Effects of Academic Stress on the Academic Performance of Students: A Case Study during Pandemic

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Abstract

COVID-19 has led to the increasing development of online courses on a global scale to combat the effects of the pandemic. Online platforms are being utilized to provide students with the resources to continue learning their respective fields of study. However, it cannot be ignored that there are still areas that are lacking regarding online learning. The purpose of this paper is to determine the effects of academic stress on the academic performance of tertiary-level students during the pandemic. A survey questionnaire was created through google forms which consist of demographic data to assess if the academic stress is linked to their academic performance. Based on the results of the statistical tests, it was shown that the majority of the respondents are experiencing high academic stress levels towards their academic performance during the pandemic. Among the three key academic stressors, the fear of contagion and relationship and academic life have been found that contributes to the academic stress of the students which both have a significant relationship with the academic performance of the students during the pandemic ($p<0.001$). The fear of isolation is perceived to be the lowest academic stress contributor and has no significant relationship to the academic performance of the undergraduates ($p=0.973$). It was also concluded that undergraduates on the higher year levels are perceived to feel more stressed than those who are on the lower year levels.

Keywords
Academic stress, academic performance, online learning, pandemic

1. Introduction
The strict implementation of regulations has taken all sectors off-balance after the World Health Organization's (WHO) announcement of the COVID-19 pandemic. The pandemic has had such a profound effect on people's lives that it has become impossible for them to adjust to the "new normal," which made every community across the globe on lockdown and required people to temporarily comply with quarantine protocols.

The education sector is one of the sectors that has been severely impacted by the pandemic. Educational institutions were required to cancel face-to-face classes and transition to online learning due to quarantine procedures; the educational institutions were struggling to work out how to continue providing education under the current standard. Students were required to study in the safety of their own homes because schools mandated distance learning. According to Clabaugh et al. (2021), Academic stress related to their desire to excel in this new learning setup is a challenge that students have to face in education. In recent years, the majority of students remain unaware of distance education, while enrollment in online courses has been increasing. The insufficient knowledge of online learning can be exacerbated by the student's mental stability and environment.

Since all environments have their features and advantages, today's online learning world can no longer be compared to the traditional learning environment that the industry had before the global pandemic. Given that the pandemic has forced educational institutions to turn to online learning, students and educators have been caught off guard by the abrupt transition from traditional face-to-face classes to online classes. Furthermore, owing to differences in contexts, most methods used in a traditional classroom environment have been recognized as inapplicable to online learning.

1.1 Objectives
This study focuses on the effects of academic stress on the performance of the student during the COVID-19 pandemic. The researchers aim to determine factors that affect the academic stress of the students and the correlation of the identified factors to the academic performance of the student.

2. Literature Review
2.1. The Transition of Educational Institutions to Online Learning
A significant number of institutions throughout the world have suspended or canceled all academic engagements such as lectures, meetings, sports, and other activities due to rising concerns about the ongoing COVID-19 outbreak (Sahu, 2020). On March 8, 2020, Philippine President Rodrigo R. Duterte signed Proclamation No. 922, placing the country in a state of a public health emergency, after the DOH confirmed the first COVID-19 patient in the Philippines, contracted by local transmission. Both public and private, Higher Education Institutions (HEIs) have adjusted to the new environment in which face-to-face engagement and large gatherings are not allowed.

As with many other parts of daily life, COVID-19 certainly has had a major effect on students and teachers throughout the world (Mailizar et al., 2020). The situation cannot be fixed immediately to move seamlessly from a traditional classroom setting to remote and online learning; this fast transition is now related to several difficulties and problems (Crawford et al., 2020). E-learning, often known as online learning, is defined as the use of any device with internet connectivity to participate in the learning process from any location at any time (Dhawan, 2020). Rapid development in technology has made it more plausible to provide distance education (Mcbrien et al., 2009). However, institutions around the world have chosen to utilize the existing technology to develop online learning platforms for students in all academia because nobody knows when this pandemic will completely subside (Kaur, 2020).

2.2. The Causes of Academic Stress to Students During Pandemic
Everyone adapted to work-from-home settings, from operations and support service units to administration and educators, as well as students (Simbulan, 2020). However, these arrangements have caused a considerable level of academic stress which may have affected the academic performance of the students. Stress was revealed as the most prevalent variable among all health factors affecting undergraduate students' educational outcomes, as stress has a negative influence on both physical and psychological health (Dwyer & Cummings, 2001; Altaf & Kausar 2013). With the implementation of various preventive measures during the pandemic's active phase, concerns including social isolation, rearrangement of family relationships, education, and businesses, the fear of COVID-19 transmissions, and loss of family members and friends are at the top concern. (Fegert et al., 2020).

Academic stress is a tension that arises from educational factors and is connected to learning activities, causing mental distortions and negatively affecting students' physical, emotional, and behavioral well-being (Nurmaliyah, 2014). Students face academic stress as a result of learning difficulties, excessive assignments and pressure to achieve high achievement, competition among classmates, financial burdens, fear of failure, and a strained relationship with lecturers (Nakalema & Ssenyonga, 2013; Liu & Lu, 2011; Misra & Castillo, 2004; Assaf et al., 2017; Phillips et al., 2020). According to Khan (2018), the students' coping methods about the demands of academic life can be influenced by stress, which is believed to be a component of their lives, and this is because academic work is always completed in conjunction with stressful activities.

Academic pressure, social and interpersonal pressure, and environmental pressure are the three key areas of stress for college students. Academic overload (representing academic pressure), remoteness from school (representing social and interpersonal strain), and fear of contagion are all examined in this study (representing environment pressure).

2.3. Fear of Contagion
With the ongoing pandemic and the sudden shift from traditional learning to online learning, fears of contagion reflect feelings of apprehension about having or contracting COVID-19. According to a study, An event that can trigger lives,

such as a global pandemic, can trigger extreme levels of stress. According to previous studies, pressures were triggered by large-scale events like natural disasters and terrorist attacks. There are previously mentioned large-scale events, but a pandemic of infectious disease is far more different from those. The COVID-19 breakout has had a devastating effect on the lives of people worldwide. The physical health and psychological well-being of people were affected. An example could be, the organs in the body and injuries it might gather in terms of physical health; while, the fear of having the infectious disease and avoiding exposure to people for a lesser chance of being infected. According to health care professionals, anxiety and stress can be triggered by the pandemic because of the uncertainties it brings. That is why the researchers came up with an idea that the stress and health problems of college students during this time, might be caused by the spread and contagion of COVID-19 during the pandemic.

Fear of Contagion assessed subjective stress connected to the danger of infection. The importance of the latter dimension is following prior research on the importance of fear of becoming infected, fear of friends, family, and others being ill, and fear of becoming a source of transmission for others (Ahorsu et al., 2020; Brooks et al., 2020; Taylor et al., 2020).

2.4. Fear of Isolation

COVID-19 has caused a lot of stress for people, especially in terms of social isolation, which may have an impact on the mental and emotional health of many. Russel & Pang (2016) defined isolation as a subjective sense of lack of amount, value, or kind of relationships with others that can lead to bad feelings and have an impact on an individual's mental and physical health. According to Mosanya (2020), it is found that academic stress may increase amid unexpected and severe external occurrences because of limited control and social isolation. The absence of interpersonal support, separation, and isolation exacerbate stress (Wang et al. 2020). Mosanya (2020) added that isolation can lead to emotional effects such as separation, pain, and impaired cognitive abilities that can deteriorate an individual's mental health.

Two essential aspects of online learning include the physical separation of teachers and students, as well as the use of materials to foster student-teachers and student-student involvement. The internet facilitates this form of learning, which makes teaching procedures remotely possible. Synchronous learning can provide a lot of opportunities for social interaction (Mcbrien et al., 2009). In accordance, synchronous learning is structured in a way that allows students to attend live lectures and have real-time interactions between educators and learners. There is also the ability of the educators to give quick feedback to the learners. While asynchronous is not well structured. In such a learning environment, learning content is not available in the form of live lectures or classes. The lectures are available at different learning platforms and forums. In such a setting, instant feedback and fast response are impossible (Littlefield, 2018).

It is expected that isolation and sexual life were associated with one another. Because students were more likely to be back with their family or return home due to the pandemic. It is more possible that relationship, intimacy, and sexual life were severely restricted as a result of the lockdown. These results could potentially be attributed to the unique European environment, given that the average age of young people leaving their parents' homes is 25.9 (Eurostat, 2020). While in other countries, students often leave home at the age of 18 to start college. (Aassve et al., 2020; Crocetti and Meeus, 2014).

2.5. Relationship and Academic Life Factor

As schools were prescribed to shift to online learning due to the ongoing pandemic, students are thrown off by the abrupt transition from traditional learning to online learning. Students were found to be underprepared for a variety of e-learning and academic-type abilities. In addition, students have a low degree of preparation when it comes to using Learning Management Systems (Parkes et al., 2014). Even in the safety of their own homes, students might be stressed. Social stresses, such as family, friends, and teachers, have an impact on students' academic stress. According to Sibnath D. et al (2015), parental pressure is the primary cause of students' academic stress. Parents put pressure on their children to excel during this period, causing academic stress. Furthermore, there is a correlation between academic stress and parental pressure (Sibnath D., 2015).

Since the daily routines of college students were modified, this factor contributed to a better understanding of the effects that characterize these changes in the relationships and academic lives of university students. With forced full-time cohabitation, with exclusive sharing of time and space throughout the day, the connection with relatives should be carefully observed. This is due to the closures of the campuses and student housing, which prompted numerous

students to return home, as well as the large number of students who are already living with their parents, but this time under different circumstances. University students may experience increasing sickness linked to changes in relationships with colleagues and professors, as well as greater suffering associated with academic studies, as constraints severely limit the opportunities to gain from university life. The changes related to relationships with colleagues and professors could be the contact limited only through online platforms, and the changes related to academic studying could be the fear of delays and difficulty of finding spaces for concentrating. (Cao et al., 2020; Lee, 2020b; Sahu, 2020).

2.6. The Effects of the Identified Academic Stress on Student's Academic Performance

Wheaton M., Prikhidko, A., and Messner, G. (2021) stated that people who are much more vulnerable to emotional contagion showed higher degrees of concern regarding COVID-19, and more depressed, anxious, and stress, as well as with more OCD symptoms. People have been put under a lot of stress because of the virus's unpredictability, as well as the inconsistency and uncertainty of when the crisis will be fully under control, particularly when social face-to-face engagements are disrupted (AlAteeq, 2020). Hence, students' stress levels have significantly influenced learning achievement in the Covid-19 epidemic era (Tukayo, 2020).

Aside from that, without the aim of disrupting interpersonal interactions, social isolation was imposed as a preventive strategy to minimize physical contact and decrease the number of infections due to the COVID-19 infection. Consequently, social separation has been portrayed as a stressful situation that has resulted in problems and an uncomfortable condition for young people to succeed in the new distant learning modality. Social isolation, stress, and depression cause memory and cognitive issues, as well as influencing decision-making, resulting in low educational attainment (Karen et al., 2021).

Furthermore, as students were more likely to continue to stay with their family or come back home due to the virus, their romantic relationship, companionship, and sexual life were more likely to be hampered by the quarantine. Family relationships and support may also be compromised. The thought of the death of family members who might be at risk is overwhelming. In the event of death, the pandemic affects families' traditional grief processes. Grief and mourning for lost loved ones can lead to adjustment issues, post-traumatic stress disorder, depression, and even suicide, especially if the person with close contact with the infected person is restricted (Fegert et al., 2020).

3. Methods

The collected responses were analyzed with the help of Minitab software and the reliability of the survey instrument was measured using Cronbach's alpha test having the coefficient value of .70. Statistical analysis such as ANOVA with Tukey's Post Hoc Test was also employed to determine the significant difference in the average level of stress of respondents in terms of demographic profile such as gender, age, year level, no. of units taken, and academic performance. After which, results of survey responses were further treated using correlation analysis to determine the relationship between the perceived stress of students in terms of the following: (1) fear of contagion, (2) fear of isolation, and (3) relationship and academic life to the academic performance of students.

A total of 101 college students were the respondents of the study. The respondents are classified based on demographic characteristics such as gender, age, year level, number of units taken, and academic performance. The researchers used the COVID-19 Student Stress Questionnaire developed by Zurlo et al. (2020) to measure the academic stress of students during the pandemic. The COVID-19 Student Stress Questionnaire (CSSQ) was created primarily to gauge students' stress levels during the COVID-19 pandemic lockdown. It consists of 7 items on a 5-point Likert scale ranging from zero ("Not at all stressful") to four ("Extremely stressful"). Perceived stress was operationalized based on transactional models of stress for instrument design (Lazarus and Folkman, 1984). Each item was created to cover a variety of domains that could have been affected by the COVID-19 pandemic lockdown and, as a result, could be seen as sources of stress. (i.e., fear of contagion, fear of isolation, and poor relationship and academic life). The scale also provides a Global Stress score ranging from 0 to 28.

4. Results and Discussion

4.1. Summary of Respondents Profile

The summary of the demographic profile of the responders is shown in Table 1. Based on the result of the responses, that the majority of the respondents were females (54.50%) ages between 20-22 years old (85.15%) and currently 3rd-year college level. The majority of them have average units of load (14-22 units) and have a very satisfactory academic standing (1.50-2.00 LWA).

Table 1. Summary Statistics of Respondents' Profile

Respondents' Profile	Category	N	%
Gender	Male	46	45.50%
	Female	55	54.50%
Age	17-19	9	8.91%
	20-22	86	85.15%
	22-25	4	3.96%
	25 and above	2	1.98%
Year Level	Year 1	13	12.87%
	Year 2	8	7.92%
	Year 3	74	73.27%
	Year 4	6	5.94%
No. of Units Taken	underload (4-13 units)	13	12.87%
	average (14-22 units)	76	75.25%
	overload (23-30 units)	12	11.88%
Academic Standing	Excellent (1.00-1.50)	13	12.87%
	Very Satisfactory (1.50-2.00)	39	38.61%
	Satisfactory (2.00-2.50)	25	24.75%
	Fairly Satisfactory (2.50-3.00)	6	5.94%
	Poor (3.00 and above)	5	4.95%

4.2. Summary Result of COVID-19 Student Stress Questionnaire

The COVID-19 Student Stress Questionnaire (CSSQ) consists of three subscales that measure COVID-19 students' stressors related to (1) Fear of Contagion; (2) Fear Isolation (i.e., social isolation and couple's relationship, intimacy, and sexual life); (3) Relationships and Academic Life (i.e., relationships with relatives, colleagues, professors, and academic studying). A Global Stress score was also provided. The questionnaire revealed a satisfactory internal consistency (Cronbach's alpha = 0.70). The questionnaire provided a brief, valid and reliable measure to assess perceived stress to be used for understanding the impact of the COVID-19 pandemic lockdown among university students and for developing tailored interventions fostering their wellbeing (Zurlo, 2020).

Table 2 shows the items, means, standard deviations, and ranges of the CSSQ scales (Relationships and Academic Life, Isolation, Fear of Contagion) and the total score (Global Stress). Considering that high levels of COVID-19-related stress can be indicated by scores that are 1 SD above the and low levels of stress can be indicated by scores that are 1 SD below the distribution of the CSSQ scores, we can affirm that scores of 6 or below indicate low levels of perceived COVID-19-related Global stress, scores of 7–15 indicate average levels of perceived COVID-19-related Global stress, and scores of 16 or more indicate high levels of perceived COVID-19-related Global stress among university students.

Table 2. Descriptive Statistics of COVID-19 Student Stress Questionnaire

Factors	Items	Mean	Std. Dev.	Range
Fear of Contagion	1	3.17	0.92	0-4
Fear of Isolation	2,7	4.72	2.08	0-8
Relationship and Academic Life	3,4,5, 6	11.25	3.64	2-16
Global Stress	All items	19.14	5.87	2-28

Based on the result of the global stress score, of the 101 college students surveyed, 72 college students (71.29%) experienced high levels of academic stress during the COVID-19 pandemic., while 26.73% experienced the average level of stress and only 2% experience low level of stress. According to the findings, the respondents experience a great deal of stress during a pandemic despite being in the comfort of their homes.

Table 3. Summary Result of Global Stress Score

Range of Global Stress Score	Frequency	%
low level of stress	2	2%
the average level of stress	27	26.73%
high level of stress	72	71.29%

Figure 1 shows the results of factors that contribute to student academic stress during a pandemic. The seven poll questions were divided into three measures of stress levels of students: fear of contagion, fear of isolation, and relationship & academic life. The results show that the high-stress contributor towards the academic performance of college students is the fear of contagion, followed by the relationship and academic life factor, and lastly the fear of isolation factor.
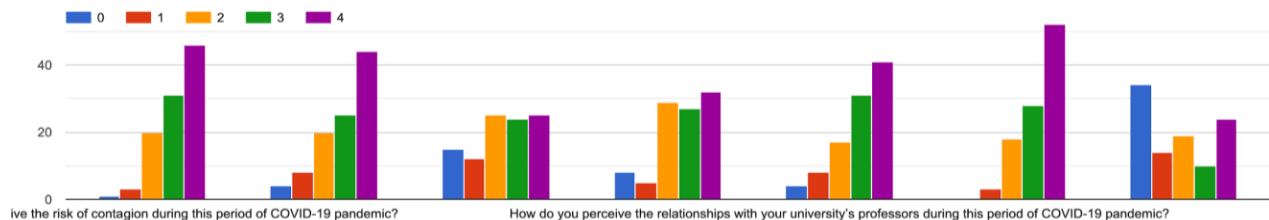

Figure 1. Summary Result of Respondents' Perception of Academic Stress During Online Class

4.3. Result of Analysis of Variance

After gathering the responses for the perceived level of academic stress of students during COVID-19 using CCSQ, the researchers have employed an analysis of variance to determine if there is a significant difference in the stress level of students based on demographic factors. As shown in Table 4, only the year level has a significant difference in the CCSQ scores of the students (p-value<0.005). According to the calculated mean, it shows that respondents in years 1 to 2 have lower stress levels than those in years 3 to 4. Other factors such as gender, number of units, and academic standing, on the other hand, show no significant differences having a p-value of greater than 0.05.

Table 4. Result of ANOVA

Factors	Variables	Mean	Std. Dev.	p-value	Remarks
Gender	Male	16.30	5.48	0.1168	not significant
	Female	19.25	6.13		
Year Level	Year 1-2	14.75	6.50	0.0299	significant
	Year 3-4	18.90	5.05		
No. of Units	Underload	16.30	5.10	0.3462	not significant
	Average	16.70	4.64		
	Overload	19.10	3.84		
Academic Standing	Excellent	20.60	6.55	0.8903	not significant
	Very Satisfactory	19.20	4.83		
	Satisfactory	18.80	5.09		
	Fairly Satisfactory	17.50	8.80		
	Poor	17.80	8.76		

4.4. Result of Correlation Analysis

To determine the effects of academic stress as measured from CCSQ scores on the academic performance of students, correlation analysis was used. The dependent variable used in the analysis is the general weighted average grades of students ranging from 1.0 to 5.0 wherein 1.0 means highest academic performance and 5.0 as lowest academic performance while independent variables in the study are the scores of students in the three subscales namely (1) Fear of Contagion, (2) Fear of Isolation and (3) Relationship and Academic Life.

Based on the result of correlation analysis as shown in Table 5, there is a significant relationship between respondents' fear of contagion and their academic performance. The relationship between the two shows how the fear of contagion for the COVID-19 impacts respondents' mental stability, making it one of the academic stresses during online classes and thereby affecting respondents' academic performance. The scatter plot to show the relationship between the two variables is shown in Figure 2. On the other hand, relationships and academic life have a significant correlation with respondents' academic performance. The relationship between the two reveals that social stressors influence students' academic stress, impacting the respondents' academic performance. The scatter plot to show the relationship between the two variables is shown in Figure 3. However, the fear of isolation due to the pandemic does not have a significant relationship to the academic performance of the respondents.

Table 5. Result of Correlation Analysis

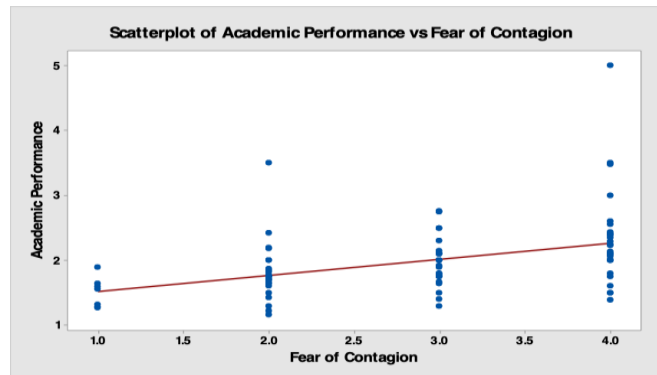| COVID Student Stress Factors	Pearson correlation	p-value	Remarks
Fear of Contagion	0.4240	0.000	significant
Fear of Isolation	0.0040	0.973	not significant
Relationship and Academic Life	0.7000	0.000	significant

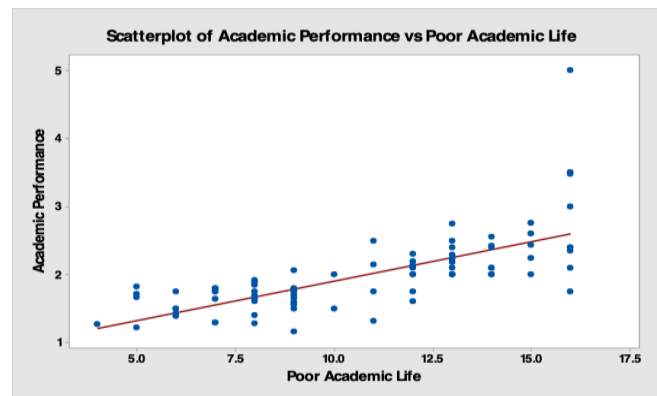Figure 2. Scatterplot of Academic Performance vs. Fear of Contagion

Figure 3. Scatterplot of Academic Performance vs. Relationship and Academic Life

5. Conclusion

COVID-19 pandemic has greatly affected the academic performance of students due to academic stress factors. Fear of contagion, fear of isolation, and relationship and academic life were identified as the academic stressors and associated with the academic performance of the undergraduate students. The results revealed that the academic stress factor: fear of contagion has a moderate correlation (r=0.4242, p<0.001) to the academic performance of students during the COVID-19 pandemic, while the fear of isolation among the students has a minimal to no impact on their academic performance (r=0.004, p=0.973). It is also concluded that there is a strong significant relationship between the fear of contagion and relationship and academic life (r=0.7, p<0.001) with the academic performance of the students during COVID-19. Moreover, it was found that 71.29% of the respondents experience a high level of stress during the COVID-19 pandemic, 26.73% of them have an average level of stress and only 2% have a low level of stress. In addition, from the result of ANOVA, it was proved that respondents in year level 3-4 have significantly higher stress levels than those on year level 1-2.

Based on the gathered results, fear of contagion is one of the significant factors that cause stress to college students. The researchers recommend taking breaks from watching, reading, or listening to news stories. It is good being informed about the new things that are happening around, but allotting time to take a break from digesting information on Covid-19 should be done most especially if the news is making one feel anxious.

Poor academic life factor is another contributor to the stress of college students, as the gathered data proves its significance. The researchers suggest budgeting the time that students have for every subject and activity that they do per day. Make a to-do list if necessary and partner it with a rewards system to feel more motivated in accomplishing the contents of the list. Having a support system should also be taken into consideration especially in a time like this. Lastly, having enough sleep is recommended by many experts to restore the energy that was taken away throughout the day.

As the data results show, fear of isolation is not significant for the stress accumulators of college students. Although it did not show significance about being an issue, the researchers suggest that it is best to use the time during this time of isolation to be more productive in terms of having a healthy life by trying to do some basic exercises three times a week, as per expert's recommendation, and having a balanced and healthy diet because most people tend to eat more than the usual food intake because they are bored, while some eat less because they feel they do not deserve to eat. Meditate and free the mind for at least five minutes.

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Biography

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