



# Effects of Contextual Concerns on University Students' Mental Health in the Wake of COVID-19 Pandemic: A Review of Kenyan Cases

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**Abstract:** *This conceptual study introduces the unprecedented COVID-19 pandemic as a global burden that has disrupted peoples' quality of life. The Kenyan government confirmed the first case of COVID-19 pandemic on 14th March, 2020, after the novel corona virus disease. One of the containment strategies put in place by the Kenyan government was the suspension of all learning activities and home confinement for all school going children and university students. The aim of this study was to find out the effects of the contextual concerns of covid-19 pandemic on the university students' mental in Kenya. The review found out that the public health containment measures led to the closure of universities, which resulted to virtual learning, virtual graduation, loss of jobs as some companies shut down, movement to rural areas, lack of supplies, isolation, pornography, concerns on one's own health and the health of loved ones, eating and sleeping disorders, all study levels and gender, knowledge of infected person, information technology exacerbated the situation of the students, Covid-19 contributed to general poor health and that vulnerable university students may have been worse hit. All these culminated into mental health issues as depression, anxiety, stress, sleep and eating disorder and loneliness. The study recommended that apart from the student counsellors, the universities also ought to engage the services of psychotherapists and psychiatrists where applicable in the fight against mental health related concerns among the students during COVID-19 pandemic.*

**Keywords:** *COVID-19, Containment, isolation, quarantine, University, Students, virtual learning, Mental, Health, pandemic.*

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## 1. Introduction

COVID-19 pandemic and subsequent closure of schools has come with a lot of negative impacts on students, especially university students whose demands are more than those of secondary and primary school students. This

is as a result of the closure of the learning institutions, lockdowns, physical distancing and isolation, which have indeed culminated into loneliness. While there is scant data on how Covid-19 is increasing mental health conditions on the African continent, one study in South Africa found that 10–20 per cent of the 220 people

surveyed reported potent experiences of anxiety and fear as a result of the pandemic (The -star.co.ke, 2020). The outbreak of COVID-19 was first reported from Wuhan province, China, by the World Health organization on 31st December 2019 and within a short span of time it spread to the entire world. On March 11, 2020, the World Health Organization declared COVID-19 a pandemic.

So far, Kenya has recorded 323,281 COVID-19 cases, 5647 deaths and 317581 recovered as at (21<sup>st</sup> March, 2022, Worldometers). According to WHO (2022), Globally, as of 4:14pm CET, 17 March 2022, there have been 462,758,117 confirmed cases of COVID-19, including 6,056,725 deaths, reported to WHO. As of 15 March 2022, a total of 10,783,650,787 vaccine doses have also been administered. According to Islam et al. (2020), to curtail the rapid spread of the virus within the population, a number of public health measures such as (i) imposing countrywide lockdown, (ii) shutting down educational institutions, (iii) isolating the infected cases, (iv) quarantining the suspected cases, (v) confining social and community movements, etc., were executed throughout the entire world. Cunningham and Firozi (4th May, 2020) lament that mental health hotlines in the United States experienced 1,000% increases during the month of April, when most people were under lockdown because of the pandemic. Students in the universities in Kenya were not isolated with respect to effects of Covid-19 and what affected students in other parts the world could have affected students in Kenyan universities too. With this existing gap the review was carried out on the effects of the contextual concerns on university students' mental health during COVID-19 pandemic.

## 1.1 Review Objective

The aim of this review was therefore to:

Find out the effects of the contextual concerns on university students' mental health during COVID-19 pandemic.

## 1.2 Review Question

The review sought to seek answers to the following question:

What were the effects of the contextual concerns on university students' mental health during COVID-19 pandemic?

## 2. Literature Review

Review of literature was carried out on Covid-19 and the contextual concerns as: closure of universities, part-time

job opportunities, drug and substance addiction, one's own health and the health of loved ones, pornographic materials, socialization, eating and sleeping disorders, virtual learning, level of study, gender, affecting a known person, information technology, family income, general poor health and vulnerable university students.

## Covid-19 and Closure of Universities

In Kenya, cancellation of such activities as graduation ceremonies, impacted negativity on the graduating students who were subjected to virtual graduations. There was a rapidly growing culture in Kenya where students were getting accustomed to a situation where graduation was perceived as a function to be attended by the church, the entire neighborhood and all friends from near and far. Its absence became a real cause of depression to students who had wished to tell the world about their graduation. Graduation ceremony became a reason for working hard amongst most students who hoped to show it off during the event. "Isolation, loss of income, the deaths of loved ones and a barrage of information on the dangers of this new virus can stir up stress levels and trigger mental health conditions or exacerbate existing ones," said Dr Matshidiso Moeti, WHO regional director for Africa (The -star.co.ke, 2020)

## Covid-19 and Part-Time Job Opportunities

During the initial stages of COVID-19, many students who had established themselves with part time jobs lost them when companies were shutting down. Besides, closure of universities and lack of money meant that most of the students who had stopped going to rural areas to concentrate on their studies and part time jobs to pay their fees, had to go back there against their wishes, which was extremely depressing to many students who were also meeting financial demands of their parents/guardians and siblings back home. With changes in social relationships, mainly due to limited physical interactions with families and friends, such situations accelerated depression among the university students in Kenya. Cao et al. (May, 2020) argue that limited interactions with significant others deteriorated mental health status among Chinese students. While LeViness et al. (2018) lament that among students seeking mental health treatment on campuses, anxiety and depression were the most frequent concerns. According to Potentash. Com, Economic hardships are part and parcel of Covid-19 pandemic. Many poverty-stricken families in Kenya rely on their children to work to supplement the family income in normal times, this has been exacerbated by the pandemic with many parents losing their jobs, businesses and sources of income. This has increased the strain on children of all ages, but mostly

those of older high-school-going age to work to support their families.

### **Covid-19 and Drug and Substance Addiction**

Students who were recovering from addiction and were under the care of a university guidance and counselling department were bound to relapse back in their homes due to hardships presented by COVID-19 and the closure of the universities. Kim et al. (2020). posit that substance disorders in many people who were previously abstinent were expected to relapse during COVID-19, which caused long-term economic and health impacts. The Kenyan university students responded positively to the measures put in place by the government like the closure of the universities and social distancing as part of the efforts to control the pandemic. Sakib et al. (2021) say that, containment measures resulted in, accumulating psychological stressors like experiencing fear and panic, feeling frustrated and bored, facing a paucity of basic supplies, lacking authentic and reliable information, overwhelming with stigma, losing from jobs, and facing financial recession, etc.

### **Covid-19 and One's Own Health and the Health of Loved Ones**

Besides, Martin (June, 2010) laments that whenever there is a life-threatening issue in a country, learners will always get worried about one's own health and the health of loved ones, which (Zuckerman, April, 1989) confirmed to have known correlations to increased stress and mental health. Besides, Brooks et al. (2020) argue that a recent review of virus outbreaks and pandemics documented stressors such as infection fears, frustration, boredom, inadequate supplies, inadequate information, financial loss, and stigma.

### **Covid-19 and Pornographic Materials**

On the other hand, UNESCO (2020b) posits that it has been proved that protracted closures of schools compounded with restricted movements with acute challenges around space among poor households have exacerbated cases of exposure to pornographic materials, drug and substance abuse, increased rape and Gender Based Violence.

### **Covid-19 and Social Groups**

When the universities closed down indefinitely, the students may have found themselves in social groups that they may not have wished to belong to, but were forced otherwise by loneliness, which increased their anxiety due to activities done in such social groups. Alawamleh et al. (2020) argue that, during the COVID-19 pandemic, however, students' psychological health becomes a

concern of interest as all the educational institutions were closed down, and their social circle, communication, and interaction processes were also changed. Zimmermann et al. (2020) also confirm that a longitudinal study of students at a public university in Nevada (n = 205) found out that anxiety and depressive symptoms were greater in (April, 2020) than in prior months.

### **Covid-19 and Eating and Sleeping Disorders**

With little pressure on college work due to lockdown, eating and sleeping took the center stage. Acharya et al. (2018) argue that the findings on the impact of the pandemic on sleeping and eating habits are also a cause for concern, as these variables have known correlations with depressive symptoms and anxiety. When students are also affected by pandemics, COVID-19 included, they experience high levels of burnout, poor sleeping and eating habits exacerbated by depression. This hindered effective study habits, especially during preparation for examinations and therefore increase the rate of cheating in examinations. Fitzpatrick et al. (May, 2019) study shows depression levels among students. While Liu et al. (March, 24th 2020) study also shows an up-take of related depressive symptoms among college students in China. Martin (June, 2010) believes that both difficulty concentrating and changes in sleeping habits are associated with depression.

### **Covid- 19 and Virtual Learning**

Another result of COVID-19 pandemic was virtual learning, which led to depression among most of the students due to poor connectivity, lack of knowledge and facilities. "right-to-education" (n.d) argues that, remote learning has also faced a lot of challenges due to lack of well-defined infrastructure. With both children and teachers at home, the government had limited time for preparation of the sudden change. Most of the teachers and education stakeholders have limited knowledge for online dissemination of knowledge, lack of detailed costs of teaching and preparation of online teaching, online assessment and evaluation. This has further resulted to slack in the implementation of online learning. According to "universityworldnews" (n.d), Dr Richard Bosire, the chairman of the Universities Academic Staff Union's University of Nairobi chapter, was quoted in local media as saying: "Not all lecturers had been trained and those who had were waiting for directions on how to proceed. Most students do not have laptops or money to buy internet bundles to sustain a three-hour online course. Some of them live in far-flung areas and do not even have access to the internet, so how will they be expected to come onboard?"

Maatuk et al. (2021) posit that the main obstacle to e-learning is the low-quality of Internet services in Libya during the pandemic period. Faculty members agree that

e-learning is useful in increasing students' computer skills, although it requires significant financial resources. The university of Nairobi resorted to ODeL (open and distance e-learning), which was meant to train the staff and students to enable them to engage in teaching and learning to online platforms. According to Twitter (30th March, 2020), the move was followed by resistance from a section of students from the University of Nairobi (UON), some of whom were active in a trending discussion during which they resisted the announcement by the university that lessons would continue online. "You want me to take online classes, I live in Turkana (in far-off remote northern Kenya). Does this university even care that I obviously can't access [the] internet? It is University of Nairobi, not University for people of Nairobi," tweeted student Jared Washington Ochako. "Training is an inevitable part of any business but depending solely on an e-learning platform can make learning less personal, less engaging, and in the process, less effective. We urge comrades to boycott such shenanigans by UON," said another student going by the online name Mzee Mzima. All these arguments depict a scenario of introducing a method of teaching and learning, which could easily cause stress since the users had not been socialized well on online teaching and learning. A survey developed by Alhubaishy (2020) on Factors Influencing Computing Students' Readiness to Online Learning for Understanding Software Engineering Foundations in Saudi Arabia showed that students' readiness level for online learning is within the acceptable range while some improvements are needed. Furthermore, the study found that students' cognition, willingness, ignorance, and the amount of assistant and help they receive play a significant role in the success/failure of the adoption of learning SE foundations through online environment.

Chirikov et al. (Aug. 17, 2020) advance the view that depression and anxiety rates for undergraduates in 9 US public research universities in (May/July 2020) were higher for those who had trouble adapting to distanced learning. While Nambiar (2020) laments that online schooling, the newly introduced method of teaching, can be unfavourable for a higher number of students due to difficulties related to understanding materials, technical issues, lack of interest in attending classes, limited access to online schooling materials, and so forth. Lederman (22nd April. 2020) believes that the pandemic also brought unprecedented stress to college students, starting with the transition to online instruction over spring break (2020) at many universities. Mamun et al. (2020) lament that the severity of lack of willingness in online schooling led to suicide occurrences in Bangladesh where an undergraduate student refused to partake online exam, that turned into conflicts within their family and as a result, the mother and son's suicide pact occurred.

## **Covid-19 and Level of Study**

Both first year and finalist students were likely to be affected than other students since the first years' students concern was that they had just joined the university and their lives could be cut short prematurely. While the finalists' concern was delayed graduation and the aspect of lacking employment after graduation due to COVID-19 pandemic. Aristovnik et al. (2020) argue that several reasons explain their findings that younger students may be at greater risk than older students. Younger students (i.e., 18 to 24 years old, regardless of academic status) tend to be more worried about their future education and ability to pay for college education than older students. Therefore, university students were worried about COVID-19 and the Kenyan university students were not exceptional. According to Keckojevic et al. (Sep, 2020) a study conducted at a public university in the US in (April, 2020) found out that worse mental health was associated with employment losses, difficulties focusing on academic work and concern about COVID-19. Nathiya et al. (1st July, 2020) say that a study based on a sample of young adults in India found significant associations between mental health and economic stressors.

## **Covid-19 and Gender**

University female students who had young children to care for may have been more worried than the rest of the college population. da Silva et al. (2020) posit that over ten studies including several with college student populations, women are identified as being at greater risk of psychological distress during the COVID-19 pandemic. While Hunt and Eisenberg (2010) posit that women are generally prone to depression and anxiety disorders. Although Wenham, Smith and Morgan (2020) argue that the initial evidence indicated men to have been more susceptible to infection.

## **Covid-19 Affecting a Known Person**

Getting to know someone who is infected also do increase levels of anxiety and depression among university students. According to Bitan et al. (2020), the finding that knowing someone infected is a risk factor for psychological impacts of COVID-19 is intuitive. Familiarity can increase the salience and perceived risk of becoming infected and dealing with subsequent health concerns, like COVID-19-related death. According to Cao et al. (May, 2020), students attending the Rome campus presented higher levels of anxiety due to the prominence of medical students at the campus who are at higher risk of psychological distress due to their familiarity with health issues compared to the general population. While Barello et al. (2020) also agree that individuals involved in medical professions are typically

more empathetic and altruistic and tend to be at higher risk for negative psychological reactions in a health crisis situation.

### **Covid-19 and Information Technology**

The current generation of the students in Kenya rely on the internet for information and from the onset of COVID-19, smartphones have been one vital source of information, which also increased anxiety and depression on what next, with overwhelming infections and deaths in the world. Besides, Elhai et al. (2020) argue that the threat of death from COVID-19 has been associated with students' mental health and explainable by unhealthy levels of smartphone use. Jacobson et al. (1st June, 2020) say that there is also increased internet search queries on negative thoughts in the United States. Twenge et al. (2020) study shows support towards the mounting evidence that excessive screen time, including during the pandemic, may negatively impact on mental health.

### **Covid-19 and Family Income**

Cao et al. (May 2020) posit that family income of college students in China was negatively associated with anxiety symptoms and that COVID-19 diagnosis of family or friends was positively associated with anxiety and depression symptoms. Akdeniz et al. (15th, July, 2020) in a study of college students in Turkey found out that students were more anxious about the effects of COVID-19 on relatives than on themselves.

### **Covid-19 and General Poor Health**

General poor health comes along with disasters like COVID-19 due to depression, which could also affect students with pre-existing health problems. Eisenman et al. (2013) posit that in addition to comorbidity between mental and physical health status, people with pre-existing health problems and those with poor mental health show lower preparedness for disasters and suffer disproportionately more from disaster-related outcomes.

### **Covid-19 and Vulnerable University Students**

Vulnerable university students may have suffered much during the pandemic in Kenya although Bruffaerts et al. (Jan, 2018) argue that there is sparse evidence of the psychological or mental health effects of the current pandemic on college students, who are known to be vulnerable populations. Aristovnik et al. (2020) also posit that although impacts are felt across populations-and especially in socially-disadvantaged communities and individuals employed as essential workers-college students are among the most strongly affected by COVID-

19 because of uncertainty regarding academic success and professional careers, social life during college, as well as feelings of boredom, anxiety and frustrations amongst other concerns.

## **3. Methodology**

This study engaged review of literature on the contextual concerns. The methodology of this review was based on the following research question: What were the effects of the contextual concerns on university students' mental health during COVID-19 pandemic?

Review of literature was carried out on Covid-19 and the contextual concerns as: closure of universities, part-time job opportunities, drug and substance addiction, one's own health and the health of loved ones, pornographic materials, socialization, eating and sleeping disorders, virtual learning, level of study, gender, affecting a known person, information technology, family income, general poor health and vulnerable university students. The methods that were used were sampled from five review articles that were done comprehensively, Keywords used in the search of the articles were Containment, isolation, quarantine, University, Students, virtual learning, Mental, Health, pandemic and only 5 articles were used through goal analysis, topic suitability, research methods used, sample size and the results of each article.

## **4. Results and Discussion**

### **4.1 Results of Article Review 1**

According to Nyaegah (2022) online survey-based study, the survey targeted 468 undergraduate students enrolled at Nakuru and Kisii Learning Centers of the University of Nairobi as per the official records available then. a structural questionnaire developed and administered online, the survey was conducted between 1<sup>st</sup> May and 20<sup>th</sup> July 2020 and it involved 232 participants.

#### **Students' Attitudes towards Online Learning**

When respondents were asked to indicate their attitudes towards the adoption of online learning while in their homes, the students who numbered 109 and who formed 46.98% at first did not know what online Learning was and was therefore not able to understand how they were going to learn without attending normal lectures at their centers. Some of the students who formed 14.66% and who were 34 in number felt this type of learning was not going to be possible while 45 of them who formed 19.40% believed that there was no way they could get lessons online and do exams online. The presidential directive which effectively led to the closer of all learning institutions came at a time when most undergraduate students were ending their semesters and were expecting



to do end of semester exams. This category of students therefore felt doing exams from home online was not going to be possible since supervision and invigilation of those exams by lecturers were not going to be possible. Students numbering 44 and who formed 18.96% had a belief that online learning was not a suitable method that could replace the face-to-face method of learning. It is important to note here therefore that, from the results given in the table, all students in the two centers had negative attitudes towards the coming in of online learning which has now become the new normal in all departments in the University of Nairobi. The majority of the students who participated in this survey who numbered 89 and who formed 38.37%, indicated that they faced network-related challenges. Most of those who gave this as a challenge said that there was no reliable network in the regions where they were living. Besides, 38 respondents forming 16.38% indicated that they lacked the essential tools like Android Smart Phones and Laptops which they were advised to ensure they had for use while 43 forming 18.53% cited lack of technical skills as a major challenge they were facing. Respondents numbering 33 and who formed 14.22% showed that there was a lack of enabling learning environments in their homes at that time while 29 of them constituting 12.5% cited unreliable power supply as their main problem in their regions.

## 4.2 Methodology and Results of Article Review 2

Another study done in Kenya revealed results as follows: According to Lazarus (2021) Students' Self-Efficacy and Challenges to Virtual Classes, the results of the survey revealed that students from Rongo University face overwhelming challenges towards virtual learning during the COVID-19 period. In the scale of 1 to 5, the students' rating of challenges they face in their bid to enjoy virtual learning received overall average rating of 3.93 with a standard deviation of 1.30. Some of the challenges are established to be insurmountable in the short period. For example, access to internet was established to be a very common challenge to most of the students in Rongo University, as reflected by mean challenge rating of 4.53 (SD=1.01). Over three quarters 76 (75.2%) of the sampled students from the University strongly agreed that lack of access to a reliable internet connection is a major challenge to virtual learning during the COVID-19 period. Only 6 (6.0%) of the respondents either disagreed or strongly disagreed that internet connection is a challenge to them. This suggests that internet connection is either unstable or totally not accessible to most of the students in their bid to learn virtually.

Besides access, the findings of the study has established that technological knowhow also present a fairly strong (M=3.96; SD=1.22) challenge to some of the students. For example, 30 (29.7%) and 44 (43.6%) of the surveyed students from Rongo University agreed and strongly

agreed, respectively, that they face difficulty in learning to use new technology. Only 13 (12.9%) of the respondents alluded that they do not have any difficulty in learning to use the new technology, but some 14 (13.9%) of them remained non-committal on the matter. This implies that many of the students in Rongo University do not have appropriate technical skills to use online learning platforms effectively, which is a hindrance to virtual learning during COVID=19 scourge.

Similarly, the results of the survey also point out that students face difficulty in concentrating in the virtual classroom. This was reflected by a mean rating of 3.84 (SD=1.35), with 28 (27.7%) of the students agreeing and 44 (43.6%) others strongly agreeing that they always have difficulty in concentrating during their virtual classroom learning.

Additionally, the study found out that the use of virtual learning has come along with the challenge of isolation. For instance, out of the 101 students who were surveyed, 66 of them translating to 65.4% of the respondents were in agreement that they feel isolated in a virtual classroom hence they lack social-emotional learning. Student isolation, as a challenge to virtual learning, was rated at 3.78 (SD=1.33), with only less than a fifth 20 (19.8%) of the sampled students insisting that they do not feel isolated in a virtual classroom.

Whilst, only 12 (11.9%) of the respondents purported that they never feel isolated during virtual learning, nearly four out of every five 80 (79.2%) of the students who took part in the survey agreed that in a virtual classroom, they have fewer opportunities to interact with other students for academic discussions and cooperative learning.

## 5.3 Methodology and Results of Article Review 3

According to this review, the study population was all undergraduate students at the Lucerne University of Applied science and Arts which was N = 5,200, across six faculties. The relevant departments informed the students about the survey in various ways (email, department website, and/or wider university website).

Sussane et al. (2021), launched the survey for this cross-sectional study on April 23, 2020 and received responses through the end of May 2020. They designed and conducted the survey using the Enterprise Feedback Suite (EFS) Survey by Questback. Whilst not designed to be representative, the survey aimed to gain insight about potential impact of the Covid-19 outbreak on the education and mental health of undergraduate students. The survey gathered n=458 responses from undergraduate students who are studying in one of the 6 departments of the Lucerne University of Applied Sciences and Arts. Regarding anxiety and stress, the study reveals that 85.8% of the students reported symptoms of

anxiety, although in the majority of cases these symptoms were mild (63.3%).

Table 1 students self-reported anxiety levels (n=458)

Anxiety level	n	Ratio (%)
Normal	65	14.2
Mild	290	63.3
Moderate	75	16.4
Severe	28	6.1
Total	458	100

Source: (Sussane, Netkey, and Cheryl, 2021)

### Student Experience of Distance Learning

While some students tackled the work with a high degree of discipline and explicitly emphasized, the advantages of the increased personal responsibility and independent working, (n=82), others expressed difficulties in concentrating and maintaining the necessary motivation for distance learning (n=76). For some students (n=24), time management was a particular challenge. Structural conditions, such as having only one room serving as both bedroom and study, complicated the situation. Eight students stated that they had difficulties with the limited available space.

### Correlation between Covid-19-Related Stressors and PHQ-4 Anxiety Scores

Table 2 shows results of the regression analysis between covid-19-related stressors and PH-4 anxiety levels. Concerns about the economic impact of the pandemic were positively related with the college students' level of anxiety ( $r=0.117, P<.05$ ). Moreover, concerns about academic delays ( $r=0.135, P<.01$ ) or over personal health issues (becoming depressed) ( $r=0.194, P<.001$ ) and worry about health issues for close others (e.g., parents, grandparents) also positively correlate ( $r=0.171, P<.001$ ) with level of anxiety. Worry about loss of social contacts was not related to anxiety levels ( $r=.073, P=.132$ ).

**Table 2: Regression analysis of COVID-19-related stressors and self-reported anxiety levels (PHQ-4)**

Related stressor	Anxiety level	
	<i>R</i>	<i>P</i>
Worry about economic impact	.117	.033
Worry about academic delays	.135	.006
Worry about loss of social contact	.073	.132
Worry about personal health issues (becoming depressed)	.194	.000
Worry about health issues for close others (e.g., parents, grandparents)	.171	.000

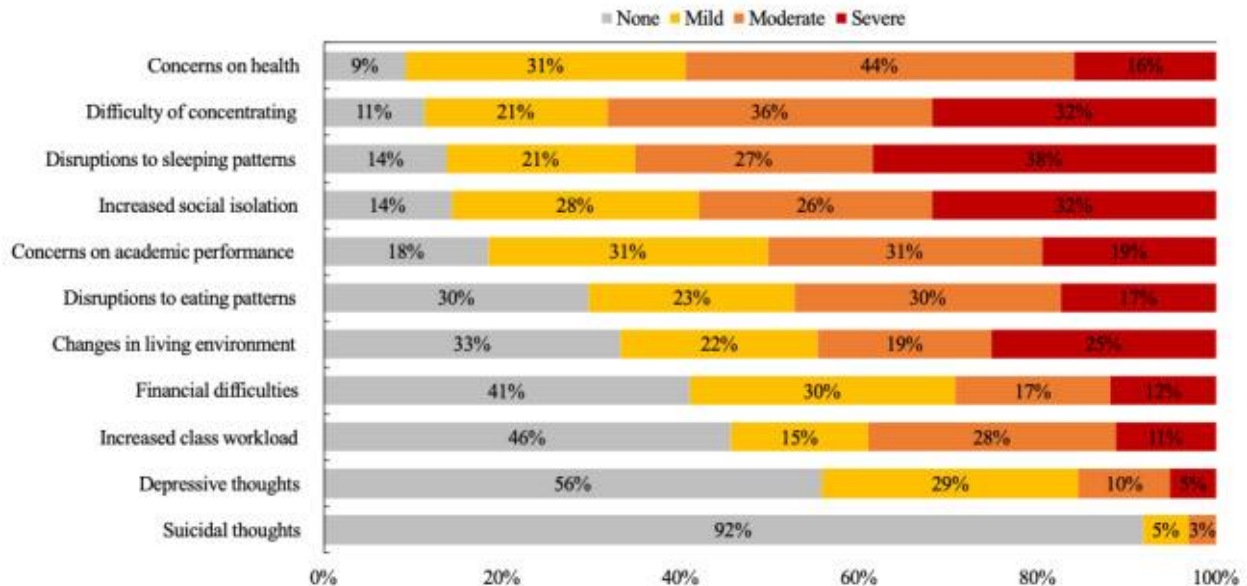
Source: (Sussane, Netkey, and Cheryl, 2021)

### 4.4 Methodology and Results of Article Review 4

In this review, interview surveys were carried out by the researchers Son et al. (2020) with 195 students at a large public university in the United States to understand the effects of the pandemic on their mental health and well-being. The data were analyzed through quantitative and qualitative methods.

Of the 195 students, 138 (71%) indicated increased stress and anxiety due to the COVID-19 outbreak. Multiple stressors were identified that contributed to the increased

levels of stress, anxiety, and depressive thoughts among students. These included, fear and worry about their own health and of their loved ones (177/195, 91% reported negative impacts of the pandemic), difficulty in concentrating (173/195, 89%), disruptions to sleeping patterns (168/195, 86%), decreased social interactions due to physical distancing (167/195, 86%), and increased concerns on academic performance (159/195, 82%). To cope with stress and anxiety, participants have sought support from others and helped themselves by adopting either negative or positive coping mechanisms.



**Figure 1: Participants rating on mental health aspects in an order of negative impacts (mild, moderate, and severe)**  
Source: (Son, Hegde, Smith, Wang, Sasangohar, 2020)



## 4.5 Methodology and Results of Article Review 5

In another review, Xiaomei et al. (2020) carried out a survey on mental health status and severity of depression and anxiety of college students in a large university system in the United States during the COVID-19 pandemic.

An online survey was conducted among undergraduate and graduate students recruited from Texas A&M University via email. The survey consisted of two standardized scales-the Patient Health Questionnaire-9 and the General Anxiety Disorder-7-for depression and anxiety, and additional multiple-choice and open-ended questions regarding stressors and coping mechanisms specific to COVID-19.

Among the 2031 participants, 48.14% (n=960) showed a moderate-to-severe level of depression, 38.48% (n=775) showed a moderate-to-severe level of anxiety, and 18.04% (n=366) had suicidal thoughts. A majority of participants (n=1443, 71.26%) indicated that their stress/anxiety levels had increased during the pandemic. Less than half of the participants (n=882, 43.25%) indicated that they were able to cope adequately with the stress related to the current situation.

## Discussion

Manzar et al. (2021) show that some of the students are facing the pandemic-related obstacles such as social and economic disruptions, uncertainty about their future careers, loneliness, fear of losing loved ones, etc. While John Hopkins University of Medicine (Sep, 17, 2020) posit that the United States continue to witness the highest incidence and mortality rates among Global North countries. da Silva et al. (2020) agree that such high rates aggravate the psychological impacts of the disease on infected and non-infected individuals. Ozamiz-Etxebarria et al. (2020) on the other hand lament that unsettled life and work conditions, typical of academic environments, and the life stage of university students, who are “in transition” to adulthood and in a delicate process of starting their careers, make them more susceptible to negative psychological effect of traumatic events. Cao et al. (May 2020) also agree that the psychological distress levels among the students are associated with their concerns about their academic activities, in terms of delays regarding completion of their degrees. Smith and Lim (2020) argue that COVID-19 effects and its containment measures cause loneliness and isolation due to physical distance from their peers and partners.

Marsicano et al. (28th April, 2020) posit that the depression state of students has further been exacerbated by the long summer of social isolation from the pandemic,

for many lost employment and uncertainty about the structure of courses and living arrangements in the 2020/21 academic year. Nelson et. al. (13th April, 2020) also found out elevated levels of anxiety and depressive symptoms among general population samples in North America and Europe. Cao et al. (May 2020) also argue that in Italy, the 71 days of total lockdown might have facilitated the development of mental health disorders, especially anxiety and depression. The psychological distress affected university students all over the world Kenyan university students included.

## 4.6 Major Results

The review found out that the public health containment measures led to the closure of universities which resulted to virtual learning, virtual graduation, loss of jobs as some companies shut down, movement to rural areas, lack of supplies, isolation, pornography, depressive thoughts, suicide, increased class workload, financial difficulties, changes in living environment, concerns on academic performance, difficulties concentrating, concerns on one’s own health and the health of loved ones, eating and sleeping disorders, students of all study levels got affected, male and female students were both affected, knowledge of an infected person worsen the state of especially medical students, information technology exacerbated the situation of the students, Covid-19 contributed to general poor health and that vulnerable university students may have been worse hit. The effects of the contextual concerns on university students’ mental health during COVID-19 pandemic therefore were that; from the review, the students’ level of depression increased from moderate to severe. Multiple stressors were identified that contributed to the increased levels of stress, anxiety, and depressive thoughts among students. Few university students were able to cope adequately with the stress related to Covid-19 pandemic. Moreover, concerns about academic delays or over personal health issues (becoming depressed and worry about health issues for close others (e.g., parents, grandparents) also positively correlated with level of anxiety The results of the survey revealed that university students faced overwhelming challenges towards virtual learning during the COVID-19 period. And most students had a belief that online learning was not a suitable method that could replace the face-to-face method of learning all these culminated into in to mental health issues as depression, anxiety, stress, sleep and eating disorder and loneliness, concerns on health, difficulty concentrating, increased social isolation, concern on academic performance changes in living environment, financial difficulties, increase class workload and suicidal thoughts.

## 5. Conclusion and Recommendations

### 5.1 Conclusion

Since the university students were not contented with the closure of the universities due to isolation, challenges posed by online learning and such factors as loss of jobs due to closure of some companies forcing students to move back to rural areas, all these culminated into mental health issues as depression, anxiety, stress, sleep and eating disorders, loneliness, frustrations, boredom, worry, fear among others. Use of digital platforms to ensure learning continued in the universities, however is paramount in critical situations. Although many universities in Kenya put in place strategies to mitigate the effects of Covid-19 pandemic, major lapse still exist. Many universities have no formal mental health response strategies. Besides, universities have not invested on psychological first aid and still there is lack of systematic collection of data on the mental health impact of COVID-19.

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### 5.2 Recommendations

The study therefore recommended that, apart from the student counsellors at the universities, the universities also ought to engage the services of psychotherapists and psychiatrists where applicable in the fight against mental health related concerns among the students in the wake of COVID-19 and other pandemics. The review also recommended that there is need for the government to set aside funds that would cushion universities in an event of an epidemic. Another recommendation was that, there is need for government to put in place a sound Education Continuity Policy which would ensure a continuous learning process during an outbreak of any pandemic. Besides, measures at the individual and societal levels are also required. There is need for universities to have formal mental health response plan. Universities also need to invest on psychological first aid and systematic collection of data on the mental health impact of COVID-19 among the students.

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