

## Anxiety and depression in medical students of Sindh province during the Covid -19 pandemic

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**Objective:** To evaluate the anxiety and depression in medical students due to COVID-19 in Sindh, Pakistan.

**Methodology:** This cross-sectional study was conducted on students of medical and dental colleges throughout the province of Sindh, including the public sector and private sector medical colleges. Anxiety and depression were assessed by generalized anxiety disorder-7 (GAD-7) and patient health questionnaire-9 (PHQ-9). Data were analyzed by SPSS version 26.

**Results:** A total of 1445 medical students participated in the study. The average age of the

students was  $21.87 \pm 3.16$  years. Various levels of anxiety and depression, ranging from mild to severe, were observed in 78.1% and 76.9% of students, respectively.

**Conclusion:** Anxiety and depression most commonly affect medical students even in reasonable condition. In the current situation of the pandemic, they are overstressed, and the prevalence of anxiety and depression relatively increased significantly. (Rawal Med J 202;45:947-950).

**Keywords:** Anxiety, depression, covid-19.

### INTRODUCTION

The coronavirus, also known as the SARS-CoV-2, was recently diagnosed in patients of unexplained pneumonia in the Chinese city of Wuhan at the end of the year 2019.<sup>1</sup> It was declared a pandemic by WHO in March 2020 as almost no nation was spared from the effects of this disease.<sup>2</sup> Millions of cases have been recorded worldwide with lots of deaths.<sup>3</sup> Even looking at the number of coronavirus-infected patients at Pakistan as on August 8, 2020, the total number of diagnosed cases stands at 283,469 with 6,066 deaths.<sup>4</sup>

In addition to the biological perspective, these outbreaks bring long-lasting adjustments in daily life, and coping successfully requires psychological endurance. Epidemics have been associated with the dramatic individual social and psychological effects.<sup>5,6</sup> Quarantine has higher chances of leaving an adverse psychological and social impact, including the long-lasting post-traumatic stress symptoms due to exposure to infectious disease.<sup>7</sup>

Anxiety and depression in medical students studying at the public sector institutions of Pakistan is around 43.7% and 43.8%, respectively.<sup>8,9</sup> In

contrast, the increased rate of anxiety and depression is observed in students of private sector institutions as compared to the public sector, which stands at 60%.<sup>10</sup> The reason for this study was to evaluate the anxiety of depression in medical students in this era of the pandemic due to COVID-19.

### METHODOLOGY

This cross-sectional study was conducted on students of medical and dental colleges throughout the province of Sindh, including the public sector and private sector medical colleges. The study was conducted from May to July 2020. Non probability consecutive sampling technique was used. Ethical approval was obtained from the ethical review committee and informed consent was taken from all participants.

The questionnaire included the responses on demographic and social features such as age, gender, marital status, course i.e., medicine or dentistry, year of study, the income of parents, any psychological problem before the pandemic, being involved in smoking or substance abuse and effects

of a pandemic on both these factors. Concerns of students relevant to the pandemic in terms of impact on their education, anyone from family or friends got infected or feared getting infected with the coronavirus. Anxiety and depression were assessed by generalized anxiety disorder-7 (GAD-7) and patient health questionnaire-9 (PHQ-9) questionnaires.

**Statistical Analysis:** Statistical analysis was performed using SPSS version 26.

## RESULTS

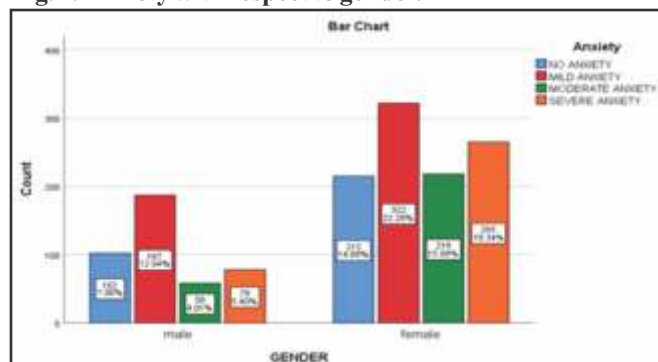
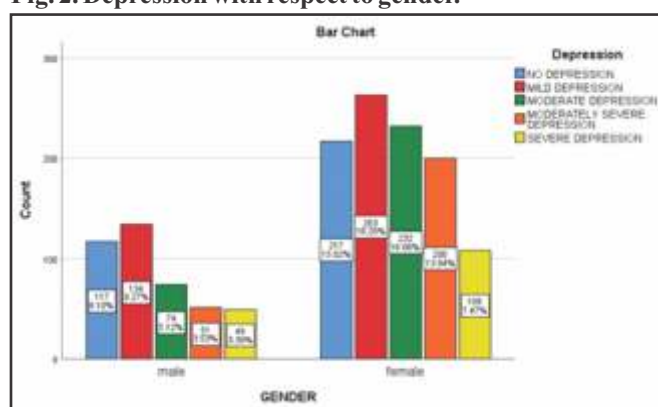
A total of 1445 medical and dental students participated in the study, 70.6% (1020) were female and 29.4% (425) male. Mean age was  $21.87 \pm 3.16$  years. Out of 1445 participants, 84.4% (1219) were enrolled in MBBS program and 15.6% (226) were enrolled in BDS program (Table).

As the family and friends of 21% and 50.4% of the students were infected with COVID-19, most of

them were concerned about them and their families getting infected from the virus. 58.3% of the students were worried due to self-isolation, and 67.8% were concerned due to social distancing from the family members. 86.3% (1247) students were worried about the academic delays. The majority of the students, 82.9% (1198), were not satisfied with online classes started by the medical colleges. Concerning the history of psychological problems faced by the medical students, 37.4% said that they experienced psychological issues even before the pandemic. 12% of the students (6.5% male students and 5.5 female students) used to smoke before the pandemic, and it increased to 14.5 due to the psychological effects of COVID-19. Similarly, 4.8% of the students were involved in substance abuse before the pandemic, and it increased significantly to 15.8% of students. Institutions did not contact students in this period in 70.2% of cases.

**Table. Descriptive statistics.**

<b>Age</b>		<b>21.87 ± 3.16</b>	
<b>Gender</b>	Male	425	29.4%
	Female	1020	70.6%
<b>Marital status</b>	Married	133	9.2%
	Unmarried	1281	88.7%
	Divorced	31	2.1%
<b>Course</b>	MBBS	1219	84.4%
	BDS	226	15.6%
<b>Year of study</b>	1 <sup>ST</sup> YEAR MBBS	487	33.7%
	2 <sup>ND</sup> YEAR MBBS	117	8.1%
	3 <sup>RD</sup> YEAR MBBS	79	5.5%
	4 <sup>TH</sup> YEAR MBBS	279	19.3%
	FINAL YEAR MBBS	483	33.4%
<b>Institution</b>	Public sector medical college	768	53.1%
	Private sector medical college	677	46.9%
<b>Residence</b>	Hostel	541	37.4%
	Home	904	62.6%
<b>Average income of family</b>	Less than Rs. 50000	287	19.9%
	Rs. 60000	235	16.3%
	Rs. 80000	199	13.8%
	Rs. 100000	232	16.1%
	More than Rs. 100000	492	34%

**Fig. 1. Anxiety with respect to gender.****Fig. 2. Depression with respect to gender.**

Abnormal levels of anxiety were observed in 78.1% of the medical students ranging from mild to severe anxiety. No anxiety was observed in 317(21.9%) students. Mild anxiety was observed in 509(35.2%) of students and moderate and severe anxiety was observed in 276(19.1%) and 343(23.7%) of cases (Fig. 1). Abnormal levels of depression were recorded in 76.9% of medical students ranging from mild to severe depression. No depression was observed in 334(23.1) students. Mild depression was observed in 397(27.5%) of students. moderate, moderately severe and severe depression was observed in 306(21.2%), 251(17.4%) and 157(10.9%) of students respectively (Fig. 2).

## DISCUSSION

A lot of studies were conducted on the effects of COVID-19 involving healthcare professionals ranging from the nursing staff to physicians to surgeons. Undergraduate students of medicine and dentistry were the most neglected community during this pandemic, so we decided to explore the

psychological effects of anxiety and depression on the undergraduate medical and dental students as a consequence of COVID-19. Medical colleges are the most challenging place for the students and leave a negative impact on students' performance, physical, psychological, and social well-being.<sup>11,12</sup>

Students find it challenging to adapt to the environment as they stay away from their family and friends, increase educational workload, peer pressure from the faculty, and even the monetary problem they face.<sup>13</sup> Anxiety in students might be due to increased distances from family and friends due to isolation, and lack of communication is the known factor for the development of anxiety disorders.<sup>14,15</sup> As it was evident in our study that majority of students were worried about the self-isolation and social distancing from the family as well. Healthcare workers were mostly concerned about their families getting infected from the COVID-19.<sup>16</sup>

However, the online classes were started by the institutions, but about 82.9% were not satisfied with the online courses. Depression in medical students is associated with psychological problems such as anxiety, fatigue, suicidal ideas, and substance abuse.<sup>17,19</sup> Due to stress resulting from COVID-19, smoking in medical college students increased from 12% to 14.5%, and most importantly, the substance abuse showed a significant increase as compared to smoking as a result of stress during the pandemic from 4.8% to 15.8%. A study on Chinese university students showed increased levels of anxiety specifically after the outbreak of COVID-19.<sup>20</sup> This was also confirmed by a study by Mei et al which showed that health emergency leads to psychological distress on the college students which can present as anxiety, fear, worries and many other<sup>21</sup>

Based on the results of our study, anxiety and depression were significantly higher as compared to studies from other authors conducted on medical students in China and Iran.<sup>22,23</sup> There should be social support for the undergraduate medical students as it would have proved morale booster during these tough times as majority of students 87.1% believed that there must have been the counseling services for the students who were

stressed as a result of academic delays and even previous studies have shown that social support helps alleviate the psychological distress.<sup>24</sup>

## CONCLUSION

Anxiety and depression most commonly affect medical students even in reasonable condition. In the current situation of the pandemic, they are overstressed, and the prevalence of anxiety and depression relatively increased significantly.

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**Conflict of Interest:** None declared  
Rec. Date: Aug 11, 2020 Revision Rec. Date: Oct 24, 2020 Accept Date: Nov 5, 2020

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