

Impact of COVID-19 on medical education and anxiety levels of medical students

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Objective: To study the impact of covid-19 on medical education and anxiety level of medical students.

Methodology: This prospective cross sectional study was done at Shifa College of mMedicine, Islamabad, Pakistan from 1st October 2020 to 15th November 2020. Medical students were randomly selected and a preformed questionnaire was circulated among them via Online Google forums. We used GAD-7 scale. Data were analyzed using SPSS version 23.

Results: Out of 122 respondents, 69 (56.5%) were female. Mean age was 22.1 ± 1.7 years. Almost all students had online education during COVID-19,

however, 64 (52.4%) of them faced communication problems during online education. Only 32 (26.2%) were satisfied with this method. In this study, 46 (37.7%) respondents had anxiety; 38.0% had moderate to severe and 27.0% had mild anxiety. Most of the anxious respondents were significantly younger (21.6 vs. 22.5 years, $p = 0.01$). Females were significantly more anxious (69.6% vs. 30.4%) than males ($p < 0.03$).

Conclusion: During Covid-19 pandemic, anxiety and stress levels have increased among medical student.

Keywords: Covid-19, pandemic, medical students, psychosocial impact, online education.

INTRODUCTION

The effect of COVID-19 pandemic on medical education is unprecedented, especially in resource limited countries like Pakistan. The pandemic resulted in introduction of novel methods of delivering education to medical students.¹ Lectures have rapidly been developed to be delivered online as webinars using Zoom, Google classroom and Microsoft teams.² This new method came with its own problems such as technical issues and active student participation.³ Instead of face to face patient interaction during clerkship rotations, students had to adapt to virtual learning.⁴ One study among final year medical students showed that most of students were not fully ready for beginning to work as a doctor, showing that the suspension to student assistantships had a significant impact on exam preparation.⁵ A study on medical students of China indicated that effects on daily life, as well as delays in academic activities, were associated with anxiety symptoms.⁶ Other studies showed female students had higher mean stress level than males.^{7,8}

On-campus educational activities were halted in our institute in mid- March 2020 with swift transition to online teaching through Zoom or Google classroom. This was a whole new experience in a developing country like Pakistan where learning through online means has scarcely been carried out before.⁹ Online webinars were conducted to help teach faculty and medical students on how to operate these software.¹⁰ On the other hand, the need for patient contact and face to

face teaching was greatly felt for clinical year 4th and 5th- year MBBS students.¹¹ Therefore, it was very important to study how students perceive the impact of COVID-19 on medical education and the degree of anxiety.

METHODOLOGY

All MBBS degree students were included in the study. Google survey forms were circulated through their official university email address and 122 students completed the survey. For the analysis purpose, junior students were those in their first three years, and seniors were those in their fourth and fifth years. The study questionnaire was designed comprising of seven main components; the demographic characteristics, place of residence during pandemic, personal protection & parameters taken during COVID – 19 lockdown, knowledge about COVID – 19, online education & how it was helpful, psychological stresses during COVID – 19 & online education. The Institutional Review Board approved the study and the objectives of the study were explained to all students.

The level of stress and anxiety was assessed using the 7-item Generalized Anxiety Disorder Scale (GAD-7). This scale ranges from 0 to 21, in which a total score of 0 to 4 shows no anxiety symptoms, a score of 5 to 9 means mild anxiety, a score of 10 to 14 suggests moderate anxiety and a total score of ≥ 15 shows that students have severe anxiety. Data was compiled over two weeks after students had joined for on campus activities in October 2020.

Statistical Analysis: Data were analysed on SPSS version 23. Continuous variables were described as mean and standard deviation and categorical variables as number and percentage, respectively. Difference in categorical variables was analysed using Chi-square test and $p < 0.05$ was taken as significant.

RESULTS

Out of 122 respondents, 69 (56.5%) were female. Mean age was 22.1 ± 1.7 years. Most of students were from 3rd, 4th and final year MBBS. There were 27 (22.9%) students who travelled abroad during COVID-19

lockdown. We found that 111 (90.1%) students lived with parents during lockdown (Table 1).

When asked how often you are bothered by nervousness, anxious and on the edge 25 (20.5%) said nearly every day and 36 (29.5%) said several days. When asked how often you feel not able to stop or control worrying, majority 44 (36.1%) said several days. There were 57 (46.7%) experienced feelings as if something awful might happen. In this study 46 (37.7%) respondents had anxiety according to GAD-7 scale. Around 38.0% had moderate to severe level of anxiety and 27.0% had mild anxiety. Most of the anxious

Table 1: Knowledge and practices of respondents regarding COVID 19 (n = 122).

	Number	% age
Did you travel Abroad during COVID 19 lockdown?		
Yes	27	22.9%
No	95	77.8%
Place of Residence during COVID 19 Lockdown		
With parents	111	90.1%
In hostel	3	2.5%
With relatives	8	6.6%
Are you familiar with the symptoms of COVID 19?		
Yes	120	98.4%
No	2	1.6%
Did you have a Steady Family Income during COVID 19 Lockdown?		
Yes	106	86.9%
No	16	13.1
Was there any death due to COVID 19 among your family members/nearby relatives		
Yes	28	22.9%
No	94	77.1%
Did you find Online teaching as helpful as on- campus teaching?		
Yes	32	26.2%
No	90	73.8%
Did COVID 19 lockdown&/or Online Teaching influence your Physical Health?		
Yes	66	54.1%
No	56	45.9%
Do you think you were more stressful during COVID 19 lockdown?		
Yes	86	70.5%
No	36	29.5%

Table 2: Association of demographic features and student's perceptions with anxiety (n = 122).

	Anxiety (n = 46)	No Anxiety (n = 76)	p-value
Age (years)			
Mean \pm SD	21.6 \pm 1.8	22.5 \pm 1.7	0.01
Gender			
Male	14(30.4%)	39(50.7%)	0.03
Female	32(69.6%)	37(49.3%)	
Place of residence			
Urban	37(80.4%)	68(91.3%)	0.30
Rural	3(6.5%)	3(4.3%)	
Did any of your relatives/acquaintances catch COVID?			
Yes	32 (69.5%)	42 (55.2%)	0.27
No	14 (30.5%)	34 (44.7%)	
Was there any death due to COVID in your close relatives/friends?			
Yes	7 (15.2%)	21 (27.6%)	0.09
No	39 (84.7%)	55 (72.4%)	
Do you think COVID-19 will influence your exam score?			
Yes	41 (89.1%)	56 (73.6%)	0.24
No	5 (10.8%)	20 (26.4%)	

respondents were significantly younger according to average age (21.6 vs. 22.5 years) ($p = 0.01$) and females were more anxious (69.6% vs. 30.4%) than males ($p < 0.03$) (Table 2).

DISCUSSION

COVID-19 has disrupted the social, psychological and educational norms of society. This study highlights the impact of COVID-19 on medical education and students in a private sector medical college. The introduction of technology can enhance collaborative skills of students, but each student might react differently to it. In country like Pakistan with frequent power shortages and internet connectivity problems it would cause additional stress.¹² Literature from pre-COVID era shows that student's preferred online teaching modalities to didactic teaching.

Online teaching was well perceived by medical student during COVID pandemic in UK.¹³ Majority of students feared that lockdown will influence their exam scores. A study on final year medical students showed that COVID 19 significantly impacted preparedness and

confidence level in UK. Physical health issues were also reported by 66 (54.1%) students due to prolong time spending in front of computers and laptops. Along with this 78% believed that online education influenced their learning capabilities. It is feared that it can cause burn out and affect the performance of students in long term.⁵

A study showed lack of face to face interaction with the educators and lack of the educators to identify any psychosocial problems.¹⁴ This was reflected in our students as 74.4% observed behavior change and reporting more stress (70.5%) during lockdown. Female students were more anxious when compared to males (69.6% vs. 30.4%) ($p < 0.03$).

A study done in France among university students identified female students as a risk factor for mental health disorders during COVID lockdown.¹⁵ This is in contrast to study from China which showed no gender related differences on psychosocial health. The study highlights that though rapid adaptive changes were made in delivering the curriculum online, assessment methods by medical schools. Its effect on medical

students and their physical and psychological health is significant and yet to be determined in the long term.

CONCLUSION

Covid-19 pandemic has greatly impacted medical education. Anxiety and stress levels have increased among medical student.

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