



IMPACT OF CORONAVIRUS-19 ON MENTAL HEALTH: A CASE STUDY OF UNIVERSITY STUDENTS

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ABSTRACT- The COVID-19 crisis is the biggest in recent times because, because of classrooms' shuts, long social alienation, and fears regarding their future and wellbeing, students have been especially affected. All these causes may trigger tremendous tension and cause students to anxiousness and depressed. The research aimed at exploring the occurrence and seriousness of COVID-19 induced mental disease in BS Economics students of the University of Punjab in the province of Punjab, Pakistan. I have implemented a quantitative approach for this project since broad samples' numerical result is credible and consistent. Two instruments of perceived stress-4 (PSS-4) and the Patient Wellbeing System for Depression and Anxiety-4 were used for an online survey (PHQ-4). During the COVID-19 pandemic, the survey was completed between March and June for students from BS Economics. A total of 128 students agreed: 51.6% were male, 48.4% were college students. A high degree of depression and a healthy mood is respectively 40.6 percent. Among respondents, the incidence of anxiety and depression was 28.9 percent. The PSS and PHQ scores were registered to female students in contrast with male students. The PSS and PHQ are strongly associated ($r=0.66$). In university college students, the COVID-19 pandemic culminated in an extraordinarily high incidence of stress and mental wellbeing disorder and is prominent in female students. An emphasis on women is desperately needed for specific screening and action to enhance students' mental wellbeing.

Keywords: COVID-19; Stress; Anxiety; Depression; Students; Survey

I. INTRODUCTION

The biggest challenge to academic achievement is mental wellbeing. Mental disorders may impact students' enthusiasm, attention, and social experiences – important factors for higher education performance. The Centre for College Behavioral Wellbeing Annual Report 2019 found distress among students who have completed the Psychologic Symptom Appraisal therapy center, while clinicians report frustration is now the most prevalent among all who pursue university counseling services. Alarmingly, only a limited percentage of students who attempt suicide in the area of mental wellbeing, considering the increased demand for mental health services, possibly owing to the mental health stigma. Such negative perception about the evaluation and care of behavioral wellbeing has been established to connect with reduced medication adherence or even early termination.

The COVID-19 pandemic centered on the emotional wellbeing of different groups affected. It is well established to accentuate or generate new stressors, which involve anxiety and care about yourself or your loved ones, restrictions on physical movements and social interactions because of quarantine, and abrupt and drastic shift in your lifestyle. Recent analyses of outbreaks of viruses and pandemics stress such as concerns of contamination, anger, forbearance, scarce supplies, lack of awareness, financial losses, and stigma. China's early hot spots have been the root of much of the latest COVID-19 research on psychological impacts. If the COVID-19 pandemic in the general population continues to grow, many students are unsure about the future and have significant psychological consequences. The focus given to healthier students was replenishing hospitals during this public health disaster where COVID-19 had taken place and interrupted several normal and routine operations. As the WHO imposes realistic rules, such as social isolation, several schools and colleges have stopped their instructional practices and have moved on to an online world. Many students realized that the stress and long-term metamorphosis occurred in many educations and intensified anxiety.

Around the same period as there is confusion for several students in the last year, professional exposure can be suspended, and the potential outcomes as a practitioner can be negative. Staying healthier among many students becomes a fresh and exacerbating tension element. Although many reports explored epidemic mental wellbeing problems, none of them concentrated on health professionals, patients, youth, and the general public. For example, in a recent study by the Kaiser Family Foundation, 47% of those sheltered recorded detrimental results regarding mental wellbeing arising from COVID-19 concern or tension. In general population surveys in the Punjab, researchers identified large levels of anxiety and depressive symptoms. However, there is little proof of the psychological and mental health impact of the current pandemic on college students, considered a vulnerable demographic, with the exclusion of some research, especially from China. Although these studies' results converge so far on the upturn of mental santé among students, the factors that contribute cannot automatically be generalized for populations in other countries. As many recent correspondences have pointed out, there is an immediate need to examine the latest pandemic's impact on college students' emotional health and welfare.

This research aims to establish key stressors linked to the COVID 19 pandemic and understand its impact on university students' mental wellbeing (perceived stress, anxiety, and depression) of PUNJAB students.

II. METHODS

Study setting and design

Around March and June 2020, the Punjab performed a transversal analysis at the height of the COVID-19 pandemic. A web-based questionnaire was widely spread through social media and direct networks to university students. All documents were held secretly, with no identifying details, such as their name, age being disclosed.

Research approach

The deductive approach begins with theories and literature. Proposals or hypotheses of theory or literature will be developed and empirically tested by collecting data using a survey method. Therefore, the deductive approach is to conclude theory. We use this approach when we are doing working on Quantitative Research Methodology. So, I will use this approach.

Theory Hypothesis Observation Confirmation

Population and sample size

The targeted students for this research will be both males and females. And the population size will be 250, out of which the sample size will be 152 Students, from which we get 128 responses. We have used the Raosoft software to select the sample size, putting 95% confidence interval and 5% error chances.

Raosoft		Sample size calculator
What margin of error can you accept? <small>5% is a common choice</small>	5 %	The margin of error is the amount of error that you can tolerate. If 90% of respondents answer yes, while 10% answer no, you may be able to tolerate a larger amount of error than if the respondents are split 50-50 or 45-55. Lower margin of error requires a larger sample size.
What confidence level do you need? <small>Typical choices are 90%, 95%, or 99%</small>	95 %	The confidence level is the amount of uncertainty you can tolerate. Suppose that you have 20 yes-no questions in your survey. With a confidence level of 95%, you would expect that for one of the questions (1 in 20), the percentage of people who answer yes would be more than the margin of error away from the true answer. The true answer is the percentage you would get if you exhaustively interviewed everyone. Higher confidence level requires a larger sample size.
What is the population size? <small>If you don't know, use 20000</small>	250	How many people are there to choose your random sample from? The sample size doesn't change much for populations larger than 20,000.
What is the response distribution? <small>Leave this at 50%</small>	50 %	For each question, what do you expect the results will be? If the sample is skewed highly one way or the other, the population probably is, too. If you don't know, use 50%, which gives the largest sample size. See below under More information if this is confusing.
Your recommended sample size is	162	This is the minimum recommended size of your survey. If you create a sample of this many people and get responses from everyone, you're more likely to get a correct answer than you would from a large sample where only a small percentage of the sample responds to your survey.

Figure 1: Sample size (<http://www.raosoft.com/samplesize.html>)

Data collection and procedure

All study participants obtained an online link. An electronic consent and a simple socio-demographic data sheet were given for this online connection. Following permission to engage in the questionnaire, participants were routed to a safe link. It took around a minute for the survey to end. We have provided the PSS4 and the Patient Wellbeing Questionnaire for depression and anxiety for this analysis (PHQ-4). The PSS-4 is a self-report questionnaire created by Cohen et al. to evaluate an individual's appraisal of difficult circumstances over the past one month of their lives. It has been well tested in many contexts and various languages and has high reliability and validity tests, which are a simple to use global indicator of stress. The whole instrument comprises 14 signs evaluating the experience of the respondent on a 5-point Likert scale.

Data analysis

In SPSS 22.0, the entire analysis was done. Descriptive research has been performed, standard deviations were computed to frequencies and percentages, and regression variables were measured for a mean (M) and standard deviation (S.D.). Univariate analyses were used to examine the participants' relevant correlations and levels of stress, anxiety, and depression. A correlation coefficient was used to determine the relationship between questions. A two-tailed p-value of < 0.05 was considered statistically significant. All analyzes were carried out in SPSS 22.0.

III. RESULTS

The questionnaire in Figure 2 was complemented by 128 (62 masculines; 65 female) students: specific mean values and the PSS-4 and PHQ-4 proportion amongst interviewees by gender. 48% had an irregular PSS ranking, and 69% had an abnormal PHQ4 scoring. Higher stress levels and mood depression/anxiety than males have been regularly recorded in women. Severity levels of student tension and anxiety/depression are seen in Figure 3. Around 28.9% of respondents were mild to extreme, 46.6% had moderate to serious tension, and 30.5% recorded moderate to severe depression. Both PSS and PHQ have a considerable gender effect.

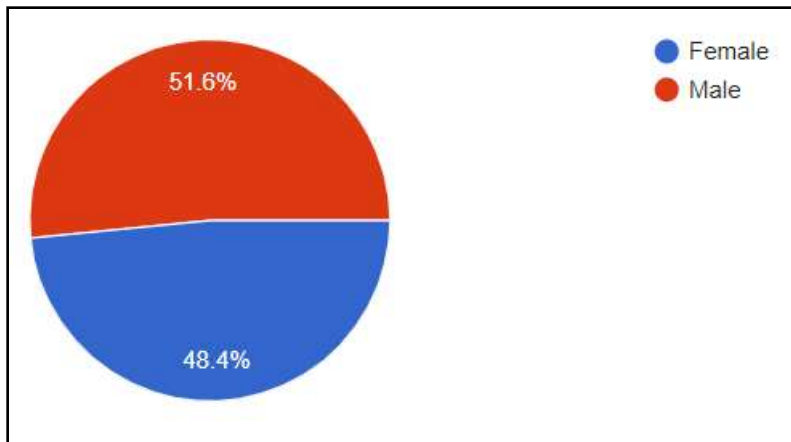


Figure 2: Gender

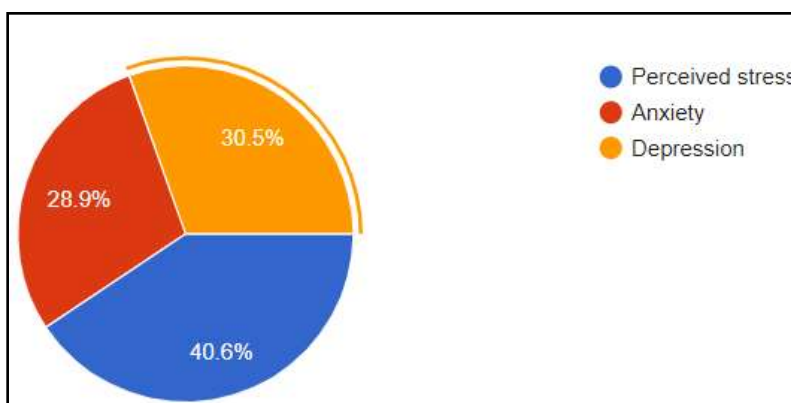


Figure 3: Stress, Anxiety & Depression

Descriptive Analysis

A typical major phase in data analysis is evaluating data-set facts, such as averages and variances. Descriptive statistical knowledge is useful for describing basic data attributes, such as abstract variable statistics and data scale steps. Such statistics allow us to arrange and finalize data in a detailed sample in an overview table. Descriptive statistics are valuable for describing the essential aspects of data, such as descriptive data statistics on variables and data process steps. These statistics allow us to process and summarize large-scale analyzes for results.



Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Over the last 2 weeks, how often have you been bothered by feeling down, depressed, or hopeless?	127	1.0	5.0	3.024	1.2877
Over the last 2 weeks, how often have you been bothered by little interest or pleasure in doing things?	127	1.0	5.0	2.622	1.4250
Over the last 2 weeks, how often have you been bothered by not being able to stop or control worrying?	127	1.0	5.0	3.299	1.1637
Over the last 2 weeks, how often have you been bothered by feeling nervous, anxious or on edge?	127	1.0	5.0	2.992	1.2567
In the last month, how often have you felt that you were unable to control the important things in your life?	127	1.0	6.0	3.157	1.3883
In the last month, how often have you felt confident about your ability to handle your personal problems?	127	1.0	5.0	2.969	1.2782
In the last month, how often have you felt that things were going your way?	127	1.0	5.0	2.976	1.3479
In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	127	1.0	5.0	2.843	1.3359
Valid N (listwise)	127				

Frequency Table

Over the last 2 weeks, how often have you been bothered by feeling down, depressed, or hopeless?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	16	12.2	12.6	12.6
	Occasionally	34	26.0	26.8	39.4
	Sometimes	29	22.1	22.8	62.2
	Often	27	20.6	21.3	83.5
	Always	21	16.0	16.5	100.0
	Total	127	96.9	100.0	
Missing	System	4	3.1		
Total		131	100.0		

Over the last 2 weeks, how often have you been bothered by little interest or pleasure in doing things?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	38	29.0	29.9	29.9
	Occasionally	27	20.6	21.3	51.2
	Sometimes	27	20.6	21.3	72.4
	Often	15	11.5	11.8	84.3
	Always	20	15.3	15.7	100.0
	Total	127	96.9	100.0	
Missing	System	4	3.1		
Total		131	100.0		

Over the last 2 weeks, how often have you been bothered by not being able to stop or control worrying?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	10	7.6	7.9	7.9
	Occasionally	21	16.0	16.5	24.4
	Sometimes	38	29.0	29.9	54.3
	Often	37	28.2	29.1	83.5
	Always	21	16.0	16.5	100.0
	Total	127	96.9	100.0	
Missing	System	4	3.1		
Total		131	100.0		

Over the last 2 weeks, how often have you been bothered by feeling nervous, anxious or on edge?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	15	11.5	11.8	11.8
	Occasionally	35	26.7	27.6	39.4
	Sometimes	33	25.2	26.0	65.4
	Often	24	18.3	18.9	84.3
	Always	20	15.3	15.7	100.0
	Total	127	96.9	100.0	
Missing	System	4	3.1		
Total		131	100.0		

In the last month, how often have you felt that you were unable to control the important things in your life?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	20	15.3	15.7	15.7
	Occasionally	24	18.3	18.9	34.6
	Sometimes	26	19.8	20.5	55.1
	Often	32	24.4	25.2	80.3
	Always	23	17.6	18.1	98.4
	6.0	2	1.5	1.6	100.0
	Total	127	96.9	100.0	
Missing	System	4	3.1		
Total		131	100.0		

In the last month, how often have you felt confident about your ability to handle your personal problems?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	20	15.3	15.7	15.7
	Occasionally	28	21.4	22.0	37.8
	Sometimes	32	24.4	25.2	63.0
	Often	30	22.9	23.6	86.6
	Always	17	13.0	13.4	100.0
	Total	127	96.9	100.0	
	Missing	System	4	3.1	
Total		131	100.0		

In the last month, how often have you felt that things were going your way?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	23	17.6	18.1	18.1
	Occasionally	26	19.8	20.5	38.6
	Sometimes	30	22.9	23.6	62.2
	Often	27	20.6	21.3	83.5
	Always	21	16.0	16.5	100.0
	Total	127	96.9	100.0	
Missing	System	4	3.1		
Total		131	100.0		



In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	26	19.8	20.5	20.5
	Occasionally	29	22.1	22.8	43.3
	Sometimes	28	21.4	22.0	65.4
	Often	27	20.6	21.3	86.6
	Always	17	13.0	13.4	100.0
	Total	127	96.9	100.0	
Missing	System	4	3.1		
Total		131	100.0		

Correlation

A correlation analysis is a method used to numerically measure the relation between two continuous variables (e.g., height and weight). This form of evaluation helps decide if an investigator can influence potential interactions between variables. The study of the correlations is assumed to determine cause and effect, but this is not accurate since the findings were affected by other factors that are not included in the testing. The remainder varies on a systematic basis, and the parameters adjust over a certain time if the partnership can be formed between two sections if one component is routinely changed. When a connection is made, it may be positive or negative based on the measured numerical values. In our study, all factors have a positive impact.

Notes		
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	Cases Used	Statistics for each pair of variables are based on all the cases with valid data for that pair.
Syntax		CORRELATIONS /VARIABLES=PHQ PSS /PRINT=TWOTAIL NOSIG /STATISTICS DESCRIPTIVES /MISSING=PAIRWISE.
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Descriptive Statistics			
	Mean	Std. Deviation	N
PHQ	11.9370	2.55339	127
PSS	11.9449	2.83489	127

Correlations			
		PHQ	PSS
PHQ	Pearson Correlation	1	-.060
	Sig. (2-tailed)		.505
	N	127	127
PSS	Pearson Correlation	-.060	1
	Sig. (2-tailed)	.505	

Correlations

In our research, we noticed that regional differences especially influence students' stress. We consider it one of the first states to be impacted, which may benefit from potentially more strict lock-down behavior. It may also indicate regional variations in baseline stress and anxiety in the University of Punjab. Our analysis has a couple of drawbacks. Firstly, this transversal analysis is undertaken in a scenario it has never seen before and

is quickly evolving. Secondly, our sampling was limited compared to other research, but we assume a typical illustration from numerous regions in the Punjab. Third, we were able to carry out a social network internet survey, and considering the confidential aspect of the survey, we did not check the identification or truthfulness of the participants, which could have created any prejudice in the results of the analysis. Nevertheless, our research gives an early insight into the spotlight of mental health diseases in Punjab University students due to the COVID-19 pandemic and its subsequent national lock-down and shows that this fragile, vital population requires immediate attention and response.

IV. DISCUSSION

Our studies are based on the key stressors correlated with the COVID-19 pandemic and their effects on the mental health of students in the University of Punjab (perceived stress, anxiety, and depression). Our research suggests a strong incidence of tension and anxiety, and depression in pupils. We specifically notice that female students tend to be harder impaired than college students, whereas high school students are more depressed and nervous. Emergencies in public health can impact students' psychosocial wellbeing, and they represent tension, anxiety, and depression. There have been several reports since the onset of the COVID-19 pandemic now investigating the effect of COVID-19 on various student societies' mental wellbeing. A perceived experience of intense anxiety was the main threat of psychological distress. These figures are much smaller than our group's results for both stress and depression and may represent geographical and racial variations and potential differences in intensity. The increased occurrence of anxiety and stress among college students will arise from the high prevalence of mental health issues among college students when they progress to young adulthood. Also, in baselines, university students are notorious for having a large prevalence of mental health issues — one research has shown that self-reported psychological symptoms and diagnosis are high, especially in the ethnic minority communities. Liu et al. identified a high prevalence of numerous stress experiences in the University of Punjab in their research and supported the immediate need for use solutions considering the high effects on emotional and suicidal wellbeing of stress. In the Liu et al. research in China, variations in gender were previously found in the tension of COVID-19. The incidence of post-traumatic stress syndrome in the most hit places was observed to be 7 percent one month after the COVID-19 epidemic, and the re-experience of detrimental shifts in perception or mood and over heatedness was more important in women. During the COVID-19 outbreak, several variables may lead to mental health issues among students. These may often entail social alienation and depression, paranoia and impoverishment due to the disorder, as well as a loss of sleep since this pandemic contributed to imprisonment or physical distance across all nations. Similar effects were also seen in earlier pandemics, such as the extreme acute respiratory syndrome (SARS) outbreak, with the overwhelming headlines, prohibitions on movement, inability to visit loved ones, and worries of job advancement or academia. In one analysis of 381 students in China, major mental wellbeing stresses were reported for the students during the SARS, and the optimistic prediction of psychological effects of stressors and the usage of preventative coping strategies.

V. CONCLUSION

In brief, our research contributes to the growing literature, which illustrates the growing crisis in mental wellbeing for University students in the Punjab. This research shows that social and emotional wellbeing should be supervised closely during the pandemic, and educational institutions should give psychological counseling for adjusting to these conditions. It is also important to investigate why psychological effects on potential research are higher for younger students.

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