

## MEDICAL EDUCATION

# Repercussions of COVID-19 on Daily Life Routine and Psychological Attributes of Medical Students towards Online Classes

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### ABSTRACT

**Background:** The novel coronavirus disease or Covid-19 is caused by a virus of a strain named Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Countries enacted a strict self-isolation order as the authorities seek to clamp down on the coronavirus pandemic that has led to severe socio-economic disruptions to minimize close contact between individuals. One of them is the concept of work from home and the continuation of studies through online sessions. The study aimed to examine the psychological health of medical students in this quarantine period and the effect of this on their daily life activities and their attitude towards online classes.

**Methods:** It was a cross sectional study conducted in the Clifton campus of Ziauddin University Karachi in April 2020. Medical students studying in 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> year MBBS were included in the study. The total calculated sample size was n=105 however, 182 responses were received and data were analyzed. To assess psychological health depression, anxiety and stress scale (DASS) was used among study participants. In order to identify its effects on daily routine and attitude self-administered questionnaires were formulated. Data were analyzed using SPSS version 20.

**Results:** The DASS scale analysis showed that most of the students belonging to different educational years scored in severe or extremely severe depression 55(30.2%), anxiety 56(30.8%) and severe stress 32(24.2%) levels according to DASS criteria due to COVID-19. The current pandemic has affected their daily life routine however, 111 (61%) favored the decision of conducting online classes.

**Conclusion:** The current situation has affected medical students psychologically and their daily life routine, students have shown a positive response to online sessions being delivered to them.

**Keywords:** Medical Students; Psychological Health; Daily Routine; Online Classes.

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### INTRODUCTION

The coronavirus pandemic is a world-shattering event whose long last consequences we can only begin to fathom. The novel coronavirus disease called Covid-19 is caused by a virus named SARS-CoV-2<sup>1</sup>. This disease has expanded to touch nearly every corner of the globe since it first emerged at the beginning of the year in Wuhan, a city of China<sup>2</sup>. More than 1,013,000 people are known to be infected and more than 54,100 deaths

have been recorded. In Pakistan, many confirmed cases have been reported to date<sup>3</sup>. With inadvertently rising numbers of confirmed cases of COVID-19 throughout the globe, the World Health Organization has declared the virus a global health emergency. Radical healthcare and preventive measures are advised for flattening the curve<sup>4,5</sup>.

This pandemic<sup>6</sup> has affected every field of life. Countries enacted a strict self-isolation order as the authorities seek to clamp down on the coronavirus

pandemic that has led to severe socioeconomic disruptions, postponement or cancellation of cultural, religious and sports events globally, with methods included to minimize close contact between individuals<sup>7</sup>. These extreme measures are taken to stop or slow down the spread of the disease, implementing the concept of social and physical distancing. Mere closing of schools and universities in more than 160 countries has affected more than 1.5 billion students worldwide. The closure of malls and shopping centers has also resulted in panic buying<sup>8</sup>. Mental disorders especially depression and anxiety have received increasing global attention because of their negative effects on working ability and the performance of people<sup>9</sup>. Infectious disease pandemic aggravates these health issues<sup>10</sup>. During the SARS outbreak, it was estimated that 29% of those quarantined showed signs of Post Traumatic Stress Disorder, and 31% had symptoms of depression following isolation<sup>11</sup>. Similarly, the emergence of covid19 has caused serious unrest and upsurge the wave of anxiety globally<sup>12</sup>.

Although quarantine measures have periodically been used for centuries to contain and control the spread of infectious diseases such as cholera, plague, SARS with some success<sup>13</sup>. But the history of invoking these measures is tarnished by threats, generalized fear, lack of understanding, discrimination, economic hardships, and rebellion<sup>14</sup>. Medical students have far higher rates of depression than the average person, their depression prevalence ranges from 9%-56%. According to a meta-analysis, 27% of medical students had depression or symptoms of it in nearly 200 studies of 129,000 medical students in 47 countries<sup>15</sup>. This may influence the student's health and quality of life<sup>16-18</sup>. With this devastating lock down many strategies have also been adopted to minimize the damage and carry on with the work in life. One of them is the concept of work from home and the continuation of studies through online sessions<sup>19</sup>. Based on the above findings, this study aimed to examine the psychological health of medical students in this quarantine period and the effect of this on their daily life activities and their attitude towards online classes.

## METHODS

It was a cross sectional study conducted in Clifton campus of Ziauddin University Karachi from 1<sup>st</sup> to 30<sup>th</sup> April 2020. Medical students studying in 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> year MBBS were included in the study. Ethical approval was taken from ERC of Ziauddin University (reference code 2400720AAPHA). The total calculated sample size was n = 105, it was calculated by using a 50% proportion of the selected population. Non-probability Consecutive sampling technique was used to recruit the participants. To assess psychological health depression, anxiety and stress scale (DASS) was used among study participants. In order to identify its effects on daily routine and attitude self-administered questionnaires were formulated and which was pilot validated.

Initially, students were asked for their consent for participation in the study followed by demographic data, DASS and further questionnaires. The questionnaire was sent to students using a Google form link and responses were recorded. Total 184 responses were received in 10 days of link sharing out of the 2 participants who denied sharing the information and data was analyzed for n=182. Data were analyzed using SPSS version 20. Depression, anxiety and stress were identified using guidelines of DASS. Frequency and percentages were calculated to correlate the effects on the daily routine of medical students and attitude.

## RESULTS

The participants of our study (100%) belonged to the age group 18-23 years, among them 66(36.37%) were males and 116(63.7%) were females. From 1<sup>st</sup> year MBBS 95(52.1%), 2<sup>nd</sup> year 39(21.4%) and 3<sup>rd</sup> year 48(26.4) students submitted the proforma. The DASS scale analysis showed that most of the students belonging to different educational years scored in severe or extremely severe depression 55(30.2%), anxiety 56(30.8%) and severe stress 32(24.2%) levels according to DASS criteria due to COVID-19 (Table 1).

**Table 1: Responses of medical students according to depression, anxiety and stress scale (DASS) criteria.**

Variables	Categories				
	Normal	Mild	Moderate	Severe	Extremely Severe
Depression	27 (14.8%)	26 (14.3%)	43 (23.6%)	29 (15.9%)	55 (30.2%)
Anxiety	29 (15.9%)	26 (14.3%)	29 (15.9%)	41 (22.5)	56 (30.8%)
Stress	41 (22.5%)	29 (15.9%)	35 (19.2%)	44 (24.2%)	32 (17.6%)

In order to assess the effect of covid-19 on the daily routine of medical students they were enquired about their activities during lockdown through a survey asking them whether a situation applied to them and to what degree. Most of the students

replied that they are not waking early in the morning 79(43.4%), the majority of students were spending their time on social media applications 65(35.7%) and majorly favored the idea of sharing recorded lectures (Table 2).

**Table 2: Daily routine of Medical students during COVID-19 lockdown.**

Statement	Strongly Disagree	Disagree	Agree	Strongly Agree
1. I am waking up early during lockdown	79 (43.4%)	40 (22%)	33 (18%)	28 (15%)
2. I spend this lock down as vacations	44 (24.2%)	60 (33%)	44 (24.2%)	33 (18%)
3. I utilize time in watching movies	44 (24.2%)	65 (35.7%)	44 (24.2%)	28 (15.4%)
4. I read novels/magazines	83 (45.6%)	59 (32.4%)	29 (15.9%)	10 (5.5%)
5. I use social media apps mostly during lockdown	15 (8.2%)	39 (21.4%)	62 (34.1%)	65 (35.7%)
6. I read books related to my education year	20 (11%)	68 (37.4%)	63 (34.6%)	29 (15.9%)
7. I visit my friends / relatives during lockdown	148 (81.3%)	26 (14.3%)	6 (3.3%)	1 (0.5%)
8. I perform exercise in a routine fashion	61 (33.5%)	65 (30%)	40 (22%)	24 (13.2%)
9. I feel like my eating habits are affected during lockdown	35 (19.2%)	37 (20.3%)	57 (31.3%)	52 (28.6%)
10. I used to order food from outside quite often during lockdown	62 (34.1%)	46 (25.3%)	32 (17.6%)	41 (22.5%)
11. I find my sleeping pattern has been disturbed	19 (10.4%)	29 (15.9%)	34 (18.7%)	99 (54.4%)
12. I use my free time to complete my assignments	38 (20.9%)	67 (36.8%)	42 (23.1%)	34 (18.7%)
13. I use my time in for my hobbies	26 (14.35)	69 (37.9%)	45 (24.7%)	40 (22%)
14. I use my time in playing computer games	97 (53.3%)	46 (25.3%)	28 (15.4%)	9 (4.9%)
15. I find myself often bored with nothing to do.	32 (17.6%)	51 (28.0%)	47 (25.8%)	51 (28%)

The attitude of medical students towards online classes during lockdown fifteen statements was asked and they were supposed to mark as strongly agree, agree, disagree and strongly disagree. Students favored the decision of continuing medi-

cal education online 111(61%) however; they reported that it is difficult to concentrate during online sessions. Many students 88(48.4%) (Table 3) found it difficult to ask questions during online sessions.

**Table 3: Attitude of medical students towards online classes.**

Statement	Strongly Agree	Agree	Disagree	Strongly Disagree
1. I favor the decision of online classes	33 (18.1%)	111 (61%)	30 (16.5%)	7 (3.8%)
2. It is a good way to deliver professional education online	23 (12.6%)	95 (52.2%)	54 (29.7%)	9 (4.9%)
3. Online sessions are helpful in creating our concepts	9 (4.9%)	75 (41.2%)	75 (41.2%)	22 (12.1%)
4. It is helpful as the course will be completed in time	47 (25.8%)	78 (42.9%)	39 (21.4%)	16 (8.8%)
5. The supplemental online resource material available online is better than the traditional classroom one	27 (14.8 %)	47 (25.8%)	85 (46.7%)	19 (10.4%)
6. The facilitators are well trained for online sessions	15 (8.2%)	90 (49.5%)	64 (35.2%)	11 (6%)
7. I like the idea of not having to derive to school	58 (31.9%)	29 (15.9%)	62 (34.1%)	31 (17%)
8. I believe that high quality learning can take place without face-to-face interaction	18 (9.9%)	58 (31.9%)	70 (38.5%)	34 (18.7%)
9. I like the idea of flexibility in time and space in recorded lectures	73 (40.1%)	89 (48.9%)	14 (7.7%)	(2.7%)
10. Learning at home does not give satisfactory feeling	38 (20.9%)	69 (37.9%)	65 (35.7%)	9 (4.9%)
11. Asking questions is difficult in online sessions	60 (33%)	88 (48.4%)	25 (13.7%)	8 (4.4%)
12. I find it depressing to focus on the medical education	51 (28%)	64 (35.2%)	55 (30.2%)	11 (6%)
13. I attend the sessions just for the sake of attendance	28 (15.4%)	50 (27.5%)	84 (46.2%)	19 (10.4%)
14. I find it hard to concentrate in online sessions	64 (35.2%)	69 (37.9%)	43 (23.6%)	5 (2.7%)
15. As it was off for all other fields of life, scheduling online classes is not a good idea	10 (5.5%)	53 (29.1%)	87 (47.8%)	31 (17%)

## DISCUSSION

Psychological morbidity in medical undergraduate students had been of great concern in the past few years due to an increase in the number of private medical schools all around the world. This has further been aggravated by a Covid-19 pandemic. Our study showed a prevalence of depression (30.2%). This survey indicated that 30.8% of college students were afflicted with severe anxiety because of the COVID-19. It results in an unintended pause in student's education due to global university closure. Similar to our study, significant psychological symptoms related to anxiety, stress, depression in university students have already been pointed out<sup>20</sup>, and it is reported to get aggravated due to the current pandemic<sup>21</sup>. The anxiety of these students about COVID-19 might have been related to the effect of the virus on their educational studies<sup>22</sup>. It is not in accordance with Cao et al. in china who reported the same finding in their survey was conducted in China<sup>21</sup>. The findings of our study regarding stress highlighted that 24.2% of medical students suffering from severe stress during current situations are similar as reported in different studies across the globe<sup>23</sup>.

Considering the depressed state of mind of the students, we measure the effect on their daily routine and their response towards the online sessions that are arranged by their respective institutes 35.7% of the respondents choose that they have started using social media apps during the lockdown. Most of the respondents (81.3%) did not visit their friends or relatives during the lockdown period which is in accordance with Balkhi et al. In addition, 31.3% of students feel that their eating habits are affected by lockdown and 34.1% of students responded they did not order food from outside during this time<sup>24</sup>. This might be because of the awareness that covid-19 affects mostly those who are not in a better state of health. Thus, 54.4% students' sleep pattern has been changed; it is in agreement to the study conducted in Italy in which it has been reported that the sleep difficulties were stronger for people with a higher level of depression, anxiety, and stress symptoms<sup>25</sup>.

More than half of the students (53.3%) indulge in playing computer/console games. Playing video games has also been recommended by the WHO to prevent the spread of the COVID-19 pandemic<sup>20</sup>. Since, 28% of students felt bored because they had nothing to do during the lockdown period. This boredom could further aggravate the anxiety. Colleges shut across the world due to covid-19 have resulted in fast-paced shifts from face-to-face instruction to online environments. In our study, mixed results have been reported, 61% of respondents favor the decision of online classes taken by my medical school.

Half of the respondents agree that online education is a good way to deliver knowledge of professional education. Another important factor to consider, in terms of the effectiveness of online units, is student retention. There has been limited research regarding student attrition/retention in online psychology courses literature shows that higher rates of attrition are typically observed in online courses compared to face-to-face learning in a classroom<sup>29</sup>. In this study, 38.5% students disagreed and 18.7% strongly disagreed that high quality learning can take place without face to face interaction. However, Bowers et al. suggested that "carefully designed interactions, faculty student contact and ongoing instructor feedback" are critical for student retention<sup>26</sup>.

In addition, 37.9% of respondents in this study found it hard to retain during online classes. The reason could be related to students' low perceived sense of connectedness and a perceived lack of instructor presence. However, equal responses (41.2% agreed and 41.2% have disagreed) came on online sessions helping create concepts. Furthermore, 35.2% of students found it depressing to focus on medical education during the current pandemic time. Due to the energy crisis (electricity issues), it is difficult in Pakistan to have persistent internet connectivity and continuous connection live interaction on online classes so students favored the decision of uploading recorded lectures to have access at any time. This could be because colleges have promptly implemented online educational activities; they were insufficient to ease students' minds in such uncertain times. Thus, if these students also consider themselves vulnerable to developing emotional disorders, institutions will need to implement prevention and intervention programs to mitigate the stress levels.

## CONCLUSION

Covid-19, online classes, lockdown and social distancing have changed the medical student's daily life routine. Students' response regarding online classes is highly appreciable, as they have shown their concern and responsibility in continuing their medical education during the current pandemic. Moreover, the current situation has also affected their psychological health and responsible for the development of depression, anxiety and stress among medical students.

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### CONFLICT OF INTEREST

The authors declare no conflict of interest.

### ETHICS APPROVAL

ERC approval was taken from Ziauddin University and ethics reference code 2400720AAPHA was issued.

### PARTICIPANT CONSENT

Consent was taken prior to participation and it was allowed to participants that if they agreed on consent then there was access to other questions.

### AUTHORS' CONTRIBUTION

AA did the concept of study, data analysis, drafting, and finalizing of the results. SA critically reviewed the article. Finally reviewed and approved by SM. Data collection and session organization was facilitated by SZ, and SS, assisted by SN. All authors read and approved the final manuscript.

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