



## Gauging the COVID-19 on Academic Stress on Tertiary Level Female Students on the eve of COVID-19

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### ABSTRACT

It has been observed that COVID-19 has increased stress which causes psychological harm. The situation is vibrant even among students who have to attend classes during stressful times. Although university level students have to bear more stress due to the level and complexity of their studies. Therefore, literature is also indicating the stress and impact of the stress on level students from different countries. Although some of the studies have also indicated the tertiary positive impact of online classes. Therefore, this study aims to clarify the impact of COVID-19 on tertiary-level students from Pakistan amid COVID-19. Previous studies were majorly based on medical students although in Pakistan most of the tertiary level students are associated with management science. Therefore, the study focuses extensively on female students pursuing tertiary level education in private sector universities of Karachi. The data has been collected through a closed-ended questionnaire through convenience sampling and the sampling size was 400 female students pursuing their bachelor's degrees in management sciences. Results indicated that COVID-19 has increased academic stress on tertiary-level female students.

### ARTICLE INFO

**Keywords:** COVID-19 Perceived, Level of Stress Online Classes, Tertiary Level Education

### INTRODUCTION

It has been indicated through prior studies that outbreak of diseases like COVID-19 causes severe harm to mental health and wellbeing (AlAteeq, Aljhani & AlEesa, 2020). However, the recent pandemic created a far-reaching impact across industries (Bolotov et al., 2021) and caused immense social isolation for university students (Leal Filho, 2021).

Universities were forced to use innovative methods and practices to continue operations and facilitate students. On the other hand, fear of the unknown, hyper-extensive media coverage, social distancing, and the threat of job loss was causing insecurity, anxiety, and depression (Bolotov et al., 2021). On the other side during COVID-19 students at college and university levels are forced to take online classes. Therefore, legitimate to declare the COVID-19

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brings a revolution in tertiary level education as universities all around the globe were conducting their classes through online mediums. Although the online medium is not the preferred one for teaching as this may not provide immediate feedback to faculty about the interest, attitude, and level of understanding of students. Moreover, it is also ineffective for making teachers understand the requirement of students, thus instructors cannot alter the teaching methodology as per the requirements and needs of the students (Nambiar, 2020).

### **STATEMENT OF PROBLEM**

Bolatov et al (2021) indicated that burnout, anxiety, and depression are the major academic stressors. On the other side, the decrease in interpersonal communication and social distancing tends to foster the rate of these psychological symptoms (AlAteeq et al., 2020). However, the study by Bolatov et al (2021) reflected that the impacts of academic stressors were found to be on the lower side on the health and academic performance of medical students from Kazakhstan. Although due to mixed findings from other parts of the world study also reflected the need for further studies to validate the relationship. Similar has been indicated by other studies e.g. Irawan Dwisona and Lestari (2020), also mentioned the lacking of research on psychological impacts created by online learning mechanisms during a pandemic. Though the later research also indicated that online learning practices were also found to be the factor that improves the student's level of satisfaction with their academic performance. Though depression and anxiety during the pandemic were significant and had a high tendency to cause dissatisfaction with academic performance (Bolatov et al., 2021).

Thus, better to find the impact of those factors that may cause academic dissatisfaction as one of the latest studies from India i.e. Punia et al. (2021)

indicated that university-level students were under immense pressure during COVID-19. These factors are found to be more vibrant in female students as indicated by (Irawan et al., 2020). Hence the purpose of this study is to reflect the impact of factors that cause academic dissatisfaction for females students on the eve of COVID-19.

### **THEORETICAL FRAMEWORK**

The model of the study has been grounded in the psychological need theory which is a brief part of Self Determination Theory given by (Ryan & Deci, 2017). The theory reflected that non-fulfillment of basic psychological needs of the person will make a person ill. According to the theory three basic psychological needs i.e. competence, relatedness & autonomy need to be fulfilled to foster one's growth, vitality & psychological well-being (Levine et al., 2021). A systematic review of literature in the context of the effect of a pandemic on students' mental health in Bangladesh indicated that anxiety, stress & depression are the major cause of the decline in mental health (Al Mamun et al., 2021). Similar sort of factors was found to be severe for female health during COVID-19 as indicated that depression, anxiety, and health anxiety are the top-ranked predictors of post-traumatic stress disorder symptoms after pandemics (Liu et al., 2020 & Özdin and Bayrak Özdin, 2020)

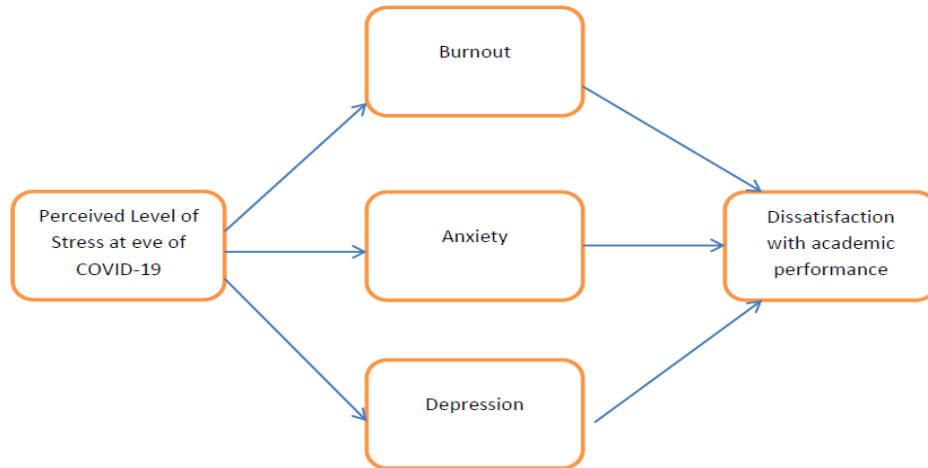
### **MAJOR RESEARCH QUESTIONS:**

RQ1: Did female youth experience more post-traumatic stress disorder symptoms on the eve of COVID-19?

RQ2: Why female students are under more at the eve of post-traumatic stress disorder symptoms COVID-19?

RQ3: Does the Perceived level of stress on female students during the eve of COVID-19 cause academic dissatisfaction?

## RESEARCH MODEL



*Figure 1: Research Model*

### LITERATURE REVIEW

Researchers concluded that the outbreak of COVID-19 resulted in an increase in academic stress and this is termed as one of the most negative and undesirable responses of students to academic environment stressors. The major reasons for the increase in stress levels are uncertainty associated with classes and exams, social distancing, and unavailability of resources to take online classes e.g. computers and poor internet connectivity, etc. (Punia et al., 2021).

Although people all around the globe were also under severe stress due to the threat of risk of death, contamination with viruses, and psychological factors. Especially issues of mental health were found to be a higher side due to continuous increase in COVID-19 cases, imposition of measures like isolation & use of online learning practices at all levels of education. The literature further indicated that taking online lectures is creating massive pressure on students which induces a level of stress due to the complications in using online media. Studies further reflected that anxiety is about working

activities in the future, hence more prevalent in economically vulnerable groups. However, fear has been shown more extensively by economically capable groups (Irawan et al., 2020).

Liang et al (2020) reflected that among higher school respondents 14.4% are suffering from post-traumatic disorders and 40.4% were affected by depression & anxiety. During lockdown, 21% of male and 27% of female respondents were reported to be involved in family arguments. A study in Norway reflected the decrease in empathy and prosocial actions by adolescents. On the other sides study also reported that moods were also reported on the negative side (Van de Groep et al., 2020). However, with the increase in the use of digital media platforms, especially for teaching practices all over the globe, students are also required to spend more time in front of a computer or mobile screen. This is also supplemented by poor sleep ratio, issues of mental & physical health, and makes adolescents dull (Magid et al., 2021).

### RESEARCH HYPOTHESES

H1A: There is a relationship between perceived level of stress on the eve of COVID-19 and Burnout in female students

H2A: There is a relationship between perceived level of stress on the eve of COVID-19 and anxiety in female students

H3A: There is a relationship between perceived level of stress on the eve of COVID-19 and depression in female students

H4A: There is a relationship between burnout and dissatisfaction of female students with academic performance



H5A: There is a relationship between anxiety and dissatisfaction of female students with academic performance

H6A: There is a relationship between depression and dissatisfaction of female students with academic performance

H7A: Burnout mediates the relationship between perceived level of stress on the eve of COVID-19 and dissatisfaction of female students with academic performance

H8A: Anxiety mediates the relationship between perceived level of stress on the eve of COVID-19 and dissatisfaction of female students with academic performance

H9A: Depression mediates the relationship between perceived level of stress on the eve of COVID-19 and dissatisfaction of female students with academic performance

#### **METHODOLOGY**

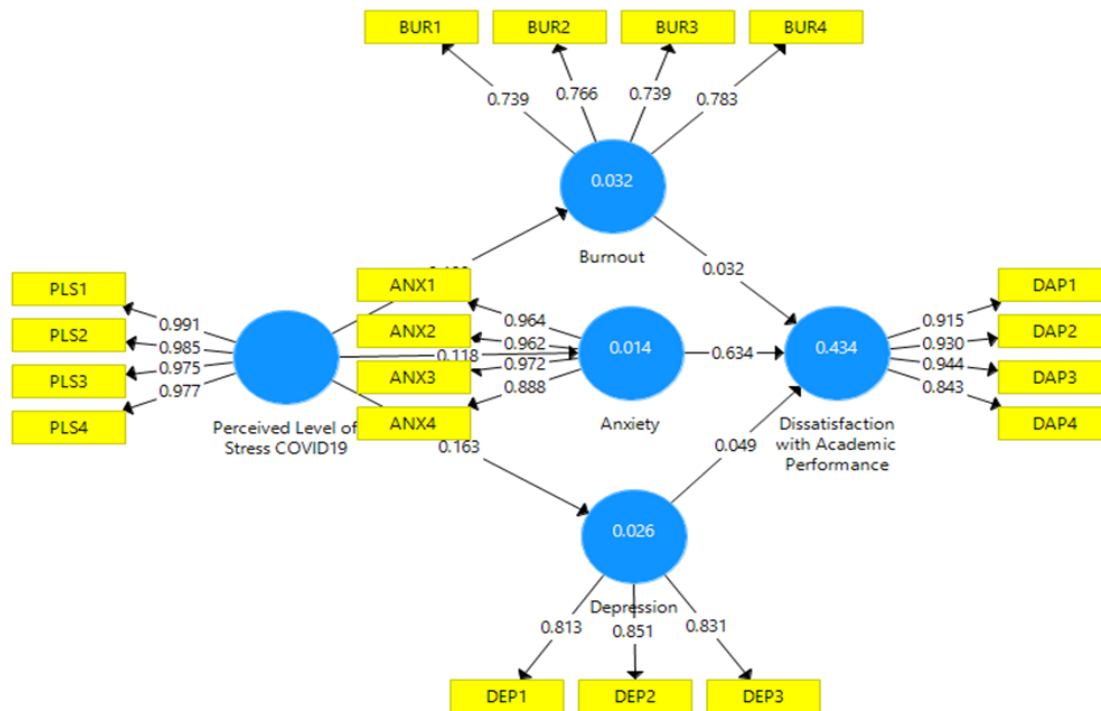
Previous studies collected data from the general population to determine the impact of COVID-19 on the level of stress. However, research reflected that university students were under more stress in comparison to the students of schools and colleges (AlAteeq et al., 2020). One of the studies from India indicated that university-level students experience more pressure due to the level of expectations from their families (Punia et al., 2021).

Studies also reflected that level of stress was like an inverted “U” during a pandemic (Sheroun et al., 2002) and therefore inquire about the stress level during the initial two waves of a pandemic (Looi, 2020) is adequate for associating the academic stress with dissatisfaction. Studies related to the framework use cross-sectional designs and convenience sampling to collect data e.g. AlAteeq et al., 2020; Bolatov et al (2021) and Al Mamun et al. (2021). However, selecting from general public research collect data from female students of private universities to follow Irawan et al., (2020) and Van de Groep et al., 2020, i.e. females were under more pressure and debate during COVID-19. Though collecting a sample from overall female youth was not possible therefore data has been collected from female students of private universities in Karachi. The reason to select these parameters is based on that number of female enrollments in higher education institutes is increasing significantly, especially in Karachi. On the other side level of stress was found to be significantly higher in females residing in Karachi, similar was highlighted by Asim et al (2021)

#### **QUESTIONNAIRE:**

The research instrument used in the study is a questionnaire as used by most of the studies related to the area. It is based on the Five Points Likert Scale that follows the indications of AlAteeq et al. (2020), Bolatov et al (2021), and Saadati et al (2021)

**STATISTICAL TESTING AND ANALYSIS**



*Figure 1: Confirmatory Factor Analysis 9 Outer Loadings)*

In figure 1, it has been observed that all the indicators are found to be satisfactory as per the indications of

Hair Jr. et al. (2016) as the outer loading for every indicator is more than 0.708

	<b>R Square</b>	<b>R Square Adjusted</b>
<b>Advanced Algorithms</b>	0.667	0.665
<b>Big-Data Analytics</b>	0.591	0.589
<b>Big-Data Knowledge</b>	0.530	0.528
<b>Innovative Capabilities</b>	0.523	0.521
<b>Sustainable Competitive Advantage</b>	0.512	0.504

*Table 1: Predictive Accuracy (Quality Criteria)*

Table 1 is indicating that the value of R2 is more than 0.50 for all of the cases and these values are equivalent to or higher than the moderate level criteria of predictive accuracy (Cheah, Memon, Chuah, Ting & Ramayah, 2018). Therefore, in light of this parameter variance caused by IV in subsequent DVs is effective (Benitez, Henseler, Castillo & Schuberth, 2020).



	<b>Cronbach's Alpha</b>	<b>rho_A</b>	<b>Composite Reliability</b>	<b>Average Variance Extracted (AVE)</b>
<b>Anxiety</b>	0.961	0.963	0.972	0.897
<b>Burnout</b>	0.754	0.761	0.843	0.573
<b>Depression</b>	0.777	0.778	0.871	0.692
<b>Dissatisfaction with Academic Performance</b>	0.929	0.930	0.950	0.826
<b>Perceived Level of Stress COVID19</b>	0.988	0.991	0.991	0.965

**Table 2: Construct Reliability and Convergent Validity**

Table 2 is used to reflect construct reliability and convergent validity. For this purpose, the initially table uses Cronbach's Alpha ( $\alpha$ ), Goldstein rho, and Composite Reliability to reflect model fit through construct reliability. Values of 0.7 and above for all the cases reflected the construct reliability effectively. Reliability parameters are also following

the required criteria as  $CR > \rho > \alpha$  (Sijtsma, 2009 a&b). Therefore, legitimate to declare the model as fit. However, for measurement of convergent validity, AVE is regarded as the most significant predictor & values of 0.5 or above for AVE are acceptable to reflect convergent validity (Ab Hamid, Sami & Sidek, 2017).

	<b>Anxiety</b>	<b>Burnout</b>	<b>Depression</b>	<b>Dissatisfaction with Academic Performance</b>	<b>Perceived Level of Stress COVID19</b>
<b>Anxiety</b>					
<b>Burnout</b>	0.266				
<b>Depression</b>	0.340	0.372			
<b>Dissatisfaction with Academic Performance</b>	0.694	0.226	0.287		
<b>Perceived Level of Stress COVID19</b>	0.120	0.206	0.185	0.145	

**Table 3: Discriminant Validity through HTMT Ratio**

Table 3 is indicating discriminant validity through Heterotrait-Monotrait Ratio which is the most authentic measure to reflect discriminant validity (Henseler, Ringle & Sarstedt, 2015). HTML uses correlation among the variables to indicate

discriminant validity and the maximum value allowed to show correlation is 0.85 (Hair Jr, Sarstedt, Ringle & Gudergan, 2017). Thus, the tool is consistent with the indications and fit for further inferential testing.



	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
<b>Anxiety -&gt; Dissatisfaction with Academic Performance</b>	0.634	0.638	0.061	10.402	0.000
<b>Burnout -&gt; Dissatisfaction with Academic Performance</b>	0.032	0.029	0.054	0.587	0.558
<b>Depression -&gt; Dissatisfaction with Academic Performance</b>	0.049	0.049	0.055	0.890	0.374
<b>Perceived Level of Stress COVID19 -&gt; Anxiety</b>	0.118	0.116	0.062	3.688	0.000
<b>Perceived Level of Stress COVID19 -&gt; Burnout</b>	0.180	0.180	0.052	3.479	0.001
<b>Perceived Level of Stress COVID19 -&gt; Depression</b>	0.163	0.168	0.059	2.739	0.006

**Table 4: Path Coefficient**

Table 4 is reflecting the path coefficient which indicated that COVID-19 results in all the major outcomes of academic stress. The findings are supported by t-values which are higher than the threshold criteria of t-statistical values given by Duarte and Amaro (2018) and the p-value given by

Hair et al (2019). However, burnout and depression do not have any impact on dissatisfaction with academic performance. The only academic stressor that is resulting in dissatisfaction with academic performance is anxiety.

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values
<b>Perceived Level of Stress COVID19 -&gt; Anxiety -&gt; Dissatisfaction with Academic Performance</b>	0.075	0.074	0.021	3.571	0.001
<b>Perceived Level of Stress COVID19 -&gt; Burnout -&gt; Dissatisfaction with Academic Performance</b>	0.006	0.005	0.010	0.561	0.575
<b>Perceived Level of Stress COVID19 -&gt; Depression -&gt; Dissatisfaction with Academic Performance</b>	0.008	0.008	0.010	0.763	0.446

**Table 5: Specific Indirect Effect**

Table 5 is the measure of specific indirect effect and according to that there is only one mediation that was found to be potent i.e. (Perceived Level of Stress COVID19 -> Anxiety -> Dissatisfaction with Academic Performance). The mediation has been supported with a t-value of 3.571 and a p-value of 0.001. Both of the values are effective enough to reflect the mediation according to the criterion of Hair et al (2019) and Duarte and Amaro (2018)

**CONCLUSION**

Analysis indicated that the Perceived level of stress on female students from private universities in Karachi has resulted in all forms of academic stressors, used in the study by Al Mamun et al. (2021). However, the impact of these academic stressors is only valid for Anxiety. The statements are valid as t-values for all the academic stressors of more than 1.97 and p-values are lesser than 0.05. Though for academic dissatisfaction it has been



observed that t-values are 0.587 and 0.897 for the Similarly, the p-values are 0.558 & 0.374 respectively. Similarly, in the case of specific indirect effects to assess mediation the only case where t-values are more than 1.97 and p-values are lesser than 0.05 is the mediation of anxiety. Hence the only mediation that proves worthy for the relating the level of perceived stress on female students of private universities in Karachi is anxiety.

### Discussion

The findings of the study are found consistent with AlAteeq et al. (2020) and Bolatov et al (2021) as COVID-19 is resulting in all the academic stressors i.e. burnout, anxiety, and depression. Although, findings associated with mediation prove that an increase in the level of anxiety is the real reason for academic dissatisfaction. Therefore, legitimate to declare that study is also consistent with Punia et al., (2021). Specifically, for female students, the study is consistent with the findings of Liu et al. (2020) and Özdin and Bayrak Özdin (2020), as all the variables predicted by these studies are also found effective for Pakistan. Hence the theory of psychological need (Ryan & Deci, 2017) is also applicable in territories of Pakistan, especially for female students attaining higher education from Karachi.

### Area for further studies and managerial implications

The study is one of the premiers in the territories of Pakistan to reflect the academic stressors of COVID-19 and their impact on the level of female students' academic dissatisfaction. Findings reflected that reflect the indications of AlAteeq et al. (2020) and

impact of Burnout and Depression.

Bolatov et al (2021), i.e. COVID-19 has resulted in academic stressors. Although the serial mediation is found to be consistent in the relationship between COVID-19 => Anxiety => Dissatisfaction in academic performance. Thus, findings are useful for academicians as in new normal academia requires a blend of face-to-face and online teaching mechanisms & findings might be used to optimize the content and curriculum in case of online or hybrid sessions.

Findings are especially considerable for improving the academic performance of female students either from co-education or gender-specific educational universities. Similar has been indicated by the study from Bangladesh that policymakers must consider the findings of studies to devise better policies for inline methods of teaching (Al Mamun et al., 2021) On the other side study conducted in Japan showed that level of anxiety on students from rural areas was on the higher side than the students of urban areas (Shigemura, Ursano, Morganstein, Kurosawa, & Benedek, 2020).

Similar were the findings of Irawan et al. (2020) students from rural areas have more difficulties in earning income, internet access, and access to necessities. Thus, the level of anxiety is dominant in the students from rural areas. Therefore, on the bases of these findings, it is recommended to conduct a study concerning rural and urban areas. Moreover, studies might further be conducted on the bases of economic status as per the indications of Irawan et al. (2020).

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