

ORIGINAL ARTICLE

Impact of Covid-19 on Mental Well-Being of Medical Students

Mohi Ud Din, Areeha Raees, Masooma Noor, Memoona Siddique, Bakhtawar Shakeel, Nehal Shahjahan

ABSTRACT

Objective: The purpose of this study was to identify the detrimental effects of Covid-19 on mental health of medical students' lives and their daily routine besides coping activities.

Study Design: Descriptive cross-sectional study.

Place and Duration of Study: The research was carried out in a private medical college of Faisalabad. Its duration was from October 16, 2021 to December 31, 2021.

Materials and Methods: The sample size was 377. Mental well-being status was assessed by using Kessler's psychological stress scale (K10). The influence of Covid-19 on everyday activities and management methods were also investigated. Consent was taken beforehand. SPSS 25 was used to analyse the data. The 95% confidence interval was chosen, with a margin of error of 5%.

Results: According to psychological stress score, more than half of the students (52.3%) were likely to have a severe condition, with 86 (22.8%) having a moderate issue, 59 (15.6%) having a light disorder, and only 35 (9.3%) being healthy. Most of the medical students i.e., 160 (42.4%) chose exercise and fitness as measures to improve their mental well-being. Significant relationship was found between age groups and concerns related to Covid-19, coping activities, and distress ($p = 0.00$); gender and concerns related to Covid-19 ($p = 0.00$), coping activities ($p = 0.00$) and distress ($p = 0.001$); class year and concerns related to Covid-19, coping activities, and distress ($p = 0.00$).

Conclusion: The COVID-19 pandemic has had a significant impact on the mental health of medical students, with a notable increase in reported psychological distress. It is recommended that actions are needed to alleviate student stress, which can have several harmful implications.

Key Words: Covid-19, Medical Students, Mental, Well-Being.

Introduction

Prior to the COVID-19 pandemic, there was already a high frequency of mental health problems among medical students, with a meta-analysis finding that depressed symptoms and thoughts of self-harm were reported by 27.2% and 11.1% of medical students from 167 countries, respectively.¹ The COVID-19 pandemic has had a significant impact on the mental well-being of individuals worldwide, including medical students. Medical students have been affected by the pandemic in various ways, including disruptions to their education, social isolation, and increased stress and anxiety related to their clinical duties and the risks associated with

exposure to the virus. Also, the world economy suffered huge losses as a result of the outbreak, and the ambiguity and COVID-19-related fear was connected to an increase in mental illnesses and psychiatric problems.²

Medical students are particularly vulnerable to mental health problems, even under normal circumstances. However, the pandemic has exacerbated these issues. Medical students have reported increased levels of anxiety, depression, and burnout since the onset of the pandemic. Also, students who reported higher levels of anxiety and depression were more likely to report negative academic outcomes, including decreased motivation and difficulty concentrating. Due to the haste with which the communal shutdown and consequent changes occurred, many students struggled to acclimate to online learning and other curricula modifications.³ The disruption of normal study was exacerbated by the cancellation of previously arranged face-to-face lectures, clinical training, and patient interaction. Other effects, such as the loss of

Department of Community Medicine

Aziz Fatimah Medical and Dental College, Faisalabad

Correspondence:

Dr. Mohi Ud Din

Assistant Professor

Department of Community Medicine

Aziz Fatimah Medical and Dental College, Faisalabad

E-mail: dr.md89@outlook.com

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peer interaction and social engagement, have the potential to negatively impact student well-being and generate additional psychological discomfort, as well as the interruption of everyday living.⁴

Because of the COVID-19 outbreak, several schools and institutions have delayed normal instructional activities. Health education is perceived as difficult and cancellable.⁵ The removal of practical teaching sessions, which were generally substituted with video lectures, was one of the most significant changes.⁶ Medical students' mental health suffers as a result of such settings. Students have significant distress, which has a negative impact on medical students' intellectual performance and cognition. Also, it was understood that students who reported higher levels of stress and anxiety were more likely to report negative coping strategies, such as increased alcohol consumption and decreased exercise.⁷

University students have been particularly hard hit by the COVID-19 pandemic. The COVID-19 pandemic forced medical colleges to examine and restructure their courses, as well as make substantial adjustments to hospital placements.⁸ Given the data that medical students' mental health is already worse than the regular populace, such adjustments are certain to have a considerable impact on these students.⁹ However, there is presently limited information on the steps taken by medical students to improve their psychological health and attitude during the COVID-19 era. There is an urgent need to comprehend the psychological impact among medical students to create practical mitigation techniques, as it has been suggested that the psychological effects of COVID-19 are likely to last long after the epidemic is finished.

It is important for medical schools to provide resources and support to help students manage their mental health during this challenging time. The current COVID-19 scenario in the world has had a negative impact on students' everyday lives, as well as on their psychological health. This may include access to mental health services, support groups, and resources for developing coping strategies and stress management techniques. Therefore, the study aimed to explore the specific impact of the ongoing pandemic on the mental health of undergraduate medical students and to examine the coping mechanisms they employed in response.

Materials and Methods

During the months of October to December 2021, a descriptive cross-sectional study was conducted among medical students. Using the Raosoft sample size calculator, a sample size of 377 students was calculated. Written consent was taken from all the participants. Ethical approval was taken from institutional ethical committee. All those who are medical undergraduate students and gave consent were included. A structured and validated questionnaire was used in which the research participants' sociodemographic parameters and a self-rated evaluation of the influence of Covid-19 on their mental wellness state using the Kessler psychological stress scale 10 (K10) were both asked.¹⁰ K10 consists of ten questions with a five-point response scale; each question is scored from one to five, with one being "none of the time" and five being "all of the time." The ten questions' scores were then added together, with a minimum of 10 and a maximum of 50 score. High scores indicate high levels of psychological stress, whereas low scores suggest low levels of psychological stress. Other queries focused on the influence of COVID-19 on many aspects of life, issues concerning COVID-19, and the participants' actions and solutions for dealing with the issue. This data was analysed with SPSS version 25. To see the association between multiple variables, the Chi square test of significance was used. A p-value of less than 0.05 was considered significant. (Significance starts if the value in probability table is more than 3.84)

Results

Total number of medical students participated in the study were 377. Majority of the participants age group was above 21-year age group i.e., 210 (55.7%) while below 21 years comprised of 167 (44.3%) participants. There were 207 (54.9%) females in the study while 170 (45.1%) males were included. Most of the participants were from 4th year i.e., 94 (24.9%) and 3rd year i.e., 80 (21.2%) while there were 70 (18.6%) 1st year students, 68 (18%) 2nd year and 65 (17.2%) students were from final year. Majority of the students were from urban areas i.e., 295 (78.2%) while only 82 (21.8%) were from rural areas. Most of the students were day scholars i.e., 249 (66%) while hostelite students 128 (34%). The information was coded and treated confidentially. The most

detrimental effect of Covid-19 on medical students were on their studies as 237 students (62.9%) said that Covid-19 had negative impact on their studies. More than 50% of students (52%) said it had negatively affected their physical fitness and exercise; social relationships (50.7%); stress level (49.9%); sleep quality (49%), diet and eating habits (48.5%) and financial status (48.3%) and friendships (39.5%). The only positive impact which Covid-19 had on most of the medical students were on their family relationships (35%) as shown in fig. 1.

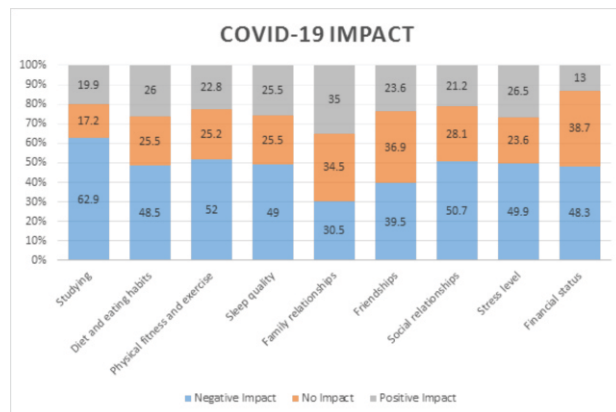


Figure 1: Covid-19's Influence on Medical Students' Life in Several Domains

When asked about concerns of negative impact of Covid-19, mostly i.e., 116 (30.8%) of participants were having concerns about being infected by Covid-19 while next most common concern was about problem in acquiring clinical skills i.e., in 84 (22.3%) participants while concerns about family members being infected with Covid-19 included 54 (14.3%) participants as shown in table I.

Table I: Concerns about Negative Impact of Covid-19

	Issues of concern	Frequency	Percent
1.	I'm anxious about the risk of one of my family members contracting Covid-19	54	14.3
2.	I'm apprehensive about being alone for an extended period of time	17	4.5
3.	I'm concerned about not being able to complete medical school	8	2.1
4.	I'm worried about not being able to travel overseas for examinations or optional courses	30	8.0
5.	I'm worried about getting ill with Covid-19	116	30.8
6.	I'm worried about dropping out of medical college	12	3.2
7.	I'm worried about not being able to learn additional clinical expertise and not being able to attend laboratories	84	22.3
8.	I'm concerned that after graduation, I won't be able to retrieve a good residency training position	26	6.9
9.	I'm concerned about not being able to participate in online classes and seminars using latest technology	30	8.0
	Total	377	100.0

When asked from medical students about activities and measures to enhance mental health, most of the medical students i.e. 160 (42.4%) chose exercise and fitness, followed by practicing hobbies like playing and listening to music, reading, watching movies, cooking and baking being done by 114 (30.2%) participants; while other measures were less commonly used i.e. meditation and praying (58, 15.4%); learning new language (20, 5.3%); Seeing a psychotherapy specialist (14, 3.7%); video chats and social media apps (11, 2.9%).

Table II: Responses of Participants to the (K10) Scale Questions

	None of the time		A little of the time		Some of the time		Most of the time		All of the time	
In the past 4 weeks,	N	%	N	%	N	%	N	%	N	%
1. How often did you get exhausted for no apparent reason?	8	2.1	54	14.3	110	29.2	152	40.3	53	14.1
2. How often did you feel nervous?	49	13.0	91	24.1	109	28.9	81	21.5	47	12.5
3. How frequently did you feel so anxious that nothing could make you feel better?	73	19.4	84	22.3	126	33.4	59	15.6	35	9.3
4. How often did you feel hopeless?	64	17.0	104	27.6	108	28.6	59	15.6	42	11.1
5. How often did you feel impatient or irritable?	33	8.8	87	23.1	137	36.3	82	21.8	38	10.1
6. How frequently did you get so agitated that you couldn't sit still?	84	22.3	93	24.7	119	31.6	52	13.8	29	7.7
7. How often did you feel depressed?	34	9.0	107	28.4	116	30.8	78	20.7	42	11.1
8. How often did you feel that everything was an effort?	31	8.2	91	24.1	126	33.4	87	23.1	42	11.1
9. How frequently did you feel so sad that nothing could make you feel better?	68	18.0	83	22.0	116	30.8	76	20.2	34	9.0
10. How often did you feel worthless?	75	19.9	81	21.5	123	32.6	68	18.0	30	8.0

Medical students' responses to the K10 scale questions were shown in table II. Majority i.e., 9 out of the 10 answers of the questions chose option "some of the time" while the only question whose answer was "most of the time" was about how often did you get exhausted for no apparent reason?

The pupils' average psychological distress score was 29.11 ± 7.25 . The scores categorized into likely to be well, or having a mild, moderate or severe disorder as shown in table III. According to psychological stress score, more than half of the students (52.3%) were likely to have a severe condition, with 86 (22.8%) having a moderate issue, 59 (15.6%) having a light disorder, and only 35 (9.3%) being healthy.

Table III. Levels of Distribution of Participants' Mental Disorders

		Mean	SD	N	%
Psychological distress score		29.11	7.25		
Likelihood of having a mental disorder	Likely to be well			35	9.3
	Likely to have a mild disorder			59	15.6
	Likely to have a moderate disorder			86	22.8
	Likely to have a severe disorder			197	52.3

Significant relationship was found between age groups and concerns related to Covid-19, coping activities, and distress ($p = 0.00$); gender and concerns related to Covid-19 ($p = 0.00$), coping activities ($p = 0.00$) and distress ($p = 0.001$); class year and concerns related to Covid-19, coping activities and distress ($p = 0.00$).

Discussion

The impact of the pandemic on students is significant, with long-term implications for medical students' future. This effect might be related to the direct psychological influence of the epidemic. Furthermore, new teaching techniques, such as online classrooms, may be difficult for some students to acclimate to; they may begin to feel behind their peers, which can contribute to their stressful situations. As a result of the pandemic's considerable mental health impairment, which has impacted even

the general people around the world, health care providers are under increased strain. While the debilitating mental illnesses may have developed because of lifestyle changes and prohibitive decisions made by higher authorities, the disease's implications on medical students are found to be greater because they are more susceptible and at greater levels of exposure as compared to general public.

In our study, the most common negative impact which students felt were on their studies experienced by more than 60% of students. A research done by Meganne N Ferrel et al also stated that, Covid-19 has impacted every student in its own way and that the negative effect because of disruption of normal study schedules and structure will be felt for long time.¹¹ A study done by Servin-Rojas et al showed that the majority of students (82%) would consider redoing their last year of clinical training since four out of five thought their education was inferior to that of earlier generations.¹² A study done by Sumair Naseem Qureshi et al showed that, majority of students strongly agreed that they had no difficulty and were extremely comfortable using internet and computer during covid-19 pandemic for their studies. This is in contrast to results of our study.¹³

Similarly, a research done by Zaza Lyons et al showed that studies, social activities and stress were main negative effects experienced by participants.¹⁴ A study done by Kazuki Tokumasu et al showed that A lower degree of perceived stress was linked to in-person interactions rather than online interactions.¹⁵

These results are similar to our study where studies, physical fitness, social relationships and stress were among the top of categories negatively affected by Covid-19. A study done by Sophie Rainbow et al showed that the overload, a high casualty count, and the dread of having the infection during the outbreak have all contributed to an increase in psychological distress which is similar to our study where almost half of participants have stress because of Covid-19.¹⁶

A study done by Naseem Ahmed et al showed that most of the participants were worried about getting the Covid-19 infection because of its high fatality rate and lack of facilities and also because they categorize coronavirus as the deadliest species.¹⁷ This is similar to our results where most of the participants concern

was being infected by Covid-19. Another major concern of participants of our study was problem in acquiring clinical skills. As stated by Suzanne Rose et al that students were likely to progress their schooling and assist to the effort in other crisis situations, such as natural catastrophes, blackouts, fires, and the September 11 attacks but with this highly communicable pandemic, however, students may unintentionally spread the virus or get the disease, therefore, there were restrictions for the betterment of their own.¹⁸ A study done by Nahal Salimi et al showed that students in higher education now confront more mental health difficulties as a result of the COVID-19 epidemic. College students now have to adjust to a virtual learning environment, make behavioral changes like social withdrawal, and deal with socioeconomic uncertainties. In particular, the 2019-2020 novel coronavirus has exacerbated the mental health challenges faced by college students.¹⁹

To improve mental well-being, some activities and measures are required as reported by our participants that most of them choose physical activities and exercise for this purpose. It is also reported by Conor Coyle et al that, most common measure taken by participants to improve mental well-being was physical activity.²⁰ Another study by Khaled Seetan et al found that baking, cooking, and leisure practice were by far the most preferred ways for people to enhance their mental health.¹⁰ Another study conducted by Jasminka Talapko et al depicted contrasting results to our study which showed that because of Covid-19 and lockdowns, physical activity decreased in students which was also a contributing factor in their psychological distress.²¹

Another study conducted by Ružica Dragun et al showed that there was no change in physical activity before and after Covid-19 and it remained stable.²² A study conducted by Hamza Mohammad Abdulghani et al showed that “indulging in religious activities” was the most common strategy adopted by students to improve their mental well-being.²³

Research done by Azeema Noor et al showed that 1/3rd of participants had effects on psychological health due to Covid 19. These results vary from our study where more than 90% had effect on their psychological health.²⁴ A study done by Afia Matloob et al showed that perceived stress was severe in 25%

among medical students. This is in contrast to our study where it is more than double.²⁵ A study done by Goolam Hussein Rassool et al showed that the majority of doctors reported a moderate level of stress (22%), while the majority of rescue workers reported extremely severe stress (10%). These results are in contrast to our study where (52%) of participants showed severe stress.²⁶ A study done by Asif Azeem et al showed that severe stress perceived by around 1/4th of participants which is very less as compared to our study.²⁷ A study done by Ala'a B. Al-Tammemi showed that most of the participants were likely to have a severe disorder and the mean of total K10 distress score was 34.2 ± 9.4 .²⁸ This is similar to our study where most of the participants were likely to have severe disorder but the total K10 distress score mean was less, i.e. 29.11 as compared to 34.2. A study done by F. Rolland et al showed that according to the psychological distress scale, 21% of medical students experienced a high level of discomfort, while 39% of pupils had moderate distress.²⁹

The research's limitations were the fact that it was a single-centre study, that sociodemographic factors varied, and that some class students were over-represented. Due to the study's non-probability sample design, it was unable to assess if the results were generally applicable to medical students. Additionally, the questionnaire was self-reported and online, which might cause recall and response bias. In addition to the variables we considered, there may be other factors that were related to the worsening of the prevalence of mental illness among medical college students.

Conclusion

The COVID-19 pandemic has had a significant impact on the mental health of medical students, with a notable increase in reported psychological distress. It is recommended that actions are needed to alleviate student stress, which can have a few harmful implications.

Future Recommendations

Future research on the effects of COVID-19 on mental well-being could focus on long-term impacts, vulnerable populations, effective coping strategies, and interventions to mitigate psychological distress. Exploring the relationship between mental health and pandemic-related factors like isolation,

economic stress, and misinformation could provide valuable insights. Additionally, investigating the effectiveness of telehealth services, online support groups, and digital mental health tools in addressing mental health challenges during and after the pandemic could be beneficial.

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CONFLICT OF INTEREST

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DATA SHARING STATMENT

The data that support the findings of this study are available from the corresponding author upon request.

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