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Anxiety And Depression Among Medical Students During Covid-19 Pandemic In Faisalabad

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Abstract

Objectives: To find out the frequency of anxiety and depression among medical students during the Covid-19 pandemic and to study their relationship with socio-demographic factors.
Methodology: Analytical cross-sectional study was conducted on medical students of various medical institutions in Faisalabad and their consent was taken beforehand. The study duration was 2 months (August to September 2021). Ethical approval was taken. The questionnaire was distributed online through google forms on social media platforms to all MBBS students of a medical college and the total number of responses received was 452. Non-probability purposive sampling was done. The inclusion criteria were those students who gave consent and filled out the questionnaire and the exclusion criteria were those who didn't concede. A validated and structured questionnaire was used. The questionnaire consisted of four sections: demographic data; COVID-19-related attitudes and practising preventive behaviours, generalized anxiety disorder scale – 7 (GAD-7) to determine anxiety among medical students and patient health questionnaire – 9 (PHQ-9) to determine depression.
Results: Most of the students i.e. 132 (29.2) were having mild anxiety, followed by minimal, moderate and severe anxiety. Similar scores were observed in PHQ-9 results which showed mostly students were having mild depression i.e. 127 (28.1) followed by minimal, moderate, moderately severe and severe depression respectively. Average GAD-7 score was 8.73 (M = 8.73; SD = 5.78); average PHQ-9 score was 10.78 (M = 10; SD = 7.1). Significant relationship was found between gender (p = 0.00), year of study (p = 0.039), suffered Covid-19 in present or past (p = 0.00), afraid of getting Covid-19 (p=0.001) with anxiety and gender (p = 0.00), suffered Covid-19 in present or past (p=0.001) and afraid of getting Covid-19 infection (p=0.001) with depression.
Conclusion: There was a high prevalence of medical students suffering from anxiety and depression during Covid-19. The students in the age group above 21 years, females, year of study (4th year) and afraid of getting Covid-19 infection were at higher risk of psychological distress in a pandemic. It is important to find ways to alleviate the pressure and fear of college students, provide them with more social support, and help them adapt to the changes in their learning styles and lifestyle.
Keywords: Anxiety, Covid-19, depression, medical, students

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1. Introduction

Corona Virus disease also known as Covid 19 causes an illness known as severe acute respiratory syndrome coronavirus 2 (SARS CoV 2 formerly called 2019-nCoV). It was first identified in the city of WUHAN, China.1 It started as a respiratory illness outbreak which very rapidly changed into a pandemic and overpowered the whole world in days.[2] It was declared a Global Pandemic in the second week of March 2020 by the World Health Organisation since it has changed the life of people worldwide.[3] Hence many countries implemented anti-epidemic measures such as restricting people to their homes, National and international shutdown of flights and closing down public spaces, markets, and educational institutes to control and prevent the spread of this deadly virus.[4]
The first Covid 19 case in Pakistan was reported in Karachi on February 26, 2020, and this deadly virus spread into various regions nationwide.5 So Pakistan like many countries of the world put a lockdown strategy into work on 23 March 2020 to ensure social distancing and home quarantines because there was not any effective drug available at that time against Covid 19.[6] Hence all the educational institutes switched the education to the online system.[7] This experience of online education during lockdown and the uncertainty about the future of professional careers and academic status has produced mental stress and anxiety among students.[8] Greater exposure to misinformation through social media is also a cause of

stress and depression.[9] The fear of contracting the disease and of loved ones being positive for the virus and its consequences lead to mental health issues. During the lockdown, people started losing jobs as all the businesses were affected and this resulted in a financial burden, also the people were restricted to their homes, and there were no physical and recreational activities, all leading to a state of mental chaos.[10]

Under all these circumstances, it is the need of the hour to explore the mental health issues among medical students during the COVID-19 Pandemic. This study is expected to measure the frequency of anxiety and depression among medical students of Faisalabad during Covid 19 pandemic.

2. Materials & Methods

The study design was an analytical cross-sectional study. It was conducted on medical students of Faisalabad and their consent was taken beforehand.

The study duration was 2 months (August to September 2021). Ethical approval was taken from the ethical review committee. The questionnaire was distributed online through google forms on social media platforms to all MBBS students of a medical college and the total responses received were 452 (response rate = 90%). Non-probability purposive sampling was done. The inclusion criteria were those students who gave consent and filled out the questionnaire and the exclusion criteria were those who didn't concede.

A validated and structured questionnaire was used based on a framework from previous studies about anxiety and depression among university students during the Covid-19 pandemic.[11]

The questionnaire consisted of four sections: demographic data; COVID-19-related attitudes and practising preventive behaviours, generalized anxiety disorder scale – 7 (GAD-7) to determine anxiety among medical students and patient health questionnaire – 9 (PHQ-9) to determine depression. In the GAD-7 questionnaire, the questions were used for screening the anxiety state of an individual on a scale ranging from '0 = not at all' to '3 = nearly every day'. The levels of anxiety for the study were categorized as 'minimal = 0-4,' 'mild = 5–9,' 'moderate = 10–14' and 'severe = 15-21.' In the PHQ-9 questionnaire, the questions were used for screening depression of an individual on a scale ranging from '0 = not at all' to '3 = nearly every day'. The levels of depression for the study were categorized as 'minimal = 1-4', 'mild = 5–9', 'moderate =10–14,' 'moderately severe = 15–19,' 'severe = 20-27.' Data was coded and confidentiality was maintained. SPSS version 25 was used for the analysis of this data. Percentages and frequencies were calculated. The Chi square test of significance was applied to see the relationship between different variables. A p-value ≤ 0.05 was taken as significant.

3. Results

The questionnaire was distributed online through google forms on social media platforms to all MBBS students and the total number of responses received was 452 (response rate = 90%). 8 responses were found invalid and excluded from analysis, so total sample size came out to be 444. The demographic details of participants are shown in table-1.

Attitudes and preventive behaviours practised by students and their opinion regarding online classes and campus closure were shown in Table 2.

GAD-7 and PHQ-9 scores of medical students were shown in table 3.

Most of the students i.e. 132 (29.2) were having mild anxiety, followed by minimal, moderate and severe anxiety.

Similar scores were observed in PHQ-9 results which showed most students were having mild depression i.e. 127 (28.1) followed by minimal, moderate, moderately severe and severe depression respectively. Average GAD-7 score was 8.73 (M = 8.73; SD = 5.78); average PHQ-9 score was 10.78 (M = 10; SD = 7.1).

Prevalence of anxiety and depression among different perspectives of medical students is shown in table 4.

A significant relationship was found between gender (p = 0.00), year of study (p = 0.039), suffered Covid-19 in present or past (p = 0.00), afraid of getting Covid-19 (p=0.001) with anxiety and gender (p = 0.00), suffered Covid-19 in present or past (p=0.001) and afraid of getting Covid-19 infection (p=0.001) with depression.

Table-1 Demographic details of participants

S.No.			Frequency (n=444)	Per cent
2	Age group	Above 21 years	266	58.8
		Below 21 years	178	39.4
3	Gender	Male	168	37.2
		Female	276	61.1
4	Year of Study	1st Year	83	18.4
		2nd Year	58	12.8
		3rd Year	100	22.1
		4th Year	140	31.0
		5th Year	63	13.9
5	Residency	Rural	72	15.9
		Urban	372	82.3
6	Day scholar or Hostelite?	Day Scholar	308	68.1
		Hostelite	136	30.1
7	Father/guardian occupation	Business/Self-employed	216	47.8
		Government Job	161	35.6
		Private Job	67	14.8
8	Father income	Below 50,000	85	18.8
		50,000-100,000	155	34.3
		100,000-150,000	107	23.7
		Above 150,000	97	21.5
9	Suffered with Covid-19 infection in past or present	Yes	107	23.7
		No	337	74.6
10	Afraid of getting Covid-19 infection?	Yes	271	60
		No	173	38.3

Table-2 Attitude and preventive behaviours

S.No.			Frequency	Per cent
1	Satisfied with online classes	Yes	152	33.6
		No	292	64.6
2	If campuses remain closed due to Covid	Continue online classes	242	53.5
		Prefer to delay the session	202	44.7
3	Agree with stay-at-home order from government authorities	Yes	324	71.7
		No	120	26.5
4	Washed their hands and used antiseptic hand wash more frequently than before	Yes	385	85.2
		No	59	13.1
5	Stopped attending bigger gatherings and functions because of the Covid situation	Yes	377	83.4
		No	67	14.8

6	Stopped going out socializing, with friends, and family because of the Covid situation	Yes	321	71.0
		No	123	27.2
7	Altered transportation methods because of the Covid situation?	Yes	275	60.8
		No	169	37.4
8	Before the Covid pandemic, how often did you worry about your health?	All the time	25	5.5
		Never	79	17.5
		Occasionally	266	58.8
		Often	74	16.4
9	Have you worried about your older relative's health because of Coronavirus	Yes	409	90.5
		No	35	7.7
10	In the past week—have you become more/less worried about the Covid-19 risks	Less worried	109	24.1
		More worried	148	32.7
		No	48	10.6
		Same worried	139	30.8
11	In the last week have you cancelled any plans due to the Covid situation	Yes	278	61.5
		No	166	36.7

5. Discussion

After its origin, Covid-19 spread worldwide and has had an everlasting effect on the physical and psychological health of the population including people of all ages. This current study assessed the prevalence of anxiety and depression among medical students during the Covid pandemic and in the recently announced lockdown in the month of September 2021. It may be thought that young people will be less psychologically affected by COVID-19 due to the low death rate because of COVID-19 and the ability to easily overcome the physiological symptoms caused by the virus.[12] However, it is predicted that young people will be negatively affected by this pandemic process and will experience psychological problems. [13] Most of the participants belong to the age group above 21 years, females and were in the clinical phase of the study which is in contrast to the study conducted by Ajay Risal et al where most of the participants were males but the participants mean age being 22.2 and they also constituted more students in the clinical phase of the study. It was also found that almost one-third of the medical students in Nepal hurt their mental health due to covid-19. [14]

In our study, more than three-fourths of medical students were having depression ranging from mild to severe which is similar to the results of a study conducted by Md. Akhtarul Islam et al et al where 82.4% of students were having mild to severe depressive symptoms.

Table-3 GAD-7 and PHQ-9 scores

GAD-7 Scores		
Categories	Frequency	Per cent
Minimal anxiety (0-4)	125	27.7
Mild anxiety (5-9)	132	29.2
Moderate anxiety (10-14)	108	23.9
Severe anxiety (15-19)	79	17.5
PHQ-9 Scores		
	Frequency	Per cent
Minimal depression (1-4)	97	21.5
Mild depression (5-9)	127	28.1
Moderate depression (10-14)	91	20.1
Moderately severe depression (15-19)	66	14.6
Severe depression (20-27)	63	13.9

In the case of anxiety, 87.7% of students exhibited mild to severe anxiety symptoms but in our study, a relatively less number of participants i.e. 70.6% exhibited mild to severe anxiety. Out of the total students suffering from an anxiety disorder, females had lower anxiety symptoms than males (66.33%), whereas in our study, females showed higher anxiety.[11] Average GAD-7 score of our study was 8.73 (M =

8.73; SD = 5.78); average PHQ-9 score was 10.78 (M = 10; SD = 7.1). this is almost similar to a study conducted by Carlos Izaias Sartorão Filho et al where the average GAD-7 score was 9.18 (M = 9.18; SD = 4.75); the average PHQ-9 score was 12.72 (M = 12.72; SD = 6.62). Results of that study indicate a significant relationship between GAD-7, PHQ-9 and females which is similar to our study.

Table-4 Prevalence of anxiety and depression among medical students

Variable	**Anxiety, N (%)**			**Depression, N (%)**			
	Minimal & Mild	Moderate	Severe	Minimal & Mild	Moderate	Moderately severe	Severe
Age group							
> 21 years	156 (35.1)	66 (14.9)	44 (9.9)	141 (31.8)	52 (11.7)	36 (8.1)	37 (8.3)
< 21 years	101 (22.7)	42 (9.5)	35 (7.9)	83 (18.7)	39 (8.8)	30 (6.8)	26 (5.9)
Gender							
Male	114 (25.7)	36 (8.1)	18 (4.1)	99 (22.3)	40 (9)	14(3.2)	15 (3.4)
Female	143 (32.2)	72 (16.2)	61 (13.7)	125 (28.1)	51 (11.5)	52 (11.7)	48 (10.8)
Year of Study							
1st	38 (8.6)	20 (4.5)	25 (5.6)	31 (7)	16 (3.6)	18 (4.1)	18 (4.1)
2nd	31 (7)	19 (4.3)	8 (1.8)	28 (6.3)	16 (3.6)	5 (1.1)	9 (2)
3rd	61 (13.8)	29 6.5)	10 (2.3)	55 (12.4)	23 (5.2)	12 (2.7)	10 (2.3)
4th	87(19.6)	27 (6.1)	26 (5.9)	75 (16.9)	27 (6.1)	19 (4.3)	19 (4.3)
5th	40 (9.1)	13 (2.9)	10 (2.3)	55 (12.4)	9 (2)	12 (2.7)	7 (1.6)
Residency							
Rural	48 (10.9)	14 (3.2)	10 (2.3)	39 (8.8)	17 (3.8)	3 (0.7)	13 (2.9)
Urban	209 (47.1)	94 (21.2)	69 (15.5)	185 (41.6)	74 (16.7)	63 (14.2)	50 (11.3)
Are you currently?							
Day scholar	175 (39.4)	80 (18)	53 (11.9)	155 (34.9)	60 (13.5)	51 (11.5)	42 (9.5)
Hostelite	82 (18.5)	28 (6.3)	26 (5.9)	69 (15.6)	31 (7)	15 (3.4)	21 (4.7)
Suffered Covid 19 infection in the present or past							
Yes	43 (9.7)	40 (9)	24 (5.4)	38 (8.6)	27 (6.1)	24 (5.4)	18 (4.1)
No	214 (48.2)	68 (15.3)	55 (12.4)	186 (41.9)	64 (14.4)	42 (9.5)	45 (10.1)
Afraid of getting Covid-19 infection							
Yes	140 (31.5)	74 (16.7)	57 (12.8)	122 (27.5)	64 (14.4)	38 (8.6)	47 (10.6)
No	117 (25.3)	34 (7.7)	22 (5)	101 (22.9)	27 (6.1)	28 (6.3)	16 (3.6)

Using a cut-off score of 10 for GAD-7, 157 (46.17%) students were identified with moderated or severe symptoms of anxiety which is almost similar to our study where 41.4% of students depicted moderate to severe anxiety. For the PHQ-9 score, using a cut-off of 10, 219 (64.41%) students were identified with moderate or severe symptoms of depression which is in contrast to our study where less than half of participants showed moderate to severe depression.[15]

A rapid systemic review with meta-analysis done by Isabel Lasheras yielded an estimated prevalence of anxiety of 28% which is in contrast to the results of our

study where more than three-fourths of participants showed the prevalence of anxiety.16 Higher levels of anxiety were related to female gender, lower grade point average (GPA), and experience of COVID-19 symptoms. Students with lower GPAs and prior experience of COVID-19 symptoms were more likely to feel depressed. These results are similar to our study where a significant relationship was found between anxiety, depression and gender, prior confirmed or suspected infection or fear of having Covid-19.17

A study done by Mingli Yu et al showed that the proportion of college students who thought their social interactions were affected with friends and family members was 37.7%, and depressive symptoms were also higher in them. This is in contrast to our study where the social interaction of 71% of students was affected. Mingli Yu et al also depicted that 28.9% of the students gave an opinion about the preference for online education over traditional and 36.3% of the college students were dissatisfied with online education, and they showed a higher prevalence of depressive symptoms in contrast to our study where 64.6% of students were dissatisfied with online education. 18

COVID-19 spreads rapidly all over the world. To some extent, this study adds to the research on college student's mental health. Relationship between demographic characteristics, COVID-19-related perception and behaviour, perception of online education, anxiety and depression among college students were studied at the same time. The limitations of the study include self-reported online questionnaires, which could lead to recall and response bias to some extent. There may be other factors in addition to the variables we took into account that were associated with the prevalence of anxiety and depressive symptoms in medical college students.

5. Conclusion

There was a high prevalence of medical students suffering from anxiety and depression during Covid-19. The students in the age group above 21 years, females, year of study (4th year) and afraid of getting Covid-19 infection were at higher risk of psychological distress in a pandemic. It is important to find ways to alleviate the pressure and fear of college students, provide them with more social support, and help them adapt to the changes in their learning styles and lifestyle.

CONFLICTS OF INTEREST- None

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M.U.D, H.U.N, M.T. - Conception of study
M.U.D, H.U.N, M.J, M.T. - Experimentation/Study Conduction
M.J. - Analysis/Interpretation/Discussion
M.U.D, M.T, S.S, J.W, H.U.N. - Manuscript Writing
J.W. - Critical Review
M.U.D. - Facilitation and Material analysis

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