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Severity of Anxiety due to the COVID-19 Pandemic among the Students of Africa International University, Karen

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Abstract

This study investigated the severity of anxiety due to the COVID-19 pandemic among students studying at the Africa International University, Karen, Nairobi County, Kenya. The study was done within a period of three months. The study was guided by the Ecological Systems theory and the Social Cognitive Theory. The study employed a descriptive survey research design. Participant's answers were compared to certain variables including prevalence of preventive hygiene measures, depression, severity of anxiety and prevalence of avoidance behavior. A working sample size of 123 was picked from a target population of 1134 students from the Africa International University. Stratified Random Sampling was used to get a sample of 123 students. A structured questionnaire with an internal consistence reliability of α=0.858 was used to collect data from the respondents. In addition to this, the researcher used the Becks Depression Inventory-II and the Beck's Anxiety Inventory to find out the severity of depression and anxiety respectively. The information obtained was analyzed using SPSS version 23 and information obtained was presented using both descriptive and inferential statistics. The study found out that the COVID-19 pandemic had a significant impact on the psychological well-being of college students. More than 60% of the students incorporated behavior changes and adhered to the government directives on preventive hygiene measures (p=0.000). It was also found out that the students suffered from depression 20.10 ± 0.975SD. 28.9% and 23.7% of the students suffered from moderate and severe depression respectively. The student also suffered from anxiety 15.85 ± 0.491SD, p=0.000. A quarter of the students had concerning high levels of anxiety. Avoidance behavior was also prevalent at 12.09 ± 3.909SD. It was alarming that 50% of the students thought of quitting or deferring their studies due to the COVID-19 pandemic ((r = 0.230, p-value = 0.014). The study recommends the introduction of psychoeducation programs to educate the students on how to cope with the COVID-19 pandemics and other pandemics that might occur, initiation of accessible and affordable counselling services for students, training on developing resilience, a concerted effort between the colleges and government to educate students on how to cope with pandemics and that the government should put measures to mitigate the spread of fake news from social media and educate people on where to obtain reliable information.

Key words: *Anxiety, COVID-19, Students*

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1.0 Introduction

COVID-19 is highly contagious and has a high risk of mortality (WHO, 2020). Scientists from all over the world were frantically researching for an effective vaccine or a cure. According to statistics collected by the World Health Organization (WHO) as of 26th December 2020, the Americas had the largest number of infections in the world amounting to 34,002,757 including 834,167 deaths. In Europe 25,118,109 infected cases were reported including 551,762 deaths. Italy which was the epicenter of the disease in Europe, as of 26th December 2020 had 2,028,354 infections and 71,359 deaths. Their infection and death cases decreased due to the drastic measures taken of locking down the country to contain the disease and minimize the infection curve. South East Asia had 11,813,360 infected cases out of which 180,231 succumbed to the disease. Surprisingly the highest cases in Asia as of 26th December 2020 were in India which reported 10,169,118 infections including 147,343 deaths, while China which was the epicenter of the disease reporting only 96,240 cases with 4,777 deaths. In Africa 1,815,247 cases were reported and 39,990 deaths with South Africa leading with 983,359 cases and 26,276 deaths. Followed by Egypt with 130,126 cases and 7,309 deaths. Kenya had 95,713 cases and 1,653 deaths (WHO Coronavirus disease dashboard, 2020).

Due to increased globalization, the COVID-19 pandemic has spread to every part of the world and has affected livelihoods, destroyed lives, depleted world economies and changed everything about how people interact with each other and the world (Mensah, 2020). In order to contain the disease and flatten the infection curve most countries in the world resorted to taking tough measures. Passenger travel between countries was stopped and the airline industry grounded. Countries like Italy, India, Britain, Spain and Rwanda effected a total lockdown in their countries where citizens could not even move out of their homes. The disease is a big challenge in Africa, given the constraints in resources, limited medical personnel, weak health systems and underequipped facilities (Were, 2020). In Kenya, the borders were closed, and lockdown enforced in Nairobi, Mombasa, Kwale and Malindi as well as in small neighborhoods that had high number of infections like Mombasa Old Town and Eastleigh, curtailing the freedom of movement (Shaban, 2020). All non-essential businesses, including schools from the basic to tertiary were closed for thirty days. A curfew was also imposed in the whole country from 7pm to 5am to curb night travel. Social gatherings like public meetings and congregating in places of worship was banned. Other events like weddings and funerals were not permitted to have more than fifteen persons (Shaban, 2020).

Social or physical distancing between individuals and wearing of face masks was advocated so as to stop social contact and therefore spread of the virus. Hygiene measures which include the regular hand washing using soap and running water and also using hand sanitizers, quarantining the sick and those suspected to be infected, were instituted (MOH, 2020).The government also came up with serious campaigns on radio and television of educating the people on the dangers of COVID-19. The Ministry of Health informs the public daily the number of reported infections and deaths that happen every twenty four hours and information on the progress and measures taken to curb the disease is also relayed (MOH, 2020). Statistics indicate that with 90% of the global fleet grounded, the global aviation industry faces its worst crisis (OECD, 2020). Global commodity prices saw the biggest decline in the month of March 2020, dropping by 20.4%. In terms of social

costs, the schooling of 1.6 billion students worldwide, that is, 9 out of 10 students worldwide, has been disrupted (Rajput & Rajput, 2020). In more than 90% of the cases of COVID 19, metropolitan areas bear the brunt of the pandemic. Global poverty was expected to rise with 40 to 60 million people estimated to be forced into extreme poverty, living on less than $1.90 a day in 2020.

The worldwide higher education enrollment was projected to be 250 million in 2020 (UNESCO, 2018). In comparison the total population of students attending colleges in Kenya was estimated to be 971,000 that is 500,000 in middle level/technical training and 471,000 in universities (Kenya Population and Housing Census IV, 2019). Schools and colleges in Kenya were closed for ten months. Many of the technical colleges closed down permanently due to financial problems while others including universities opted to continue their studies through online platforms, a new learning experience for most students. The effects of the Coronavirus Disease pandemic are being faced by all these students and among them are those with psychosocial issues induced by the pandemic (Kecojevic, Basch, Sullivan & Davi, 2020). The WHO emergency committee gathered on 31st July 2020 over the coronavirus crisis and assessed that the COVID-19 global risk level was still very high and anticipated that the duration would be lengthy without an end in sight and warned of risk response fatigue due to the socio-economic pressures on countries (WHO, 2020).

The report by the Task Force on Mental Health in Kenya, (2020) states that the world had been changed by the COVID-19 pandemic in ways that defy the imagination. It was termed as likely to be "the most life changing single event for this and many generations past and future" (GOK, 2020). According to the report, there were different reactions to the COVID-19 pandemic. There was the psychotic contagion at the population level which was characterized by extreme level of communal anxiety. This included fear of getting infected by the virus, or a loved one getting infected and dying. Others experienced fear due to the enormous amount of information driven by social and mainstream media whether true or inaccurate. The report further argued that the health measures put in place to contain the virus although necessary, was also painful and this increased the stress levels to the population. Kenya's Ministry of Health reported that the number of mental health cases had increased dramatically during the COVID-19 pandemic. According to the Task Force on Mental Health in Kenya (2020), 25% of coronavirus outpatients and 40% of in-patients suffered from mental health issues such as depression. On a positive note, Kenyans were seeking help and speaking up more about mental health issues (Yusuf, 2020). The curfew regulations were implemented by security forces with brutal force, the social distancing, closure of churches and schools, the uncustomary measures for burial of the dead, the requirements that people stay at home away from work causing problems of unemployment and a likelihood of starvation led to heightened levels of societal anxiety never experienced before.

1.1 Research Problem

The Coronavirus Disease of 2019 (COVID-19) is one of the world's most deadly pandemics ever witnessed. About 78 million people have been infected with the disease and over 1.7 million others killed worldwide (WHO, 2020). The rate of infection globally continued to grow at a very high rate with over 400,000 new cases reported daily. The COVID-19 pandemic also brought about widespread psychological problems that may result in long term issues such as depression, anxiety and worsening pre-existing psychological disorders (Haider, Tiwana & Tahir, 2020). In Kenya,

the rate of infection continued to grow exponentially daily. Mwiti (2020) elucidated that there would be critical post-COVID-19 health challenges and that psychosocial interventions should be implemented together with medical care.

Wang, Pan, Wan, Tan, Xu and Ho (2020) in a cross-sectional study in China established that 53.8% of the population experienced severe psychological impacts of the outbreak. 16.5% reported severe levels of depression, with 28.8% and 8.1% reporting severe anxiety and stress respectively.

There is a likelihood that the COVID-19 pandemic had adversely affected the mental, social status and overall well-being of college students in Kenya and this needs urgent intervention. A study conducted by Infotrak Research and Consulting showed that 75% of Kenyans were worried and anxious about Coronavirus and the COVID-19 situation in Kenya and of these 50% of Kenyans reported to be extremely worried (Infotrak, 2020). In a study done in China, anxiety among college students was related to the disrupted daily schedules, change in academic activity due to the closure of schools and lockdown and financial strain due to job losses caused by economic stagnation (Dubey, Biswas, Ghosh, Chatterjee, Dubey, Lahiri, & Lavivie, 2020). According to Addelman (2020), promotion of social and physical distancing as a way of preventing infection was leading to increased feelings of anxiety and depression among people.

The COVID-19 pandemic could lead college students to suffer from avoidance behavior. It was assumed that avoidance responses due to the fear of contracting COVID-19 could lead to an emergence of psychological problems such as avoidance behavior (Balkhi, Nasir, Zehra & Riaz, 2020). College students might have avoided or reduced contact with people, social places, visits to healthcare facilities, places of worship and travelling (Balkhi, Nasir, Zehra & Riaz, 2020). Avoidance behavior could be caused by fear and anxiety and lead to loneliness and depression.

1.0 Theoretical Framework

The Ecological Systems Theory

Urie Bronfenbrenner developed the Ecological Systems Theory and posits that human development is affected by various environmental systems. The Ecological systems theory makes three assumptions: First, that a person is a dynamic player and affects his or her environment. Secondly, that the environment compels a person to adapt to its conditions and boundaries. Thirdly, the environment is understood to be comprised of different environmental systems of varying sizes which are interrelated and these spectrum ranges from smaller immediate environments in which people interact directly, to larger distant environments that impact growth indirectly. The microsystem, the mesosystem, the exosystem, the macrosystem and the chronosystem are such environmental systems. (Bronfenbrenner, 1979). The microsystem is the nearest environment to a person and includes the entities with which he/she maintains direct contact (Berk, 2000). It consists of a person's family, friends, school and teachers. Microsystems are themselves linked to the mesosystem. The mesosystem offers links across the microsystems because what happens in one microsystem is likely to influence others. The mesosystem encompasses the relationships between the different entities in the microsystem, such as family and friends, the family and school among others. The strength and nature of these connections are important to a person's development. Supportive relations among these context can benefit the person and their overall development.

For example, in the context of online learning, a student can attain academic success if the family and school are supportive. The family can provide a conducive learning environment and the facilities required like a laptop and a steady internet and the school can provide the platform that will facilitate learning. If the relations in the mesosystem do not support the individual, there is a likelihood of negative outcomes.

The exosystem encompasses of settings that an individual may not be involved in but can still influence their development. For example, the parents' workplace can affect a student. If a parent was laid off their job or their salary was reduced due to the decreased business caused by the measured taken to mitigate the COVID-19 pandemic, then the student will be forced to either drop out of school or reduce the number of units they could have taken for the semester. The macrosystem consists of the broader society's overall principles, ideals, customs, and laws in which all the other levels are rooted. According to Berk (2000), the macrosystem is the outermost layer of a person. It does not have a distinct structure but influences all the other systems. For example, a student is affected by the Ministry of Health directives of school closures and the hygiene protocols of wearing of masks, washing of hands and social distancing in the fight against the COVID-19 pandemic. The chronosystem refers to the dimensions in time relating to a person's development. It describes the development or evolution of the systems in time. The chronosystem can vary for a short or long time. (Bronfenbrenner 1989). Changes in the ecological context of development can affect the direction a person's development is likely to take. In this case the COVID-19 pandemic has over time since it was discovered affected the beliefs, customs, technologies and social circumstances of a person. It has changed how education is delivered, how technology is used, how people socialize and even the beliefs that were held. It has forced people to adapt to a different lifestyle in what is being referred to as the 'new normal'.

The main strength of the Ecological Systems theory is that it deals with individuals based on their natural environment. It also shows how multiple influences affect a person's development. The theory used with other theories complement the level of explanation to supplement and support the individual's psychological development. While the theory highlights the development stages of life and the different environments in which an individual is associated, it has a weakness in that it does not provide a detailed mechanism for development. It also does not provide reasons for behavior.

The Social Cognitive Theory

The Social Cognitive Theory (SCT) addressed the weaknesses of the Ecological Systems theory. SCT was proposed by Albert Bandura and it posits that learning occurs within a social environment in an active and reciprocal interaction of the person, environment and behavior. New social behavior can therefore be acquired through own experiences, observing the actions of others and the results of those actions. Learning is a cognitive process that happens in a social environment and can occur through observation or direct instruction. According to Bandura,

> "Human functioning involves interrelated control systems in which behavior is determined by external stimulus events, by internal processing systems, and regulatory codes, and by reinforcing response-feedback systems" (Bandura 1969, p19).

The Social Cognitive theory has four major concepts. The first concept is the differential reinforcement which relates to the use of consequences for a behavior. This includes positive or negative reinforcement, punishment or withdrawal. These arise directly from the external environment.

The second is vicarious learning or modelling which argues that the observation of a model being strengthened for a given behavior can increase the probability of that behavior been replicated by the observer. Also, the observer may avoid similar behavior that has been perceived to lead to punishment. The third is cognitive processes which Bandura viewed as intervening environmental events and behavior. Behavior is governed by cognitive processes of encoding, arranging and retrieving data. The environment thus provides the person with cognitively processed information and the outcome of the processing will decide the overt behavior that will follow.

The fourth construct is reciprocal determinism which posits that behavior both influences and is also influenced by the person and the environment controls a person's behavior through external social stimulus events. The person also has self-efficacy, which is the level of confidence in his/her ability to successfully perform a behavior and manipulate their environment. In this case a student's behavior will be determined by how they perceive the COVID-19 pandemic as a result of the vast information they are consuming from the media about the dangers, infections and deaths that the disease is posing. This might make the student become anxious or suffer from depression. The environment through the social events happening due to the disease, where people are wearing masks, keeping physical and social distance, unconventional burials, will determine the student's behavior where they might opt to avoid people and also wear masks to protect themselves from the disease.

The strength of the Social Cognitive Theory is that it stipulates that conditioning and modeling will lead to behavior modification and cause the elimination of undesirable behaviors and therefore increase desirable responses. The Social Learning theory is criticized that it underestimates the individual's contributions to their own development. It also has a very narrow focus on the environmental influences. The Ecological system theory addresses this weakness.

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Diagrammatic Theoretical Approach

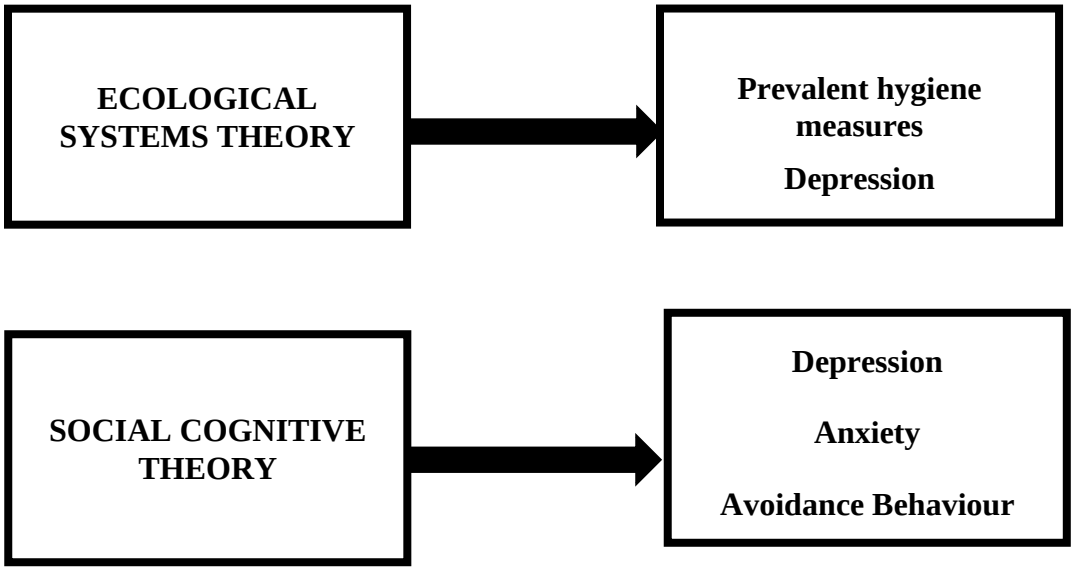

Figure 1: Diagrammatic Theoretical Framework (Researcher, 2020)

2.1 Empirical Literature

Depression

Depression, is a common and severe illness. It is also known as major depressive disorder. It is a normal response to an abrupt worsening change in living conditions involving uncertainty and separation (Huremovic, 2020). Depression is caused by a complex interaction of psychological, biological and social factors. Adverse life events like psychological trauma, loss of a loved one, unemployment, abrupt disruption of life trends, can cause an individual to develop depression. According to the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5*), depression symptoms range from mild to extreme and can include feelings of sadness, loss of interest in things once loved, trouble sleeping, substantial weight loss or weight gain, lethargy or tiredness, feelings of worthlessness or remorse, difficulty focusing, thinking or making decisions, suicidal thoughts. Depression is diagnosed if these symptoms last for at least two weeks consecutively (APA, 2013). According to a study carried out by Global Burden of Disease (GBD, 2017) depression is a widespread mental illness that affects over 264 million individuals worldwide. In any given year, depression affects around one in fifteen adults and one in six individuals will suffer from depression for any point in their lives (APA, 2013).

Behavioural theorists accentuate the importance of the environment in influencing behavior. Depression is therefore a consequence of the relationship of a person with his or her environment. Operant conditioning indicates that the elimination of positive reinforcement from the environment induces depression. (Lewinsohn, 1974). Events such as losing a job, being isolated from friends induce depression because they decrease positive reinforcement.

Anxiety

Anxiety is a common reaction to stress. It is an expectation of a potential problem and is related to the actions of fear and avoidance. The most common psychiatric disorders in the world are anxiety disorders, affecting 33.7% of adults at some stage in their lives (Bandelow & Michaelis, 2015). These disorders include social anxiety disorder (social phobia), panic disorder, and generalized anxiety disorder involve excessive fear, anxiety and worry which is persistent, uncontrollable and overwhelming. Anxiety disorders cause individuals to evade situations that can trigger or aggravate their symptoms. This may affect their school work, social relationships or occupation. In order for a person to be diagnosed with an anxiety disorder, fear or anxiety must be out of proportion, causing substantial discomfort and hindering the ability of an individual to work normally in social, occupational or other critical functioning areas. (APA, 2013).

A study by Salari, Hosseinian-Far and Jalali (2020) concluded that the prevalence of anxiety as a consequence of the COVID-19 pandemic among the general population was 31.9%. A study by Wang and Zhao (2020) found out that university students had higher levels of anxiety than the general population after the outbreak of the COVID-19 and that the disease had a negative psychological impact on the students in relation to anxiety. The study also established that the students were worried about the change of their lives due to school closures and online learning rather than face-to-face learning.

Avoidance behavior

Avoidance is the act of keeping clear of threatening situations and is a major characteristic of adaptive fear. Excessive avoidance can affect an individual's quality of life which may transform into maladaptive avoidance due to the absence of anxiety correcting information (Barlow, 2002). According to the American Psychiatrist Association (2013) maladaptive avoidance is a key feature of numerous mental disorders. For example, individuals with Obsessive Compulsive Disorder (OCD) will tend to avoid situations where they believe contamination is high, Social Phobia patients will tend to avoid social gatherings and Post Traumatic Stress Disorder (PTSD) patients will tend to avoid intrusive memories.

In a study by Lau, Griffiths and Choi (2010) during the Swine Flu H1N1 pandemic, 77% or the respondents showed some avoidance behavior. Individuals avoided going to hospitals for fear of getting infected by the virus, they avoided crowds and leaving their homes.

3.0 Research Methodology

A descriptive survey research design was adopted by the report. In order to assess the current pattern of that population with respect to one or more variables in question, the descriptive survey study design aimed to collect data from members of a population. The study was conducted at the Africa International University located in Karen, Nairobi County, Kenya. The target population for the study were all the students undertaking diploma, bachelors, masters' and PhD degree programs at AIU. Data available at the AIU's Admissions office indicated that there were 1134 students enrolled in the 2020/2021 academic year with 84 enrolled for diploma courses, 807 for undergraduate degree programs, 204 for masters' degree programs and 39 for the Doctor of Philosophy (PhD) programs. Stratified random sampling method was used in selecting 114 students from AIU to form the sample population.

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4.0 Findings and Discussion

The objective of the study sought to determine the severity of anxiety due to the COVID-19 pandemic among the students of AIU, Karen. Section B of the questionnaire explored the issue of anxiety which is a psychological impact of the COVID-19 pandemic as demonstrated by Table 1.

Table 1: Whether the COVID-19 pandemic caused anxiety among students

Statements	Yes %	No %
I fear leaving my house because of COVID-19	61 (53.5%)	53 (46.5%)
I fear visiting crowded places i.e. markets and supermarkets.	56(49.1%)	58 (50.9%)
I fear for the safety of my health even when I am at home.	47 (41.2%)	67 (58.8%)
I feel anxious when a family member goes outside the house.	63(55.3%)	51 (44.7%)
I feel anxious on a daily basis because of COVID-19	50(43.9%)	64(56.1%)
I feel that the government should isolate COVID-19 patients to specific hospitals.	69(60.5%)	45(39.5%)
I feel under-confident with the current infection control measures.	70 (61.4%)	44(38.6%)
I feel fake news surfacing on the social media regarding COVID-19 is causing fear.	82(71.9%)	32(28.1%)
I feel the situation is not as bad as it is being portrayed.	66(57.9%)	48(42.1%)
I feel that virtual learning is too stressful.	64(56.1%)	50(43.9%)

As observed in table 1, 61 (53.5%) of the respondents feared leaving their house because of COVID-19 and 63 (55.3%) felt anxious when a family member went outside the house. 69 (60.5%) felt that the government should isolate COVID-19 patients to specific hospitals while 70 (61.4%) felt under-confident with the current infection control measures. It is alarming that a significant number of the respondents 82 (71.9%) felt that fake news surfacing on the social media regarding COVID-19 was causing fear and 64 (56.1%) felt that virtual learning was too stressful. Whereas 50 (43.9%) felt anxious on a daily basis due to COVID 19, 66 (57.9%) felt that the situation was not as bad as it was being portrayed. The above findings show that more than half of the respondents had fear and anxiety over their life and those of their family members. They also did

not trust the measures taken by the government to control infection thus increasing the anxiety felt on a daily basis.

The study also sought to find out the mean and standard deviation to verify if the COVID-19 pandemic caused anxiety among the students of AIU, Karen. Table 2 presents the findings.

Table 2: To determine the mean and standard deviation if the COVID-19 pandemic caused anxiety among students

Statements	N	Mean	Std. Deviation
I fear leaving my house because of COVID-19	114	1.46	.501
I fear visiting crowded places i.e. markets and supermarkets.	114	1.51	.502
I fear for the safety of my health even when I am at home.	114	1.59	.494
I fear for the health of my family members.	114	1.36	.482
I feel anxious when a family member goes outside the house.	114	1.45	.499
I feel anxious on a daily basis because of COVID-19.	114	1.56	.498
I feel that the government should isolate COVID-19 patients to specific hospitals.	114	1.39	.491
I feel under-confident with the current infection control measures.	114	1.39	.489
I feel fake news surfacing on the social media regarding COVID-19 is causing fear.	114	1.28	.451
I feel the situation is not as bad as it is being portrayed.	114	1.42	.496
I feel that virtual learning is too stressful.	114	1.44	.498
Total	**114**	**15.85**	**0.491**

According to table 2 a score of 15.85 ± 0.491SD was obtained can be interpreted to mean that students were suffering from anxiety due to the COVID-19 pandemic. A T-test was also run to determine if there was a significant difference between the means of the different variables.

Table 3: T- test results to find out if the COVID-19 Pandemic caused Anxiety among Students

	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference Lower	Upper
I fear leaving my house because of COVID-19	31.221	114	.000	1.465	1.37	1.56
I fear visiting crowded places i.e. markets and supermarkets.	32.082	114	.000	1.509	1.42	1.60
I fear for the safety of my health even when I am at home.	34.287	114	.000	1.588	1.50	1.68
I fear for the health of my family members.	30.117	114	.000	1.360	1.27	1.45
I feel anxious when a family member goes outside the house.	30.943	114	.000	1.447	1.35	1.54
I feel anxious on a daily basis because of COVID-19.	33.449	114	.000	1.561	1.47	1.65
I feel that the government should isolate COVID-19 patients to specific hospitals.	30.332	114	.000	1.395	1.30	1.49
I feel under-confident with the current infection control measures.	30.264	114	.000	1.386	1.30	1.48
I feel fake news surfacing on the social media regarding COVID-19 is causing fear.	30.298	114	.000	1.281	1.20	1.36
I feel the situation is not as bad as it is being portrayed.	30.596	114	.000	1.421	1.33	1.51
I feel that virtual learning is too stressful.	30.818	114	.000	1.439	1.35	1.53

Based on the results presented in Table 3, all the factors investigated in the study were highly statistically significant (p = 0.000) implying that the COVID-19 pandemic was highly likely to have caused anxiety among the students of AIU, Karen, Nairobi County.

The Beck's Anxiety Inventory tool was used to assess the severity of anxiety due to the COVID-19 pandemic among the students of AIU, Karen. Table 4.14 presents the findings.

Table 4: BAI assessment of the severity of anxiety due to the COVID-19 pandemic

	Frequency	Percent	Valid Percent	Cumulative Percent
Low anxiety	58	50.8	50.8	50.8
Moderate anxiety	28	24.6	24.6	75.4
Potentially concerning levels of anxiety	28	24.6	24.6	100.0
Total	114	100.0	100.0	

The results obtained in table 4 above show that about a quarter 28 (24.6%) of the respondents experienced potentially concerning levels of anxiety while three quarters experienced low anxiety 58 (50.9%) and moderate anxiety 28 (24.6%). These findings indicate that a significant number of students 56 (49.2%) suffered from moderate to potentially concerning levels of anxiety which correlates with the results of table 4.12. This also correlates with the findings of a study by Wang et.al. (2020) that university students experienced higher levels of anxiety than the general population due to the COVID-19 pandemic.

Given the above findings, the study further sought to find out the gender that felt that virtual learning was too stressful.

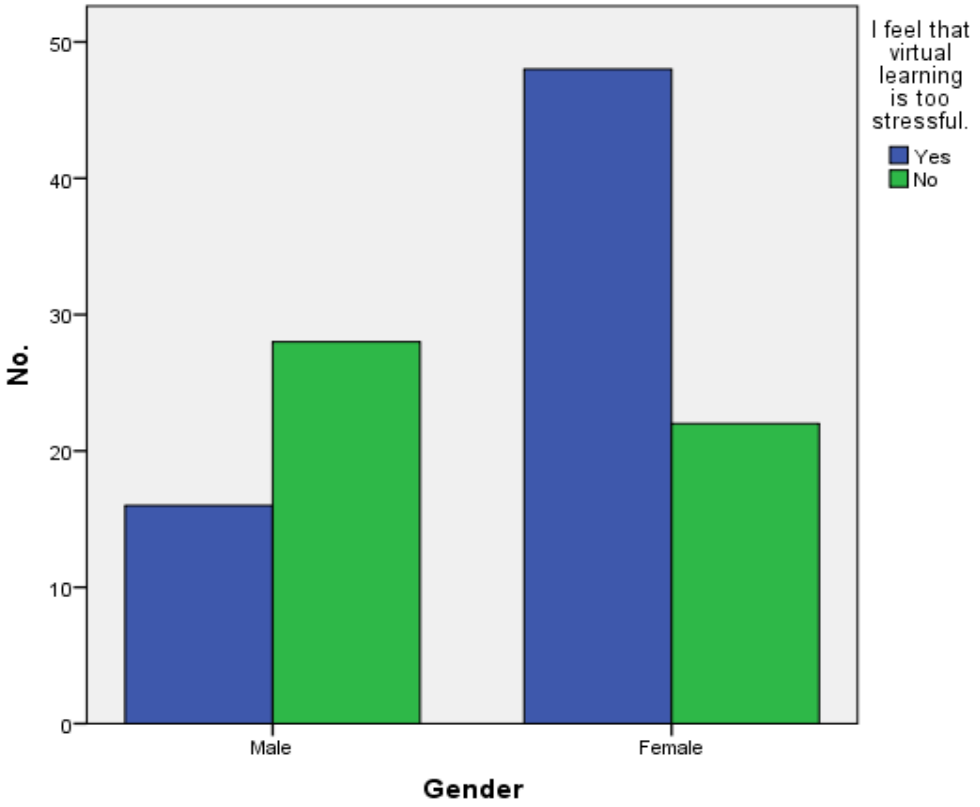

Figure: 2: The gender that had the feeling that virtual learning was too stressful

Figure 4 shows that 48 (68%) of the female students felt that virtual learning was too stressful while only 16 (36%) of the male students felt the same. 28 (63.6%) of the male students and 22 (31.4%) of the female students did not feel that virtual learning was too stressful.

In order to find out if the results of figure 4 were statistically different, the Analysis of Variance (ANOVA) was conducted at 5% level of significance. The final value of F was calculated as recorded as shown in the table 5.

Table 5: Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2.803	1	2.803	12.423	.001[b]
	Residual	25.268	113	.226		
	Total	28.070	114			

a. Dependent Variable: I feel that virtual learning is too stressful.

b. Predictors: (Constant), Gender

In this model, the regression shows that the F statistics 12.423 is positive and the significance value p = 0.001 which means that the model is statistically significant. The above findings correlate with the study by Luna et. al. (2020) where female respondents reported higher levels of PTSS which is an anxiety problem, than males in China due to the COVID-19 pandemic.

4.1 Discussion

The students of AIU, Karen, Nairobi County suffered from anxiety due to the COVID 19 pandemic (15.85 ± 0.491SD, p = 0.000). The Beck's Anxiety Inventory established that 24.6% of the students experienced potentially concerning levels of anxiety. 56.1% of the students of AIU, Karen felt that virtual learning was too stressful. However female students experienced more anxiety (68%) than the male students (36%).

5.0 Conclusion

The objective of the study was to determine the severity of anxiety due to the COVID-19 pandemic among the students of AIU, Karen. The frequencies of several factors were tabulated and presented using tables. A mean of 15.85 ± 0.491SD and a p-value of 0.000 were obtained which confirms that the students are highly likely to be suffering from anxiety. The Beck's Anxiety Inventory indicated that 24.6% of the students had potentially concerning levels of anxiety. The study also found out that female students were more likely to find virtual learning to be stressful. 71.9% of the students reported that fake news surfacing on social media regarding COVID-19 was causing them fear. These finding concur with the study by Balkhi, et al (2020), which highlighted increased levels of anxiety by students due to the COVID 19 pandemic and also that social media was reported to cause increased panic. Similarly, a study by Fardin (2020), found out that the COVID-19 pandemic has induced a number of psychological effects, including an increase in anxiety.

6.0 Recommendations

1. The students need to be educated on how to develop resilience after going through difficult challenges.
2. There should be a concerted effort between the colleges and government to educate students on how to cope with pandemics.
3. The government should put measures to mitigate the spread of fake news from social media and educate people on where to obtain reliable information.

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