while others confessed that they were enjoying this time.

The Transformation

The students experienced a variety of challenges and emotions as time passed. Some participants reported feeling "panicked initially" because of the uncertainty of the situation, especially the ones whose family members were frontline healthcare workers. While for others the lockdown created a sense of euphoria, as the institutions closed down, at the beginning which eventually faded with time.

"Initially it was very scary because both my parents were front-line doctors and there was less interaction with my parents. It became less scary over time when PPEs and testing were available. Now everything is a routine.'' (Participant # 4)

"Initially it was exciting, but after a month or so I realized we'll probably have to change our lifestyles." (Participant # 31)

Amidst a hectic medical school routine, unexpectedly all academic activities were halted. This resulted in the decreased motivation of the students to continue studying on their own. It also became frustrating at times because the students could not go out and the lack of activity made the days boring and uneventful. Listening to the news and personal accounts of sufferings from COVID-19 added to the stress. The anxiety gradually decreased as it all became a routine.

Theme 2: Unprecedented Academic Experiences

This theme included the following sub-themes:

a)   Teaching and Learning during lockdown

b)   Communication Challenges

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c)   Technical Tantrums

Teaching and learning during lockdown

"There were no interactive sessions, and it was very easy to lose the time. I had zero focus because of one-way communication as teachers don't make it interactive.''

Students voiced their opinion in a variety of ways when they talked about their academic experiences during the pandemic lockdown. Some felt dissatisfied with the virtual/online classes as they failed to stay alert and attentive in classes due to a number of reasons that included the inability of teachers to effectively engage with the students, lack of answerability, headaches due to excessive screen time, stress of varying degrees, and unpredictability of the overall situation.

On the other hand, some students found it convenient to attend classes from the comforts of their homes. Also, lecture recordings were available, and the students could access them of their own will. This way they stayed in touch with their studies even if they were not very attentive during the lectures.

A few students also confessed that they would only log in to mark their attendance and then go to sleep. Lack of interest of students was observed by some during online classes. Participant # 16 said:

 "Non-serious attitude of students, in the beginning, turned disrespectful after a while. Some students would play songs between lectures, confusing the teachers. The teachers were unable to manage the class."

Some students claimed that they could not focus on their studies as they were used to study groups. The tutorials, small group discussions (SGDs), and/or Problem Based Learnings (PBLs) were conducted virtually. Similarly, the students greatly felt that they were deprived of clinical experience with patients. Participant # 14 is reported to have said:

"Online wards are not sufficient. Most teachers just copy scenarios from books and just ask questions that are useless, but some teachers use live cameras and discuss treatment plans with students. I think that's a very good method."

However, for some introverted students this proved to be a blessing in disguise as participant # 21 confessed:

"I didn't enjoy it before but now I do because it's not face-to-face, and I can speak without any hesitation''.

Many students expressed concern about insufficient preparedness for the professional exams due to none or poorly executed online tests. The uncertainty about the professional exam schedule further augmented their anxiety.

Communication Challenges

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The students expressed their concerns about the lack of communication with peers as well as with the teachers. Participant # 5 strongly felt that the teachers faltered at establishing an effective communication:

"No interaction with teachers! There should be interaction with teachers even on zoom as obviously we have paid the college fees".

However, participant # 22 said that the interaction with the teachers was, "helpful because they are available on WhatsApp, email and we can always ask questions during online classes. So that is why I didn't feel that we were being sidelined"

While some students felt the same about connecting with their peers, "interaction between students reduced to a great extent", some were interacting only within their assignment/study groups and many with their close friends through social media. They found this a useful means to reduce stress and anxiety. Participant # 31 explained that they "(interacted) quite a lot. Many students would make groups and play Ludo or do zoom meetings, we met virtually because we wanted to drop off the anxiety for a while''

Technical Tantrums

The Internet connectivity issue was faced by nearly all participants irrespective of which city they belonged to. The issues were more prevalent in Baluchistan as one of the participants said:

"We have internet in Quetta but not in some distant areas, so when they (college) wanted to start online classes there was a massive protest by students who had to take their phones to mountain tops (to catch signals)''

The unfamiliarity of some teachers with gadgets proved to be a nuisance for online activities.

"Students were unable to connect to online lectures. Sometimes teachers would unknowingly mute themselves or spend up to 15 minutes trying to fix the connectivity issues'', said participant # 16.

Theme 3: Light at the End of the Tunnel

This part of the interview was the most overwhelming for the participants as well as the interviewers. We divided this into the following sub-themes

a)   The Vicissitudes of experience

b)   Looking forward

The Vicissitudes of experience

Some participants faced predicaments ranging from being stuck in a toxic environment to losing a family member to COVID. The magnitude of these predicaments was evident from the views they shared. Participants # 23, and 24 said respectively

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"Bad experience, tough time because we were getting bad news from everywhere. It seemed as if someone changed the entire map of life. Life wasn't the same as before. And it was a tough time with family as well because of the joint family system".

"Initially happy because universities were closed and got so much time. But then I was tested positive and lost my father."

Increased family time was a positive experience for many but not all, as participant # 14 shared

"I can connect better with my family, but due to lock down huge panic has been created and everyone has reached their height of tempers. Everyone is just awful.''

Most study participants, however, managed to find positivity even in these adverse times. They focused on the hobbies that they were unable to do earlier due to the hectic routine of medical college. These hobbies ranged from painting, cooking, and reading to learning new skills or languages. Some found solace in spirituality and found this as an opportunity to focus on religion and spirituality.

Some students utilized this time to focus on their studies as they had enough time for self-study but they also found it difficult to work on it consistently.

Looking forward

Although the students were enthusiastic about going back to college, they did have apprehensions about the SOPs especially the ones residing in the hostels.

Participant # 5 explained

"Nothing will be exactly the same as before because we will have to wear masks and gloves and it is going to be really hard to get back on track"

The students felt that they had gotten used to the relaxed routine and would find it difficult to adjust to the hectic medical college routine when they return.

DISCUSSION

This study aimed to learn the individual experiences of medical students during the COVID-19 pandemic in Pakistan. The analysis revealed that the major part of the experiences of medical students revolved around academics. Since academics play a vital role in the lives of medical students this is why a plethora of emotions and uncertainty accompanied the 180º change in the teaching methodologies.

The students particularly had concerns about missing clinical rotations and wards. They felt that teaching clinical skills online was not useful. Similar findings were noted in a survey conducted in the United Kingdom. Despite discussing clinical conditions and case scenarios on online platforms, the students did not feel confident about their clinical competence(4). Another point of concern for the students was related to assessments. The repeated postponement of the final exam date was a cause of stress for the students; they also questioned the integrity of online tests that were being taken by their respective colleges. In order to deal with this issue, Imperial College London was the first to conduct an open book exam (OBE) for final-year students, and questions were designed such that they could not be

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answered simply by searching sources over the internet(7). However, to the best of our knowledge, no medical university in Pakistan adopted OBE for conducting the final professional exam. The unavailability of proper IT infrastructure in many medical colleges as well as at students' homes is a big hindrance in implementing online assessments in developing countries like Pakistan(8). Not only did the students highlighted that connectivity issues impeded their learning, but also the incompetency of teachers to conduct online classes affected the process adversely. It has been noted that one of the major challenges to online learning in Pakistan is the lack of faculty training as a lot of medical colleges do not even have an IT department or a dedicated staff to train the faculty. This, in addition to the unwillingness of faculty to shift from face-to-face didactic lectures to interactive technology-assisted teaching and learning resulted in a huge problem because with COVID-19, this shift had to be made posthaste(8, 9). Therefore, the students' claim that online classes lacked interaction with teachers and those teachers were inexperienced in the use of technology does not come as quite a shock.

The majority of students reported an increase in anxiety and stress levels, especially at the initial stages of lockdown. This was in part due to disruption of studies but lack of social activities and concern that their loved ones might get the infection also significantly contributed to the psychological stress. Disruption of studies and fear of not graduating in time were especially noted by final-year MBBS students. Similar findings were reported by a study conducted in China to assess the psychological impact of COVID-19 on medical students(10). Lockdown impacting social life, also played a significant role in increasing the anxiety of students as they were no longer able to meet with their friends, or colleagues or participate in extra-curricular activities, all of which are essential for good academic and personal formation(11). In order to cope, many students invested their time in developing hobbies, interacting with their family, friends, and colleagues through various social media platforms and spending time in meditation, and becoming more religious(12, 13). It is also noteworthy that while most students experienced improved quality of interactions with their families, not all students were so fortunate. Students facing domestic violence were forced to isolate themselves at home. Increased stress in the family members often leads to quick tempers and decreased patience and being restricted to their homes with limited access to support turned an already bad situation into a worse one(14).

RECOMMENDATIONS

For Institutions: It is highly recommended that all medical colleges must have student counselors who should be available for both onsite and online sessions. Not only should trained counselors be easily available but their availability should be advertised and shared repeatedly among the students. Students should be given protected time to spend in the counseling sessions. Healthy group activities, like outdoor activities, that require safe distancing should be resumed as early as possible.

The institution should be considerate and empathetic towards days off and sick leaves by students as well as faculty and staff. The faculty and staff should also have easy access to counselors and various mental health resources, not only to utilize for themselves but also to educate and enable them for their students and peers.

The colleges should provide leniency in fees by offering installments in order to provide relief to students in these financially unstable times. An effort to find effective on-campus assessment

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alternatives needs to be made. Online methods employed in developed countries can be altered to cater to resource-challenged institutions while still maintaining the integrity of the process.

For Faculty and Staff: The faculty and staff in an academic institution play a major role in the mental and professional development of the students. They should discuss physical, psychological, and academic challenges faced by not only them but also their students to acknowledge these challenges and develop a sense of community to develop support for everyone. Discussions with the students in and outside of the classrooms should be encouraged. Non-judgmental and empathetic behavior must be showcased by the faculty and staff. The counselors should have institutional support in terms of the resources required to face this tremendous challenge.

For Students: The students should utilize the resources and support offered by their institutions and by the government and engage in healthy activities and discussions on and off-campus, educate themselves about mental health and look out for their peers who may be showing signs of distress or disinterest. Peer support is an excellent way to identify and initiate steps to mitigate the harms caused by stress and anxiety among students. Students should learn about the resources available and keep sharing the information with peers in order to reduce the stigma attached to mental health and access to mental health resources.

CONCLUSION:

The challenges associated with the COVID 19 pandemic are enormous. The physical, psychological, social, and academic changes and their effects are undeniable. Medical students with already stressful academic routines have faced unprecedented circumstances. The abrupt shift to online teaching where students struggled to effectively communicate with teachers and peers amidst poor internet connections, being housebound with no open avenue for personal interactions with friends, and short temperaments of family members are just a few of the challenges faced by the students. There is a need to further explore the experiences of medical students and faculty members and to identify the mitigating strategies adapted by institutions, faculty, and students. New and innovative ways to develop support within medical institutions are the need of the hour and more qualitative exploration in this regard can clarify the way towards a well-supported and well-energized post-COVID era.

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REFERENCES

1.   Dhahri AA, Arain SY, Memon AM, et al. The psychological impact of COVID-19 on medical education of final year students in Pakistan: A cross-sectional study. *Ann Med Surg*. 2020 Dec 1;60:445–50.

2.   Salman M, Asif N, Mustafa ZU, et al. Psychological Impairment and Coping Strategies During the COVID-19 Pandemic Among Students in Pakistan: A Cross-Sectional Analysis. *Disaster Med Public Health Prep.* 2020;1–7.

3.   Ferrel MN, Ryan JJ. The Impact of COVID-19 on Medical Education. *Cureus*. 2020 Mar 31;12(3).

4.   Sethi BA, Sethi A, Ali S, et al. Impact of Coronavirus disease (COVID-19) pandemic on health professionals. Pakistan J Med Sci. 2020;36(COVID19-S4):1–6.

5.   Zafar SMA, Tahir MJ, Malik M, Malik MI, Akhtar FK, Ghazala R. Awareness, anxiety, and depression in healthcare professionals, medical students, and general population of Pakistan during COVID-19 Pandemic: A cross sectional online survey. Med J Islam Repub Iran [Internet]. 2020 Oct 30 [cited 2022 Jan 18];34:131. Available from: /pmc/articles/PMC7787044/

6.   Over 78pc medical graduates clear NLE - Newspaper - DAWN.COM [Internet]. Dawn newspaer. 2021 [cited 2022 Jan 18]. Available from: https://www.dawn.com/news/1643424

7.   Sandhu P, de Wolf M. The impact of COVID-19 on the undergraduate medical curriculum. Med Educ Online [Internet]. 2020;25(1):4–5. Available from: https://doi.org/10.1080/10872981.2020.1764740

8.   Farooq F, Azam Rathore F, Nasir Mansoor S. Challenges of Online Medical Education in Pakistan During COVID-19 Pandemic. J Coll Physicians Surg Pak [Internet]. 2020 [cited 2021 Oct 4];30(1):S67–9. Available from: https://doi.org/10.29271/jcpsp.2020.Supp1.S67.

9.   Lakbala P. Barriers in Implementing E-Learning in Hormozgan University of Medical Sciences. Glob J Health Sci [Internet]. 2016 Nov 3 [cited 2021 Oct 4];8(7):83. Available from: /pmc/articles/PMC4965673/

10.   Cao W, Fang Z, Hou G, Han M, Xu X, Dong J, et al. The psychological impact of the COVID-19 epidemic on college students in China. Psychiatry Res. 2020 May;287:112934.

11.   Chinelatto LA, Costa TR da, Medeiros VMB, Boog GHP, Hojaij FC, Tempski PZ, et al. What You Gain and What You Lose in COVID-19: Perception of Medical Students on their Education. Clinics. 2020 Jul;75:1–3.

12.   Noreen K, Rubab Z-, Umar M, Rehman R, Baig M, Baig F. Knowledge, attitudes, and practices against the growing threat of COVID-19 among medical students of Pakistan. PLoS One. 2020 Dec;15(12):e0243696.

13

13.   Lyons Z, Wilcox H, Leung L, Dearsley O. COVID-19 and the mental well-being of Australian medical students: impact, concerns and coping strategies used: https://doi.org/101177/1039856220947945. 2020 Aug;28(6):649–52.

14.   Usher K, Bhullar N, Durkin J, Gyamfi N, Jackson D. Family violence and COVID-19: Increased vulnerability and reduced options for support. Int J Ment Health Nurs. 2020 Aug;29(4):549–52.

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Manuscript: EXPERIENCES OF MEDICAL AND DENTAL STUDENTS OF PAKISTAN DURING COVID-19 PANDEMIC LOCKDOWN: A QUALITATIVE STUDY

Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist

Developed from:
Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

No. Item	Guide questions/description	Reported on Page #
Domain 1: Research team and reflexivity		
Personal Characteristics		
1. Inter viewer/facilitator	Which author/s conducted the inter view or focus group?	Page 4
2. Credentials	What were the researcher's credentials? E.g. PhD, MD	Page 13-14.
3. Occupation	What was their occupation at the time of the study?	Page 13-14.
4. Gender	Was the researcher male or female?	Page 13-14.
5. Experience and training	What experience or training did the researcher have?	Page 4.
Relationship with participants		
6. Relationship established	Was a relationship established prior to study commencement?	Page 4.
7. Participant knowledge of the interviewer	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	Page 4.
8. Interviewer characteristics	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	Page 3-5.

Domain 2: study design		
Theoretical framework		
9. Methodological orientation and Theory	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	Page 3
Participant selection		
10. Sampling	How were participants selected? e.g. purposive, convenience, consecutive, snowball	Page 4
11. Method of approach	How were participants approached? e.g. face-to-face, telephone, mail, email	Page 4
12. Sample size	How many participants were in the study?	Page 4
13. Non-participation	How many people refused to participate or dropped out? Reasons?	Page 4
Setting		
14. Setting of data collection	Where was the data collected? e.g. home, clinic, workplace	Page 4-5
15. Presence of non-participants	Was anyone else present besides the participants and researchers?	Page 4
16. Description of sample	What are the important characteristics of the sample? e.g. demographic data, date	Page 4-5
Data collection		
17. Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested?	Page 5
18. Repeat interviews	Were repeat inter views carried out? If yes, how many?	Page 4
19. Audio/visual recording	Did the research use audio or visual recording to collect the data?	Page 4
20. Field notes	Were field notes made during and/or after the inter view or focus group?	Page 4
21. Duration	What was the duration of the inter views or focus group?	Page 4
22. Data saturation	Was data saturation discussed?	Page 4
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	Page 4
Domain 3: analysis and findings		

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Data analysis		
24. Number of data coders	How many data coders coded the data?	Page 5
25. Description of the coding tree	Did authors provide a description of the coding tree?	Page 5-6
26. Derivation of themes	Were themes identified in advance or derived from the data?	Page 5
27. Software	What software, if applicable, was used to manage the data?	Page 5
28. Participant checking	Did participants provide feedback on the findings?	Page 5
Reporting		
29. Quotations presented	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	Page 6-9
30. Data and findings consistent	Was there consistency between the data presented and the findings?	Page 6-9
31. Clarity of major themes	Were major themes clearly presented in the findings?	Page 6-9
32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	Page 6-9

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EXPERIENCES OF MEDICAL AND DENTAL STUDENTS OF PAKISTAN DURING COVID-19 PANDEMIC LOCKDOWN: A QUALITATIVE STUDY

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EXPERIENCES OF MEDICAL AND DENTAL STUDENTS OF PAKISTAN DURING COVID-19 PANDEMIC LOCKDOWN: A QUALITATIVE STUDY

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WORD COUNT: 4154

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ABSTRACT

Objective

The COVID -19 pandemic resulted in medical institutes being shut down. Face-to-face activities were shifted to online medium. The unpredictability of the situation impacted medical faculty and students alike, creating panic and anxiety. Since these students are to take hold of the healthcare system of the country soon, it is important to learn their perspective on how COVID impacted them. Therefore, this study aims to explore the lived experiences of Pakistani medical students in-depth by a qualitative observation of their personal and educational experiences.

Design

A phenomenological qualitative study interviewing medical students of Pakistan was conducted.

Participants/Methodology

This study was designed to interview medical and dental students from various cities in Pakistan using a semi-structured, open-ended questionnaire. A total of 34 interviews were recorded and transcripts were prepared. All authors (SI, SS, IA, and MS) were involved in the thematic analysis of the data whereby, transcripts were read thoroughly, and codes were developed. Similar codes were then combined to generate themes.

Results

Three major themes emerged after the analysis of results. The students' ''diverse experiences'' of panic and anxiety or excitement were high initially but gradually reduced as time progressed. The ''unprecedented academic experiences'' of students included teaching/learning, communication, and technical challenges that they faced during online classes. Despite facing a lot of challenges, the students still saw ''light at the end of the tunnel'' and looked forward to going back to their college.

Conclusion

The effects of COVID-19 on the physical, psychological, social, and academic life of medical students were enormous. It is highly recommended that institutes and faculty provide support for personal and professional development of students in these unprecedented times in the form of counseling, provision of technical facilities, or leniency in fee process. Peer support is also considered crucial in reducing anxiety among students.

Keywords: COVID -19, Medical Education, Medical students, experiences, Pakistan

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ARTICLE SUMMARY

Strengths/Weakness:

- The study gains access to in-depth knowledge about the direct and indirect impacts of the lockdown, because of the COVID pandemic, on various aspects of the life of a medical student in Pakistan
- A strength of this study lies in the diversity of the study population in terms of academic level, gender, institutional affiliation, and city of residence as no study on the impact of the COVID pandemic in Pakistan has achieved this, so far
- Because of the diverse study population, it took a long time to reach out to medical students from various parts of the country, schedule, record, and transcribe interviews, it took researchers more than a year to complete the study and submit it for publication
- This study does not include healthcare professionals and allied health/nursing students from Pakistan, and this may be considered a logistic limitation of the study

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INTRODUCTION

The COVID -19 pandemic has affected the lives of students and young adolescents in numerous ways. The medical students in Pakistan experienced unprecedented emotional, physical, and educational challenges like everyone else. The levels of stress, anxiety, and depression mounted up as they prepared themselves for the uncertain way of life[1][2]. The study aims to qualitatively explore the lived-in experiences of medical students in various parts of the country, during the lockdown in Pakistan.

To prevent the spread of the disease in the country, the government of Pakistan imposed a country-wide lockdown closing all educational institutes in March 2020. The lockdown showed significant changes in medical education. The face-to-face lectures or interactive activities like small-group discussions including problem-based or case-based learning were shifted to digital lectures while the clinical rotations of students were halted completely. The time was very crucial with respect to learning clinical skills, especially for final-year students. The unpredictability of the situation impacted medical faculty and students alike creating panic and anxiety[3]. The supplementary examinations were postponed by medical universities, further spreading uncertainty among students.

The pandemic has markedly affected the experiences and opportunities of medical students but its impact needs to be determined. Sethi et al. have determined the impact of COVID-19 on personal and professional aspects of healthcare providers' lives, however an in-depth impact on students' life, both personal and academic, still needs to be determined[4]. Studies have shown that the lockdown impacted the students' psychological well-being, resulting in students having low self-confidence, especially the final-year students[1]. A study from South Asia particularly emphasized the high prevalence of anxiety and depression during COVID-19 in this region [5]. Another study concluded that undergraduate medical students also had depression based on the self-rating depression scale[6]. Academically, sudden changes in modes of teaching proved to be a great challenge for the students. Unlike medical schools in western countries where online teaching was already a norm pre-pandemic, most medical colleges in Pakistan had never experienced online modes of teaching[7]. Apart from being unaccustomed to online teaching, Pakistan also faces electricity outages and poor connectivity issues making it harder for students to cope up with online teaching[8].

This study aims to address the gap through a qualitative observation and analysis of the personal and educational experiences of medical students in Pakistan as they lived through this pandemic. To the best of our knowledge, no qualitative study has been done before to explore the experiences of medical students during the COVID-19 lockdown. There are a total of 176 medical and dental colleges in Pakistan which makes up to around 1600 students graduating from medical colleges every year and above five thousand undergraduate students[9]. The global crisis has affected them equally as they are humans first and medical students later. Acquiring mental health and counseling was already difficult for medical students and the pandemic has exaggerated the need to pay attention to the mental health of medical students[10]. Since these students will take hold of the healthcare system of the country in the coming years so it is of utmost importance to get their perspective on how COVID impacted them.

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METHODOLOGY

Study Design

This qualitative study was designed to conduct this phenomenological investigation. In-depth interviews were conducted by using a semi-structured guide to learn the experiences of medical students during the lockdown. The interviews were conducted online with the participants given various options of online or face-to-face meetings. All of the participants preferred to give interviews via WhatsApp video call.

Study Participants

A purposive convenient sampling technique was used to enroll the study participants. Flyers were disseminated through various social media platforms inviting medical students in Pakistan students to participate in the study. Students contacted the researchers themselves on the information provided and were subsequently scheduled for interviews at a time of mutual convenience. A conscious effort was made to enroll medical and dental students through all years of study and from both public and private sector institutions. Care was also taken to include participants from the three largest provinces and the federal territory of Pakistan. A total of 34 interviews were conducted after which the investigators decided that saturation had been achieved as no new information was being shared. The decision was made after several reviews of the recorded interviews by all the researchers in the team. No further interviews were scheduled.

Ethical Approval

Ethical approval from Shalamar Medical & Dental College-Institutional Review Board was obtained on 20/7/2020. Reference number: SMDC-IRB/AL/38/2020. IRB number: 0206.

Patient and Public involvement

No patients were involved in this study. The study participants were undergraduate medical and dental students.

Procedure

All researchers (SI, SS, IA, and MS) conducted participant interviews, it was ensured that more than one researcher was present during the interview to record non-verbal communication and to reduce bias. Participants were contacted half an hour before their scheduled time to confirm availability and on average 15 minutes, long interviews were then conducted. The interviews were recorded on an electric recorder/transcriber for transcription afterward. All the researchers have prior experience in qualitative interviews and/or formal/informal training in communication skills. A formal verbal consent with a clearly defined study purpose and permission to audio record was recorded before each interview. The information rendered by the participants was kept strictly confidential and the audio recording was shared only among the investigators of this study. The names of the participants were given codes to keep anonymity. No repeat interviews were carried out.

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Data Collection and analysis

The data was collected from July 2020 to September 2021. The data consisted of two components: demographics and open-ended questions. No identifiable information like personal names, names of educational institutions, etc., were recorded. The demographics included the city from which the participant belonged, whether they were enrolled in a private or public university, and their year of study in medical school (Table 1).

Table 1. Demographics of participants

Province	
Punjab	20
Sindh	6
KPK	3
Islamabad	1
Sector	
public	17
private	17
Gender	
Female	24
male	10
Education	
BDS	4
MBBS	30

The semi-structured interview contained the following broad questions (Interview guide available as supplemental file):

1.   What is your experience of COVID-19?

2.   How has COVID-19 affected you academically?

3.   How has COVID-19 affected you personally?

4.   How do you feel about going back to college when the lockdown is lifted?

The prompts and further explanatory questions were asked during the interviews to get insight into the comments of participants. The interviews were done in Urdu or English depending on the participant's preference. The audio recording was done and field notes were taken. The interviews were transcribed and then translated into English language. The transcription process and interviews continued side by side. The data was collected until it reached saturation. After 34 interviews the investigators decided that saturation had been achieved as no new information was being shared. All the authors went through the transcripts individually and discussed them among themselves. Member checking was

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carried out by sending the transcripts to the participants for comments and/or corrections. We received comments from only a few. The changes were incorporated into the transcript before initiating the analysis.

The data was then hand-analyzed by all the researchers based on the simultaneous as well as iterative analysis of the data. It was mutually decided among the researchers to analyze the data manually to give a contextual and personalized interpretation. Secondly, because our interviews were mixed in Urdu and English we wanted to make sure that some Urdu words were neither missed nor misinterpreted by the software. It was decided to keep the Urdu words which could not be translated verbatim, as such.

The framework method was used to develop a table to handle a large amount of the gathered information. The coding of data was done based on the thematic areas as well as descriptions developed during the analysis process. The codes, themes, and sub-themes were discussed and agreed upon by all the investigators in order to avoid lone researcher bias. A backup of the entire data collection was made in the form of duplicate hard copies to ensure the safety of the data. Audio tape recordings and field notes were transcribed in detail into text data.

RESULTS

Three major themes emerged after analyzing the data.

1. A diverse experience

2. Unprecedented Academic Experiences

3. The light at the end of the tunnel

Theme 1: A Diverse Experience

This theme was further divided into sub-themes

a) Unexpected Challenges

b) The Transformation

Unexpected Challenges

It was a conflicting experience for the participants. Yet, all participants shared that the lockdown brought panic and anxiety to their lives. They were concerned about their studies as the lockdown meant they could not go to libraries. One final-year student showed concern over delaying graduation:

"I could have started my house job but feel like I have wasted 4-5 months and I am just stuck"

A lot of participants stated that staying at home has changed their routines as they were waking up later in the morning. Some considered it a disturbance in their lives while others confessed that they were enjoying this time.

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The Transformation

The students experienced a variety of challenges and emotions as time passed. Some participants reported feeling "panicked initially" because of the uncertainty of the situation, especially the ones whose family members were frontline healthcare workers. While for others the lockdown created a sense of euphoria, as the institutions closed down, at the beginning which eventually faded with time.

"Initially it was very scary because both my parents were front-line doctors and there was less interaction with my parents. It became less scary over time when PPEs and testing were available. Now everything is a routine.'' (Participant # 4)

"Initially it was exciting, but after a month or so I realized we'll probably have to change our lifestyles." (Participant # 31)

Amidst a hectic medical school routine, unexpectedly all academic activities were halted. This resulted in the decreased motivation of the students to continue studying on their own. It also became frustrating at times because the students could not go out and the lack of activity made the days boring and uneventful. Listening to the news and personal accounts of sufferings from COVID-19 added to the stress. The anxiety gradually decreased as it all became a routine.

Theme 2: Unprecedented Academic Experiences

This theme included the following sub-themes:

a)   Teaching and Learning during lockdown

b)   Communication Challenges

c)   Technical Tantrums

Teaching and learning during lockdown

"There were no interactive sessions, and it was very easy to lose time. I had zero focus because of one-way communication as teachers don't make it interactive.''

Students voiced their opinion in a variety of ways when they talked about their academic experiences during the pandemic lockdown. Some felt dissatisfied with the virtual/online classes as they failed to stay alert and attentive in classes due to several reasons that included the inability of teachers to effectively engage with the students, lack of answerability, headaches due to excessive screen time, stress of varying degrees, and unpredictability of the overall situation.

On the other hand, some students found it convenient to attend classes from the comforts of their homes. Also, lecture recordings were available, and the students could access them of their own will. This way they stayed in touch with their studies even if they were not very attentive during the lectures.

A few students also confessed that they would only log in to mark their attendance and then go to sleep. Lack of interest of students was observed by some during online classes. Participant # 16 said:

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"Non-serious attitude of students, in the beginning, turned disrespectful after a while. Some students would play songs between lectures, confusing the teachers. The teachers were unable to manage the class."

Some students claimed that they could not focus on their studies as they were used to study groups. The tutorials, small group discussions (SGDs), and/or Problem Based Learning (PBLs) were conducted virtually. Similarly, the students greatly felt that they were deprived of clinical experience with patients. Participant # 14 is reported to have said:

"Online wards are not sufficient. Most teachers just copy scenarios from books and just ask useless questions, but some teachers use live cameras and discuss treatment plans with students. I think that's a very good method."

However, for some introverted students this proved to be a blessing in disguise as participant # 21 confessed:

"I didn't enjoy it before but now I do because it's not face-to-face, and I can speak without any hesitation''.

Many students expressed concern about insufficient preparedness for professional exams due to none or poorly executed online tests. The uncertainty about the professional exam schedule further augmented their anxiety.

Communication Challenges

The students expressed their concerns about the lack of communication with peers as well as with the teachers. Participant # 5 strongly felt that the teachers faltered at establishing effective communication:

"No interaction with teachers! There should be interaction with teachers even on zoom as obviously we have paid the college fees".

However, participant # 22 said that the interaction with the teachers was, "helpful because they are available on WhatsApp, email and we can always ask questions during online classes. So that is why I didn't feel that we were being sidelined"

While some students felt the same about connecting with their peers, "interaction between students reduced to a great extent", some were interacting only within their assignment/study groups and many with their close friends through social media. They found this a useful means to reduce stress and anxiety. Participant # 31 explained that they "(interacted) quite a lot. Many students would make groups and play Ludo or do zoom meetings, we met virtually because we wanted to drop off the anxiety for a while''

Technical Tantrums

The Internet connectivity issue was faced by nearly all participants irrespective of which city they belonged to. The issues were more prevalent in Baluchistan as one of the participants said:

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"We have internet in Quetta but not in some distant areas, so when they (college) wanted to start online classes there was a massive protest by students who had to take their phones to mountain tops (to catch signals)''

The unfamiliarity of some teachers with gadgets proved to be a nuisance for online activities.

"Students were unable to connect to online lectures. Sometimes teachers would unknowingly mute themselves or spend up to 15 minutes trying to fix the connectivity issues'', said participant # 16.

Theme 3: Light at the End of the Tunnel

This part of the interview was the most overwhelming for the participants as well as the interviewers. We divided this into the following sub-themes

a)   The Vicissitudes of experience

b)   Looking forward

The Vicissitudes of experience

Some participants faced predicaments ranging from being stuck in a toxic environment to losing a family member to COVID. The magnitude of these predicaments was evident from the views they shared. Participants # 23, and 24 said respectively

"Bad experience, tough time because we were getting bad news from everywhere. It seemed as if someone changed the entire map of life. Life wasn't the same as before. And it was a tough time with family as well because of the joint family system".

"Initially happy because universities were closed and got so much time. But then I tested positive and lost my father."

Increased family time was a positive experience for many but not all, as participant # 14 shared

"I can connect better with my family, but due to lock down huge panic has been created and everyone has reached their height of tempers. Everyone is just awful.''

Most study participants, however, managed to find positivity even in these adverse times. They focused on the hobbies that they were unable to do earlier due to the hectic routine of medical college. These hobbies ranged from painting, cooking, and reading to learning new skills or languages. Some found solace in spirituality and found this as an opportunity to focus on religion and spirituality.

Some students utilized this time to focus on their studies as they had enough time for self-study but they also found it difficult to work on it consistently.

Looking forward

Although the students were enthusiastic about going back to college, they did have apprehensions about the SOPs especially the ones residing in the hostels.

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Participant # 5 explained

"Nothing will be exactly the same as before because we will have to wear masks and gloves and it is going to be really hard to get back on track"

The students felt that they had gotten used to the relaxed routine and would find it difficult to adjust to the hectic medical college routine when they return.

DISCUSSION

This study aimed to learn about the individual experiences of medical students during the COVID-19 pandemic in Pakistan. The analysis revealed that the major part of the experiences of medical students revolved around academics. Since academics play a vital role in the lives of medical students this is why a plethora of emotions and uncertainty accompanied the 180º change in teaching methodologies.

The students particularly had concerns about missing clinical rotations and wards. They felt that teaching clinical skills online was not useful. Similar findings were noted in a survey conducted in the United Kingdom. Despite discussing clinical conditions and case scenarios on online platforms, the students did not feel confident about their clinical competence[4]. Another point of concern for the students was related to assessments. The repeated postponement of the final exam date was a cause of stress for the students; they also questioned the integrity of online tests that were being taken by their respective colleges. To deal with this issue, Imperial College London was the first to conduct an open book exam (OBE) for final-year students, and questions were designed such that they could not be answered simply by searching sources over the internet[11]. However, to the best of our knowledge, no medical university in Pakistan adopted OBE for conducting the final professional exam. The unavailability of proper IT infrastructure in many medical colleges as well as at students' homes is a big hindrance in implementing online assessments in developing countries like Pakistan[12]. Not only did students highlight that connectivity issues impeded their learning, but also the incompetency of teachers to conduct online classes affected the process adversely. It has been noted that one of the major challenges to online learning in Pakistan is the lack of faculty training as a lot of medical colleges do not even have an IT department or a dedicated staff to train the faculty. This, in addition to the unwillingness of faculty to shift from face-to-face didactic lectures to interactive technology-assisted teaching and learning resulted in a huge problem because with COVID-19, this shift had to be made posthaste[12 13]. Therefore, the students' claim that online classes lacked interaction with teachers and those teachers were inexperienced in the use of technology does not come as quite a shock.

The majority of students reported an increase in anxiety and stress levels, especially at the initial stages of the lockdown. This was in part due to the disruption of studies but lack of social activities and concern that their loved ones might get the infection also significantly contributed to the psychological stress. Disruption of studies and fear of not graduating on time were especially noted by final-year MBBS students. Similar findings were reported by a study conducted in China to assess the psychological impact of COVID-19 on medical students[14]. Lockdown impacting social life, also played a significant role in increasing the anxiety of students as they were no longer able to meet with their friends, or colleagues or participate in extra-curricular activities, all of which are essential for good academic and personal formation[15]. In order to cope, many students invested their time in developing hobbies,

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interacting with their family, friends, and colleagues through various social media platforms and spending time in meditation, and becoming more religious[16 17]. Religion and spirituality have been shown to help people cope with anxiety and depression during difficult times, especially during COVID-19. Spirituality has such a positive impact that it has been suggested that healthcare workers should take religion and spirituality into account for the well-being of COVID-infected patients(18).

It is also noteworthy that while most students experienced improved quality of interactions with their families, not all students were so fortunate. Students facing domestic violence were forced to isolate themselves at home. Increased stress in the family members often leads to quick tempers and decreased patience and being restricted to their homes with limited access to support turned an already bad situation into a worse one[19]. The impact of COVID-19 imposed a lockdown on family life is huge. Although it has given time for valuable interactions the situation has become worse for members already going through challenging times. Divorce rates have increased considerably and families struggled to adapt to the new concept of "work from home"[20 21].

Limitations

Because of the diverse study population, it took a long time to reach out to medical students from various parts of the country, schedule, record, and transcribe interviews, it took researchers more than a year to complete the study and submit it for publication. This study does not include healthcare professionals and allied health/nursing students from Pakistan and this may be considered a logistic limitation of the study. Moreover, since this was a qualitative study that aimed at exploring the individual experiences of research participants so it cannot be generalized to the entire population.

RECOMMENDATIONS

For Institutions: It is highly recommended that all medical colleges must have student counselors who should be available for both onsite and online sessions. Not only should trained counselors be easily available but their availability should be advertised and shared repeatedly among the students. Students should be given protected time to spend in the counseling sessions. Healthy group activities, like outdoor activities, that require safe distancing should be resumed as early as possible.

The institution should be considerate and empathetic towards days off and sick leaves by students as well as faculty and staff. The faculty and staff should also have easy access to counselors and various mental health resources, not only to utilize for themselves but also to educate and enable them for their students and peers.

The colleges should provide leniency in fees by offering installments in order to provide relief to students in these financially unstable times. An effort to find effective on-campus assessment alternatives needs to be made. Online methods employed in developed countries can be altered to cater to resource-challenged institutions while still maintaining the integrity of the process.

Our thorough literature search did not reveal any published data regarding policies Pakistani colleges made post-pandemic to cater to issues raised. Further research is required to review the changes made by various institutions in Pakistan and to assess how they were received by students

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For Faculty and Staff: The faculty and staff in an academic institution play a major role in the mental and professional development of the students. They should discuss physical, psychological, and academic challenges faced by not only them but also their students to acknowledge these challenges and develop a sense of community to develop support for everyone. Discussions with the students in and outside of the classrooms should be encouraged. Non-judgmental and empathetic behavior must be showcased by the faculty and staff. Counselors should have institutional support in terms of the resources required to face this tremendous challenge.

For Students: The students should utilize the resources and support offered by their institutions and by the government and engage in healthy activities and discussions on and off-campus, educate themselves about mental health and look out for their peers who may be showing signs of distress or disinterest. Peer support is an excellent way to identify and initiate steps to mitigate the harm caused by stress and anxiety among students. Students should learn about the resources available and keep sharing the information with peers to reduce the stigma attached to mental health and access to mental health resources.

CONCLUSION:

The challenges associated with the COVID-19 pandemic are enormous. The physical, psychological, social, and academic changes and their effects are undeniable. Medical students with already stressful academic routines have faced unprecedented circumstances. The abrupt shift to online teaching where students struggled to effectively communicate with teachers and peers amidst poor internet connections, being housebound with no open avenue for personal interactions with friends, and short temperaments of family members are just a few of the challenges faced by the students. There is a need to further explore the experiences of medical students and faculty members and to identify the mitigating strategies adopted by institutions, faculty, and students. New and innovative ways to develop support within medical institutions are the need of the hour and more qualitative exploration in this regard can clarify the way toward a well-supported and well-energized post-COVID era.

AUTHORS' STATEMENT/CONTRIBUTIONS:

Sundus Iftikhar: Study conception and design, data acquisition and analysis, Manuscript writing and editing.

Sarosh Saleem: Study design, data acquisition, and analysis, Manuscript writing and editing.

Iqra Aziz: Manuscript writing and editing, data acquisition and analysis.

Momal Sana: Manuscript writing, data transcription, and analysis.

Competing Interest: None to declare.

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Ethics approval: Ethical approval from Shalamar Medical & Dental College-Institutional Review Board was obtained on 20/7/2020. Reference number: SMDC-IRB/AL/38/2020. IRB number: 0206.

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REFERENCES

1. Dhahri AA, Arain SY, Memon AM, Rao A, Mian MA. "The psychological impact of COVID-19 on medical education of final year students in Pakistan: A cross-sectional study." Ann Med Surg. 2020 Dec 1;60:445–50.

2. Salman M, Asif N, Mustafa ZU, Khan TM, Shehzadi N, Tahir H, et al. Psychological Impairment and Coping Strategies During the COVID-19 Pandemic Among Students in Pakistan: A Cross-Sectional Analysis. Disaster Med Public Health Prep. 2020;1–7.

3. Ferrel MN, Ryan JJ. The Impact of COVID-19 on Medical Education. Cureus. 2020 Mar 31;12(3).

4. Sethi BA, Sethi A, Ali S, Aamir HS. Impact of Coronavirus disease (COVID-19) pandemic on health professionals. Pakistan J Med Sci. 2020;36(COVID19-S4):1–6.

5. Hossain MM, Rahman M, Trisha NF, Tasnim S, Nuzhath T, Hasan NT, et al. Prevalence of anxiety and depression in South Asia during COVID-19: A systematic review and meta-analysis. Heliyon. 2021 Apr 1;7(4):e06677.

6. Zafar SMA, Tahir MJ, Malik M, Malik MI, Akhtar FK, Ghazala R. Awareness, anxiety, and depression in healthcare professionals, medical students, and general population of Pakistan during COVID-19 Pandemic: A cross sectional online survey. Med J Islam Repub Iran [Internet]. 2020 Oct 30 [cited 2022 Jan 18];34:131. Available from: /pmc/articles/PMC7787044/

7. Raja AKF, Raja MHR, Ashfaq M. The Experience and Perplexities of the COVID-19 Situation in Pakistan. Int J Med students [Internet]. 2020 [cited 2022 Oct 4];9(2):171–3. Available from: https://www.ijms.info/IJMS/article/view/668/746

8. Siddiqi H, Tahir MJ, Ullah I, Nazir A, Douba Z, Asghar MS, et al. COVID-19 pandemic: Direct effects on the medical education in Pakistan. Ann Med Surg [Internet]. 2022 Jul 1 [cited 2022 Oct 4];79:104073. Available from: /pmc/articles/PMC9225938/

9. Over 78pc medical graduates clear NLE - Newspaper - DAWN.COM [Internet]. Dawn newspaer. 2021 [cited 2022 Jan 18]. Available from: https://www.dawn.com/news/1643424

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10. Komer L. COVID-19 amongst the pandemic of medical student mental health. Int J Med students [Internet]. 2020 [cited 2022 Oct 4];8(1). Available from: http://www.ijms.info/IJMS/article/view/501

11. Dost S, Hossain A, Shehab M, Abdelwahed A, Al-Nusair L. Perceptions of medical students towards online teaching during the COVID-19 pandemic: A national cross-sectional survey of 2721 UK medical students. BMJ Open. 2020;10(11):1–10.

12. Farooq F, Azam Rathore F, Nasir Mansoor S. Challenges of Online Medical Education in Pakistan During COVID-19 Pandemic. J Coll Physicians Surg Pak [Internet]. 2020 [cited 2021 Oct 4];30(1):S67–9. Available from: https://doi.org/10.29271/jcpsp.2020.Supp1.S67.

13. Lakbala P. Barriers in implementing E-learning in Hormozgan University of Medical Sciences. Glob J Health Sci [Internet]. 2016 [cited 2022 Oct 4];8(7). Available from: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4965673/

14. Cao W, Fang Z, Hou G, Han M, Xu X, Dong J, et al. The psychological impact of the COVID-19 epidemic on college students in China. Psychiatry Res. 2020 May;287:112934.

15. Chinelatto LA, Costa TR da, Medeiros VMB, Boog GHP, Hojaij FC, Tempski PZ, et al. What You Gain and What You Lose in COVID-19: Perception of Medical Students on their Education. Clinics. 2020 Jul;75:1–3.

16. Noreen K, Rubab Z-, Umar M, Rehman R, Baig M, Baig F. Knowledge, attitudes, and practices against the growing threat of COVID-19 among medical students of Pakistan. PLoS One. 2020 Dec;15(12):e0243696.

17. Lyons Z, Wilcox H, Leung L, Dearsley O. COVID-19 and the mental well-being of Australian medical students: impact, concerns and coping strategies used: Australas Psychiatry. 2020 Aug;28(6):649–52.

18. Fardin MA. COVID-19 Epidemic and Spirituality: A Review of the Benefits of Religion in Times of Crisis. Jundishapur J Chronic Dis Care 2020 92 [Internet]. 2020 May 26 [cited 2022 Oct 5];9(2):104260. Available from: https://brieflands.com/articles/jjcdc-104260.html

19. Usher K, Bhullar N, Durkin J, Gyamfi N, Jackson D. Family violence and COVID-19: Increased vulnerability and reduced options for support. Int J Ment Health Nurs. 2020 Aug;29(4):549–52.

20. Lebow JL. Family in the Age of COVID-19. Fam Process [Internet]. 2020 Jun 1 [cited 2022 Oct 5];59(2):309. Available from: /pmc/articles/PMC7273068/

21. Lee J, Chin M, Sung M. How Has COVID-19 Changed Family Life and Well-Being in Korea? J Comp Fam Stud [Internet]. 2020 Aug 28 [cited 2022 Oct 5];51(3–4):301–13. Available from: https://www.utpjournals.press/doi/10.3138/jcfs.51.3-4.006

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Interview Guide

After maintaining an initial rapport with the participant, the following questions were asked:

Themes	Main Questions	Prompts
General Experience	What is your experience of COVID 19?	1. What were the good things about the lockdown? If any 2. What were the bad things about the lockdown, if any? 3. How would you describe your feelings during this time
Academic experience	How has COVID 19 affected you academically?	1. How did you cope up with studies? 2. How was your experience with online teaching and learning? 3. How did it affect your interaction with teachers and peers?
Personal experience	How has COVID 19 affected you personally?	1. How was your interaction with family and friends during this time? 2. How did you pass time or kept yourself busy? 3. Do you want to tell us about any hobbies that you pursued during this time?
Future expectations	How do you feel about going back to college when the lockdown is lifted?	1. How do you think it will affect your lives when you go back to college? 2. Are there any suggestions or comments you want to give?

The prompts and further explanatory questions were asked during the interviews to get insight into the comments of participants. The interviews were done in Urdu or English depending on the participant's preference. The audio recording was done and field notes were taken.

Manuscript: **EXPERIENCES OF MEDICAL AND DENTAL STUDENTS OF PAKISTAN DURING COVID-19 PANDEMIC LOCKDOWN: A QUALITATIVE STUDY**

Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist

Developed from:
Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

No. Item	Guide questions/description	Reported on Page #
Domain 1: Research team and reflexivity		
Personal Characteristics		
1. Inter viewer/facilitator	Which author/s conducted the inter view or focus group?	Page 4
2. Credentials	What were the researcher's credentials? E.g. PhD, MD	Page 13-14.
3. Occupation	What was their occupation at the time of the study?	Page 13-14.
4. Gender	Was the researcher male or female?	Page 13-14.
5. Experience and training	What experience or training did the researcher have?	Page 4.
Relationship with participants		
6. Relationship established	Was a relationship established prior to study commencement?	Page 4.
7. Participant knowledge of the interviewer	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	Page 4.
8. Interviewer characteristics	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	Page 3-5.

Domain 2: study design		
Theoretical framework		
9. Methodological orientation and Theory	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	Page 3
Participant selection		
10. Sampling	How were participants selected? e.g. purposive, convenience, consecutive, snowball	Page 4
11. Method of approach	How were participants approached? e.g. face-to-face, telephone, mail, email	Page 4
12. Sample size	How many participants were in the study?	Page 4
13. Non-participation	How many people refused to participate or dropped out? Reasons?	Page 4
Setting		
14. Setting of data collection	Where was the data collected? e.g. home, clinic, workplace	Page 4-5
15. Presence of non-participants	Was anyone else present besides the participants and researchers?	Page 4
16. Description of sample	What are the important characteristics of the sample? e.g. demographic data, date	Page 4-5
Data collection		
17. Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested?	Page 5
18. Repeat interviews	Were repeat inter views carried out? If yes, how many?	Page 4
19. Audio/visual recording	Did the research use audio or visual recording to collect the data?	Page 4
20. Field notes	Were field notes made during and/or after the inter view or focus group?	Page 4
21. Duration	What was the duration of the inter views or focus group?	Page 4
22. Data saturation	Was data saturation discussed?	Page 4
23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	Page 4
Domain 3: analysis and findings		

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Data analysis		
24. Number of data coders	How many data coders coded the data?	Page 5
25. Description of the coding tree	Did authors provide a description of the coding tree?	Page 5-6
26. Derivation of themes	Were themes identified in advance or derived from the data?	Page 5
27. Software	What software, if applicable, was used to manage the data?	Page 5
28. Participant checking	Did participants provide feedback on the findings?	Page 5
Reporting		
29. Quotations presented	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	Page 6-9
30. Data and findings consistent	Was there consistency between the data presented and the findings?	Page 6-9
31. Clarity of major themes	Were major themes clearly presented in the findings?	Page 6-9
32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	Page 6-9