COVID-19 Online Teaching and its Impact on Psychological Health in Higher Education: A Cross Sectional Study on Medical Students of 1st 2nd and 3rd Year MBBS

Akhtar Ali[1]*, Syeda Mahnoor[1], Sehrish Ahmed[2], Sobia Naseem[3], Syed Wajid Shah[4], Syed Shehryar[4]

[1]Department of Pharmacology, Ziauddin University, Karachi, Pakistan
[2]Department of Pathology, Ziauddin University, Karachi, Pakistan
[3]Department of Oral and maxillofacial Surgery, Jinnah Postgraduate Medical Centre, Karachi, Pakistan
[4]Department of Pharmacy Practice, Ziauddin University, Karachi, Pakistan

ABSTRACT

Background: Covid-19 emerged from Wuhan; China in December 2019 took the whole world in its grip in mere few months the cases were found in almost every part of the globe. Pakistan too, was severely impacted tolling 233,500 cases of the coronavirus and 6,035 deaths to date. Most of the schools and colleges resorted to an online educational platform in order to resume work and discipline in life during such chaos, perhaps the most affected were the professionals of healthcare setup including medical students who reported to have far higher rates of depression than the average person.

Objectives: To examine the association of COVID-19 to the prevalence of depression, anxiety, or stress amongst medical students of 1st, 2nd, and 3rd year MBBS in this quarantine period and their attitude towards online classes.

Methodology: It was a cross sectional study conducted in Clifton campus of Ziauddin University Karachi in the month of May 2020. Medical students studying in 1st, 2nd, and 3rd year MBBS were included in the study. The total calculated sample size was n=105, Non-probability Consecutive sampling technique was used to recruit the participants. Depression, anxiety, and stress scale (DASS) was used to assess psychological health among study participants.

Results: DASS score showed that Stress and anxiety were significantly (p=0.001) prevalent in students however there are no significant findings observed related to depression, many responded that their life routine is altered and their attitude towards online session was significantly positive.

Conclusion: Stress and anxiety was found to be prevalent in in Medical students predominantly in students studying in 1st year MBBS, their life routine is disturbed and their attitude towards online classes was welcoming.

Keywords: Covid-19, MBBS students, Depression, Anxiety, Stress, Daily life, Online classes

INTRODUCTION

The biggest highlight of 2020 which put the whole world to a halt, must be the COVID-19 pandemic caused by SARS-CoV-2 [1]. The disease emerging from the small city of Wuhan, China in December 2019 took the whole world in its grip in mere few months and cases were found in almost every part of the globe [2]. Pakistan too, was severely impacted tolling 233,500 cases of the coronavirus and 6,035 deaths to date. Epidemiology and virologic studies report the spread is mainly from symptomatic people to others via close contact through respiratory droplets, by direct contact with infected persons, or by contact with contaminated surfaces [3,4]. To control the spread of COVID-19 and flatten

the curve many countries including Pakistan took drastic measures of quarantine including imposing lock down, ban on traveling, closing of workplaces and educational institutes. All entertainment activities such as theatre, sport matches in stadium, shopping centers, dine-in places were closed. Strict SOPs were introduced at places that were to open out of necessity with social distancing made compulsory in almost area of life [5].

Most of the schools and colleges resorted to an online educational platform in order to resume work and discipline in life during such chaos [6]. COVID-19 is associated with mental and neurological manifestations, including delirium or encephalopathy, agitation, stroke, meningo-encephalitis, impaired sense of smell or taste anxiety, depression, and sleep problems. Anxiety and depression appear to be common amongst people hospitalized for COVID-19, with one hospitalized cohort from Wuhan, China, revealing over 34% of people experiencing symptoms of anxiety and 28% experiencing symptoms of depression [7,8]. The impact on psychological wellbeing was not only limited to just COVID patients but also extended to the people restricted to their households due to the lockdown. In a pandemic of this magnitude, fear increases anxiety and stress levels in healthy individuals and is more amplified in patients of pre-existing psychological disease [9].

During the SARS outbreak it was estimated that 29% of those quarantined showed signs of PTSD, and 31% had symptoms of depression following isolation [10]. Perhaps the most affected were the professionals of healthcare setup including medical students who reported to 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. This may influence student's health and quality of life [11]. Based on the above findings, this study aims to examine the association of COVID-19 to the prevalence of depression, anxiety or stress amongst medical students of 1st, 2nd, and 3rd year MBBS in this quarantine period and their attitude towards online classes.

METHODOLOGY

It was a cross sectional study conducted in Clifton campus of Ziauddin University Karachi in the month of May 2020. Medical students studying in 1st, 2nd and 3rd year MBBS were included in the study. The total calculated sample size was n=105, it was calculated by using 50% proportion of selected population. Non-probability Consecutive sampling technique was used to recruit the participants. Depression, anxiety, and stress scale (DASS) was used to assess psychological health among study participants [12]. To identify its effects on daily routine and attitude self-administered questionnaires were formulated and which were validated by a pilot. Initially students were asked for their consent for participation in the study followed by demographic data, DASS and further questionnaires. Questionnaire were sent to students using google form link and responses were recorded. Data was 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 daily routine of medical students and attitude. Chi square was applied to observe the association among different classes. Ethical consideration was taken from ERC of Ziauddin University.

RESULTS

Total 184 responses were received in 10 days of link sharing out of them 2 participants denied sharing the information and data was analyzed for n=182. The demographic data of participants is shown in Table 1.

The DASS score showed significant findings for stress (p- value 0.001) and anxiety (p-value 0.008) however there was not any significance in depression score in different educational years. The students from 1st year MBBS seemed to suffer from anxiety and stress more than 2nd and 3rd year students. Table 2 displays the findings of

Table 1: Demographic data of participants.

Variable	Categories	Frequency (n)	Percentage (%)
Age	18-23 years	182	100
Gender	Male	66	63.7
	Female	116	36.3
Educational Year	1st year	95	52.1
	2nd year	39	21.4
	3rd year	48	26.4

Table 2: Association of depression anxiety and stress among 1st, 2nd, and 3rd year MBBS.

Class	Normal	Mild	Moderate	Severe	Extremely Severe
Depression					
1st year	9 (9%)	12 (12%)	24 (24%)	17 (17%)	38 (38%)
2nd year	6 (17.6%)	7 (20.6%)	8(23.5%)	5 (14.5%)	8 (23.5%)
3rd year	12 (25.5%)	7 (14.9%)	11 (23.4%)	7 (14.9%)	10 (21.3%)
p-value			0.097		
Anxiety					
1st year	10 (10%)	12 (12%)	17 (17%)	21 (21%)	40 (40%)
2nd year	10 (29.4%)	2 (5.9%)	7 (20.6%)	7 (20.6%)	8 (23.5%)
3rd year	9 (19.1%)	12 (25.5%)	5 (10.6%)	13 (27.7%)	8 (17%)
p-value			0.008		
Stress					
1st year	11(11%)	11 (11%)	28 (28%)	30 (30%)	20 (20%)
2nd year	13 (38.2%)	8 (23.5%)	5 (14.7%)	4 (11.8%)	4 (11.8%)
3rd year	17 (36.2%)	10 (21.3%)	2 (4.3%)	10 (21.3%)	8 (17%)
p-value			0.001		

Table 3: Daily routine of Medical students during COVID-19 lockdown.

Statement	Did not applied to me	Applied to me at some degree	Applied to me at considerable extent	Applied to me very much	p-value
I am waking up early during lockdown	79 (43.4%)	40 (22%)	33 (18%)	28 (15%)	0.986
I spend this lock down as vacations or weekend	44 (24.2%)	60 (33%)	44 (24.2%)	33 (18%)	0.123
I use major portion of my time in watching movies during lockdown period	44 (24.2%)	65 (35.7%)	44 (24.2%)	28 (15.4%)	0.001
I use my time in reading novels/magazines during lockdown	83 (45.6%)	59 (32.4%)	29 (15.9%)	10 (5.5%)	0.855
I use social media apps during lockdown more than normal routine	15 (8.2%)	39 (21.4%)	62 (34.1%)	65 (35.7%)	0.974
I read books related to my education / academic year	20 (11%)	68 (37.4%)	63 (34.6%)	29 (15.9%)	0.01
I visit my friends / relatives during lockdown	148 (81.3%)	26 (14.3%)	6 (3.3%)	1 (0.5%)	0.297
I perform exercise in a routine fashion during lockdown	61 (33.5%)	65 (30%)	40 (22%)	24 (13.2%)	0.979
I feel like my eating habits are affected by lockdown	35 (19.2%)	37 (20.3%)	57 (31.3%)	52 (28.6%)	0.624
I used to order food from outside quite often during lockdown	62 (34.1%)	46 (25.3%)	32 (17.6%)	41 (22.5%)	0.016
I find my sleeping pattern has been disturbed during lockdown	19 (10.4%)	29 (15.9%)	34 (18.7%)	99 (54.4%)	0.088
I use my free time to complete my assignments and class work	38 (20.9%)	67 (36.8%)	42 (23.1%)	34 (18.7%)	0.001
I use my time in creating/ making something (Hobbies, Cooking)	26 (14.35)	69 (37.9%)	45 (24.7%)	40 (22%)	0.768
I use my time in playing computer/console (PlayStation) games	97 (53.3%)	46 (25.3%)	28 (15.4%)	9 (4.9%)	0.987
I find myself often bored with nothing to do during lockdown	32 (17.6%)	51 (28.0%)	47 (25.8%0	51 (28%)	0.284

DASS scale and association of depression anxiety and stress among 1st, 2nd, and 3rd year Students.

When asked about daily routine the students responded positively and most of them spent their time watching movies (p-value=0.001), many told that they were reading books related to their educational year (p-value=0.010), they fulfilled their food carving by ordering food from restaurants (p-value=0.016) and they reported that they utilized free time in completing their assignments (p-value=0.001). Further questions related to daily routine and their results are elaborated in Table 3.

The attitude of students towards online classes was encouraging, the were happy by the method of delivering knowledge via online sessions (p-value=0.032), but their response that they usually attend the online sessions just for the sake of attendance was uncertain and highly significant (p-value=0.003), however, they favored the online sessions as by this mean they will end the course on time (p-value=0.027). Further questions related to attitude of students towards online classes are highlighted in Table 4.

DISCUSSION

Human beings are social animals. However,

Table 4: Attitude of medical students towards online classes.

Statement	Strongly Agree	Agree	Disagree	Strongly Disagree	p-value
I favor the decision of online classes taken by my medical school	33 (18.1%)	111 (61%)	30 (16.5%)	7 (3.8%)	0.14
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%)	0.552
It is a good way to deliver knowledge of professional education in online sessionS	23 (12.6%)	95 (52.2%)	54 (29.7%)	9 (4.9%)	0.032
I find it hard to concentrate in online sessions	64 (35.2%)	69 (37.9%)	43 (23.6%)	5 (2.7%)	0.506
I attend the sessions just for the sake of attendance	28 (15.4%)	50 (27.5%)	84 (46.2%)	19 (10.4%)	0.003
Online sessions are helpful in creating our concepts	9 (4.9%)	75 (41.2%)	75 (41.2%)	22 (12.1%)	0.175
I find it depressing to focus on the medical education during this time	51 (28%)	64 (35.2%)	55 (30.2%)	11 (6%)	0.3
It is helpful as the course will be completed in time and we will be promoted to next semester on time	47 (25.8%)	78 (42.9%)	39 (21.4%)	16 (8.8%)	0.027
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%)	0.524
Learning at home does not give satisfactory feeling of learning	38 (20.9%)	69 (37.9%)	65 (35.7%)	9 (4.9%)	0.528
asking questions is difficult in online sessions	60 (33%)	88 (48.4)	25 (13.7%)	8 (4.4%)	0.369
the facilitators are well trained in delivering the lectures online	15 (82%)	90 (49.5%)	64 (35.2%)	11 (6%)	0.637
I like the idea of not having to derive / commute to school	58 (31.9%)	29 (15.9%)	62 (34.1%)	31 (17%)	0.097
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%)	0.814
I like the idea of flexibility in time and space in recorded lectures i.e. to access the class whenever and from wherever I want	73 (40.1%	89 (48.9%)	14 97.7%	5 (2.7%	0.348

during the current time, COVID 19 pandemic has led people to lockdown in their homes and enforced social distancing. It has produced unrest in people's lives globally and medical education is no exception. Medical students were pulled from the classroom, hospitals, and clinics to reduce the risk of spreading the virus. As a result, studies have shown increasing rates of depression in medical students [13,14]. In China alone despite the knowledge of disease control and prevention, the prevalence of anxiety disorder in medical students was 17.1% and depression was 25.3% [15]. Another study showed 35.5% of medical students in a depressed state and 22.1% were in a state of anxiety [16]. On the contrary, the overall results of our study showed that the participants did not face depression, anxiety, or stress according to DAS analysis. It is because the online sessions that were arranged by the institute to continue the process of education were satisfactory and the students did not feel left out during this lockdown period. Nevertheless, 38% extremely severe depression and 40% extremely severe anxiety was found in first-year students. It is justified because even in normal circumstances they have more anxiety and stress levels as compared to their seniors which were further aggravated by the dilemma of the pandemic.

The boredom, loneliness, and stress of being in lockdown can prompt unhealthy ways of coping. In our study 35.7% of the students started using social media apps and 35.7% spent most of the time watching movies during lockdown. Balkhi et al. and other researchers have also reported similar results [17-19]. Covid 19 has affected sleep individuals Trouble sleeping have been reported by many researchers that are associated with the pandemic according to Cellini et al, sleep difficulties were stronger for people with a higher level of depression, anxiety, and stress symptoms [20]. In our study 54.4% of the students fond that their sleeping pattern has been disturbed during lockdown and the habit of early rising is also affected by 43.4% of the students. Due to the uncertainty of contracting the disease from anyone people showed avoidant behavior and limited their social contact and strictly obey social norms [18]. 81.3% of our respondents followed strict confinement in their homes and avoid visiting their friends and relatives. 36.8% students utilized this quarantine time more efficiently by completing their assignments and class work. This pandemic has utterly disrupted an education system. The transition from studying in a structured classroom environment to virtual education is imperative [21]. With such unprecedented changes coming on so quickly, it is understandable that if affects the quality of education. However, the online sessions give the flexibility to attend classes, eliminate transportation time, and decrease cost [22,23]. To evaluate the quality of online session our survey showed that more than half of our respondents agreed that online sessions are a good way to deliver knowledge of professional

education. It will help them in completing their courses in time without fear of losing a year. They will be able to apply for their future endeavors in time.

CONCLUSION

Stress and anxiety were found to be prevalent in in Medical students predominantly in students studying in 1st year MBBS, their life routine was seemed to be altered during the pandemic however, their attitude towards online classes was positive and welcoming.

Ethical approval

Ethical Approval was taken from ERC of Ziauddinuniversity.

CONFLICT OF INTEREST

There was not any conflict of interest.

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No.

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