Pandemic-Induced Online Learning and its Impact on Mental Health of High School and Tertiary Students

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Abstract

Background: The Coronavirus Disease 2019 (Covid-19) pandemic in 2020 led to schools shutting down worldwide. Indefinite lockdowns forced many educational institutions to transition to online instruction. Learning, not only in isolation but also in some form of quarantine and fear of contracting a killer disease with limited to no social activities for many students in many countries, must have been a huge undertaking. This study explored the impact of online learning in isolation on students' mental health.

Methods: A literature review was conducted using peer-reviewed journal articles published between 2020 and 2021 that provided full access. Initially, a search was conducted with the Google search engine using the words "mental health, Covid-19, and mental health." This was done to explore the literature available on the subject under review.

Results: The Covid-19 pandemic has adversely affected the mental health of both tertiary and high school students. Although the sources vary, online learning has been identified as a significant contributing factor.

Conclusion: As much as technology provides platforms for socialization, face-to-face interactions provide opportunities for shared moments and interactions coupled with emotional contagion. Recommendations for students' mental wellness/care during a pandemic and remote learning are provided.

Keywords: *Covid-19, remote learning, online learning, mental health, mental wellness*

Introduction

Mental health during the Covid-19 pandemic became a major subject of discussion. This was due to the world's struggle to cope with mental health challenges that came with measures to contain the pandemic and some consequences such as job losses, online or remote learning, and the cancellation of social events. Mental health issues during a pandemic are "complex and multilayered" in that they exacerbate pre-existing mental health issues. Confining measures, such as quarantine, isolation, and physical distancing, have a negative effect on the physical and psychological well-being of people, as well as causing an emotive response to the pandemic (Talevi, 2020; Ihm et al., 2021; Walters et al., 2022).

The World Health Organization (WHO, 2022) describes mental health as an essential component of overall health and well-being, because it underlies

the individual and communal ability to make decisions, form relationships, and affect the environment in which we live. The WHO adds that mental health is a fundamental human right and is essential for personal, communal, and socioeconomic growth. This could be why it came out as a matter of concern as it is a major component of well-being, not only at the individual but also at the community and economic levels.

According to the United Nations International Children's Emergency Fund (UNICEF) State of the World Children 2021 report, the impact of the Covid-19 pandemic was felt more among children and young people. In particular, the negative outcomes on children and young people's mental health and well-being will manifest for many years. Approximately one in five young people aged 15-24 in 21 countries reported feeling or not having an interest in activities. The same report also indicated that young people have always borne the biggest burden of mental health challenges even before the pandemic, making them even more vulnerable due to the anxiety and stress that came with the pandemic and its containment measures. Chu and Li (2022) found less physical activity in male university students during online learning compared to their female counterparts. Physical inactivity may not have impacted mental health during the study period, but Pedersen and Saltin (2015) found that inactivity over time can lead to depression and depressive mood disorders. It is important to bear this aspect in mind, not only for online learners but also for teachers.

Lee (2020) reports that school closure negatively impacts children and adolescents with mental health needs as it curtails access to resources only accessible through schools. She also reported that the YoungMinds survey found that 83% of people with a history of mental illness in the UK stated that the pandemic worsened their condition due to missing peer support and in-person counseling services that were canceled. This shows how online learning can further impact students who have to deal with mental health issues on their own without peer support enjoyed in face-to-face learning environments. An Australian study found that exposure to the Covid-19 pandemic was implicated in causing challenges to community mental health in adults in Australia (Dawel et al., 2020). The pandemic's overwhelming stress and anxiety have impacted all population groups.

The Covid-19 virus's containment measures have resulted in widespread social isolation, which has had adverse effects on mental health globally. For teenagers, who primarily rely on their peer relationships for emotional support, these limitations are particularly challenging (Magson et. al., 2021). Friedman (2020) argued that the Covid-19 pandemic was not only a public health issue; it also resulted in multifaceted challenges, including the disruption of the global economy and

education systems. Chen and Lucock (2022) discovered elevated anxiety levels and depression among college students, with over half reporting levels exceeding clinical limits, with females rating much higher than males. The survey also revealed relatively low levels of resilience attributed to constraints and isolation, which restricted opportunities to participate in effective coping techniques and activities, rather than persistent personality traits.

Well-being

Well-being means different things to different people and contexts, but White (2008) defines it as doing well, which is the material dimension; feeling good, which is a subjective dimension; and doing good and feeling well, which are categorized as moral and religious dimensions. In contrast, Crisp (2015) defined well-being as being related to health, which indicates the absence of disease or sickness. White (2008) emphasized the importance of relationships as part of well-being, according to findings from her study of communities in Bangladesh. In essence, well-being has to do with an individual's material, subjective, and relational aspects coupled with the absence of disease or sickness.

Stress

According to Schneiderman et al. (2005), stress affects individuals' psychological, behavioral, and biological well-being. Stress is defined as a disturbance/destabilization of homeostatic status, which is the balance between a person's internal environment and the constantly changing external environment (Bernard, 1865/1965, as cited in Schneiderman et al., 2005). They further stated that the impact of stress on mental health is highly dependent on the coping skills and resources available to an individual to overcome stressful situations. According to Russell and Lightman (2019), prolonged stress predisposes an individual to various health challenges, including mental health issues.

Anxiety

The Covid-19 Pandemic has brought a lot of anxiety not only to students but also to many people around the globe. Landi et al. (2020) explain that anxiety can negatively affect mental health and refer to the anxiety experienced during the pandemic as health anxiety. According to the American Psychological Association (n.d.), anxiety is "an emotion characterized by feelings of tension, worried thoughts, and physical changes such as increased blood pressure (para. 1)." This shows that anxiety emanating from the Covid-19 Pandemic has the potential to alter the physical well-being of learners. They worry about catching the disease and sometimes preparing for examinations.

Theoretical Framework

Learning has always been perceived or known to be a face-to-face activity. The teacher stands in front of the class while students sit and listen.

The teacher introduces and explains concepts and examines how far students understand the content by testing them or examining their facial expressions and body language. With the Covid-19 pandemic came online learning which made the traditional learning setup impossible to achieve. Online or virtual learning replaced the traditional method of transmitting knowledge. According to Martin and Evans (2019), for a teacher to achieve positive outcomes when teaching, the teacher must practice what is known as Load Reduction Instruction (LRI). In this approach, instruction must be well-structured, clear, and incremental. Students should not be overloaded with study material before they understand the basics and then progress into harder content, or before they can work independently or as groups. According to the LRI approach, this helps students to remain motivated, engaged, interested in the subject matter, and attain achievement in the subject matter. This could not be achieved during the pandemic, as it would be difficult to read the body language and adjust accordingly.

Martin (2020) opines that Connective Instruction is one of the most important aspects in achieving teaching objectives in the classroom setting. He explained that a teacher-student-peer connection is necessary for learning, which happens only in face-to-face setups. He argued that using online teaching platforms makes this difficult, as students are separated from each other and their teachers. As much technology is available to replicate personal connections, it cannot meet the same outcome that personal contact provides. Connective Instruction, for Martin (2020) includes connection with students at three levels that he terms channels and these are: interpersonal, instruction, and content. The teacher must have a personal connection with the student and be able to adapt the content according to the knowledge the teacher has of each student based on interpersonal relationships. This helps the teacher tailor the lesson delivery based on the knowledge of how best to reach each student. All these could not be achieved during the pandemic, as there was no time to spend with each student online except to teach and give instructions.

Martin and Dowson (2009) argued that interpersonal relations are more important for educational outcomes as they provide solutions to students' concerns, thereby achieving motivation and engagement by students. Martin (2014) emphasizes that the functioning and development of students depend on their interpersonal relationships with significant others, including teachers and peers, in addition to their parents. This shows why the pandemic might have been a source of anxiety, stress, and mental health challenges, as students missed out on a vital part of their functioning through physical distancing and isolation prompted by the Covid-19 pandemic. The following narrative review explores the impact

of online and remote learning on the mental health well-being of high school and tertiary or university students.

Methodology

A literature review was conducted using peer-reviewed journal articles published between 2020 and 2021 that provided full access. Initially, a search was conducted with the Google search engine using the words, "mental health, Covid-19 and mental health." This was done to explore the literature available on the subject under review. Once sufficient scholarly articles were established, Google Scholar was used. A multitude of peer-reviewed journal articles were reviewed for this study, and the Google search engine also brought up some leads to usable articles. These were PubMed and the National American Mental Health Institute (NAMI) California, where open access articles on the subject were available. The search for peer-reviewed journal articles showed that there was more research from Asian countries pertaining to the pandemic and mental health than any other region. This may be due to the fact that the pandemic first hit Asia, where they got a head start at research, and by the time the pandemic reached other places, there was already a substantial amount of literature on the subject that other scholars felt it was unnecessary to replicate/duplicate the studies.

Inclusion and Exclusion Criteria

In the search for review articles in this study, those that did not offer full access and those that were not focused on high school and tertiary students were excluded.

Ethical Considerations

I have endeavored to write this paper and have reviewed the articles. All the sources cited and referenced were articles that I searched; some I read in their entirety, while I read only the relevant sections for the topic in some of them. I have ensured the accurate citing of all sources used. If there are any similarities with another article, they are coincidental or may stem from the use of the same sources and similar thought patterns.

Mental Health Status of Online Learners during the Covid-19 Pandemic

According to Alibudbud (2021), students' heightened anxiety and absenteeism may be two of the most detrimental effects of online learning on mental health. Absenteeism will naturally lead to an overload of schoolwork to be covered or poor grades, which may further impact a learner's mental well-being. Jung, et al. (2021), as cited in Alam, (2022) also adds that the unknown and uncertain length of time the Covid-19 pandemic would last was another source of stress and anxiety for many students. According to Idris et al. (2021), online learning was filled with distractions

for 72% of students and increased stress in 64.9% of students, although 54.8% reported using the isolation and lockdown time for self-reflection. Another source of stress is the use of gadgets in online learning. According to Mheidly et al. (2020) and Priyanka et al. (2021), prolonged exposure to screens, iPads, and smart gadgets increases stress and anxiety levels. Telecommunication-related mental health pressures can compound other stressors such as isolation and lockdown, eventually leading to tiredness and burnout. As much as online learning was meant to solve a problem, the challenges that came with it were more than most learning institutions anticipated.

Some countries, such as Kenya, had no formal response plan for mental health during the pandemic and no surveillance system was available to identify those who needed mental health services (Jaguga & Kwobah, 2020). This made it even more difficult for learners going through mental health challenges as they had no access to services to help them cope. Magson, et al. (2021) highlight the mental challenges of adolescents during the COVID-19 pandemic resulting from social isolation as they depend on peers for emotional support. Online learning challenges and rising interpersonal conflicts in the home environment have added to the stress and anxiety experienced by most students.

High School Students

Magson et al. (2020) state that adolescents rely on peers for emotional support. Therefore, moving classes online and not in person may have affected them more than in any other population group. Garcia et al. (2021) found that a lack of motivation, rising tiredness with online learning, and emotions of connectivity with peers that were lost and could not be replicated through online meeting software were major sources of anxiety and stress. Prolonged stress and anxiety can lead to mental health disorders such as depression and post-traumatic stress disorder (Salari et al., 2020). This provides a glimpse into the value of peer social interaction and the importance of physical activity for mental health and well-being among high school students.

Asanov et al. (2021) found that 16% of high school online learners were suffering from depression, but the cause was attributed more to social isolation than online learning. This shows variations in sources of mental health issues among online learners during the peak of the Covid-19 pandemic. On the other hand, Kang, et al. (2021) found that online learning coupled with a sedentary lifestyle was a predictor for mental health issues. They further found that girls and those in their final high school grades had more signs of mental distress than boys and those in lower grades.

Most participants in an Indian study of high school students attributed

their sense of powerlessness and dissatisfaction to social alienation and online schooling. These findings corroborate the idea that the pandemic has a negative impact on students' physical and mental health, leading to low productivity and irritation (Aggarwal, 2021). In a South Korean study, high school students' challenges in focusing on learning online were due to other distractions such as Netflix, YouTube, and other video platforms and sleeping during classes (Friedman, 2020). These disturbances and distractions could be sources of stress for students during online learning.

The transition to online learning appears to have impacted students' concentration and engagement levels, and their capacity to learn and obtain value from their work. These reductions have been linked to a decline in mental health (Walters et al., 2021). Gunawan et al. (2021) found that university students generally show a greater degree of academic burnout than senior high school and junior high school students. Interestingly, during the Covid-19 pandemic, there was no difference in the level of burnout between students who allotted a small amount of online learning time (less than one hour per day) and those who allocated more. The pandemic caused the same stress levels to online learners, despite their academic level of study.

Tertiary Students

The magnitude of the adjustments compelled by Covid-19 is perhaps unparalleled in the history of tertiary education. Krishnamurthy (2020) states that due to the development of artificial intelligence, machine learning, and automation, this occurrence took place at the same time as information technology's capabilities were increasing. The changes implemented by most universities remain and will be improved, and online learning will be a normal part of tertiary education. If this is the case, then it calls for taking an inventory of the mental health impacts on students and finding mitigation measures that are sustainable and well thought out.

According to Son et al. (2020), in a study of 197 college students, stress and anxiety during the COVID-19 pandemic increased in 71% (138) of the students. The majority of the participants (91%, 177) indicated that the pandemic increased their fear and worry, leading to poor concentration of schoolwork. The main sources of worry and anxiety were their health, loved ones, and academic performance. Akpinar's (2021) study found an upsurge in mental health problems among tertiary students. This was ascribed to the separation between students and lecturers, the difficulty in utilizing online platforms, the absence of advice and counseling, and the platform's high levels of distractions. For example, the inability to communicate and connect with peers and lecturers was a major source of stress for this set of students. Online learning, which came as a solution to Covid-19 containment measures, seems to have

caused stress, adding to the stress of the pandemic itself.

For developing countries, there was the added stress of poor Internet connectivity (Ferdous & Shifat, 2020; Heng & Sol, 2021) coupled with the high cost associated with online services, especially where keeping cameras on was a requirement to avoid '*logged in*' absenteeism (Alibudbud, 2021). In some countries, power cuts also played a role in adding to the stress of online learning. A study in Brunei by Alam (2022) revealed that university students found it difficult to concentrate in their new learning spaces, as they saw their homes as places of relaxation, not learning. Students considered online learning from home to be distracting because of the presence of social media, television, and other family members. These findings are similar to Barrot et al. (2021) findings on college students, who indicated that the learning environment at home was the biggest challenge to the quality of education and mental health. This placed a mental burden on the students, as they were still required to cover as much learning material as they were in the regular school setting, despite the disturbances of several people learning and working in the same space.

Ferdous and Shifat (2020) revealed that college students were vulnerable to worry, frustration, and despair, all of which harmed their mental health. Getting used to new study methodologies, coping with the absence of laboratories and other required study resources, network connectivity issues, and the severity of Covid-19 all contributed to difficult and unnecessary mental strain. Gadi et al. (2022) discovered through their research on student mental health during the pandemic that 84.2% (n=196) of students worried too much about various things. More than sixty-one percent (61.9%, n=144) were unable to stop or manage worrying, 71.2% (n=166) had problems relaxing for at least a few days, 72.1% (n=168) reported feeling at least occasionally unable to perform tasks, and 8.5% (n=20) reported feeling never or hardly competent to address personal issues. These findings call for proper planning of online learning not only during pandemics, but also for institutions that wish to continue online course delivery or those wishing to adopt a hybrid of online and face-to-face learning.

Recommendations for Improving Mental Well-being for Remote Learning

Some of the recommendations for mental well-being during a pandemic (or any emergency for that matter) for remote learners, according to Jaguga and Kwobah (2020) and Rajkumar (2020), include preparing a formal mental health response plan, training community health workers and volunteers on psychological first aid, and scaling up mobile health services. Talevi et al. (2020) suggested the incorporation of mental health in emergency public health response, access to secure psychological counseling assistance,

and targeted mental health services to vulnerable populations such as females and the younger population, while Lee (2020) suggested creating a routine or schedule to reduce the anxiety that comes with uncertainty.

Son et al. (2020) and Idris et al. (2021) recommend addressing college students' mental health through the development of interventions and preventive strategies. Mheidly et al. (2020) identified eight points or practical activities to preserve psychological and physical well-being. These include raising awareness of stress and burnout, taking breaks during online activities, directing wellness campaigns in direct groups, podcast learning, exercise, supportive online communities, cutting down on unhealthy habits such as smoking and caffeine intake, and regular surveys to assess actual levels of stress among learners.

In a New Zealand study of high school students, Yates et al. (2021) found that learning was encouraged by authenticity (contextualized and situated learning) and cooperation or collaboration; however, participants also appreciated supporting pedagogies (methods of teaching), motivating techniques, and technology-mediated supportive pedagogies that allowed for academic advancement and improved well-being. These are methods for improving online learning that can be adopted and adapted depending on the context and availability of technological tools.

Barrot, et al. (2021) suggest strategies that were reported to have been used by college students. The most common student tactics were resource management and utilization, help-seeking, improving technical abilities, time management, and maintaining a positive learning environment. To combat social isolation, mental health practitioners propose fostering good habits, avoiding unpleasant news, and adopting alternative communication techniques, such as social networks and digital communication platforms (Salari et al., 2020). Chen and Lucock (2022) recommend long-term monitoring and mental health care for university students as a solution when engaging in online learning and in isolation as well as professional psychological therapy and counseling.

I would add to the recommendations, training parents and guardians, religious leaders, and teachers in psychological first aid and ensuring that they are aware of referral systems available for mental health care issues beyond their training for online learners. According to Korndörffer et al. (2022), psychological first aid is based on the five guiding concepts of promoting self and collective efficacy, connectedness, safety, and calmness to

lessen suffering and promote adaptive coping.

Conclusion

It is clear that the Covid-19 pandemic has had an impact on the mental health of both tertiary and high school students. The sources of stress vary, but online learning has been identified as a significant contributing factor. It would also be valuable to explore the psychological well-being of students who did not have the opportunity to have online or remote lessons but have had their school calendar altered and have had to "catch up" to make up for the lost time during the pandemic.

In some instances, the disease itself was a trigger, while in others, the concern for the well-being of loved ones contributed to high stress levels. Online learning, a distractive home-learning environment, rising conflict at home, social isolation, lack of physical exercise, and the uncertainty of the end of the pandemic also contributed to mental health challenges. The recommendations pointed out have been pooled to provide one-stop guidance on how to plan, implement, and respond to mental health issues during emergencies, such as disease outbreaks for students forced to use the online mode of learning. Although not exhaustive, they provide a starting point.

Covid-19 is not the only emergency situation that calls for online learning. Disasters such as floods, earthquakes, cyclones, tornados, wars, and conflicts can disrupt face-to-face learning. Therefore, this calls for careful planning, resourcing, and reflection based on Covid-19 experiences to build robust and supportive online learning systems and training for teachers and instructors to ensure the mental well-being of learners and teachers.

It would also be helpful to consider African students' mental health status during a pandemic in the future, as there was not much research from the continent during the review. In addition, considering the connectivity levels of continent and power matters, there may be different sources of challenges to mental health for online learners.

Author Note

Conflict of Interest: None

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