

Anxiety and perceived stress among students due to covid-19 pandemic in Lahore

Afshan Ahmad¹, Zainab Hassan^{2,*}, Bisma Ahmad¹, Kiran Tariq¹, Sameen Saeed³

ABSTRACT

Background: The COVID-19 pandemic has had the impact that may contribute to a rise in mental health problems. The novel coronavirus disease (COVID-19) is spreading rapidly, increasing the stress and challenges for healthcare professionals around the world.

Objective: To explore the levels of anxiety and perceived stress among students due to the COVID-19 pandemic in Lahore, Pakistan.

Methodology: An online cross-sectional survey was conducted in Lahore in the duration of 6 months on n=249 participants sampled through a non-probability convenient sampling technique. Participants with an age group between 15-30 years residing in Lahore were included in the study. The survey was done on all the medical students in this range so it could not affect the generalizability of results. Students with Ongoing physical or previous mental illness were excluded. Perceived Stress Scale (PSS) and generalized anxiety disorder were questionnaires converted into Google Forms and were distributed to students of medical discipline through WhatsApp, Instagram, and Facebook.

Results: The mean age of the study participant was 22.±1.94 years. The mean score of perceived stress scale (PSS) was found to be 16.90±4.21 which showed that out of n=249 students n= 181(72.69%) reported moderate stress. While n=30(12.04%) students had low stress. While remaining high stress levels were found among n=38(15.2%) students. The mean score of General Anxiety disorder was found to be 18.45 ±3.16 which showed that out of 249 students, 35.74% (n= 71) students showed Mild Anxiety Level and 12.05% (n=30) showed Severe Anxiety Level.

Conclusion: It was concluded that most of the medical students from Lahore reported stress and anxiety. However, higher stress and anxiety were reported among younger age groups and greater stress was found in females as compared to males.

Keywords: anxiety; COVID-19; GAD- 7; mental health; perceived stress.

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INTRODUCTION

Covid-19 is a worldwide emergency that led towards a high mortality rate and decrease quality of life that can cause a lot of physical, mental, and psychological issues. As this virus spread with physical contact. These circumstances are a big reason of the spread of depression, anxiety as physical health mental health deteriorates with this infection [1]. COVID-19 broke out in China and turned into an overall danger in only a couple of months and to date, it is spreading. Not only compromising individuals' physical wellbeing, COVID-19 carried extraordinary stress to the general population and also disturbed the psychological health of human being worldwide [2]. The confirmed cases and those who are suspected can likewise confront loads of mental issues even after they were cured. Social support & help, as a steady asset acquired by people from others or the general public, was a significant factor influencing individual emotional wellness and can help individuals adapt to back to life [3].

Every human being goes through anxiety in different phases of life due to different circumstances. It's a normal feeling that exaggerates with a different state of affairs [1] this feeling of anxiety leads to reduction of self-confidence or feelings of fear without any origin" [4]. In a person's life when someone goes through stress, this is a normal response [5]. Anxiety Symptoms are divided into three categories physical behavioural and cognitive symptoms. Physical symptoms may appear as shivering in the hands and legs, a lot of sweating, forceful and difficult breathing, tachycardia, weakness, and temperature intolerant. Behavioural Symptoms including social withdrawal and loss in independence Also in cognitive symptoms including learning difficulty, memory issues, retention issues and fear of something happening wrong in future [6].

This pandemic is becoming a big source of the spread of psycho-emotional illness as many countries worldwide reported a sudden and abrupt rise in mental health issues including depression, anxiety, retention or memory issues, cognitive issues, sleep disorders as well as fear of getting affected by this virus in citizens [7]. It is also observed that social media is a big contributor in spreading misinformation about the severity of this virus that is raising mental health issues e.g. depression and anxiety in the common public [8].

The anxiety and depression are two major mental health issues and with 10-44% prevalence worldwide in developing countries while the fourth major reason of morbidity is depression [9, 10]. The University students are at high risk for depression and anxiety symptoms [11, 12] and students get exposure of multiple stresses during their academic

life which is the unique era of development in their life [13]. Few types of research were conducted in China during an outbreak of Severe Acute Respiratory Syndrome and Swine flu that indicated the prevalence of stress and anxiety on higher rates in university students [14]. This unstoppable increase in no of effected cases, misinformation of media, disappointments due to adversely reduction of quality of life of the sufferers [15], social distancing, break in continuity of education department, incomplete attendance of students from their classes due to online education system [16]. Financial issues within families and many more factors influenced the mental health of the students [17].

Although the pandemic affected the whole population but the data on Pakistani university students are lack in the literature. So, this study mainly focused to explore the level of stress and anxiety in students in Lahore.

METHODOLOGY

A Cross-sectional survey was done in which n=249 sample was taken through nonprobability convenient sampling. Both male and female medical students of age group 15-30 years registered in any program of medical and belong to Lahore region were included in the study. Those students who were already taking psychiatric treatment or having anti-depressants, history of malignant diseases, and any physical disability were excluded from the study. A cross-sectional study conducted after taking approval from the Research & Ethics Committee of Riphah College of Rehabilitation Sciences (REC/RCR & AHS/20/-4089).

The demographic data consisted of personal information including sex, age and program enrolled like DPT, premedical and MLT. The Perceived Stress Scale (PSS) consisted of 10 questions was used to determine the stress. A score between 0-13 was the lowest score and it indicated low perceived stress level. A score of 14-26 was the moderate score and it indicated moderate perceived stress level. A score of 27-40 was the highest possible score and it indicated high perceived stress level [18]. The Generalized Anxiety Disorder (GAD-7) scale consisted of 7 questions related to anxiety. A score range between 0-4 indicated minimal anxiety level, a score range between 5-9 indicated mild anxiety level, a score range between 10-14 indicated moderate anxiety level [19].

In the study a qualitative information was presented by using frequency tables and graphs. While quantitative facts were presented with the mean and standard deviation. One Way ANOVA with post-hoc analysis was used for comparing the level of stress and anxiety among different age categories. While to determine the gender-based differences was compared through independent t-

test. The level of significance was set at $p < 0.05$ and SPSS ver. 21 was used for data analysis. To comparing mean scores based on demographic factors, one-way analysis of variance (ANOVA) and independent samples t-test were used. Assumptions were thoroughly examined before running the samples t-test. A samples t-test was carried out under the following conditions: the measurement scale, random selection, normality of the data distribution, adequate sample size, and equality of variance. The conditions were also met about the ANOVA test (normality, independence, and equal variance). The shapiro-wilk test and Q-Q graphs were used to determine whether the distribution of the data was normal.

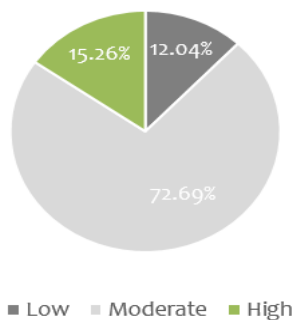


Figure 1: Level of Stress (PSS) among participants (n=249)

The mean score of perceived stress scale (PSS) was found to be 16.90 ± 4.21 which showed that out of $n=249$ students $n=181$ (72.69%) reported moderate stress. While $n=30$ (12.04%) students had low stress. While remaining high stress levels were found among $n=38$ (15.2%) students. (Figure 1)

The mean score of General Anxiety disorder was found to be 18.45 ± 3.16 which showed that out of 249 students, 35.74% ($n=71$) students showed Mild Anxiety Level and 12.05% ($n=30$) showed Severe Anxiety Levels. (Figure 2)

RESULTS

The mean age of the study participant was 22.0 ± 1.94 years. The $n=168$ (67.4%) student's age ranges from 21-25 years, while $n=35$ (14.05%) ranges from 15-20 years and $n=46$ (18.4%) has age more than 25 years. A total student was $n=249$, out of which $n=205$ (82.3%) were females and $n=44$ (17.7%) were males. The $n=181$ (72.69%) of the participants were DPT students, while $n=33$ (13.25%) was MLT students and remaining $n=35$ (14.05%) were higher secondary school students.

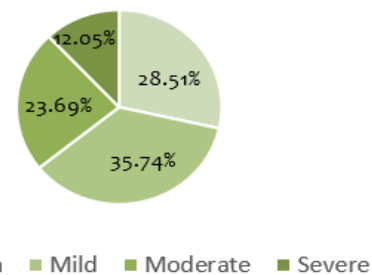


Figure 2: Level of Anxiety (GAD) among participants (n=249)

The results of the One Way ANOVA suggested that there was significant difference among the age categories regarding the stress ($F=14.73$ (2), $p=0.002$) and anxiety ($F=8.96$ (2), $p=0.001$) among medical students due to COVID-19 pandemic. The post hoc analysis showed that there are significant differences in stress level between the age group of 15-20 years vs. 21-25 years ($p < 0.001$) and 15-20 years vs >25 years ($p=0.034$) respectively. Similarly significant differences in anxiety were seen in the age category of 15-20 years vs 21-25 years ($p=0.018$) as well as 21-25 years vs >25 years ($p=0.002$) respectively. (Table 1)

Table 1: Differences of Stress and Anxiety based on age categories.

	Mean±SD	Level	p-value	F(2)	p-value	
Stress	15-20	21.04±4.1	High	^a 0.000***	14.73	0.002**
	21-25	19.42±5.0	Moderate	^b 0.142		
	>25	17.67±3.6	Moderate	^c 0.034*		
Anxiety	15-20	12.85±4.8	Mild	^a 0.018*	8.96	0.001**
	21-25	21.04±3.5	Severe	^b 0.002**		
	>25	18.29±2.4	Moderate	^c 0.992		

^a15-20 vs 21-25 years, ^b21-25 vs >25 years & ^c15-20 vs >25 years
Significance level: $p < 0.05^*$, $p < 0.01^{**}$ & $p < 0.001^{***}$

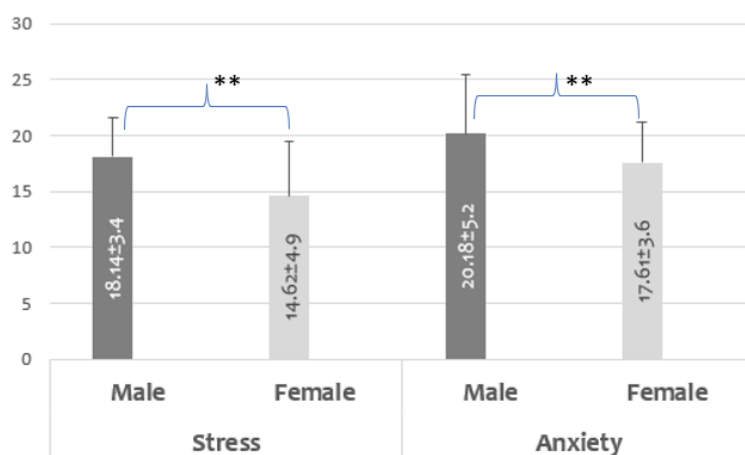


Figure 3: differences of Stress and Anxiety based on gender

The mean score based on gender difference showed that male have moderate stress and mild anxiety level, while female have severe stress level and moderate anxiety. Which showed that male have less stress ($p=0.004$) and anxiety ($p=0.002$) as compared to female students. (Figure 3)

DISCUSSION

The objective of the study was to explore anxiety and perceived levels of stress among students due to COVID-19. The results showed that mild to moderate levels of anxiety and moderate level of stress prevalent in students due to COVID-19. A study reported those students who were confined to their homes and didn't move to some other place were reported with a higher level of stress. It was concluded that 2/3 of students were reported with an increased level of anxiety during the lockdown and their mental health was adversely affected conducted[20]. The current research revealed minority of students showed low-stress levels of 12.0% and similarly minority of them showed high-stress levels of 15.66%. While 72.09% was found with moderate stress levels and this moderate level of stress affected the working abilities of the students and the quality of work and study was compromised due to this stress.

A study conducted in China by Huali Zhan et al in 2021 focused on the stress and anxiety level during this COVID-19 in Chinese students. Moderate to severe stress level was reported in 67.50% while 43.77% of participants were detected with depression while anxiety was also found in 20.60% of students. Consequently, it was concluded during this pandemic of COVID-19 stress and anxiety level is sharply raised in college students particularly in those students who didn't get back to their schools or get stuck in the online system of education. It is needed to be considered that exposure to negative emotions for a long time can easily cause serious mental illness such as cognition issues [21]. Therefore, it is inferred that the stress and anxiety

level of college students during the COVID-19 pandemic is generally high, especially for those who have not yet resumed school.

Long-term negative emotions can easily lead to serious mental diseases such as cognitive impairment[22]. In the current study it was also concluded that a moderate level of stress was most prevalent particularly in students of age 21 years to 23 years. And the level of stress was found moderate with 72.09%. In 2020, Leodoro J. et al conducted a study to find out stress levels in nurses who are working as front-line worriers in this pandemic. According to the findings of this study, 26.8% were ready to care for the COVID-19 patients with a moderate level of stress while 20.3% were probably ready to take care of patients with a mild level of stress while 35.7% were found with the highest level of stress[23]. In the Current study it was observed that Anxiety level among students according to Generalized Anxiety Disorder Scale (GAD-7), 28.5% of the students showed Minimal Anxiety Levels, 35.7% showed Mild Anxiety Levels, 23.7% showed Moderate Anxiety Level while 12% showed Severe Anxiety Levels.

There was an apparent variation in the amount of stress experienced by men and women. Males experienced just mild anxiety and moderate stress, whereas females experienced significant anxiety and stress. This may be due to the fact that females have more differential conditioned skin conductance responses to stimulations than males and have stronger reactivity in fear-related brain networks[24]. Because of their fear of losing their academic achievements due to school closures during the COVID-19 pandemic, as well as their fear that COVID-19 will have a negative impact on the wellbeing of their families or relatives, female students frequently experience more stress and depression than male students [25].

The results of the present investigation revealed a substantial difference in stress and

anxiety, among the three age groups. Moderate depression was reported by the age groups. While younger pupils (those in primary school) expressed mild stress and moderate anxiety, older students (those in secondary school) indicated considerable stress and severe anxiety. Students in secondary schools are more stressed and anxious than those in elementary schools. The main reason for this appears to be that secondary school students commonly utilize social media platforms, giving them a better opportunity to learn about COVID-19, which spreads rumours, fake news, and disinformation about COVID-19, which causes fear, panic, stress, anxiety, and despair. Additionally, secondary school pupils are worried about the effects of this[26].

As in the current study very few samples were included so it may affect the generalizability of the study.

CONCLUSION

This Study concluded that majority of the students had faced moderate stress levels and mild anxiety levels during Covid-19 pandemic. However higher stress and anxiety was reported among younger age groups. Moreover, greater stress was found in females as compared to males.

DECLARATIONS & STATEMENTS

Author's Contribution

AA: substantial contributions to the conception and design of the study.

AA and BA: acquisition of data for the study.

ZH and BA: interpretation of data for the study.

KT: analysis of the data for the study.

ZH and SS: drafted the work.

AA, BA, ZH, KT and SS: revised it critically for important intellectual content.

AA, BA, ZH, KT and SS: final approval of the version to be published and agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. All authors contributed to the article and approved the submitted version.

Ethical Statement

The study was conducted after getting approval from the Research & Ethics Committee of Riphah College of Rehabilitation Sciences (REC/RCR & AHS/20/-4089).

Consent Statement

Informed consent was obtained from all subjects involved in the study.

Data Availability Statement

The data presented in this study are available on request from the corresponding author.

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Funding Sources

None to declare.

Conflicts of Interest

None to declare.

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