

## Original Article

### Impact of Attending Online Classes on Mental Health Among University Students During COVID-19 Pandemic in Lahore

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#### Abstract

**Background:** There are many challenges that people face in their lives. Recently, the whole world was affecting because of a unique virus known as COVID-19 or coronavirus. **Objective:** To determine the impact of attending online classes on mental health among university students during the COVID-19 pandemic in Lahore. **Methods:** This cross-sectional study was conducted on 215 undergraduate students who were locked down in their homes during the COVID-19 pandemic and took online classes using the depression, anxiety, stress scale and online learning scale through convenient sampling. The demographics were reduced to numbers, percentages, and frequencies for analysis. The frequency and percentage of occurrence were selected as the presentation formats for qualitative variables. Cross-tabulation was used to see whether online learning was related to depression, anxiety, or stress levels. **Results:** Among 215 Undergraduate students, 53 (24.7%) were males and 162 (75.3%) were females. While 15 (7.0%) presented with symptoms, the level of depression was moderate among 65 (30.2%), severe 69 (32.1%) and extremely severe 81 (37.7%). Level of anxiety was moderate among 23 (10.7%), severe at 32 (14.9%) and extremely severe at 160 (74.4%) while the level of stress was normal 15 (7.0%), mild at 25 (11.6%), moderate 59(27.4%), severe 71 (33.0%) and extremely severe 45 (20.9%). There was a significant association between online classes and mental health including depression, anxiety and stress as the p-value was 0.029, 0.045 and 0.043 respectively. **Conclusion:** The level of depression, anxiety and stress was high among undergraduate university students during the COVID-19 pandemic. There was a significant impact of online classes on mental health symptoms including the level of depression, anxiety, and stress. Students taking online classes suffer from poor mental health.

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## Introduction

There are many challenges that people face in their lives. Recently, the whole world was affected by this unique virus known as COVID-19 or coronavirus.<sup>(1)</sup> There is no cure for the virus, and no vaccine has been developed to prevent the spread of the virus.<sup>(2)</sup> Protection is the only solution to prevent the spread of the virus.<sup>(3,4)</sup> On December 31, 2019, China reported a cluster of pneumonia cases with an unknown origin. These patients were eventually identified as having coronavirus 2 infections (SARS-CoV-2)

The COVID-19 issue first arose in the Chinese regions of Wuhan and Hubei at the end of December 2019.<sup>(5)</sup> The World Health Organization (WHO) formally classified the illness as COVID-19 in February 2020, which stands for "coronavirus disease in 2019." The virus responsible for COVID-19 was formerly known as 2019-nCoV before being identified as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Symptoms include sore throat, cough, and possibly pneumonia, in addition to fever and shortness of breath. Aside from having terrifying impacts on human life, the recently detected coronavirus strain known as COVID-19 has the potential to greatly impede economic growth not just in China but around the globe.<sup>(6)</sup>

WHO has declared COVID-19 to be a public health emergency of international concern (PHEIC), putting public health at risk. PHEIC, according to the WHO, is either an infectious disease that spreads globally or an unexpected, unusual, and severe public health crisis that exceeds the capacity of the local healthcare system.<sup>(7)</sup> Humans have always been gregarious beings, and although many are indeed terrified at this moment and many people feel threatened and are hiding inside their homes. During the COVID-19 disease

epidemic, it is critical to understand how the community has responded to such a significant disaster, especially in nations such as China that have been severely impacted. The damage caused by COVID-19 is likely to be comparable to the devastation caused by SARS in 2003. The SARS epidemic has resulted in over 8,000 cases of illness and over 800 fatalities worldwide in 26 countries.<sup>(8, 9)</sup> There have been reports of moderate to severe occurrences of stressful life events in places severely impacted by the SARS pandemic.

Within eight months, the SARS pandemic had been controlled. SARS-CoV-2 and COVID-19, like other viral respiratory diseases, may be spread via the respiratory system.<sup>(10)</sup> Infected people often suffer severe pneumonia and other respiratory tract infections, with some requiring critical care unit hospitalization.<sup>(11)</sup> One of the most likely reasons people die from serious diseases is that they can no longer breathe. This virus may infect anybody, but those who are already sick or old are more likely to develop serious complications because of infection.<sup>(12)</sup> According to the most recent findings, people with several chronic underlying conditions have a significantly increased mortality risk. As a result, aged people and patients with impaired immune systems should be given special consideration.

In these populations, infections may spread quickly, necessitating quick treatment choices.<sup>(13)</sup> In the absence of a vaccine, social isolation has become the most preferred method of mitigating and controlling the disease's effects. The basic purpose of public health interventions is to prevent disease transmission from person to person by separating groups of people to break the chain of transmission. As methods, we have accessible isolation and quarantine, social separation, and community control or lockdown. The terms "community

confinement" or "lockdown" refer to an intervention that is implemented over a whole town, city, or area to limit the amount of individual contact and mobility. These methods vary from social isolation (such as canceling public events, closing schools, and working from home) to communal usage of face masks to the closure of whole towns or districts. The goal of "social distance" is to limit contact among members of a larger group in which some people may be infectious but have not yet been recognized and hence are not segregated from the rest of the community.<sup>(14, 15)</sup>

The administration had no option but to establish nationwide lockdown rules. The government's initial response was to move and clean out hostels located near schools and other institutions around the nation.<sup>(16)</sup> As a result, each student is required to return to their respective hometowns and home states in a very short period, raising concern not only among the students but also among their parents about their children's safety while traveling. Because a statewide lockdown was about to happen, the school board decided to hold classes online to protect the educational system of the country.<sup>(17)</sup>

Research undertaken by the Institute of Medical Education and the National Center for Health Professions Education Development at Peking University in Beijing, China, found that when the right materials and arrangements were used, the online study would be just as successful as a conventional study. Because of the lockout, no school had enough time to manage the online classroom system, and students weren't ready to take online classes, which made them even more nervous.<sup>(6)</sup> In response to the growing concern over the ongoing COVID-19 outbreak, an increasing number of educational institutions throughout the world have either postponed or canceled all campus events and activities.

Seminars, conferences, intra- and inter-university sports events, and other activities are examples.<sup>(18)</sup> The distribution method for a variety of university courses and programs has swiftly transitioned from in-person to online delivery at various educational institutions. The COVID-19 epidemic has drastically disturbed the daily lives of many individuals throughout the globe. Because of the fast growth in the number of infected people throughout the globe, there is growing concern about the future. It has also caused a lot of tension between students and the rest of the academic community.<sup>(19)</sup>

Students' ability to study as well as their mental health may suffer because of this stress. In addition to their health, safety, and education, international students studying in a foreign country are often worried about the well-being of their families. The COVID-19 epidemic has the potential to have a substantial influence on the professional lives of this year's college graduates.<sup>(20)</sup> They are nearing the end of their studies, which is distinguished by significant disruptions in both teaching and assessment. Because of the postponement of the final examination, students were likely to graduate later than expected.

Furthermore, the graduates had confronted considerable challenges as a consequence of the current global recession caused by the COVID-19 pandemic.<sup>(21)</sup> Extreme weather conditions had caused mental health issues such as stress, anxiety, depressive symptoms, sleeplessness, denial, wrath, and panic, as well as decreased the capacity to pay attention, comprehend, and make decisions, which may make combating COVID-19 more difficult.<sup>(22)</sup> The purpose of the study was to determine the impact of attending online classes on mental health among university students during the COVID-19 pandemic in Lahore.

## Methods

It was a cross-sectional survey conducted on 215 undergraduate students taking online classes selected for data collection. The data for this research was gathered from the University of Lahore and students aged between 20-30 years attending the online classes using standardized questionnaires like Depression, Anxiety Stress scale (DASS-21) and online learning/distance education questionnaire by convenient sampling from undergraduate students during COVID-19. The first part contained demographic information; the second part assessed online learning/distance education questionnaire; the third part assessment of the level of depression anxiety and stress.

The participants were questioned to see whether or not they fit the study's inclusion criteria. After gaining permission to publish from the University of Lahore's ethical committee and authorization from all departments involved. Participants were given a thorough description of the testing technique. The survey questionnaire was distributed following the established inclusion criteria for the study. The survey was conducted after gaining consent from the proper authorities at the institution and the university's committee.

The research was completed six months after the executive summary was approved. The data were analyzed using IBM SPSS Statistics 25.0. The data was put into the SPSS file once the participants' replies were collected. The information was then analyzed. The demographics were reduced to numbers, percentages, and frequencies for analysis. The frequency and percentage of occurrence were selected as the presentation formats for qualitative variables (frequency tables and bar charts). After calculating the descriptive measure for each variable, cross-tabulation

was used to see whether online learning was related to depression, anxiety, or stress levels.

## Results

Among 215 undergraduate students, 59 (27.4%) were 18-22 years, 63 (29.3%) of 23-27 years, 78 (36.3%) of 28-32 years and 15 (7.0%) of 33 or more years. While 53 (24.7%) were males and 162 (75.3%) were females. According to post-secondary schooling, 46 (21.4%) have 1 year, 50 (23.3%) have 2 years, 54 (25.1%) have 3 years and 65 (30.2%) have 4 or more years. About 160 (79.1%) were taking online classes and 55 (20.9%) have not. According to the number of hours spent per week on the computer for educational purposes, 40 (18.6%) had spent less than 1 hour, 58 (27.0%) spent 1-5 hours, 59 (27.4%) spent 6-10 hours and 58 (27.0%) spent more than 10 hours.

Almost 15 (7.0%) were currently ill, 188 (87.4%) were not currently ill and 12 (5.6%) may or may not be ill. While 15 (7.0%) presented with symptoms, the level of depression was moderate among 65 (30.2%), severe 69 (32.1%) and extremely severe 81 (37.7%). Level of anxiety was moderate among 23 (10.7%), severe at 32 (14.9%) and extremely severe at 160 (74.4%) while the level of stress was normal 15 (7.0%), mild at 25 (11.6%), moderate 59(27.4%), severe 71 (33.0%) and extremely severe 45 (20.9%) shown in Table I.

Among 215 undergraduate students, cross-tabulation has been done among students attending online classes and depression according to which there is a significant association between them as the p-value was found to be 0.029 which is <0.05. (Table II) Cross-tabulation between students attending online classes and anxiety also showed a significant association with a p-value of 0.045. (Table III) Cross-tabulation has been done

among students attending online classes and stress displayed a significant association,  $p=0.043$ . (Table IV)

**Table I: Frequency Distribution of Depression, Anxiety and Stress**

	Depression		Anxiety		Stress	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Normal					15	7.0
Mild					25	11.6
Moderate	65	30.2	23	10.7	59	27.4
Severe	69	32.1	32	14.9	71	33.0
Extremely Severe	81	37.7	160	74.4	45	20.9
Total	215	100.0	215	100.0	215	100

**Table II: Cross-tabulation among Students Attending Online Classes and Depression**

		Depression			Total	p-value
		Moderate	Severe	Extremely Severe		
Attending online Classes at the University	Yes	55(32.4%)	55(32.4%)	60(35.3%)	170(100.0%)	0.029
	No	10(22.2%)	14(31.1%)	21(46.7%)	45(100.0%)	
Total		65(30.2%)	69(32.1%)	81(37.7%)	215(100.0%)	

**Table III: Cross-tabulation among Students Attending Online Classes and Anxiety**

		Anxiety			Total	p-value
		Moderate	Severe	Extremely Severe		
Attending online Classes at the University	Yes	20(11.8%)	26(15.3%)	124(72.9%)	170(100.0%)	0.045
	No	3(6.7%)	6(13.3%)	36(80.0%)	45(100.0%)	
Total		23(10.7%)	32(14.9%)	160(74.4%)	215(100.0%)	

**Table IV: Cross-tabulation among Students Attending Online Classes and Stress**

		Stress					P-value
		Normal	Mild	Moderate	Severe	Extremely Severe	
<b>Attending online Classes at the University</b>	Yes	15(8.8%)	21(12.4%)	50(29.4%)	52(30.6%)	32(18.8%)	0.043
	No	0(0.0%)	4(8.9%)	9(20.0%)	19(42.2%)	13(28.9%)	
<b>Total</b>		<b>15(7.0%)</b>	<b>25(11.6%)</b>	<b>59(27.4%)</b>	<b>71(33.0%)</b>	<b>45(20.9%)</b>	

## Discussion

According to the findings of this study, among 215 undergraduate students, 53 (24.7%) were males and 162 (75.3%) were females. About 82.6% were single and 16.2% were married. 15(7.0%) were currently ill, 188(87.4%) were not currently ill and 12(5.6%) may or may not be ill. About 37.7% of the students were affected with extremely severe depression and 74.4% have extremely severe anxiety and 20.9% with extremely severe stress. In a study conducted by Cuiyan Wang et al (2020) in China 1210 participants included 67.3% were women out of which 53.1% with 21-30 years of age and 76.4% were married, 52.8% were students and 87.9% were well-educated.<sup>(23)</sup>

A study conducted in 2020 by Sijia Li et al included 25% males and 75% females. This study concluded that psychological problems including depression, anxiety and stress are negative emotions and the score for these emotions has been increased and the score for positive emotions including happiness and leisure activities has been decreased. People are worried and are more concerned about their family and health than their friends and leisure activities.<sup>(24)</sup> According to our study, there was a significant association between students attending online classes and depression. Students taking online classes had poor mental health. Yingfei Zhang et al conducted a study in China (2020) comprised

of 263 individuals out of which 157 were males and 106 females with age 14-37 years and 74.9% had high education levels. According to this study, a mild impact was found between quality of life and mental health and most of the individuals about 53.3% did not feel helpless but about 52.1% of the participants were terrified and 57-77% population received support from their friends and family to overcome this stressful condition.<sup>(25)</sup> In the current study, psychological symptoms including depression, anxiety and stress have a strong impact on the quality of life and the performance of students was also impaired due to increased levels of depression, anxiety and stress.

Paula Odriozola-González et al in 2020 found that score for depression was 44.1%, the score for anxiety was 32.4% and for stress was 37.0%. Psychological stress indicated by the symptomatic score was 88.6% of participants. The frequency of depression anxiety and stress was more among young females and among those who reported COVID-19 symptoms by themselves. According to the present study, about 37.7% of the students were affected with extremely severe depression and 74.4% have extremely severe anxiety and 20.9% with extremely severe stress.

## Conclusion

Level of depression, anxiety and stress was high among undergraduate university students during the COVID-19 pandemic. There was a significant impact of online classes on mental health symptoms including the level of depression, anxiety and stress. Students taking online classes had poor mental health.

## Declarations

**Consent to participate:** Written consent had been taken from patients. All methods were performed following the relevant guidelines and regulations.

**Availability of data and materials:** Data will be available on request. The corresponding author will submit all dataset files.

**Competing interests:** None

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**Authors' contributions:** All authors read and approved the final manuscript.

## References

1. Srivastava N, Baxi P, Ratho R, Saxena SK. Global trends in epidemiology of coronavirus disease 2019 (COVID-19). *Coronavirus disease 2019 (COVID-19)*: Springer; 2020. p. 9-21. doi:10.1007/978-981-15-4814-7\_2.
2. Sajed AN, Amgain K. Corona virus disease (COVID-19) outbreak and the strategy for prevention. *Europasian Journal of Medical Sciences*. 2020;2(1):1-3. DOI: <https://doi.org/10.46405/ejms.v2i1.38>
3. Suryawanshi R, More V. A Study of Effect of Corona Virus Covid-19 and Lock Down on Human Psychology of Pune City Region. *Studies in Indian Place Names*. 2020;40(70):984-94. doi.org/10.1007/s11042-021-11004-w
4. Liu S, Yang L, Zhang C, Xiang Y-T, Liu Z, Hu S, et al. Online mental health services in China during the COVID-19 outbreak. *The Lancet Psychiatry*. 2020;7(4):e17-e8. DOI:[https://doi.org/10.1016/S2215-0366\(20\)30077-8](https://doi.org/10.1016/S2215-0366(20)30077-8)
5. Yuan Z, Xiao Y, Dai Z, Huang J, Chen Y. A simple model to assess Wuhan lockdown effect and region efforts during COVID-19 epidemic in China Mainland. *Medrxiv*. 2020. doi: <https://doi.org/10.1101/2020.02.29.20029561>
6. Raj U, Fatima AJAaS. Stress in Students after Lockdown Due to COVID-19 Thereat and the Effects of Attending Online Classes. 2020. doi.org/10.2139/ssrn.3584220
7. (PHEIC). WHO WIHRI opCPHEoIC. 2005.
8. Brooks SK, Webster RK, Smith LE, Woodland L, Wessely S, Greenberg N, et al. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *The Lancet*. 2020. doi.org/10.1016/S0140-6736(20)30460-8
9. Graham RL, Donaldson EF, Baric RS. A decade after SARS: strategies for controlling emerging coronaviruses. *Nature Reviews Microbiology*. 2013;11(12):836-48. <https://doi.org/10.1038/nrmicro3143>
10. Wilder-Smith A, Chiew CJ, Lee VJ. Can we contain the COVID-19 outbreak with the same measures as for SARS? *The Lancet Infectious Diseases*. 2020. doi.org/10.1016/S1473-3099(20)30129-8
11. Chauhan S. Comprehensive review of coronavirus disease 2019 (COVID-19). *Biomedical journal*. 2020;43(4):334-40. doi.org/10.1016/j.bj.2020.05.023
12. Shereen MA, Khan S, Kazmi A, Bashir N, Siddique R. COVID-19 infection: Emergence, transmission, and characteristics of human coronaviruses. *Journal of advanced*

- research. 2020;24:91-8. doi.org/10.1016/j.jare.2020.03.005
13. Lau JT, Yang X, Pang E, Tsui H, Wong E, Wing YK. SARS-related perceptions in Hong Kong. *Emerging infectious diseases*. 2005;11(3):417. doi: 10.3201/eid1103.040675
14. Emami A, Javanmardi F, Pirbonyeh N, Akbari AJAoem. Prevalence of underlying diseases in hospitalized patients with COVID-19: a systematic review and meta-analysis. 2020;8(1). <https://doi.org/10.1007/s40200-020-00667-1>
15. Ahmed U, Karimi H, Amir S, Ahmed AJJoimr. Effects of intensive multiplanar trunk training coupled with dual-task exercises on balance, mobility, and fall risk in patients with stroke: a randomized controlled trial. 2021;49(11):03000605211059413.
16. Karatas S, Yesim T, Beysel S. Impact of lockdown COVID-19 on metabolic control in type 2 diabetes mellitus and healthy people. *Primary Care Diabetes*. 2021;15(3):424-7. doi.org/10.1016/j.pcd.2021.01.003
17. Armbruster S, Klotzbücher V. Lost in lockdown? COVID-19, social distancing, and mental health in Germany. *Diskussionsbeiträge*; 2020. [hdl.handle.net/10419/218885](http://hdl.handle.net/10419/218885)
18. Houston S. Lessons of COVID-19: virtual conferences. *Journal of Experimental medicine*. 2020;217(9). doi.org/10.1084/jem.20201467
19. Kim Y-H. Academic exchange in the COVID-19 era. *Archives of Plastic Surgery*. 2020;47(04):287-9. DOI: 10.5999/aps.2020.01172
20. Chen T, Rong J, Peng L, Yang J, Cong G, Fang J, editors. Analysis of social effects on employment promotion policies for college graduates based on data mining for online use review in China during the COVID-19 pandemic. *Healthcare*; 2021: MDPI. doi.org/10.3390/healthcare9070846
21. Sahu PJC. Closure of universities due to Coronavirus Disease 2019 (COVID-19): impact on education and mental health of students and academic staff. 2020;12(4). DOI: 10.7759/cureus.7541
22. Acharya SJAaS. Stress in the Students after Lockdown due to Outbreak of Corona Virus (COVID-19). 2020. .doi.org/10.2139/ssrn.3627022
23. Wang C, Pan R, Wan X, Tan Y, Xu L, Ho CS, et al. Immediate psychological responses and associated factors during the initial stage of the 2019 coronavirus disease (COVID-19) epidemic among the general population in China. *International journal of environmental research and public health*. 2020;17(5):1729. doi.org/10.3390/ijerph17051729
24. Bento TPF, dos Santos Genebra CV, Maciel NM, Cornelio GP, Simeão SFAP, de Vitta A. Low back pain and some associated factors: is there any difference between genders? *Brazilian Journal of Physical Therapy*. 2020;24(1):79-87. doi.org/10.1016/j.bjpt.2019.01.012
25. Zhang Y, Ma ZF. Impact of the COVID-19 pandemic on mental health and quality of life among local residents in Liaoning Province, China: A cross-sectional study. *International journal of environmental research and public health*. 2020;17(7):2381. doi.org/10.3390/ijerph17072381
26. Odriozola-González P, Planchuelo-Gómez Á, Iurtia-Muñiz MJ, de Luis-García R. Psychological symptoms of the outbreak of the COVID-19 crisis and confinement in the population of Spain. 2020. doi.org/10.1177/1359105320967086
27. Nguyen HC, Nguyen MH, Do BN, Tran CQ, Nguyen TT, Pham KM, et al. People with Suspected COVID-19 Symptoms Were More Likely Depressed and Had Lower Health-Related Quality of Life: The Potential Benefit of Health Literacy. *Journal of clinical medicine*. 2020;9(4):965. doi.org/10.3390/jcm9040965.