

EFFECT OF COVID-19 PANDEMIC ON MENTAL HEALTH OF UNIVERSITY STUDENTS**Dr. Aruna K. Pandya¹, Nisarg N. Shah², Aman Keshari^{*3}, Dr. Shraddha Bhatt⁴, Dr. Kirtan Parmar⁵, Dr. Sweta Patel⁶ and Dr. Nandita Christy⁷**

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Article Received on 04/04/2022

Article Revised on 25/04/2022

Article Accepted on 15/05/2022

ABSTRACT

The novel coronavirus disease 2019 (COVID-19), originated in Wuhan city of China, has spread rapidly around the world, sending billions of people into lockdown. In light of the rising spread of this infectious disease, to prevent students and staff members, most Universities across the world have either postponed or canceled all campus events, be it regular lectures, workshops, conferences, sports, or any other activity. As studies have shown that the mental health of young adults (18–34 years old) was most affected by restrictions because of this, we are interested in seeing how COVID-19 has impacted the wellbeing of students. We will review studies found using keywords such as 'College student', 'COVID-19', and 'mental health'. This review will evaluate how COVID-19 has impacted University students' mental health, and what students have done to cope with stressors stemming from COVID-19. In this research, we aim to find the relation between stress due to Covid-19 and symptoms of depression among college students. The Perceived Stress Scale related to Covid-19 (**PSS-10-C**) and Patient Health Questionnaire (**PHQ-9**) will be used for this purpose. We also wish to find socio demographic risk factors for high scores on these tests.

INTRODUCTION

Covid-19 (Coronavirus Disease 2019) caused by the strain SARS-CoV-2 of coronavirus, is the first coronavirus pandemic in history. The first known case was identified in Wuhan, China in December 2019. The disease has since spread worldwide, leading to an ongoing pandemic. Officially declared a Public Health Emergency of International Concern on 30 January 2020 and a pandemic on 11 March 2020 by WHO^{[1],[2]}, it has claimed the lives of at least 5 million people around the world.^[3] To suppress the spread of the pandemic coronavirus disease 2019 (COVID-19) several governments all over the globe opted for lockdowns, which is a period of time in which people are not allowed to leave their homes or travel freely, because of a dangerous disease.

In India, the government declared a nationwide lockdown commencing from 24th March 2020. All schools and colleges in the nation were directed to remain shut for students about a week before this. As of March 25, 2020, 150 countries had closed schools and educational institutions nationwide, impacting over 80% of the world's student population.^[4] On 26 April India saw the peak daily tally of new severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) infections ever documented in the world, 3,60,960, taking its pandemic

total to 16 million cases, following the US, and more than 2,00,000 deaths. The distressing second wave arises a year afterward when the country imposed one of the most rigid lockdown restrictions in the world and just three months since its health ministry professed that infections and mortality were at an all-time low.^[5]

Subsequently, a large number of distance learning solutions have been arrayed all over the country to reach 32 crore scholars affected by school and college terminations. Apart from this paradigm shift in the approach of teaching-learning, there exist foremost limitations to stay indoors, uphold social distancing, restrictions on eating at their preferred outlets and not being able to go for shopping, etc. could be major factors affecting the social and emotional lives of these adolescents who crave to hanging out with at their desired engagements with their peer group.^[6]

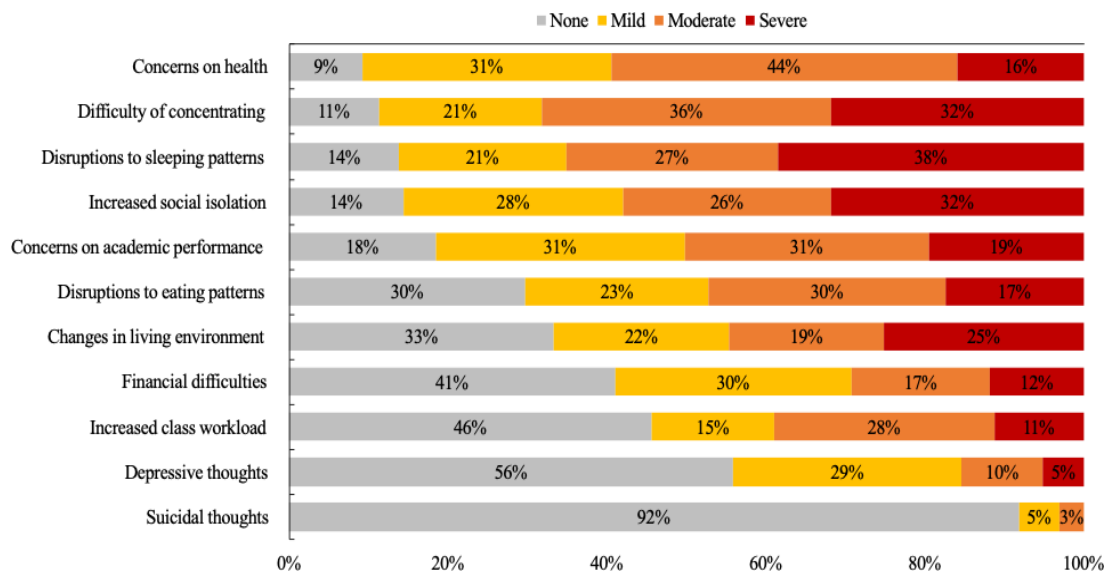
Undoubtedly, this situation has had an adverse impact on the mental wellbeing of people of all ages, including students. The effect on mental health includes an increase in anxiety, stress, experiencing symptoms of depression, and suicidal thoughts.

DISCUSSION

Several studies have been conducted to understand the

effect on the mental wellbeing of students due to the pandemic. One such research named **Effects of COVID-19 on College Students' Mental Health in the United States: Interview Survey Study** was conducted by **Son C, Hegde S, Smith A, Wang X, Sasangohar F** using interview surveys with 195 students at a large public university in the United States to understand the effects of the pandemic on their mental health and well-being.

The study assessed participants' general stress levels using the **Perceived Stress Scale-10 (PSS)** which is **A global measure of perceived stress** designed by S Cohen, T Kamarck, R Mermelstein. Second, participants were asked if their own and peers' (two separate questions) stress and anxiety increased, decreased, or remained the same because of the COVID-19 pandemic.



The above figure shows Participants' ratings on mental health aspects in an order of negative impacts (mild, moderate, and severe). For those who indicated increased stress and anxiety during the pandemic, we questioned their stress coping strategies and the use of available mental health counseling services. The data were analyzed through quantitative and qualitative methods. It was found that the majority of student respondents reported increased stress and anxiety due to the COVID-19 outbreak. Multiple stressors such as fear and worry about their health and of their loved ones, difficulty in concentrating, disruptions to sleeping patterns, decreased social interactions due to physical distancing, and increased concerns on academic performance were the reasons for increased levels of stress, anxiety, and depressive thoughts among students. To cope with stress and anxiety, participants have sought support from others and helped themselves by adopting either negative or positive coping mechanisms. However, the administration of PSS as interview questions (compared to allowing participants to read and respond to the 10 questions) might have introduced bias and resulted in underreporting.

In conclusion, measures like lockdown bring a negative impact on higher education. There is an urgent need to develop interventions and preventive strategies to address the mental health of college students.^[7]

Another research named **The psychological impact of the COVID-19 epidemic on college students in China** conducted by **Wenjun Caoa, Ziwei Fanga, Guoqiang**

Houc, Mei Hana, Xinrong Xua, Jiaxin Donga, Jianzhong Zhenga found that the pandemic has brought not only the risk of death from infection but also unbearable psychological pressure.

They sampled college students from Changzhi medical college by using cluster sampling, who responded to a questionnaire packet that inquired demographic information, including gender, region, place of residence settlements, who diagnosed them, and source of parental income, among others. They were also inquired about their cognitions and preventive behaviors regarding COVID-19 and the availability of social support. Moreover, the participants responded to the **7-item Generalized Anxiety Disorder Scale (GAD-7)** designed by Spitzer and colleagues which includes seven items based on seven core symptoms:

1) nervousness; 2) inability to stop worrying; 3) excessive worry; 4) restlessness; 5) difficulty in relaxing; 6) easy irritation, and; 7) fear of something awful happening. and inquires the frequency with which respondents suffered from these symptoms within the last two weeks. Respondents report their symptoms using a 4-item Likert rating scale ranging from 0 (not at all) to 3 (almost every day), such that the total score ranges from 0 to 21. The GAD-7 is a well-validated screening instrument, and it has demonstrated excellent internal consistency (Cronbach's $\alpha = 0.911$).

They received 7,143 responses and found that the majority of the students experienced mild anxiety, and others experienced moderate to severe anxiety.

However, living in urban areas, family income stability, and living with parents were protective factors against anxiety. Having relatives or acquaintances infected with COVID-19 was a risk factor for increasing the anxiety of college students. Economic effects, and effects on daily life, as well as delays in academic activities, were positively associated with anxiety symptoms. However, social support was found to be negatively correlated with the level of anxiety.

In conclusion, The mental health of college students is significantly affected when faced with public health emergencies, and they require the attention, help, and support of society, families, and colleges. The study also suggested that the government and schools should collaborate to resolve this problem to provide high-quality, timely crisis-oriented psychological services to college students.

However, a limitation is that most participants (99.45%) had no relatives or acquaintances who were infected with

COVID-19 which might have affected their responses. Also, among the respondents, approximately two-thirds were women (67%), which is a case in most of the online surveys.^[8]

Another such study was conducted: **Impact of the COVID-19 Pandemic on the Mental Health of College Students in India: Cross-sectional Web-Based Study** conducted by **Amar Prasad Chaudhary, Narayan Sah Sonar, Jamuna TR, Moumita Banerjee, Shailesh Yadav**. This cross-sectional web-based study was conducted using a Google Forms questionnaire. The Google Form included a sociodemographic questionnaire and psychometric scales evaluating the psychological and behavioral impacts of the COVID-19 pandemic. Thus, both qualitative and quantitative analyses were performed in the study. The form contained two sections, namely, a sociodemographic section and a psychometric scale section; the latter assessed the psychological and behavioral impacts of the COVID-19 pandemic.

Socio-demographic Characteristic		Students Distribution(%)
Age (in years)	18-21	190 (58.6%)
	22-25	116 (35.8%)
	26-29	8 (2.5%)
	30 and above	10 (3.1%)
Gender	Male	144 (44.4%)
	Female	180 (55.6%)
Degree Enrolled	Diploma	11 (3.4%)
	Bachelor's Degree	256 (79%)
	Master's Degree	53 (16.4%)
	PHD	4 (1.2%)
Any of family members got infected with COVID-19	Yes	37 (11.4%)
	No	287 (88.6%)
Total Sample		324

They have used **Fear of COVID-19: the FCV-19S** which consists of 7 items that attempt to measure the fear of COVID-19. The responses are recorded on 5-point

Likert scales with points ranging from 1 to 5. The higher the score, the greater the fear of COVID-19 among the participants.

SCALES	CATEGORIZATION	TOTAL
FCV-19s	High Fear	223 (68.8%)
	Low Fear	101 (31.2%)
PHQ-9	Minimal	142 (43.8%)
	Mild	89 (27.5%)
	Moderate	46 (14.2%)
	Moderately Severe	33 (10.2%)
	Severe	14 (4.3%)
GAD-7	Mild	157 (48.5%)
	Moderate	90 (27.8%)
	Moderately Severe	38 (11.7%)
	Severe	39 (12.0%)

The study concluded among the identified risk factors, having a family member infected by COVID-19 significantly impacted anxiety and depression among students. This study also concludes that the FCV-19S has

a moderate positive correlation with the GAD-7 and PHQ-9, respectively. Also there seems to be not much impact of the independent variable like Age, Gender and Degree enrolled on any of the scale scores of participants

which is shown in table below.

Scales	Age p-value	Gender-p-value	Degree Enrolled-p-value	Any of familymembers got infected with COVID-19 p-value
FCV-19s	0.049	0.542	0.276	0.468
PHQ-9	0.015	0.096	0.688	.000**
GAD-7	0.049	0.189	0.859	0.012

The study suggested that to mitigate the fear, anxiety, and depression caused by the COVID-19 pandemic, students should be encouraged to pursue healthier lifestyles during the pandemic. They also recommended developing and implementing various policies at the government level to reduce the effects of the COVID-19 pandemic on mental health.

However as the survey was internet-based, the researchers did not actively collect the responses of learners who are not linked to social media. Also, they have opted for three tests, namely, **FCV-19S, Anxiety: the GAD-7, Depression: the PHQ-9** which might have increased the length of the Questionnaire.^[9]

Another research named “**The impact of Covid-19 on students’ mental health**” conducted by **Miraz Uddin, Burhan Uddin** found that economic factors, social factors, and educational factors have a significant impact on the students’ mental health during the Covid-19 pandemic situation. The paper uses quantitative data. The study used both primary and secondary data, primary data were collected through the personal interview method to gain the actual scenario of the impact of Covid-19 on students’ mental health. Primary data were collected through a structured questionnaire method using three variables such as economic factor, social factor, and educational factor. The study attempted to collect the data from 250 schools, colleges, and university students who are affected mentally by the Covid-19 pandemic. The sample size of the study is 250 Bangladeshi school, college, and university students who are selected conveniently using a 7-point Likert scale. On the other hand, secondary data were obtained from different kinds of books, journals, published materials, and online sources. The questionnaire consisted of basically two parts. The first part contained the demographic factors of the respondents, such as Gender, Age, and educational qualification of respondents. Then, the other parts were related to the three independent variables (economic factor, social factor, and educational factor) and mental health as a dependent variable.

However, the study was restricted due to its geographical limitations. Also, the sample size of 250 might not be sufficient and may not be the actual representative for all students in Bangladesh. They have not considered all the factors which effect Mental Health. The study included a smaller sample size with Respondents' ranging from school-going students to Ph.D. scholars limiting the researchers from drawing precise conclusions.^[10]

CONCLUSION

Mental health of students should not be taken lightly during this pandemic and be considered as important as their physical health. The impact on mental health seems alike for different factors such as age, gender, and the degree pursued by the student. Hence, a holistic approach is needed to educate about, and help better the mental health of university students at all levels.

Fear of Covid-19 is linked with increased levels of anxiety and depression in students. Hence, along with an emphasis on preventive measures for Covid and better health infrastructure, rumors and fear-mongering should be strictly controlled and awareness about mental health should be promoted.

Living with family, financial stability acted as protective factors against anxiety. However, having a family member infected with Covid-19 is a risk factor for increased levels of anxiety and depression. Regular online counseling should be considered during/after the quarantine period of the family, especially for families having a background of anxiety and depression, or other related problems.

There is a need for preventive strategies to address mental health. Students should be encouraged to pursue healthier lifestyles during the pandemic. Government and schools should collaborate to resolve this problem to provide high-quality, timely crisis-oriented psychological services to college students.

ACKNOWLEDGEMENT: No funding has been granted for this study by any institution and organization.

CONFLICT OF INTEREST: No conflict of interest declared.

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