ONLINE LEARNING AND MENTAL STRESS DURING THE COVID-19 PANDEMIC LOCKDOWN: IMPLICATION FOR UNDERGRADUATES' MENTAL WELL-BEING

Adetunmbi L. AKINYEMI
Department of Science and Technology Education, Faculty of Education, University of Ibadan, Ibadan, Oyo State, NIGERIA
**adetunmibia@yahoo.com*
ORCiD: https://orcid.org/0000-0002-8406-5981

Owolabi P. ADELANA
Department of Science and Technology Education, Faculty of Education, University of Ibadan, Ibadan, Oyo State, NIGERIA
paulyetty@gmail.com
ORCiD: https://orcid.org/0000-0002-4829-5106
**Corresponding author*

Abstract

The COVID-19 pandemic lockdown prompted all schools around the world, including Nigeria, to go online to continue education. Since most universities in Nigeria were not ready for a full scale online learning, the Emergency Remote Teaching (ERT) that was set up created some challenges for undergraduates. This study was carried out to find out university undergraduates' perspective of mental stress caused by online learning, and its implication for their mental health. Descriptive survey of the non-experimental design was employed. One research question and two hypotheses were examined. Sample comprised one hundred and twenty-one (121) undergraduates. A 13-item instrument titled "Online Learning and Mental Stress Questionnaire" (OLMSQ) (r = .87) was administered. Analysis was done using Mean (2.5 benchmark), Standard Deviation, Independent Samples t-test and One-Way ANOVA at 0.05 alpha level. Findings showed that online learning influenced university undergraduates' mental well-being (X = 2.99). There was no significant difference in undergraduates' perceptions of mental stress across gender (t = -1.952; df = 119; p>.05) or degree of study (F (2; 118) =.40; p> 0.05).This necessitates immediate action by university administrators and other stakeholders to prevent stress and its detrimental effects on undergraduate mental health.

Keywords: Online learning, mental stress, Covid-19 pandemic lockdown, undergraduates, mental well-being

Introduction

The role of education in the advancement of any nation of the world cannot be overemphasised. Education emancipates citizens, makes them relevant and allows them to contribute meaningfully to

their societies, in addition to making them self-sufficient. However, the global outbreak of covid-19 in early 2020 led to the shutdown of schools all over the world. The covid-19 virus was first reported in Wuhan, Hubei Province of China in late December, 2019. The virus was reported to have later spread rapidly from Wuhan, China to over 198 countries (Munster, Koopmans, van Doremalen, van Riel, and Wit, 2020). In order to curtail further spread of the disease which had then constituted a public health issue at an international level, the World Health Organization (WHO) called for collaborative efforts of all countries to prevent further spread of the virus. The WHO later declared the disease to be a global pandemic on 12th of March, 2020 (WHO, 2020).

As soon as the WHO announced that COVID-19 had become a pandemic, many sectors in almost every country shut down to avoid exposing their citizens to the disease. One of the sectors that was badly hit was the education sector. In Nigeria, all levels of education – primary, secondary, and tertiary – were mandated to shut down in order to observe social distancing, which was a method of controlling the spread of the disease from person to person. In view of this, all teachers, lecturers and their students were compelled to stay at home, and from there, education continued. The online medium was thought to be viable for the continuation of teaching and learning processes. Thus, all levels of education, especially universities, which is the focus of this study, were mandated to shift from face-to-face physical classes to online learning through the World Wide Web (www) (Kumalasari and Akmal, 2021).

Online learning or E-learning has been defined as a form of learning which embraces the use of Information and Communication Technologies (ICTs) to improve the processes of teaching and learning, and to improve education in general (Howlett, Vincent, Gainsborough, Fairclough, Taylor, Cohen and Vincent, 2009). At the outset of the COVID-19 pandemic, Nigerian universities leveraged on online learning as an emergency solution to ensure that teaching and learning processes continued. Applications such as Zoom, Microsoft Teams, and Edmondo, among others, were used by lecturers and students for the continuity of education. While online learning is good and makes learning accessible, it has its own challenges. Its success depends on accessibility to the internet, however, this is sometimes rendered impossible because of poor internet access and usage, students' and lecturers' poor digital skills, among others (Attardi and Rogers, 2015; Niebuhr, Niebuhr, Trumble and Urbani, 2014; Bediang, Stoll, Geissbuhler, Klohn, Stuckelberger, Nko'o and Chastonay, 2013; Dyrbye, Cumyn, Day and Heflin,2009). Other weaknesses of online learning include poor teaching

infrastructure, lecturers' inexperience in the use of modern technologies, complex home environment (Blissitt, 2016), and technological and technical challenges (Sadeghi-Bazargani, Tabrizi, and Azami Aghdash, 2014; Gibbons and Fairweathe, 2000; Rosenberg, 2001). Although online learning is not new among university students, the urgency with which the covid-19 pandemic pushed it to both lecturers and students brought about some challenges. The experience, according to Ngampornchai and Adams (2016), resulted in shock for some students. The challenges experienced by university students in online learning portend a strong indication of mental health issues among them. Goff (2011) stated that one of the commonly experienced mental health issues among university students is academic stress, which is mostly due to the students' apprehension for grades and fear of failure.

Mental well-being is now a topic of interest in the academia, especially among health psychologists, due to the need to identify factors that contribute to it. This is vital at the moment, especially as students and institutions are now massively moving from lecturer-students' classrooms to online learning which, in most cases does not afford students the opportunity of direct physical relationships with their lecturers. The attendant consequences call for attention because research has reported that behaviour, mental state and health are all related (Sydney-Agbor, Ebeh and Onyeanu, 2018; Taylor, 2002). Also, Kunjiapu and Kunasegaran (2021) noted that issues relating to mental well-being among undergraduate students have received a lot of attention in the academic community, especially with regards to online learning. This is because undergraduate students are often stressed out as a result of independent living and learning, and the attendant heavy academic burdens and pressure. Abdul-Manap, Vijayabalan, Madhavan, Chia, Arya, Wong, and Koshy(2019) posit that undergraduate students are experiencing varying degrees of mental health-related depression at institutions of learning. Due to the importance attached to students' well-being recently, positive psychology is now preferred in most studies related to mental well-being because it explores healthy traits of students' minds as against traditional psychology (Woolston, 2020).

Stress among students refers to their inability to adjust or respond adequately to the physical, emotional or mental demands of their learning activities; this inability could be actual or imagined (Kwaah and Essilfie, 2017). Koolhaas, Bartolomucci, Buwalda, de Boer, Flügge, Korte, and Fuchs (2011) stated that the body's reaction to changes requiring adjustment is known as stress, and the body's reaction to the change is physical, mental, and emotional. According to Lin, Marcus, Isa, Jamaluddin, Harun, Mat, and Nor(2019), stress is a normal phenomenon experienced in life and it

might come from an individual's thoughts, environment, or from other means, all of which affect the person's feelings, thoughts, and behaviour, and might result in serious implications on the individual's health. Some of the negative effects of stress include diabetes, heart diseases, obesity, among others, and some of the factors predisposing individuals to stress include finances, work, relationships, and other situations. The WHO (2020) states that issues relating to individual student's mental health are the leading challenges inhibiting students' success because these might negatively influence their social interaction, concentration, and motivation, all of which are germane to students' success in university education (World Health Organization, 2020).

Studies have reported how the covid-19 pandemic engendered online learning and fuelled stress among students. Global health challenges such as the covid-19 pandemic usually have negative and serious effects on people's mental health (Sameer, Khan, Nissar, and Banday, 2020). The covid-19 disease, which broke out in Wuhan, China, later spread to many countries of the world (Cucinotta, and Vanelli, 2020; Sohrabi, Alsafi, O'neill, Khan, Kerwan, Al-Jabir, and Agha 2020; Mudenda, 2020; Kasanga, Mudenda, Gondwe, Chileshe, Solochi, and Wu2020; Phiri, Banda, Mudenda, Ngazimbi, Hangoma, and Mufwambi, 2019), thereby necessitating the closure of schools and forcing all students to go online. In effect, it later resulted in psychological trauma for tertiary students and their teachers, healthcare workers and the populace in general (Ali, Shi, Siddique, Nabi, Hu, and Han, 2020; Akour, et al. 2020; Nochaiwong,Ruengorn, Awiphan, Ruanta, Boonchieng, Nanta, and Wongpakaran, 2020). According to Rourke, Hammond, Flynn, and Boylan(2010), undergraduate students experience some form of stress, thus, making stress a part of their existence.

Researchers such as Sydney-Agbor, et al. (2018), Conner, et al. (2010) and Kaplan, et al., (2005), have all reported negative effects of physical and psychological stressors on mental well-being. These studies, including those of Mostafaei (2012), Conner et al. (2010) and Lohman and Jarvis (2009), further discovered that a higher level of academic-related stress among undergraduate students reduces their mental well-being. Social isolation (Rosenberg, 2001), confinement at home (Horton, 2001), emotional-cum-psychological challenges (Sadeghi, et. al., 2014; Niebuhr, 2014) and so on have also been reported as some of the problems associated with online learning during the shutdown of schools because of the pandemic. Also, studies by Cao, Fang, Hou, Han, Xu, Dong and Zheng (2020), Waseem et al., (2020) and Mudenda et al. (2021) reported that due to the covid-19 disease, tertiary students encountered, and are still encountering mental health challenges

which include anxiety, depression, and stress (Khan et al. 2020; Cao, et al. 2020; Waseem, et al., 2020). This was also confirmed by Enns et al. (2019), who reported that stress among students does have a serious and negative effect on their physical and psychological health.

Findings on gender differences in the perceptions of mental stress amongst students differ. Some researchers reported females to have higher levels of academic stress than males (Ebrahim, 2016; Dhull & Kumari, 2015; Calvarcse, 2015), as against others who reported otherwise (Aihie & Ohanaka, 2019; Mishra, 2018). For instance, Sarkar et al., (2021) reported a significant difference in the perception of male and female undergraduate students. Also, researchers including Yikaelo, et al. (2018), Gonmei and Devendiran (2017), and Farhan and Khan (2015), reported significant differences in the impact of academic stress among students based on gender. In addition, the studies of Iqbal et al. (2015) and Kumar et al. (2014) reported that females consistently reported higher mental stress than male students. In adjusting to mental stress, some of the less desirable adjustment methods among undergraduate students are smoking, as well as the use of alcohol and illicit drugs. Peer, Hillman and Van-Hoet (2015) have also reported that exercise and social events positively influence how students cope with stress. In addition, behavioural-based counselling techniques helped, and encouraging productive activities and exercise greatly benefited students who were experiencing stress in building social support (Lin et al., 2019). However, Bedewy and Gabriel (2015) found no significant difference between both genders.

With regards to course of study, Deepa (2016) reported that undergraduate students from Science department experienced a higher level of stress than those from the Business and Humanities Departments. Also, Reddy, Menon and Thattil (2018) reported a higher level of stress among students in the Business department as compared to those in the Humanities.

The uncertainties brought about by public health emergencies, especially in the case of the covid-19 pandemic, usually result in negative psychological issues for university students (Sprang & Silman, 2013). This was the case with the global lockdown caused by the covid-19 pandemic. However, this might result in negative effects in undergraduate students' coping strategies in relation to the requirements of campus life. Studies such as Dusselier, Dunn, Wang, Shelley and Whalen (2010), Abdullah and Dan Moh (2011) and Soliman (2014), reported that many of the emotional and physical symptoms of mental stress amongst undergraduate students include depression, headaches, and fatigue, among others. Also, extreme mental stress among undergraduate students

results in poor academic performance, loss of objectivity, addictions and incidences of errors, dropping out of school, anxiety, improper behaviour like negligence, examination malpractices, and [academic] fraud (Soliman, 2014; Gormathi and Ahmend, 2013; Dusselier, Dunn, Wang, Shelley and Whalen, 2010).

In view of the foregoing, this study examined the perceptions of undergraduate students on mental stress caused by online learning during the covid-19 pandemic lockdown, this was carried out with implication for their mental well-being. It is important to state that the pandemic is still very present, hence, the issue of students' continuous online learning cannot be ruled out, not just as a result of the covid-19 pandemic but also in view of the fact that the world, education in particular, is moving towards online classrooms as the 21st century advances. Therefore, there is the need to find out students' challenges, especially with regards to those relating to their emotional well-being. In view of this, the objectives of the study were to examine the perceptions of undergraduate students toward mental stress caused by online learning during the covid-19 pandemic lockdown, to determine the influence of gender on undergraduate students' perceptions of mental stress caused by online learning during the covid-19 pandemic lockdown; and investigate the influence of course of study on undergraduate students' perception of mental stress caused by online learning during the covid-19 pandemic lockdown.

Research Question

1. What are the perceptions of undergraduate students toward mental stress caused by online learning during the covid-19 pandemic lockdown?

Hypotheses

Ho_1: There is no significant influence of gender on undergraduate students' perceptions of mental stress caused by online learning during the covid-19 pandemic lockdown.

Ho_2: There is no significant influence of course of study on undergraduate students' perception of mental stress caused by online learning during the covid-19 pandemic lockdown.

Methodology

In Nigeria, all tertiary institution students were moved to online learning when schools were mandated to go off physical classes at the beginning of the covid-19 pandemic in early 2020. During the online

learning, teaching and learning were done using Zoom, PowerPoint Presentations (PPTs) and the university's Learning Management System.The study employed a descriptive survey design of the non-experimental type. The study was carried out at the University of Ibadan, one of the federal universities in South-West, Nigeria. The target population of the study was made up of 200 level undergraduate students in the Faculty of Education of the university where the study was carried out. The sample of the study, which was selected using the convenience sampling method, was made up of one hundred and twenty-one (121) undergraduates. They were the total number of students who filled the instrument sent to them online. Data was collected using an online questionnaire that was designed using Google forms. The instrument, titled "Online Learning and Mental Stress Questionnaire (OLMSQ) (r = .87), consisted of 13 items with options on a four-point Likert scale of "Strongly Disagree (SD)", "Disagree (D)", "Agree (A)", and "Strongly Agree (SA)". The 13-item questionnaire was administered via Google forms, which was shared with the students on the online platform. It was used as part of the resources used to interact with the students during the covid-19 pandemic lockdown. As part of inclusion criteria, only undergraduates who were taught remotely during the semester of the lockdown were allowed to participate in the study. One hundred and twenty-one (121) students responded to the questionnaire which was made available for over one month on the group's platform. The data collected were used to answer the research question and hypotheses raised in the study. The research question was answered using descriptive statistics of Mean (2.5 benchmark) and Standard Deviation. The benchmark Mean of 2.5 was calculated by summing the point of each response: strongly disagree (1 point), disagree (2 points), agree (3 points), and strongly agree (4 points), and dividing the result by 4, being the total number of responses provided. The decision rule is that if the average Mean is greater than 2.5, the response is positive, but if less than 2.5, the response is negative. Inferential statistics of Independent Samples T-test and One-Way ANOVA was used to test the hypotheses raised at 0.05 level of significance. This was done on SPSS Version 26.

Results

Research Questions: What are the perceptions of undergraduate students towards mental stress caused by online learning during covid-19 pandemic lockdown?

Table 1: Mean and S.D. distribution of undergraduate students' perception of mental stress caused by learning during covid-19 pandemic lockdown.

Items	Mean	S.D.	Remark
I feel exhausted during online learning.	3.14	0.799	Positive
I feel restless during online learning.	2.79	0.839	Positive
Having to concentrate alone for hours in front of the computer during online learning stresses me mentally.	3.18	0.816	Positive
Lack of break after two hours of non-stop online learning stresses me mentally.	3.12	0.744	Positive
Having to attend to some immediate online learning activities puts me under stress.	3.12	0.714	Positive
The fear that I may not learn anything reasonable online as a result of poor network puts me under stress.	3.32	0.933	Positive
The feeling of isolation or loneliness during online learning makes me feel sick.	2.64	0.940	Positive
During online learning, I find it difficult to control my emotions when things are not going according to plan.	2.36	0.884	Positive
Having to complete assignments and meet up with many other deadlines during online learning gives me mental stress.	3.17	0.820	Positive
Sometimes, I feel that I cannot cope with the demands of online learning due to the mental stress involved.	3.04	0.860	Positive

Average Mean = 2.99

As shown in the responses to each item in Table 1, the undergraduate students sampled in the study have positive perceptions towards mental stress caused by online learning during the covid-19 pandemic lockdown. Based on the Average Mean of 2.99, and in relation to the decision rule, it was concluded that online learning during the lockdown negatively affected the mental well-being of undergraduate students as a result of the stress it put them through. Individual responses to each item further showed that undergraduates felt exhausted (Mean = 3.14) and restless (Mean = 2.79) during online learning. They also reported being stressed mentally due to having to concentrate alone for hours in front of the computer during online learning (Mean = 3.18), just as lack of break after two hours of non-stop online learning led to mental stress (Mean = 3.12). Also, the students were stressed mentally due to having to attend to some immediate activities online (Mean = 3.12),

and the fear that they may not learn anything reasonable online as a result of poor network also stressed them mentally (Mean = 3.32). In addition, the feeling of isolation or loneliness during online learning made them to be sick (Mean = 2.64), and sometimes, they found it difficult to control their emotions during online learning when things do not go according to plan (Mean = 2.36). In addition, the result showed that having to complete assignments and meet up with many other deadlines during online learning (Mean = 3.17) and sometimes, the feeling that they could not cope with the demands of online learning (Mean = 3.04), stressed them mentally. In view of these positive responses, it was concluded that online learning embarked on during the covid-19 pandemic lockdown stressed the undergraduate students mentally.

Ho_1: There is no significant influence of gender on undergraduate students' perception of mental stress caused by online learning during covid-19 pandemic lockdown.

Table 2: Independent-Samples t-test showing no significant influence of gender on undergraduate students' perception of mental stress caused by online learning.

	Gender	N	Mean	S.D	t	Df	*p*	Remark
Mental	Male	40	28.45	6.891	-1.952	119	.060	Not Sig.
Stress	Female	81	30.57	5.005				

Significant at p<0.05

As shown in the result in Table 2, there is no significant influence of gender on undergraduate students' perception of mental stress caused by online learning (t = -1.952; df = 119; p>.05). This connotes that both genders have the same perceptions of the mental stress caused by online learning during the covid-19 pandemic lockdown.

Ho2: There is no significant influence of course of study in undergraduates' perception of mental stress caused by online learning during covid-19 pandemic lockdown.

Table 3*:* ANOVA result showing no significant influence of course of study on undergraduate students' perception of mental stress caused by online learning based on course of study.

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	27.403	2	13.702	.409	.665
Within Groups	3948.481	118	33.462		
Total	3975.884	120			

Significant at p<0.05

The results in Table 3 revealed no significant influence of course of study on undergraduate students' perception of mental stress caused by online learning ($F_{(2; 118)} = .40$; $p > 0.05$). This implies that across different courses of study (sciences, social sciences and arts), undergraduate students sampled in the study all have the same perceptions which is that their mental well-being was negatively affected by the online learning during the COVID-19 pandemic lockdown of schools.

Discussion

The findings from this study have shown that online learning, occasioned by the shutdown of schools during the covid-19 pandemic affected the mental well-being of university undergraduate students. All the responses from the students, with an Average Mean of 2.99, which showed positive perceptions and the responses revealed that all the students perceived that they were mentally stressed during the online learning that took place in the covid-19 pandemic lockdown. This finding aligns with earlier reports that the online learning occasioned by the covid-19 pandemic affected the mental well-being of undergraduate students. These earlier reports include those of Sameer, et al. (2020), Khan, et al., (2020), Akour (2020), and Nochaiwong, et al. (2020), who stated that the schools' lockdown and the online learning resulted in psychological trauma for undergraduate students. Also, the result corroborates Cao et al. (2020), Waseem et al. (2020), and Mudenda et al., (2021) who reported that due to the covid-19 pandemic, undergraduate students encountered mental health challenges, including anxiety, depression and stress. This was also confirmed by Enns et al., (2019), who reported that stress among students usually has serious and negative effects on their physical and psychological health. Supporting this findings, Rourke et al., (2010) reported that undergraduate students experience some forms of stress, making stress a part of their existence. The findings also corroborates Waseem et al., (2020), and Mudenda et al., (2021) who reported that undergraduate students encountered mental health challenges during the Covid-19 pandemic lockdown. Khan et al., (2020) and Cao, et al., (2020) also reported psychological challenges including anxiety, depression and stress.

With regards to gender, this study found no significant influence on undergraduate students' perception of mental stress caused by online learning during the covid-19 pandemic lockdown. This implies that both genders have the same perceptions of the mental stress caused by online learning during the covid-19 pandemic lockdown. Though, there are many variations in research reports with regards to the influence of gender on students' perceptions of mental stress in online

learning. This finding supports the position of Bedewy and Gabriel (2015) who found no significant difference instudents' perceptions of mental stress in online learning based on gender. However, the report disagrees with several studies such as those of Aihie and Ohanaka (2019), Mishra (2018), Yikaelo et al. (2018), Ebrahim (2016), Dhull and Kumari (2015), and others, who all reported significant differences on mental stress among students based on gender.

Finally, the study found no significant influence of course of study on undergraduate students' perception of mental stress caused by online learning during the covid-19 pandemic lockdown. This implies that, across different courses of study (sciences, social sciences and arts, the departments investigated in the study), the undergraduate students all have the same perceptions that their mental wellbeing was negatively affected by online learning during the covid-19 pandemic. Several studies such as those from Reddy et al., (2018) and Deepa (2016) reported that a higher level of stress was noticed amongst students in business department as against those in the Humanities, and that undergraduate students from Science department experienced a higher level of stress than those from the Business and Humanities Departments. This connotes differences across courses of study.

Conclusion

The findings of this study have implications for undergraduate students' mental well-being, in an era that is almost being dominated by online learning in various forms. The covid-19 pandemic has brought the issue of mental stress and health among undergraduates to the limelight, especially with regards to various forms of online learning which have isolated students from not just their lecturers but also many enriching physical activities. Even if the covid-19 pandemic eventually stops globally, it is likely that education cannot return fully to the normal physical, face-to-face mode of instructions.

Recommendations

In lieu of the above, there is the need to ensure that students are not stressed to the extent that their mental well-being, in terms of concentration, social interaction, and motivation, all of which are germane to their overall academic success, will be negatively affected. This calls for the need to put in place regulations on online learning which will ensure that institutions are not totally isolated from their students. These regulations should also create an enabling environment for lecturers and students to interact more effectively and efficiently, while also ensuring that online learning activities, especially the types that completely isolate students from other peers and their teachers, are more enriching so as to drastically reduce the incidence of stress which negatively affects them.

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