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Title: The psychological impact of COVID-19 on university students in the Global South: A scoping review

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Declaration

I declare that this thesis titled "*The psychological impact of COVID-19 amongst university students in the Global South: A scoping review*" is my own work, that it has not been submitted for any degree or examination in any other university. Each significant contribution to, and quotation in, this dissertation from the work, or works, of other people has been attributed, and has been cited and referenced in accordance with the APA 7 guideline.

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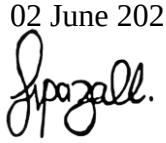
Signed: 

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Abstract

In 2020, the World Health Organization (WHO) declared an outbreak of the highly transmittable virus, coronavirus disease (COVID-19). Given the rapid increase of infection amongst the global population, countries implemented preventative measures to assist in reducing the infection rate. These measures had a significant effect on the higher education sector, which ultimately impacted on student mental health. The aim of this study was to provide a comprehensive overview of the published literature conducted on the psychological impact of COVID-19 on university students in the Global South. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) was followed and the Arksey and O'Malley five-stage process to collect, evaluate, and present available research evidence, to answer the identified research questions was also used. A literature search was performed via the University of the Western Cape (UWC)'s library, using the metadata online research platform EBSCOhost. From the analysis, fifteen articles were identified that met the criteria for inclusion, and findings revealed that there was a significant increase in anxiety and depression, substance abuse, and loneliness among university students in the Global South during the COVID-19 pandemic. Furthermore, the study found that COVID-19 prevention measures and the risk of infection, emergency remote teaching and learning, challenges with social support, and socioeconomic difficulties, contributed significantly to the identified mental health outcomes among university students in the Global South. Based on the results of the present study, the existing literature, and observations of the study's limitations, it is suggested that educational institutions and future researchers should consider further research and practical implementations regarding the psychological impact of COVID-19 post-pandemic on Global South universities.

List of Abbreviations

AJOL	African Journals Online
ARDS	Acute Respiratory Distress Syndrome
CDC	Centers for Disease Control and Prevention
COVID-19	Coronavirus
DASS	Depression, Anxiety and Stress Scale
DOAJ	Directory of Open Access Journal
ERIC	Education Resource Information
ERT	Emergency Remote Teaching
GAD-7	General Anxiety Disorder
GDP	Gross Domestic Product
GNI	Gross National Income
JSTOR	Journal Storage Cambridge Core
MERS-CoV	Middle East Respiratory Syndrome Coronavirus
PRISMA-ScR	Preferred Reporting Item for Systematic Reviews and Meta-Analysis Extension for Scoping Reviews Extension for Scoping Reviews
PTSD	Posttraumatic Stress Disorder
SARS-COV	Severe Acute Respiratory Syndrome Coronavirus
UN	United Nations
USA	United States of America
UWC	University of the Western Cape
WHO	World Health Organization

Glossary of Terms

Epidemic	"An increase, often sudden, in the number of cases of a disease above what is normally expected in that population in that area" (CDC, 2012, p. 2)
Gross National Income (GNI)	"Is a measurement of a country's income. It includes all the income earned by a country's residents, businesses, and earnings from foreign sources" (Amadeo, 2018)
High Income Country	Countries' economies with a GNI per capita of US$13,205 or more, as measured in 2022
Low Income Country	Low-income countries are those that have the weakest economies as evaluated by the World Bank
Middle Income Country	Countries' economies with a GNI per capita between $1 036 and $12 055, as measured in 2022
Outbreak	"An increase, often sudden, in the numbers of cases of a disease above what is normally expected in that population in that limited geographic area" (CDC, 2012, p. 2)
Pandemic	"Refers to an epidemic that has spread over several countries or continents, usually affecting a large number of people" (CDC, 2012, p. 2)
SARS-CoV	Severe Acute Respiratory Syndrome Coronavirus, which is a virus that causes a respiratory disease

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Chapter One: Introduction

The introduction to this study begins with background information on the key terms (i.e., Global South, COVID-19, and university students) that will be used throughout the study. The purpose is to gain a holistic understanding of these terms and their relevance to the study.

COVID-19

In December 2019, the first case of the coronavirus disease (COVID-19) emerged in Wuhan, China. COVID-19 is an acute respiratory infection that is caused by the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) virus (Hassanpour et al., 2020). Symptoms of COVID-19 range from being asymptomatic to dry cough, sore throat, breathlessness, body aches, fatigue, nausea, vomiting, diarrhoea, acute respiratory distress syndrome (ARDS), severe pneumonia, and multiple organ dysfunction, all of which could result in death (Madabhavi et al., 2020). COVID-19 was noted to be highly transmittable between humans due to its spread via droplets and virus particles released into the air through an infected person's cough or sneeze (WHO, 2020b). As a result, in March 2020, due to the rapid spread of the virus, COVID-19 was declared an outbreak by the World Health Organization (WHO, 2020b). The WHO recommended that countries develop measures to slow down the rapid increase in infections (Marazziti & Stahl, 2020). In response to this, several countries enforced mask-wearing, hand hygiene, physical distancing, and lockdown. One of the suggested measures was for countries to consider quarantine or the restriction of movement of individuals in their country (WHO, 2020b).

Related to abovementioned measures, the WHO did note concerns on the possible psychological impact among the population that may result from the measures implemented during the pandemic (WHO, 2020a). Globally, studies have indicated that the general population experienced some psychological effects due to the pandemic and its regulations

(Debata et al., 2020). Quarantine and isolation were endorsed as the most effective measures in reducing the increase of infections, however this has led to an increase on the psychological impact in individuals. For example, Cornwell and Laumann (2015) note the worsening of mental health symptoms in both those who had pre-existing mental health problems and those who were 'healthy' individuals pre-COVID-19. Furthermore, despite literature indicating the importance of social interaction and connectivity in preventing mental illness, individuals were separated from any social contact due to COVID-19 regulations. Thus, isolation and quarantine from loved ones appears to have precipitated anxiety and depression among individuals (Jain& Yuan, 2020). Further studies have reported anxiety, depression, posttraumatic stress disorder (PTSD), acute stress disorder, emotional stress, and psychosis amongst the mental disorders that were evident in the general population (Brooks et al., 2020; Gupta et al., 2020; Salari et al., 2020; Vindegaard & Benros, 2020). According to Salari et al. (2020), the cause of distress may also be due to the content shown in the media during the lockdown period. Additionally, the closure of businesses led to many workers being retrenched, resulting in a rise in the unemployment rate (Debata et al., 2020), financial stress, as well as feelings of anger, frustration, and helplessness in many households (Brooks et al., 2020). Therefore, countries that are underdeveloped or have a lower Gross Domestic Product (GDP), such as those in the Global South, may have had significant challenges in the wake of the COVID-19 pandemic, negatively impacting both their economies and psychological wellbeing.

The Global South and COVID-19

The Collins Dictionary (HarperCollins, n.d.) defines the 'Global South' as countries with a relatively low level of economic and industrial development. These countries are often located to the south of the more industrialised countries. In present times the terms have grown to have multiple definitions and broader characteristics. For example, Dados and Connell (2012) indicate that the term 'Global South' refers to the focus on geopolitical power relations

rather than the emphasis on development or cultural differences amongst certain regions. However, according to the World Population Review (World Population Review, 2021) clarified that there is often a challenge in the definition of the term 'Global South' and often the term is misunderstood and mistaken for geographical location. The World Population Review further states that, although most of these countries are in the Southern Hemisphere, the term is strictly economic (World Health Review, 2021).

The COVID-19 pandemic affected the world globally, which included countries that are recognised as either Global South or Global North countries. Countries within these two terms are often differentiated by those that are economically disadvantaged (i.e., Global South), and those having more dominance and power (i.e., Global North) (Haug et al., 2021). Global South countries includes countries that have been identified by the World Bank as being Global South countries, including but not limited to Ghana, South Africa, China, Saudi Arabia, Brazil, and India.

This study is mindful that not all countries categories within the Global South are underdeveloped or low-income countries. As such, the definitions given above offer a contextual definition that may assist in understanding the factors that influence the psychological impact of university students in the Global South. Therefore, for the purpose of this study, the definition used by both the Word Population Review (2021) and Dados and Connell (2012) will be used interchangeably.

University Students and COVID-19

A university is an institution of higher learning that provides facilities for teaching and research and are authorised to grant academic degrees (Merriam-Webster, 2022). A university student is any student (undergraduate or postgraduate) who is enrolled in an academic course of study at a specific university (Law Insider, n.d.). The role of a university student is one of

academic integrity and includes completing assignments, attending classes, and meeting and achieving educational goals (Lumen Learning, n.d.).

Although some universities may have had blended learning (i.e., online and face-to-face) pre-COVID-19, the rapid shift in modes of engagement in some universities may have been anxiety provoking, especially in countries that are under resourced. One can, therefore, hypothesise that university students in the Global South may have experienced adversity in the transition from purely face-to-face classes to remote modes of learning and teaching, due to a lack of technological advancement in their countries and the ability to maintain the financial demands of virtual learning (Hedding et al., 2020). Furthermore, the shift to remote learning as a preventative measure to reduce the spread of COVID-19 may have contributed to the university population being vulnerable to various psychological impacts (Hedding et al., 2020).

Problem Statement and Rationale

Browning et al. (2021) state that students are a vulnerable population when it comes to mental health. As such, the implementation of global lockdown measures and the temporary closure of universities forced university institutions to transition to remote online learning (WHO, 2020b), meaning that students were required to, suddenly and quickly, familiarise themselves with remote online learning technologies (Browning et al.,2021; Eder, 2020).

Studies have indicated that students, during the time of COVID-19, experienced feelings of frustration, anger, uncertainty, and concern about what will happen to the academic year (Aylie et al., 2020; Sundarasen et al., 2020). Given that the mental health challenges of university students pre-COVID-19 have already been noted, the impact of COVID-19 may have elevated feelings of frustration and anxiety, especially in relation to their future (Pandita et al., 2021).

Examining literature on the psychological impact of COVID-19 on university students in the Global South, will aid in potentially assisting universities in creating relevant and

appropriate interventions, including financial, psychological, and academic support, when addressing the aftermath of the COVID-19 pandemic. Furthermore, exploring the available literature on the psychological impact of COVID-19 on the university students in the Global South could provide insight in better understanding the mental functioning of students in the Global South during the COVID-19 pandemic.

Research Questions

(i) What were the mental health consequences caused by COVID-19 on university students in the Global South?

(ii) What were the factors identified that contributed to the mental health consequences on university students in the Global South?

Aim and Objectives of the Study

The aim of this study was to provide a comprehensive overview of the published literature conducted on the psychological impact of COVID-19 among university students in the Global South.

The objectives of this study were:

(i) To explore the extent, range, and nature of published literature on the psychological impact of COVID-19 on university students in the Global South.

(ii) To identify and explore factors contributing to adverse COVID-19 related mental health outcomes among university students in the Global South.

(iii) To summarise research findings on the psychological impact of COVID-19 and its factors on the adverse psychological outcomes among university students in the Global South.

There were significant global effects of the COVID-19 pandemic. It is likely, however, that countries in the Global South experienced significant challenges because of the pandemic. In addition to managing a global health crisis, failing healthcare and an unstable economic

system, university students in the Global South also struggled to adjust and transition to remote and/or online learning. As a result, it is not surprising that student psychological wellbeing may have been affected.

Chapter Two: Literature Review

The mental health of university students has always been considered more vulnerable than the general population. Although there is extensive literature on the mental health of university students globally, COVID-19 is the first pandemic in centuries to affect the global population and not just a certain region (Udhayakumar & Illango. 2018; Vanika & Sankhian, n.d.). Given that university students were already considered a vulnerable group regarding their mental health, this review explores the available literature on the psychological impact of COVID-19 on the student population, specifically the mental wellbeing of university students in the Global South during the COVID-19 pandemic.

History of Infectious Illnesses and its Psychological Impact

Infectious illnesses and diseases have continued to grow and spread amongst humans in the past years. One would assume that the upgrading of medical technology and preventative measure would reduce the likelihood of illnesses and disease severely effecting the population.

While literature has reported on various pandemics and outbreaks (e.g., Spanish flu, Malaria, and Smallpox) (Baker et al., 2022), in the 20th century we are still faced with outbreaks that not only affect healthcare and the economy, but also results in significant psychosocial effects that are often left untreated, thereby affecting the vulnerability of the general population's mental wellbeing (Goldmann & Galea, 2014).

In 2003, the first case of SARS – CoV was reported in Asia (WHO, 2003). Cleri et al. (2010) define SARS-CoV as "a viral respiratory illness caused by a coronavirus" (p. 176). They further indicate that it was declared an epidemic since it had spread to various countries. However, since 2004 there have been no new cases reported of SARS-CoV (Sim & Chua, 2004). Literature during the SARS-CoV epidemic focused primarily on the psychological impact on healthcare workers and, as a result, Sim and Chua (2004) recommended that research

that also focuses on, for example, family members, scholars, and university students, was needed.

In 2012, a variant referred to as Middle East Respiratory Syndrome coronavirus (MERS-CoV) was first reported in the Middle East, with more than 80% of the cases reported in Saudi Arabia, United Arab Emirates, and the Republic of Korea (WHO, 2015). Again, much of the literature during this period focused on the psychological wellbeing of healthcare workers and limited studies on the psychological wellbeing of the student population. The focus on healthcare workers is understandable given that immense strain and pressure was placed on healthcare workers during this time (McAlonan et al., 2007). However, in 2003 when Canada and China were subjected to a citywide quarantine in response to the SARS outbreak and in 2014 with the outbreak of Ebola in some African countries, symptoms of acute stress disorder were observed (Brooks et al, 2020). In addition, studies have found that preventative measures (i.e., lockdown, isolation, quarantine, etc.) that were implemented in previous epidemics had a negative psychological effect on the population (Faisal et al, 2022a; Faisal et al., 2022b; Wathelet et al., 2020).

In 2019, the first case of COVID-19 was reported in Wuhan, China (Adrefis & Moges, 2021). After the initial reported case, the virus spread globally and resulted in a significant number of deaths and hospitalisation within a short period of time. Due to the rapid rise in infections and death rate, the WHO declared the COVID-19 a public health emergency, thereby being considered a pandemic (WHO, 2020b). The WHO recommended preventative methods, such as quarantine and social isolation, to lessen the rapid rise in infections (Kaggwa., 2022; Sun et al., 2021). Brooks et al. (2007) defines quarantine as the "separation and restriction of movement of people who have been exposed to a contagious disease to ascertain if they have become unwell" (p. 7). This differs from isolation, which is defined as the separation of people who have been diagnosed with a contagious disease from people who are not sick (Brook et

al., 2007). The restriction of movement (WHO, 2020a), quarantine (Brooks et al., 2020), wearing of masks (WHO, 2020a), and social distancing (Lennon et al., 2020) were all measures recommended by the WHO. As countries implemented national lockdowns and the recommended preventative measures, many businesses and institutions that were regarded as non-essential were temporarily closed (Dube, 2020; Nafrees et al., 2020).

Early literature predicted that the COVID-19 pandemic would have a significant impact on individual mental health (Faisal et al., 2022b). This is corroborated by a systematic review conducted by Delanerolle et al. (2022), which compared the prevalence of the psychological impact of the SARS-CoV in 2003, MERS-CoV in 2012, and COVID-19 in 2019. They found that the prevalence of anxiety among the general population was higher during the COVID-19 pandemic (33.16%) in comparison to the SARS-CoV epidemic (25.22%) and the MERS-CoV outbreak (17.35%). On the other hand, their findings on the prevalence of depression among the general population was higher during both the MERS-CoV outbreak (33.65%) and the COVID-19 pandemic (31.35%) in comparison to the SARS-CoV epidemic (23.1%). Therefore, their review demonstrates the significant psychological impact of the COVID-19 pandemic in comparison to the other infectious diseases that have occurred. Similarly, Stamatis et al. (2021) state that there is a link between the COVID-19 pandemic and poor mental health, due to findings from existing literature related to previous and similar outbreaks and epidemics which had had a significant impact mental wellbeing.

Brooks et al. (2020) note possible stressors, such as financial loss, an extended quarantine period, and inadequate supplies, that may have been experienced by the population, causing confusion, anger, and fears of infection. Social distancing, as identified by Lennon et al., (2020) was a distinctive feature in controlling the spread of COVID-19. However, Li and Wang (2020) report that social distancing may have caused a rupture in social bonds, strained support systems, increased fear and worry, and compromised one's sense of belonging and

affiliation. Similarly, Wathelet et al. (2020) found that a consequence of the pandemic and the preventative measures, was that the population presented with posttraumatic stress, anxiety, stress, and depression. Santomauro et al. (2021) also report on the global changes in depressive and anxiety symptoms between 2020 and 2021 and found a global increase of 22.7% and 25.6% in the prevalence of major depressive disorder and anxiety respectively.

Some studies (Adjei et al., 2021; Patel et al., 2020; Ridley et al., 2020; Yorke et al., 2021) have noted that factors, such as the socioeconomic status of individuals, had an impact on the effects of the COVID-19 pandemic, and that countries were impacted economically. Often the difference between Global South countries and Global North countries is their socioeconomic status, and most of its areas are developing or undeveloped, remote, and rural areas. Whilst the impact of the COVID-19 affected both developing and developed countries' systems, certain arears (specifically rural areas in developing countries) may have been more susceptible to collapse (Mncube et al., 2021).

A study conducted by Ridley et al. (2021) found a link between poverty and mental health, reporting that individuals in lower income countries are more likely to experience anxiety and depressive disorders than their wealthier counterparts Thus, due to pre-existing structural inequality, poverty, unemployment, and lack of access to quality healthcare and other services in some of these Global South countries, individual mental health may have also been negatively affected by the COVID-19 pandemic (Nguse & Wassenaar, 2021). As argued by Mncube et al. (2021) and Patel et al. (2021), risk factors, such as poverty and vulnerability in the population, would have likely been exacerbated by the COVID-19 pandemic, resulting in the onset or persistence of mental disorders.

University Student's Psychological Wellbeing

Globally, university students have been known to experience extensive stressors, due to this phase being identified as one of the crucial parts of life and a significantly transformative stage for individuals. This is understandable given that university years are characterised by new responsibilities and the need for individuals to make their own independent choices for, often, the first time in their lives. This newfound independence could result in various psychological and social issues. Additionally, students find that they have to face the stressors of achieving their goals, personally and academically, whilst also having to deal with financial constraints, uncertainty about their future employability, academic pressure, loneliness, and being distant from their primary sources of support (Udhayakumar & Illango, 2018; Vanika & Sankhian, n.d.). Kumaraswamy (2013) and Udhayakumar and Illango (2018) identified that, during this critical period in a university student's life, they develop a fear of failure and may struggle with identity, thereby resulting in them becoming more anxious and/or depressed.

University students also come from various socioeconomic backgrounds and, as such, it has been noted that students in rural areas experience higher levels of anxiety than those in urban areas (Udhayakumar & Illango, 2018). This could be due to the financial constrains experienced by students from rural areas. As Ludban and Gitimu (2015) note, financial stress has an impact on a university student's academic learning quality. Thus, the expectation for young adults to transition from scholar (i.e., have total dependence) to being a university student (i.e., met with numerous responsibilities and freedom) may be overwhelming for some students. Therefore, these demands and burdens may possibly lead to the poor mental health for university students. For example, Kumaraswamy (2013) found in their research that there has been an increase in student's vulnerability to mental health challenges that has generated public concern, especially in western societies. Therefore, the introduction of counselling services was made available for students to aid in navigating this stressful phase.

COVID-19 Pandemic and the Psychological Impact on the Global Student Population

According to Wathelet et al. (2020), Pandita et al. (2021), and Dessauvagie et al. (2022), university students are considered a vulnerable group, as they are more likely to suffer from mental health problems than the general population. As Krifa et al. (2022) argue, university students are three times more susceptible to mental health problems. Pandita et al. (2021) note that academic stress and anxiety experienced by students due to postponed or delayed examinations, internships, or job placements, as well as various barriers to learning, are amongst the factors that may negatively affect their mental health. In addition, the transition to adulthood, stressful academic life, and financial burdens are all some of the unique challenges faced by university students (Dessauvagie et al. ,2022). These stressors can and often do result in poor mental health, including suicidal ideation, social isolation, an increase in the dropout rate, and substance abuse (Krifa et al., 2022).

A rapid shift in modes of engagement in various sectors, including the tertiary education sector, due to preventative measures to curb the spread of COVID-19, resulted in numerous difficulties for some universities. The abrupt closure of universities due to the COVID-19 outbreak led to universities having to transition from a face-to-face mode of learning to online modes of learning, leading to students experiencing feelings of disconnection from peers and other social systems due to home confinement, financial pressures, and uncertainties about the future (Padmanabhanunni & Pretorius, 2021). The sudden closure of the university and rapid increase in the infection rate caused a great deal of disruption to students' day to day operations (Faisal et al., 2022b), and this disruption may have triggered feelings of anxiety, apprehension, and stress.

According to Fernandes (2020), approximately 1.8 billion students in 134 countries, both in the Global South and the Global North, were affected by the closing of universities. Among the issues stated by the author were social and economic issues, especially in

disadvantaged communities, and this included healthcare interruption, due to the health crisis, and learning interruption, due to school closures and the conversion to emergency remote learning and teaching. A study conducted in the United States of America (USA), a Global North country, identified some of the psychological impacts of COVID-19 on students (Browning et al., 2021). They report heightened levels of anxiety as well as traumatic and financial stress amongst students during this period. Wathelet et al. (2020) report that 37% of its participants had experienced a depressive episode, with 8% reporting a history of suicidal ideation. This corresponds with Giaotto et al. (2021) who report suicide being the second leading cause of death among young people globally.

COVID-19 Pandemic and the Psychological Impact on Student in the Global South

Whilst Kohls et al. (2021) found that the levels of perceived stress and loneliness were elevated amongst university students in Global North countries during the COVID-19 pandemic lockdown, students in the Global South were no exception, as lockdown, quarantine, online learning, and social distancing were further stressors added to the already existing recurrent stressors of these students, such as financial difficulties, limited resources. and academic pressures (Dube, 2020; Nafrees et al., 2020). Porter et al. (2021) agrees, arguing that the COVID-19 pandemic more than likely exacerbated students' vulnerability to mental health challenges, due to the factors such as poverty, poor healthcare systems, and a general lack of mental health resources.

Increased levels of anxiety, depression, stress, and loneliness have been reported among the student population during the COVID-19 pandemic (Pretorius & Padmanabhanunni, 2021; Porter et al., 2021). In a study conducted by Kapasia et al. (2020) with university students in India (i.e., a Global South Country), it was found that approximately 42% of the student participants suffered from anxiety, depression, and stress.

Among the student population, Nguyen et al. (2021) state that medical students form part of the psychologically vulnerable population and believes that they are deemed the more vulnerable among the student population. In a study conducted in Vietnam (Nguyen et al., 2021), it was found that medical students who score a higher score on the Fear of COVID-19 scale were more likely to suffer from substance abuse or engage in substance use. This study further found that, among medical students, first-year students and younger students scored much higher on the test in comparison to final year students. This could be due to their medical understanding of the illness, which may have lessened anxiety symptoms. A common concern in the student population was the completion of their academic year. Apart from medical students, Hedding et al. (2020) state that, in South Africa (i.e., a Global South Country), postgraduate students feared not completing their degrees and that undergraduate students felt a sense of helpless. Nearly 88% of university students in Bangladesh reported mild to severe anxiety symptoms (Faisal et al., 2022b). The study by Faisal et al. (2022a) also found that students felt that they no longer had a sense of stability and stimulation that the university community was able to provide as they had less time to spend with their friends or access to social support, all of which are essential for maintaining good mental health.

Pandita et al. (2021) found that 25% of students did not have access to online learning due to limited resources (e.g., laptops or smartphones). Thus, the online learning and teaching processes that were implemented during COVID-19 lockdown may have discriminated against poor and marginalised students. This is in line with Pretorius and Padmanabhanunni (2021) who argue that online learning platforms are not easily accessible for a significant portion of the population, which could have aggravated feels of loneliness and anxiety amongst students. Although data provision was made by some universities to support students' online work and in order to ease possible anxiety around the transition, students still felt the social isolation, the

anxiety (Ariagga et al., 2021), the loneliness (Adjei et al., 2021), and a general lack of support from universities (Marler et al., 2021).

In their study, Adam et al. (2021) highlights the common themes experienced among South African university students during the COVID-19 pandemic. These themes included poor internet connection, time management difficulties, family responsibilities, poor mental wellbeing, and an increased barrier between student and lecturer interaction. Although these themes were found amongst South African university students, various studies have reported similar findings in countries such as Bangladesh, Ethiopia, India, and Malaysia (Faisal et al., 2022b; Shifera Aylie et al., 2020; Kapasia et al., 2020). Similarly, research conducted in Sri Lanka (Rohanachandra et al., 2021), South Africa (Laher et al., 2021), and Uganda (Kaggwa et al., 2022) found that the psychological impact found amongst university students was largely due to the shift to remote online learning, inadequate resources, and lack of support.

There is no doubt that students suffering from mental health have a longstanding history of dealing with the condition, and as such, many external factors, such as a lack of adequate support, poor transitioning, and a drastic shift to their mode of learning, may play a role in their mental health. The student's mental health is then challenged, ultimately affecting their academic performance

Chapter Three: Methodology

Research Design

A scoping review was utilised in this study since it enabled the mapping and synthesis of the available literature, thereby allowing for an exploration of the different types of studies on the psychological impact of COVID-19 on university students in the Global South. Arksey and O'Malley (2005) state that a scoping review aims to map key concepts that underlie a particular field, clarify working definitions, and clarify the conceptual boundaries of that field. Tricco et al. (2018) further state that scoping reviews present a broad overview of the evidence pertaining to a topic, regardless of the studies' quality and are useful for identifying gaps and clarifying key concepts in emerging areas.

Due to the emerging research on the COVID-19 pandemic and the psychological impact on the university student population, a scoping review was appropriate, as it allowed for an "in-depth coverage" of the literature available on the psychological impact of COVID-19 on university students in the Global South (Arksey & O'Malley, 2005, p. 6). One of the purposes of conducting a scoping review, as outlined by Aromataris and Munn (2020), was to analyse the types of literature available, identify critical characteristics or factors, and assess how research was conducted, all of which were vital in answering the research questions.

Study Protocol

The Preferred Reporting for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR) Checklist was developed to improve the quality and conduct of reporting scoping reviews (McGowan et al., 2020). The PRISMA-ScR checklist contains twenty essential minimal reporting items and two optional items (Tricco et al., 2018). Therefore, for this study, the PRISMA-ScR was found to be an appropriate tool to synthesis literature by following a "systematic approach to map evidence on a topic and identify main

concepts, theories, sources and knowledge gaps" (McGowan et al., 2020, p. 178). The researcher followed the twenty reporting items (Appendix A) and the PRISMA flowchart (see Figure 1 later in this chapter), which provided a guideline for all steps taken in the review and data extraction process.

Eligibility Criteria

Inclusion Criteria

All available English-medium peer-reviewed journals between January 2019 and June 2022 were reviewed for this study. The inclusion criteria used to identify relevant titles, abstracts, and articles were as follows:

(i) Studies that included university students in the Global South. For the purposes of this study, the phrase 'university students' included both undergraduate and postgraduate students. The term Global South included countries that have been identified by the World Bank as Global South countries (Appendix B).

(ii) Studies which specifically explored or measured the psychological impact of COVID-19 on university students in the Global South. Specific examples of these include anxiety, depression, sleep difficulties, acute stress disorder, feelings of anger and frustration, loneliness, and PTSD.

Exclusion Criteria

The exclusion criteria used to identify studies that were not relevant to the aims and objectives of the study were as follows:

(i) Any studies that solely focused on the psychological impact of COVID-19 on university staff, university students in the Global North, and university students both in the Global South and Global North were excluded from the search criteria.

(ii) Studies that met the inclusion criteria but were not aimed at the identification of the psychological impact on university students were also excluded.

(iii) Unpublished articles, books, conference proceeding, letters, editorials, and dissertation papers were excluded from the scoping review.

Data Extraction Process

Arksey and O'Malley's (2005) five-staged process for conducting a scoping review was utilised. The five-stage process that was followed to collect, evaluate, and present the available research evidence to answer the identified research questions was as follows:

(i) Identify the research question;

(ii) Identify relevant studies;

(iii) Identify and select relevant studies;

(iv) Data charting; and

(v) Summarise, synthesise, and report the results.

Stage One: Identify the Research Question

Stage one involved identifying the research questions and was the starting point of the scoping review which, ultimately, guided the perspective of the research. For this study, the research questions were:

(i) What are the psychological effects of COVID-19 among university students in the Global South?

(ii) What are the factors identified that contribute to adverse COVID-19 related mental health outcomes among university students in the Global South?

Stage Two: Identify the Relevant Studies

The objective of a scoping review is to be as comprehensive as possible in identifying primary studies and reviews suitable for answering the research questions (Arksey & O'Malley,

2005). A literature search was performed via the University of the Western Cape's (UWC) library using the metadata online research platform EBSCOhost.

Within EBSCOhost, the following databases were accessed to assist the identification of articles: APA PsycArticles, CINAHL, PubMed, Education Resource Information (ERIC), Journal Storage (JSTOR) Cambridge Core, Directory of Open Access Journal (DOAJ), African Journals Online (AJOL), BioMed Central, SAGE Journal, and Google Scholar.

The coverage of the review in terms of time span included literature starting from January 2019 up to July 2022. The identified time span reflects the start of the pandemic and is also inclusive of most stages of the COVID-19 pandemic, such as the enforcement of hard lockdown, the shift to online learning, and the lessening of the COVID-19 pandemic protocol.

The identified keywords that were utilised to identify articles for the review were: 'COVID-19' AND 'University Students' AND 'Global South' AND 'Psychological Impact' OR 'Mental Health'. Additional keywords were also utilised: "Global South" AND "Mental Health" AND "University students"; "South Africa" AND "Mental Health" and "University Students".

During the data extraction process, one conducted two separate, but identical data extraction processes, from both Google Scholar and the UWC Library (EBSCOhost). The following number of articles were identified on the chosen databases: EBSCOhost (*n* = 838); BioMed Central (*n* = 215), African Journal (*n* = 384), DOAJ (*n* = 6), ERIC (*n* = 100), JSTOR (*n* = 133), PubMed (*n* = 13), and SAGE Journal (*n* = 457). Google Scholar (*n* = 90 900), Cambridge Core (*n* = 3 061 351), and CINAHL (*n* = 26 207) had large number of article hits and, as such, the search was refined to the first ten search pages. Reference mining was conducted to find additional studies that were not discovered through the database search and a total of nine more articles were found. The articles obtained through reference mining were recorded accordingly to ensure the validity of the results.

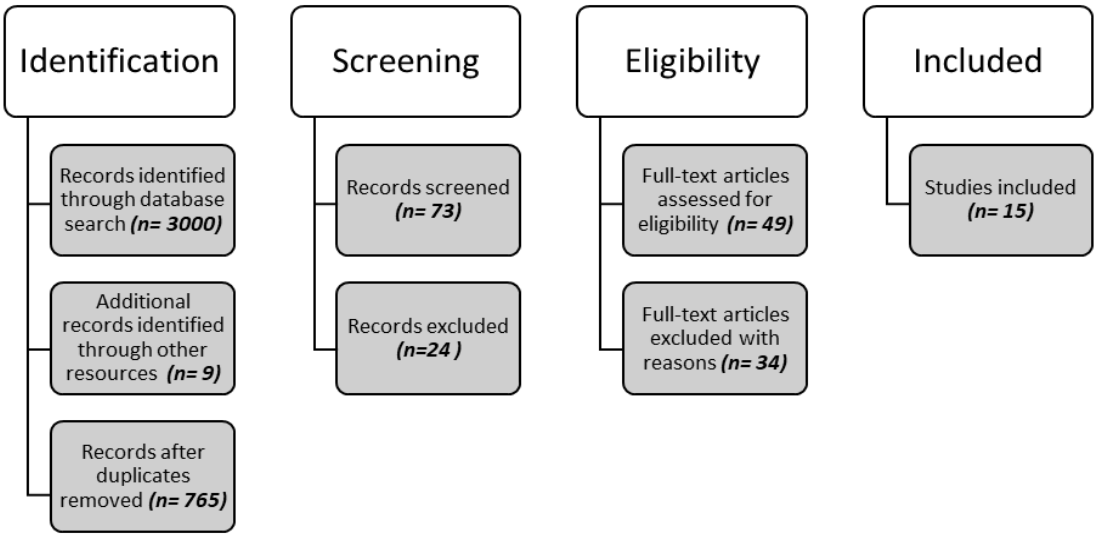
Stage Three: Identify and Select Relevant Studies

When the preceding stages were completed; title and abstract screening, as well as full-text screening processes were used to identify and select articles that were eligible to be included in the review. It is during this stage of the study that the inclusion and exclusion criteria was applied to determine the relevance of the available literature. The identified keywords were used on the various databases to ensure that the articles fell within the inclusion criteria.

Title Screening, Abstract Screening, and Full Article Reading Process. Articles were screened based on their titles using the keywords identified and a total of 765 articles were excluded, with only seventy-three (73) articles being eligible for abstract screening. One then proceeded with the abstract screening process, where each article's abstract was screened to determine whether the article met the inclusion criteria and was deemed appropriate for inclusion in the review. From the total of seventy-three articles accepted based on title screening, twenty-four (24) articles were excluded as they did not meet the inclusion criteria. Thus, forty-nine (49) articles were eligible for full-text screening. Each of the forty-nine selected articles underwent in-depth reading, which was documented on a Microsoft Excel document (Appendix C). Of these forty-nine articles, fifteen (15) were identified as appropriate for review as they met the inclusion criteria and were able to contribute towards answering the research questions. The PRISMA flowchart below (Figure 1) reflects the summary of the above process.

Figure 1

PRISMA Flowchart



Stage Four: Data Charting

The data charting process provides the reader with a logical and descriptive summary of the results that align with the objectives and research questions of the scoping review (Aromataris & Munn, 2020). This process involved charting key items of information obtained after full-text screening from the articles that would be eligible to be included in the review.

A table was created on Microsoft Excel (Appendix C), which allowed me to pull out relevant information from the article that was vital for obtaining a comprehensive understanding of the literature found. The characteristics that were identified for the content of the data charting form included: Authors, Year of publication, Database used, Study design, Students, Income of country (e.g., middle-income country), Country in which the study was conducted, Psychometric instruments used, Psychological disorders identified, Risk factors identified, and recommendation. I employed a descriptive-analytical method, which involved applying a common analytical framework to include research reports. Article findings were then plotted in accordance with the characteristics from the data charting form (Appendix C).

Stage Five: Summarise, Synthesise and Reporting of Results

Stage five involved collating, summarising, and reporting of the results. A numerical analysis was used, and tables and charts summarising the results found in the data charting forms was produced. Studies were then grouped according to geographical location, research method adopted, year of publication, students' academic level, psychological impact, and risk factors. Thus, gaining insight into the dominated areas in the literature.

Based on the abovementioned process, using a narrative account of the findings of the studies, a summary was produced based on the themes uncovered during the articles reviewed (Arksey & O'Malley, 2005). A detailed account of both the numerical and narrative analysis is presented in the next chapter,

Rigour and Reliability of the Review

The PRISMA-ScR is a checklist containing twenty essential reporting items and two optional items that are vital in completing a scoping review (Tricco et al., 2018). Therefore, the PRISMA-ScR was used to promote the reliability of the study (Appendix A).

The researcher's supervisor acted as the second reviewer, which ensured that the necessary steps were followed correctly throughout the review process. This explicit approach increases the reliability of the results and response to critiques that the study method (i.e., a scoping review) lacks methodological rigour (Arksey & O'Malley, 2005).

The framework for conducting a scoping review study was shaped by the view held by proponents of systematic reviews that the methods employed throughout the process should be rigorous and transparent (Arksey & O'Malley, 2005; Mays et al., 2001). Thus, transparency, accountability, and integrity are ensured due to the consistency of the review process.

Ethical Considerations

Ethical approval for the review was obtained from the Humanities and Social Sciences Research Ethics Committee (HSSREC) at the University of the Western Cape (Appendix D). No human or animal participants were used throughout the duration of the study. Therefore, anonymity or consent was not a concern. By acknowledging all authors and ensuring that all sources are cited, the risk of plagiarism was reduced.

Chapter Four: Results And Discussion

This study aimed to provide a comprehensive overview of the published literature on the psychological impact of COVID-19 among university students in the Global South. In this regard, the study had three main objectives namely:

(i) To explore the extent, and nature of published literature on the psychological impact of COVID-19 on university student in the Global South;

(ii) To identify and explore factors contributing to adverse COVID-19 related mental health outcomes among university students in the Global South; and

(iii) To summarise research findings on the psychological impact of COVID-19 and its factors on the adverse psychological outcomes among university students in the Global South.

The purpose of this chapter is to present the findings of the review in relation to these objectives, as well as review the limitations of the study and propose opportunities for future research.

Please see Table 1 on the following page for a summary of the results.

Table 1

Summary of Results

Authors	Sample size	Country of Study	Study Design	Measurement Tool	Main Findings		Recommendations
					Psychological Impact of COVID-19	Contributing Factors	
(1) Aylie et al. (2020)	*N* = 322	Ethiopia (LMIC)	Cross-sectional Study	Depression, Anxiety and Stress Scale (DASS)	• Depression • Anxiety • Stress	- Staying at Home - Medical History - Poor social support - Sickness in the family	- Providing psychosocial and mental health interventions - Incorporating mental health and psychological intervention within the COVID-19 outbreak prevention and mitigation program
(7) Baloch et al. (2021)	*N* = 494	Pakistan (LMIC)	Quantitative Study: A self-administered questionnaire	Zung Self-Rating Anxiety Scale	• Anxiety • Stress	- Poor academic performance - Living in remote areas - Financial difficulties	- University to develop feasible action plans to alleviate students' mental health challenges
(5) Ghazawy et al. (2021)	*N* = 1335	Egypt (LMIC)	Cross-sectional survey; Quantitative	Depression, Anxiety and Stress Scale (DASS)	• Depression • Stress • Anxiety	- Studying at medical colleges. - Sickness in the Family (COVID-19 related) - Lack of psychological and social support	- Monitoring of mental health of the university students during a crisis. - Intervention to being adapted to the circumstances.
(24) Govender et al. (2021)	*N* = 14	South Africa (UMIC)	Exploratory descriptive Qualitative study	n/a	• Fear • Anxiety	- Poor Academic performance - Online Learning	- Academic support for students in rural areas
(11)	*N* = 540	Uganda (MIC)	Cross-sectional study	General Health Questionnaire	• Suicidal Ideation	- Trauma History - Financial Difficulties - Academic Difficulties	- Providing appropriate interventions such as life skills

Kaggwa et al. (2022)							education and suicide prevention techniques
(35) Kim et al. (2021)	*N* = 234	South Korea (HIC)	Cross-sectional study: Descriptive	Alcohol Use Disorder Identification Test Self-Harm Inventory	• NSSI behaviour • Depression	Alcohol use	Academic screening to identify students with academic difficulties
(44) Laher et al. (2021)	*N* = 160	South Africa (UMIC)	Quantitative Method	General Mental Health Hospital Anxiety and Depression Scale Burnout Measure-Short Version	• Anxiety • Fear • Loneliness	- Online Learning - Home Dynamics	- Follow up research
(17) Li et al. (2021)	*N* = 1442	China (UMIC)	Cohort Study	Depression, Anxiety and Stress Scale Psychological Distress Scale-Revised	• Acute Stress • Distress	- History of Childhood Trauma - Previous traumatic events - Internet addiction	- Additional support be provided for vulnerable individuals
(2) Mekonen et al. (2021)	*N* = 350	Ethiopia (LMIC)	Cross-Sectional Study	Depression, Anxiety and Stress Scale (DASS)	• Stress • Anxiety • Depression	- Staying in rural residences. - Substance Use - Living with Family - Poor Coping Skills	- Developing effective strategies and interventions around mental health - Establishing a psychological crisis intervention team to minimize the possible future psychological impact of future pandemics.
(45) Padmanabhanunni and Pretorius (2021)	*N* = 340	South Africa (UMIC)	Cross-sectional study: Explorative	Behavioural Insights Tool UCLA Loneliness Scale	• Loneliness	- Social Isolation - Social Distancing measures (Lockdown restrictions)	- Self-efficacy and resilience to be reinforced by public health campaigns
(43) Pretorius and Padmanabhanunni (2021)	*N* = 337	South Africa (UMIC)	Cross-sectional research design	UCLA Loneliness Scale Fortitude Questionnaire Satisfaction with life scale The State-Trait Anxiety Inventory	• Anxiety • Loneliness •	- Low levels of fortitude	- Further research - Psychological intervention strategies to be incorporated into pandemic-related mitigation plans

(23) Ross (2022)	*N* = 18	South Africa (UMIC)	Exploratory descriptive Qualitative study	n/a	• Stress • Anxiety	- Poor communication from universities - Health issues and death in the family - Uncertainty about future - Workload - Financial difficulties	- Establishing proactive strategies to help students develop resilience - Developing proactive mental health programmes to help identify at risk students
(18) Salman et al. (2022)	*N* = 1134	Pakistan (LMIC)	Cross-sectional study	Generalized Anxiety Disorder (GAD-7) Patient Health Questionnaire BRIEF-COPE	• Anxiety • Depression	- Avoidant coping skills - Poor physical habit - Substance abuse	- Promoting interventions and measures aiding to the mental health of students.
(25) Santosa et al. (2021)	*N* = 1 013	Indonesia (LMIC)	Mixed-method research design	Generalized Anxiety Disorder (GAD-7) Coronavirus Anxiety Scale (CAS-BR) Work and Social Adjustment Scale (WSAS)	• Anxiety	- Workload - Limited spiritual connection - Financial Difficulties	- Multicultural counsellor to aid in students' anxiety - Developing university policies that support students i.e., internet data, longer time limits for submitting assignments
(32) Visser and Law-van Wyk (2021)	*N* = 5 074	South Africa (UMIC)	Cross-sectional survey: Online survey	The Patient Health Questionnaire for Depression and Anxiety Perceived Hope Scale Mental Health Continuum	• Anxiety • Depression	- Living conditions i.e., informal settlements - Resource-restricted settings	- Relevant and appropriate interventions for student's psychological well-being during a crisis

Nature of Literature on the Mental Health Impact of COVID-19 for University Students in the Global South

This scoping review identified 834 published journal articles, where forty-nine (49) of the published articles were reviewed through the inclusion and exclusion criteria, resulting in fifteen (15) articles that met the full criteria to be included in the review. The fifteen identified studies were grouped into the following categories: instruments used to measure the mental health impacts of COVID-19, results of these studies, and their recommendations.

Eleven studies were cross-sectional quantitative studies (i.e., Aylie et al., 2020; Baloch et al., 2021; Ghazawy et al., 2021; Kaggwa et al., 2022; Kim et al., 2021; Laher et al., 2021; Mekonen et al., 2021; Padmanabhanunni & Pretorius, 2021; Pretorius & Padmanabhanunni, 2021; Salman et al., 2022; Visser & van Wyk, 2021), two studies were qualitative in nature and used an exploratory, descriptive research design (i.e., Govender 2021; Ross, 2022), one article was a cohort study (i.e., Li et al., 2021), and one article used mixed methodology involving a survey and a descriptive open-ended questionnaire (i.e., Santosa et al., 2021).

With reference to the student population, ten studies (i.e., Aylie et al., 2020; Baloch et al., 2021; Ghazawy et al., 2021; Govender et al., 2021; Kim et al., 2021; Padmanabhanunni & Pretorius, 2021; Salman et al., 2022; Santosa et al., 2021; Mekonen et al., 2021; Visser & van Wyk, 2021) included both postgraduate and undergraduate students, whilst five studies (i.e., Kaggwa et al., 2022; Laher et al., 2021; Li et al., 2021; Pretorius & Padmanabhanunni, 2021; Ross, 2022) focused solely on undergraduate students.

With regard to location, six studies were based on data collected in South Africa (i.e., Govender et al., 2021; Laher et al., 2021; Padmanabhanunni & Pretorius, 2021; Pretorius & Padmanabhanunni, 2021; Ross, 2022; Visser & van Wyk ,2021), two studies were based on

data collected in Pakistan (i.e., Baloch et al., 2021; Salman et al., 2022) and Ethiopia (i.e., Aylie et al., 2020; Mekonen et al., 2021), and the remaining studies were from: South Korea (i.e., Kim et al., 2021), Indonesia (i.e., Santosa et al., 2021), Uganda (i.e., Kaggwa et al., 2022) China (i.e., Li et al., 2021), and Egypt (i.e., Ghazawy et al., 2021).

Seven of the studies (i.e., Govender et al., 2021; Laher et al., 2021; Li et al., 2021; Padmanabhanunni & Pretorius, 2021; Pretorius & Padmanabhanunni, 2021; Ross, 2022; Visser & van Wyk et al., 2021) were based in middle income countries, three of the studies (i.e., Ghazawy et al., 2021; Kaggwa et al., 2022; Santosa et al., 2021) were based in lower-middle-incomes countries, five studies (i.e., Aylie et al., 2020; Baloch et al., 2021; Kim et al., 2021; Mekonen et al., 2021; Salman et al., 2022) were based in a high income country.

In terms of mental health outcomes, most studies investigated anxiety (e.g., Aylie et al., 2020; Mekonen et al.,2021), depression (e.g., Laher et al., 2021, Kim et al., 2021), loneliness (e.g., Padmanabhanunni & Pretorius, 2021), and suicidality (e.g., Kim et al., 2021). Studies typically focused on assessing more than one mental health outcome.

The most frequently used instruments to measure mental health outcomes were the Depression, Anxiety and Stress Scale (DASS) (e.g., Ghazawy et al., 2021; Li et al., 2021), General Anxiety Disorder (GAD-7) (e.g. Salman et al., 2022; Santosa et al., 2021), Patient Health Questionnaire (e.g. Visser & van Wyk, 2021), and the UCLA Loneliness Scale (e.g., Pretorius & Padmanabhanunni, 2021).

Psychological Impact Of COVID-19 Among University Students in the Global South

One of the objectives of this scoping review was to assess the psychological impact of the COVID-19 pandemic among university students in the Global South. The results revealed

that anxiety, depression, loneliness, suicidality, and substance (ab)use were the most common mental health outcomes associated with the pandemic among university students.

Anxiety and Depression

Globally, poor mental health among university students has been a cause of concern and literature has consistently indicated that university students have a higher rate of depression and anxiety than the general population (Ngin et al., 2018; Rousseau et al., 2021; Varma et al., 2021).

As university students progress through their academic careers, they face increased academic pressures including managing and engaging with complex syllabi and more challenging work assignments and projects. Rousseau et al. (2021) report that the prevalence and severity of depression has increased significantly over the period of 2016 to 2019. Additionally, in a correlational study conducted by Asif et al. (2020) with Pakistani university students, reports the prevalence of both depression and anxiety being significantly high, ranging at 75% and 88.4% respectively. Thereby, confirming that the prevalence of anxiety and depression amongst university students is significantly high.

Based on the review, anxiety and depression were identified as the most prevalent mental health problems among Global South university students during the COVID-19 pandemic. Ten articles (e.g., Aylie et al., 2020; Baloch et al., 2021) identified anxiety as one of the negative mental health outcomes experienced by Global South university students during the COVID-19 pandemic. According to Ghazawy et al., (2021) and Baloch et al. (2021), 53.6% and 58.7% of university students reported anxiety symptoms. Ross (2022), Visser and van Wyk (2021), and Padmanabhanunni and Pretorius (2021), recognise that anxiety symptoms such as, irritability, somatic complaints, fear, and constant worry were reported by the population.

Eight articles identified depression as a common negative mental health outcome among Global South university students during the COVID-19 pandemic. Based on the studies reviewed a range of 20% to 70% of students reported experiencing depressive symptoms during the COVID-19 pandemic. Laher et al, (2021) state that students reported depressive symptoms such as feelings of sadness, emotional exhaustion, irritability, and feelings of detachment. Additionally, a study conducted by Kim et al. (2021) reports that approximately 80% of participants had self-reported having had self-harm tendencies, including cutting and scratching themselves during the COVID-19 pandemic, which is in line with the symptomology of depression.

In the studies reviewed, an identification of higher levels of anxiety and depression among university students in Global South were found, which also brought forth the vulnerability of university students and how the COVID-19 pandemic may have intensified pre-existing mental health conditions as well as previous risks of poverty and limited resources.

Santosa et al. (2021) found that university students whose relatives contracted coronavirus were at a higher risk of experiencing anxiety symptoms. This finding is in line with research conducted by Ghazawy et al. (2021), Mekonen et al. (2021), and Salman et al. (2022). Whilst Laher et al. (2021) and Visser and van Wyk (2021) note that students reported anxiety due to fear of contracting the virus themselves, as well as due to the amount of exposure and constant virtual updates and information on the rate of infections on social media.

A systematic review conducted by Dessauvagie et al. (2022) with university students in Asia, showed prevalence of depression (29.4%) and a high prevalence of anxiety (42.4%). Similarly, three studies conducted in Germany (Kohls et al., 2021), France (Wathelet et al., 2020) and Florida the USA (Stamatis et al., 2021) with university students, found a high

prevalence of anxiety and depression amongst their students during the COVID-19 pandemic. Wathelet et al. (2020) note that a high prevalence of students also self-reported experiencing suicidal ideation, which is in line with depression symptomology. Stamatis et al. (2021) report that the reported rate of depression (43.9%) and anxiety (27.6%) of the students were above the clinical cut-off.

A total of five articles identified stress symptoms as a negative mental health outcome among Global South university students during the COVID-19 pandemic. In the studies reviewed, approximately half of the participants reported experiencing elevated levels of stress. For example, a prevalence of high levels of stress symptoms of about 47.8% was reported by Ghazawy et al. (2021). It was found that university students in the Global South experienced significant levels of both posttraumatic stress and acute stress in some, but not all, of the studies reviewed. There was also a reported link between high levels of stress among students and financial constraints, as well as academic performance. In the study conducted by Kostić et al. (2021), high levels in insomnia and anxiety were found among Southeast Serbian university students, which have been attributed to higher levels of stress.

Studies conducted in Ethiopia in 2020 (Aylie et al., 2020) and 2021 (Mekonen et al., 2021) found that 32.5% of students in 2020 and 22.20% of students in 2021 reported clinically significant stress levels. The stress levels decreased between the two years, which may be explained by COVID-19 reaching its peak in 2020, which may have resulted in heightened levels of stress among the population. Considering that university students are a vulnerable group, the heightened stress levels may be a gateway to mental health disorders, such as depression and anxiety.

Existing findings (Brooks et al.,2020; Ernst et al., 2022; Patsali et al., 2020) suggest that pandemic-induced lockdown may have contributed to the prevalence of mood disorders. For example, approximately 71% of university students in Florida reported an increase in their stress levels in response to the COVID-19 pandemic (Son et al., 2020). Furthermore, COVID-19 preventative measures were associated with heightened levels of stress, anxiety, and depression among students (Aylie et al., 2020; Ghazawy et al., 2020; Mekonen et al., 2021; Ross, 2022). In addition, the studies identified social distancing (Aylie et al., 2020), lockdown (Ghazawy et al., 2020), and loss of personal freedom because of lockdown and physical restriction on movement, as being the biggest contributing factors to the identified negative psychological outcomes. Additionally, stressors such as fear of contracting the virus, financial and academic uncertainties, and concern for their academic performance, may have aggravated university students' already vulnerable mental state.

Even though universities are viewed as launching points for success and personal growth, this comes with a great deal of pressure for students, including increased academic demands, adjusting to a new environment, and establishing new support systems. Furthermore, students during this period often experiment with alcohol and other drugs, which can exacerbate mood problems and increase the risk of suicide. It has been estimated that suicide is the second leading cause of death among young people and, therefore, suicidal ideation among university students is often amplified by numerous risk factors, including stressors associated with university life, broken relationships, financial constraints, and the loss of loved ones (UN, 2020). Two articles (i.e., Kaggwa et al., 2022; Kim et al., 2021) discussed suicide among university students in the Global South during the COVID-19 pandemic.

Kaggwa et al. (2022) found that students reported engaging in suicide attempts (6.11%), experiencing suicide ideations (31.8%), and/or having had a suicide plan (8.11%). In Korea, university students reported non-suicidal self-injury, such as scratching and cutting, while in China 14% of students reported suicidal ideation (Kim et al., 2021). Several factors contributed to students in the Global South experiencing suicidal ideation, including financial pressures associated with COVID-19, poor academic performance caused by online learning, and feelings of isolation and displacement.

Studies conducted in other countries corroborate these findings. For example, in research conducted in the USA (cf. Horigian et al., 2021; Killgore et al., 2020; Son et al., 2020) report several factors, such as feelings of loneliness, powerlessness, as well as financial and academic uncertainties, that contributed to 8% of students reporting suicidal thoughts during the pandemic. Similarly, according to Panchal et al. (2021), approximately 26% of the youth population globally reported serious suicidal thoughts during the pandemic in comparison to the adult population which had the rate of 11%.

Loneliness and Isolation

Prior to the COVID-19 pandemic, social isolation and loneliness were major public health and policy concerns, largely due to their detrimental impact on longevity, mental and physical health, and well-being (Ernst et al., 2022). The transition from school to university is often associated with social, structural, and behavioural changes, which can lead to students experiencing loneliness due to leaving home to attend university (Diehl et al., 2018; Ernst et al., 2022; Vasileiou et al., 2019). According to the evidence found in both this study and literature regarding the general population and university students of the Global South, the prevalence for loneliness was higher during the COVID-19 pandemic. This is understandable

considering that the primary preventative measure was to isolate people from their families, friends, and other social activities.

As mentioned previously, to combat the rapid increase in infection and death rates associated with COVID-19, various governments around the world implemented preventative measures, such as physical distancing orders, travel bans, a shift to remote working, social isolation, and quarantine (Killgore et al., 2020; Ernst et al., 2020). Consequently, the limited social contact between individuals may have contributed to loneliness and an unwanted separation from what is considered an integral part of human existence (Killgore et al., 2020). These preventative measures may have also resulted in a global psychosocial impact that caused mass stress, tension, isolation, loneliness, and lack of social interaction among university students in the Global South. Only one article among the fifteen studies reviewed identified loneliness as a negative psychological outcome among university students during COVID-19. The study indicated that loneliness among university students was at a much higher and more concerning level than before COVID-19 (Padmanabhanunni & Pretorius, 2021).

Academic support from lecturers and tutoring programmes provided a sense of stability and security in promoting student academic success. However, Salman et al. (2022) found that students reported some disconnection from the university due to the inaccessibility of the campus due to lockdown measures and the shift to remote learning. It is essential for a student's psychological and social well-being that they socialise with their peers (Mai et al., 2021). Given this, Santosa et al. (2021) suggest that social distancing may have contributed to the rupture of social bonds, straining support networks, and increased anxiety and fear all of which contributed to the reported feelings of loneliness experienced by students during the COVID-19 pandemic (Padmanabhanunni & Pretorius, 2021).

Furthermore, the transition to online learning was difficult for students due to several factors, including the lack of infrastructure to support it, students having difficulties understanding course material because of the lack of interaction between lecturer and student, difficulties managing one's time, and limited internet access and lack of digital technology (Baloch et al., 2021; Laher et al., 2021; Visser & van Wyk, 2021). Yorke et al. (2021) state that these challenges were common among students in the Global South, as the COVID-19 pandemic exposed significant shortcomings in the education system as well as deep-rooted and often hidden differences in academic performance among students from different groups.

There was a common thread among the studies reviewed of students reporting feeling alone, anxious, and struggling with a sense of belonging and loneliness due to social isolation and the disconnect from peers and the university (Govender et al., 2021; Padmanabhanunni & Pretorius, 2021; Ross, 2021; Visser & van Wyk, 2021). These findings are similar to studies conducted in 2020 and 2021 among the youth population in the USA, that reveals that approximately 60% of participants felt isolated the majority of the time (Killgore et al., 2020) and 65% reported feelings of loneliness during that period (Horigian et al., 2021). It was noted by Killgore et al. (2020) that the high prevalence of loneliness in their study was associated with a higher incidence of depression and increased suicidal thoughts.

Substance Use and Abuse

Going to university is an important milestone in a student's life journey, given that students can form new social circles, explore new interests, and experience unlimited freedom. However, there are some negative experiences that university students must manage as well, including a heavier workload, social and academic pressure, and finding balance, all of which

can be exhausting and often lead to students resorting to unhealthy coping mechanisms (Vanika & Sankhian, n.d; Udhayakumar & Illango, 2018).

Globally and prior to the COVID-19 pandemic, the prevalence of alcohol and substance use was high among the youth population, especially university students (Skidmore et al., 2016). Substance use among the university students has been found to not only affect academic performance but also results in interpersonal difficulties (Mekonen et al., 2017). Roberts et al. (2021) argue that previous pandemics suggest that the use of substances can either go in one of two directions: either an increase in substance use in the population due to the psychological distress experienced, or a decrease in substance use due to the limited availability and financial constraints.

Only one study (i.e., Kim et al., 2021) identified alcohol use as a negative psychological outcome of COVID-19 among Global South university students. The results of the study indicate that 69.7% of their participants exhibited problematic alcohol consumption and 58.1% identified as 'binge drinkers' during the COVID-19 pandemic. As a result of COVID-19 stressors, Panchal et al. (2021) noted an increase in substance abuse worldwide. This is consistent with Gritsenko et al.'s (2020) findings on Russian and Belarusian students, who also reported an increase in substance abuse in the form of tobacco, alcohol, Ritalin, and marijuana. In contrast, Horigian et al. (2021) report a decrease in substance abuse in the general population. The study attributes the decrease in substance abuse due to the public health restrictions in place, which included limiting the sale of alcohol. Layman et al. (2022) suggest that substance abuse is reliant on availability and access. Roberts et al. (2021), however, suggest that social isolation during lockdown may have led to individuals consuming more alcohol or using other forms of substances as coping mechanisms.

Although only one study in this scoping review identified substance use a negative psychological outcome of COVID-19, mixed results can be observed in existing research. Therefore, one can hypothesise that, based on the literature found, university students and substance use and abuse in the Global South may also present with mixed results. This could be due to each country in the Global South implementing different COVID-19 restrictions and could be related to diversity in economic and cultural standing. Substance use and abuse among the student population would have differed and, in agreement with Roberts et al. (2021), it would be linked to students coping skills as well as their country's restriction policies.

The prevalence of the psychological impact of COVID-19 among Global South university students was depression, stress, and anxiety and, given pre-existing factors as well as COVID-19 stressors, students' psychological wellbeing has been compromised. Simply, a strong link between these aforementioned factors and student mental health has been observed. As such, when students experience socioeconomic challenges and/or academic difficulties, this results in students having heightened level of stress and anxiety, which negatively affects their academic performance. However, when students have adequate resources and academic support, this results in better mental state, as well as a sense of belonging and connection, which ultimately leads to academic success.

Factors Contributing to Adverse COVID-19 Related Mental Health Outcomes Among University Students in the Global South

One of the objectives of the review was to identify and explore factors contributing to adverse COVID-19 related mental health outcomes among university students in the Global South. The results reveal a link in the prevalence COVID-19 related mental health outcomes among Global South university students to five broad factors: (i) COVID-19 preventative

measures; (ii) risk of infection; (iii) emergency remote learning and teaching; (iv) challenges with social support; and (v) socioeconomic difficulties.

COVID-19 Preventative Measures

Earlier epidemics (e.g., Ebola in Africa and MERS-CoV in the Middle East) resulted in countries implementing preventative measures to reduce the risk of infection among their populations, such as quarantine protocols, school and business closures, and restrictions on domestic movements (Ha, 2016; Kim et al., 2015; van Bortel et al., 2016). Considering this, previous literature has identified psychosocial difficulties among the population, including depression (James et al., 20219), stigmatisation (Van Bortel et al., 2016), and anxiety and burnout (Magnavita et al., 2021) during these two epidemics. This is consistent with Knox et al. (2022) who argue that social restrictions may have doubled people's odds of experiencing mental health challenges due to the length and strictness of lockdown measures After COVID-19 was declared a public health concern by the WHO in 2020, similar preventative measures were implemented by various countries. As a result of these COVID-19 preventative measures, concerns regarding the population experiencing elevated levels of anxiety, stress, and depression were reported.

The studies reviewed (i.e., Aylie al., 2020; Ghazawy et al., 2020; Ross, 2022) report that the COVID-19 preventative measures in the Global South were associated with heightened levels of stress, anxiety, loneliness, and depression among university students. Related to this, various studies identified social distancing (i.e., Padmanabhanunni & Pretorius, 2021), lockdown (i.e., Brooks et al., 2020), the loss of personal freedom (Laher et al., 2021), and physical restrictions on movement (i.e., Ghazawy et al.,2020) as the main contributing factors to the identified psychological impact.

Socialisation among university students is vital for a student's social and psychological well-being. Thus, Santosa et al. (2021) state that social distancing may have contributed to the rupture of social bonds, strained support networks, and increased fear and worry, leading to feelings of loneliness (Padmanabhanunni & Pretorius, 2021). Furthermore, Salman et al. (2022) found that 80% of the student participants reported symptoms of distress due to the restrictions on social meetings. Govender et al. (2021) agree with Padmanabhanunni and Pretorius (2021) and Salman et al. (2022) in their findings where students reported some disconnect from the university due to the inaccessibility of the campus.

During a student's transition to university, emphasis is made on establishing a sense of belonging and building and maintaining connections with friends and family. Therefore, connectivity through social meetings with friends and peers is vital, since during these stages there are potential feelings of loneliness. Research has revealed that Italian and British students scored high levels of loneliness due to the imposed travel and social restrictions during the COVID-19 pandemic (Allen et al., 2022). Similarly, following COVID-19 restrictions, Al-Orabi et al. (2022) found that the global student population reported high levels of feelings of loneliness, stress, low mood, anxiety, and depression. This is consistent with the findings from the present study among the Global South university students (Padmanabhanunni & Pretorius, 2021; Salman et al., 2022). This is understandable given the importance of social connectivity during these life stages and that loneliness has been regarded as the signature mental health impact of the COVID-19 pandemic (Killgore et al., 2020). Therefore, it is more than likely that the COVID-19 preventative measures may have worsened these feelings among the student population.

Risk of Infection

In the context of the COVID-19 pandemic, there was the potential for stress caused by the fear of infection (Spatafora et al., 2022). Anyone may be at risk of infection and developing COVID-19 symptoms, which is especially true for people with serious pre-existing health conditions, such as heart or lung disorders, weakened immune systems, obesity, or diabetes (De Kock et al., 2021). Simply, a pre-existing medical condition may increase one's vulnerability to COVID-19 symptoms and, therefore, the risk of mental health challenges.

According to de Kock et al. (2021), the psychological wellbeing of healthcare workers during the COVID-19 pandemic was high, with significantly high levels of anxiety, depression, insomnia, and distress. Similarly, previous studies exploring the fear of COVID-19 infection and its impact on mental health found associations with depression and anxiety among university students (Browning et al., 2021; Son et al., 2020). This is consistent with the present study where the studies reviewed (i.e., Aylie et al., 2020; Ghazawy et al., 2020; Mekonen et al., 2021; Ross, 2022) found that students reported heightened levels of anxiety and stress caused by their constant worry of COVID-19 infection.

Laher et al. (2021) and Visser and van Wyk (2021) note that students reported anxiety due to fear of contracting the virus themselves. In addition, studies (i.e., Ghazawy et al., 2020; Kim et al., 2021; Li et al., 2021; Mekonen et al., 2021; Santosa et al., 2021) found that university students reported heightened levels of anxiety during the pandemic due to the influx of information received about the rising COVID-19 rates of infections and death. Repeated media exposure and constant daily COVID-19 related information through social network systems placed students at a higher risk of anxiety and stress given their increased internet usage (Kim et al., 2021; Mekonen et al., 2021).

Santosa et al. (2021) found that university students whose relatives had contracted COVID-19 were at a much higher risk of experiencing anxiety symptoms. This is in line with findings from Ghazawy et al. (2020), Mekonen et al. (2021), and Salman et al. (2022). Similarly, in a study conducted with university students in Germany (Spatafora et al., 2022), 24% of students reported being concerned about possible infection, with a greater percentage of students being concerned about their close relatives becoming infected or suffering severe illness due to COVID-19. The same findings were found in research conducted in the USA (cf. Stamatis et al., 2021; Varma et al., 2021).

Therefore, there is no doubt that both students in the Global North and those in the Global South experience increased mental health challenges due to the fear of infection, not only due to their own personal experiences but also those of their close relatives or friends.

In response to the COVID-19 pandemic, communities have experienced structural repercussions, including disruptions to businesses and industry, as well as the closure of community services, markets, and schools, as well as a decline in health and support (Donthu & Gustafsson, 2020; Schleicher, 2020). As a result, given that some infrastructure, such as the healthcare system, is commonly associated with its inability to meet the needs of its citizens, the fear of risk of possible COVID-19 infection for themselves and/or their close relatives infected has been shown to result in negative psychological outcomes for university students in the Global South.

Emergency Remote Learning and Teaching

Emergency Remote Teaching (ERT) was implemented due to the abrupt closure of universities as part of the COVID-19 preventative measures. As ERT is a temporary alternative method of delivery (Hodges et al., 2020), based on psychological effects of COVID-19 on

students, it has been argued that some universities were not prepared and/or equipped in facilitating a smooth transition. This is not solely the university's fault, but rather that the challenges encountered as a result of ERT were beyond their control. These challenges included 'network instability', 'unilateral interactions between lecturers and students', 'insufficient data', and dissatisfaction with workload (Shim & Lee, 2020).

According to a study conducted by Shin and Hickey (2021), this alternative mode of delivery left students in resource-restricted areas disadvantaged due to the inaccessibility of resources that are needed to support online learning. Countries in the Global South often experience difficulties related to their infrastructure, limited support and management of relevant government departments, and a large economic divide between their citizen (Nguse & Wassenaar, 2021; Uleanya & Alex, 2022). Therefore, the additional stressors of COVID-19 added to the ongoing stressors among university students may have worsened pre-existing mental health issues.

A student-led protest, the #FeesMustFall Movement in South Africa, resulted in the closure of universities due to the violent nature of the protests, making it difficult for teaching and learning to occur face-to-face (Greef et al., 2018). As a result, universities were forced to shift from on-site learning to remote learning to finish the academic year. Greef et al. (2018) note that participants in their study reported experiencing anxiety, powerlessness, fear, and PTSD symptoms not only due to their exposure to violence during the protests but also due to fears of not successfully completing their academic year. Similarly, when the 2015 MERS outbreak occurred in the Middle East, universities developed a contingency plan that included remote teaching, and studies have found that university students in countries affected

experienced anxiety, fear, and stress (Al-Rabiaah et al., 2020; Güngör et al., 2020; Park et al., 2016; Stirling et al., 2015).

In the current scoping review, studies found that the transition to online learning was difficult for students because of the lack of infrastructure to support it (Visser & van Wyk, 2021), difficulties with time management and understanding course material due to the lack of interaction between lecturer and student (Laher et al., 2021), as well as limited internet access and digital equipment (Baloch et al., 2021). These studies also report on how workload and poor connectivity and data issues negatively impacted academic performance, leading to suicidal ideation, anxiety, and stress. Similarly, due to uncertainty about their futures and potential poor academic performance, studies have found that students expressed feelings of hopelessness (Kaggwa et al., 2022). However, most studies identify a significant distinction between students in remote areas and those residing in the suburbs. Global South countries are characterised by limited resources and socioeconomic disparities are evident. As a result, students residing in informal and resource-restricted settings face additional challenges that aggravate their anxiety levels (Visser & van Wyk et al., 2021).

Karakose (2021) argues that even developed countries have yet to produce an effective and fair solution to the inequality of remote education. Findings from studies conducted with university students in Turkey and Switzerland (i.e., Global North countries) indicate that the majority of the respondents were satisfied with the quality of remote education (Lischer et al., 2022; Toprak & Tunc, 2022). However, the majority of students in Switzerland and Turkey expressed concerns regarding structural conditions (e.g., the absence of appropriate workstations), time management, time necessary to adjust and modify learning, as well as

difficulties in maintaining motivation to engage in distance learning (Lischer et al., 2022; Toprak & Tunc, 2022).

Ultimately, the shift to ERT did present with various challenges that contributed to the negative mental health outcomes among university students. Furthermore, it is evident from the current study that students in Global South universities experienced additional stressors in connection with the shift to ERT during the pandemic period than students in Global North universities. This, therefore, confirms that students from lower socioeconomic backgrounds may experience more stressors and, therefore, an increased vulnerability to mental health challenges (Hu et al., 2021; Karakose, 2021; Yorke et al., 2021)

Challenges with Social Support

Good social support can provide protection for individuals under stress and has a generally beneficial effect on stabilising the mood and maintaining the health of individuals. Literature has identified that students who receive more support from family and/or friends have a stronger mental capacity and are more mentally and physically healthy (Mai et al., 2021; Toprak & Tunc, 2022). The effect of deferred school openings, emergency remote learning, and a decrease in employment opportunities caused tremendous pressure among university students and, as such, social support from family, friends, and the university would have been beneficial for students during the pandemic period (Mai et al., 2021).

As discussed earlier, students commonly experience stress due to increased responsibilities, sudden and unexpected challenges, and studying for exams. Furthermore, students are expected to make decisions about their academic and career life, whilst having to foster new meaningful relationship. Family support has consistently been identified as playing

an important role in academic persistence and support from academic staff has been found to be vital for both the student's wellbeing and transition into university (Mclean et al., 2022).

According to Li et al. (2021), healthy family functioning is associated with a decreased risk of poor psychological wellbeing. The studies reviewed indicate that Global South university students experience increased anxiety, depression, and stress due to a lack of family, community, and university social support (Ghazawy et al.,2021; Govender et al., 2021), as well as due to increased family responsibility whilst also having to manage their increased workload (Baloch et al., 2021; Ross, 2022; Santosa et al., 2021). As a result of having to multi-task between schoolwork and chores, approximately 48% of students reported experiencing anxiety and depression (Salman et al., 2022). A study by both Mekonen et al. (2021) and Aylie et al. (2020) indicate that students living at home during the pandemic were more likely to develop stress and were at a higher risk of developing depression. Furthermore, it was found that students with poor social support were almost three times more likely to experience stress than students with strong social support (Aylie et al., 2020).

Kee (2021) states that the COVID-19 pandemic resulted in students having limited access to friends, family, and the university for emotional, psychological, and informational support. University students in Germany, France, and the USA reported being frustrated due to inadequate informational support from their universities and government (Kohls et al., 2021; Marler et al., 2021; Wathelet et al., 2020). This is consistent with Cam et al.'s (2022) study where a link between a poor family relationship and a student's anxiety and stress during the pandemic was found.

Socioeconomic Difficulties

There are numerous financial challenges that university students face, which contribute to their high level of stress. According to Ludban and Gitimu (2015), financial stress has an adverse effect on student academic performance. In addition, Kohls et al. (2021) state that part-time jobs play an important role in financing the livelihood and studies of many students. During the COVID-19 pandemic there was a high incidence of job loss, parental job loss, food insecurity, and difficulty accessing health care. Therefore, it is not surprising that students who experienced financial difficulties during the COVID-19 pandemic showed an increase in suicidal behaviour, stress, and depression, in comparison to those who had a stable financial standing (Baloch et al., 2021; Govender et al., 2021; Kaggwa et al., 2022; Santosa et al. 2021).

In the current study, it was found that most of the reviewed studies indicate that students from low socioeconomic backgrounds were more likely to experience anxiety (e.g., Aylie et al., 2020). Several additional factors contributed to students developing anxiety symptoms during the pandemic period, which included job losses (Govender et al., 2021), increased data expenditure (Baloch et al., 2021; Santosa et al., 2021), and concerns about paying tuition fees (Kaggwa et al., 2022). In a study conducted by Visser and van Wyk (2021) in South Africa, more than half of the students reported financial losses and increased financial dependence, resulting in increased anxiety and fear regarding future employment prospects. In a study conducted by Mekonen et al. (2021), 36% of students living in rural areas were more likely to suffer from anxiety in comparison to students living in urban areas. Therefore, due to financial constraints resulting from lost employment and a limited budget for internet connectivity, anxiety levels among students increased.

Students in the Global North are often overlooked due to the misconception that they are more privileged and resourceful than their counterparts in the Global South. However, according to Lederer et al. (2021) and Gewalt et al. (2022), students in the Global North also experienced socioeconomic difficulties during the COVID-19 pandemic. For example, a study conducted with university students in Germany has shown that, since students in the country often work part-time to pay for their living expenses and university fees, students who reported a decrease in income and an increase in financial limitations were more likely to experience distress during the COVID-19 pandemic (Gewalt et al., 2022). The findings are in accordance with the findings of a study conducted in the USA, where it was found that students in this region experienced a rise in food and housing insecurity, as well as economic hardships during the COVID-19 pandemic (Lederer et al., 2020).

COVID-19 not only affected the student population but also the general population. Studies (e.g., Josephson et al., 2021; Martin et al., 2020) indicate that parents and other breadwinners were particularly affected, as the pandemic adversely affected their financial standing and their ability to provide for their families during a time of difficulty. As a result, the general population experienced elevated levels of anxiety, stress, and depression. The stress caused by financial difficulties in various households has also contributed to some of the stressors experienced by students during this time. In this regard, Aylie et al. (2020) and Govender et al. (2021) confirm that students whose families were experiencing financial difficulties were more likely to experience anxiety, which could exacerbate their already vulnerable mental health. Therefore, based on the findings from this study, it has been found that the prospect of a scarcity of future employment, loss of income in their household, and

having to buy data to meet the ERT demands had a tremendous impact on the mental health of university students in the Global South.

Limitations

This scoping review involved an extensive review of the extant literature on the psychological impact of COVID-19 on university students in the Global South. The purpose of this section is to highlight the limitations that most affected the quality and effectiveness of the review findings, as well as its ability to effectively address the identified research questions.

This review focused only on articles written by authors from the Global South, as this term is rarely used nowadays. While some of the countries identified were in the Global South, most of these studies were concentrated in one geographical area. Additionally, due to the recent nature of the pandemic and the lack of prior research, there is only a limited period for article searches. Considering this, it is recommended that further research be conducted on this topic. Finally, some studies may not have been included in the review due to limitations or exclusions imposed by various database restrictions, thereby not providing a comprehensive picture of the psychological impact of COVID-19 among university students in the Global South.

Recommendations

The findings from the studies reviewed illustrate the need for an innovative and comprehensive approach in addressing the psychological aftermath of pandemics, such as COVID-19, among university students in the Global South. The study found that the mental wellbeing of students in the Global South may have been compromised due to the impact of the COVID-19 pandemic on their academics, families, and social support. Thus, it is recommended that follow up research be conducted on the mental wellbeing of students' in the Global South

post-pandemic. Furthermore, for future researchers to specifically examine the influence of ERT and socioeconomic difficulties on the mental wellbeing of university students in the Global South. This will be beneficial in assisting higher educational institutions in establishing programmes targeted for this population.

Based on the reported 'poor' mental health of Global South university students during the COVID-19 pandemic (e.g., high prevalence in stress, anxiety, and depression levels), it is recommended that higher education institutions create and implement policies and programmes to support students, such as providing internet data for disadvantage students as well as collaboration with various organisations to provide adequate infrastructure and resources for remote learning. Although this was done in various countries such as South Africa (Hlatshwayo, 2022; Schleicher, 2020), universities should incorporate this with the already existing academic support offered. In addition, establishing programmes to identify at-risk students and creating appropriate interventions during a time of crisis is required.

In this study, it was reported that some of the student anxiety and concern was related to the implementation of ERT and limited support from the universities. As such, it is recommended that universities incorporate training of educators and lecturers in ERT and managing teaching during a time of crisis, especially given that educators and lecturers are frontline workers for education institutions.

Simply, the creation of policies to aid in preparing students and the institution in a time of crisis may be beneficial in reducing students' stressors and the prevalence of negative mental outcomes.

Chapter Five: Conclusion

This chapter concludes the scoping review by summarising the key findings in relation to the research aim and research questions, as well as the value and contribution thereof.

In this study, a scoping review was conducted to enable the mapping and synthesis of the literature. It also explored different types of studies related to the psychological impact of COVID-19 on university students in the Global South. The aim was to provide a comprehensive overview of the published literature conducted on the psychological impact of COVID-19 on university students in the Global South. There has been a consistent pattern of literature stating that university students are more vulnerable to mental health problems due to academic pressures and transitioning to a university lifestyle (Aylie et al., 2020; Ludban & Gitimu, 2015; Ngin et al., 2018; Rousseau et al., 2021; Varma et al., 2021). Therefore, a comprehensive review of the literature was of value in gathering relevant information with a more nuanced focus on the psychological effects of COVID-19 on university students in the Global South.

A total of fifteen (15) articles were identified and reviewed based on the extended search employed to answer the central research question for this study. The central questions for this research were as follows:

(i) What are the psychological effects of COVID-19 among university students in the Global South?

(ii) What are the factors identified that contribute to the adverse COVID-19 related mental health outcomes among university in the Global South?

The study revealed that there was a significant increase in anxiety and depression, substance abuse, and loneliness among university students in the Global South during the COVID-19 pandemic. Furthermore, the study found that COVID-19 prevention measures and risk of infection, emergency remote teaching and learning, challenges with social support, and

socioeconomic difficulties contributed significantly to the identified mental health outcomes among university students in the Global South. Thus, the significant levels of mental health outcomes and factors found in this study supported the hypothesis that students in the Global South faced psychological and environmental challenges during the COVID-19 pandemic. As a result, it was concluded that the pandemic further exacerbated the mental, academic, and socioeconomic difficulties that already existed.

This study has provided insight into the challenges faced by university students during the COVID-19 pandemic and how such challenges affected their psychological wellbeing. Emergency remote teaching and learning was identified as one of the primary causes of students' anxiety and stress during COVID-19. Furthermore, the distinct differences among students in relation to their academic performance and limitations was highlighted, with students from disadvantaged backgrounds experiencing significantly more challenges in achieving success than their more advantaged peers. It was evident that there was significant inequality between students and that higher educational institutions had difficulty ensuring that the emotional and academic needs of all students were addressed during COVID-19. It should be noted, however, that the COVID-19 pandemic affected the global population and, as such, many people and various infrastructures were impacted by it. Therefore, higher education institutions may have not been adequately prepared for the severity of the effects of the COVID-19 pandemic.

In conclusion, based on the results of the present study, the existing literature, and observations of the study's limitations, it is suggested that education institutions and future researchers should consider practical implementation and research related to the psychological impact on Global South universities of COVID-19 post-pandemic. This can be done by

universities implementing early screening for mental health challenges and/or outcomes at the start of pandemics to facilitate targeted intervention efforts.

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Appendices

Appendix A: PRISMA-ScR Checklist

Section	Item	PRISMA-ScR Checklist item	Reported on Page
TITLE			
Title	1	Identified the report as a scoping review.	1
ABSTRACT			
Structured Summary	2	A structured summary that includes background, objectives, eligibility criteria, sources of evidence, charting method, results, and conclusions that relate to the review questions and objectives.	5
INTRODUCTION			
Rationale	3	Described the rational for the review and explained why the review questions/objectives lend themselves to a scoping review approach	10
Objectives	4	Provided an explicit statement of the questions and objectives being addressed with reference to their key elements	11
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	22
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g.,	23

		years considered, language, and publication status), and provide a rationale.	
Information sources	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	24
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	24
Selection of sources of evidence	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	25
Data Charting process	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	26
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	Iv
Critical appraisal of individual sources of evidence	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	N/A

Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	27
RESULTS			
Selection of sources of evidence	14	Gave numbers of sources screened, assessed for eligibility and those included in the review, with reasons for exclusion at each stage.	27 and iv
Characteristics of sources of evidence	15	For each source of evidence, presented characteristics for which data were charted and provide the citations.	iv
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	n/a
Results of individuals of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	Iv
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	33
DISCUSSION			
Summary of evidence	19	Summarized the main results and linked it to the review questions and objectives and considered the relevance to the key groups.	29 - 53
Limitations	20	Discussed the limitation of the scoping review process.	54
Conclusions	21	Provided a general interpretation of the results with respect to the review questions and objectives. Provided potential implication and/or next steps	57

FUNDING			
Funding	22	Described the sources of finding for the included sources of the evidence, as well as sources of funding for the scoping review.	N/A

Appendix B: Global South Countries[1]

Africa			**Arab States**		**Asia and Pacific**			
Angola	Central African Republic	Ethiopia	Algeria	Bahrain	New Caledonia	Afghanistan	American Somoa	Antarctica
Benin	Chad	Gabon	Djibouti	Egypt	Niue	Azerbaijan	Bangladesh	Bhutan
Botswana	Congo	Gambia	Jordan	Kuwait	Norfolk Island	British Indian Ocean Territory	Brunei Darussalam	Cambodia
Burkina Faso	The Democratic Republic of Congo	Ghana	Libya	Mauritania	Northern Mariana Islands	China	Christmas Island	Cocos (Keeling) Islands
Burundi	Cote D'Ivoire	Guinea	Oman	Palestinian Territory	Pakistan	Cook Island	Fiji	French Polynesia
Cameroon	Equatorial Guinea	Guinea-Bissau	Saudi Arabia	Somalia	Palau	French Southern Territories	French Southern Territories	Guam
Cape Verde	Eritrea	Kenya	Tunisia	United Arab Emirates	Papua New Guinea	Heard Island	McDonald Islands	India
Lesotho	Liberia	Malawi	Comoros	Iraq	Philippines	Indonesia	Iran	Kazakhstan
Madagascar	Mauritius	Mali	Morocco	Lebanon	Pitcairn Islands	Kiribati	(Democratic People's Republic or/North) Korea	Kyrgyzstan

[1] (World Population Review, 2021)

Mozambique	Namibia	Niger	Qatar	Sudan	Reunion	Lao	Macau	Malaysia
Nigeria	Rwanda	Saint Helena	Yemen		Samoa	Maldives	Marshall Island	Micronesia
Sao Tome	Principe	Senegal			Solomon Islands	Mongolia	Nauru	Nepal
Seychelles	Sierra Leone	South Africa			Sri Lanka	Syrian Arab Emirates	Tajikistan	Thailand
Tanzania	Togo	Uganda			Timor-Leste	Tokelau	Tonga	Turkmenistan
Western Sahara	Zimbabwe	Zambia			Tuvalu	United States Minor Outlying Islands	Uzbekistan	Vanuatu
					Vietnam	Wallis	Futuna	

Appendix C: Data Charting

No.	Author	Title	DOI	Year	Study Design	Population			Instruments Used	Outcome		Recommendations	Accept or Discard
						Student	Income Country	Country		Psychological Disorders Identified	Risk factors Identified		
1		The Psychological Impacts c	http://doi.org/10.2147/PR	2020	Qualitative :Online S	All students	LMIC	Ethiopia		Depression, Anxiety and Stress	1. Staying at home 2. History of n	1. Providing psychosocial and n	Accept
2	Mekonen et al	The Psychological Impact of	http://doi.org/10.2147/PR	2021	Quatitative: Self-adm	Graduating Stud	LMIC	Ethiopia		Stress, Anxiety and Depression	1. Staying in rural residences 2.	1. Developing effective strateg	Accept
3	Idowu et al	Impacts of COVID-19 Pander	https://doi.org/10.46327/	2020	Quantitative:Online	On campus accomodation students		Nigeria					Discard
4	Adefris & Moges	The psychological impact at	https://doi.org/10.1007/s	2021	Quantitative: Online	All students	LMIC	Ethiopia		1. Depression 2. Anxiety 3. Loneliness 5. Fear (	none identified	1. Engaging in physical exercise	Discard
5	Ghazawy et al	Psychological impacts of CO	doi: 10.1093/heapro/daa	2020	Quantitative: Online	All Students	LMIC	Egypt		1. Depression 2. Stress 3. Anxiety (mild)	1. Studying at medical colleges 2	1. Monitoring of mental health	Accept
6	Sabrina et al	Psychological Distress amo	https://doi.org/10.3390/ij	2021	Quantitative: Online	Dental university students (Private		Bangladesh	1. Kessler Psychological Distress Scale 2. Fear of COVID-19 Scale 3. Brief Resilient Coping Scale				Discard
7	Baloch et al	COVID-19: exploring impacts	DOI 10.7717/peerj.10612	2021	Quantitative: Online	All students	LMIC	Pakistan	Zung Self-rating Anxiet	Anxiety - majority falining within the normal/n	1. Academic performance 2. com	Universities mitigating a way f	Accept
8	Kostic et al	Perceived Stress among uni	https://doi.org/10.1186/s	2021	Mixed methods: Both	All students		Serbia	Perceived stress scale,	1. Anxiety resulting in insomnia			Discard
9	Sun et al	Psychiatric symptoms, risk, a	https://doi.org/10.1186/s	2021	Quantitative: Online	All students	UMIC	China	Generalized Anxiety Di	1. Traumatic stress (67,05) 2. Depressive symptoms (46.55% 3. suicidal ideation		Attending to needs of disadvar	Discard
10	Liang et al	Prevalence and associayed	https://doi.org/10.1186/s	2022	Quantitative: Online	All students	UMIC	China	1. Patient Health Quest	1. Suicide ideation (high) 2. depression 3. Anxiety and insomnia		1. Monitoring of the psychologi	Discard
11	Kaggwa et al	Suicidal Behaviours among	https://doi.org/10.1186/s	2022	Quantitative: Online	Undergraduate :	MIC	Uganda	1.General Health Ques	Suicide ideation	Trauma history 2. financial diffic	Providing appropriate interven	Accept
12	Najjuka et al.	Depression, anxiety, and sti	https://dx.doi.org/10.431	2021	Quantitative: Online	semi-structured i	MIC	Uganda	1.Depression Anxiety S	1. Depression, anxiety and stress	*	1. Interventions to support you	Discard
13	Adeji et al	Responding to COVID-19: Ex	DOI: 10.24085/jsaa.v9i1.1	2021									Discard
14	Gebru	Psychosocial impact of COVI	??	2020	Qualitative: cross-sectional interview)								Discard
15	Rohanachandra et a	Psychological impact and cc	doi: 10.1192/j.eurpsy.202	??	Quantitative: Online	Undergraduate	LMIC	Sri Lanka	Depression Anxiety Str	1. Depression (40%), Anxiety (34%) and 3. Stress (10,3%)		Supportive strategies should b	Discard
16	Seffrin et al.	Return to classes impact on	doi: 10.1017/neu.2021.31	2022	Quantitative: Online	Health Sciences	UMIC	Brazil	1. Patient Health Quest	Depression and anxiety. Online learning was	1. Level of restrictions adopted	Interventions that will aid to s	Accept
17	Li et al.	Psychological distress amor	https://doi.org/10.1017/S	2021	Cohort Study	Health Professi	UMIC	China	1. Depression, Anxiety	1. Acute stress and distress	1. Childhood trauma, 2. previous	traumatuc events 3. internet ac	Discard
18	Salman et al.	Psychological impairement	https://doi.org/10.1017/d	2020	Quantitative: Online	All students	LMIC	Pakistan	1. Genalized Anxiety Di	Moderate to severe anxiety and depression 34	Avoidant coping, poor physical, s	1. Promoting measures to keep	Accept
19	Alsolais et al.	Risk perceptions, fear, depr	https://doi.org/10.1080/0	2021	Quantitative: Online	Undergraduate	HIC	Saudi Arabia	1. Depression, Anxiety	Depression19,3% , anxiety 20,6 and stress 14,2	reported severe	1. Eduaction and activities that	Discard
23	Andrew J. Ross	Impact of COVID-19 - Experie	https://doi.org/10.4102/s	2022	Qualitative: Online -F	5th year Medica	UMIC	South Africa	none	1. Stress and Anxiety	1. Poor communication from uni	1. Planning for the future, proa	Accept
24	Govender et al.	Academic and psychosocial	http://dx.doi.org/10.1882	2021	Qualitative: semi-stru	All students n=1	UMIC	South Africa	none	1. Fear and anxiety	1. Academic performance and or	1. Alternative ways of teaching	Accept
25	Godoy et al.	The psychological impact of	https://doi.org/10.3390/e	2021	Quantitative: Online	Psychology unde	UMIC	Brazil	1. Coronavirus Anxiety	Scale 2. Genralized Anxiety 3. Work and social a	1. 42.9 % Anxiety 53,6% moderate	1. Active learning strageties fo	Accept
26	Ba Tuan Vu & Guy Bi	Psychological impact of COV	DOI: 10.1177/01430343211	2021	Quantitative: Online survey								Discard
27	Santosa et al.	A description and factors ca	https://doi.org/10.18844/	2021	Mixed methods: Both	All students n=1	LMIC	Indonesia	not identified	low to moderate anxiety	1. Workload i.e. coursework 2. lii	1. Counselors to include religic	Accept
28	Arriaga et al.	Psychological distress of CO	DOI: 10.1002/pits.22570	2021	Quantitative: Online	All students n= 848		Mexico	1. Impact of Event Scale	1. Elevated stress 36% 2. anxiety 31,4% and sadness 18.2%			Discard
29	Dorovolomo et al.	COVID-19 and online learni	https://doi.org/10.15663/	2021	Tokstori: Qualitative	All students n= 16		Solomon Islands					Discard
30	Marler et al.	The impact of COVID-19 on u	https://doi.org/10.1037/s	2021	Quantitative: Online	Undergraduate students n=238							Discard
31	Sun et al	Psychiatric symptoms, risk, and protective factors am		2021									Discard
32	Maretha Visser & El	University students' mental	DOI: 10.1177/00812463211	2021	Quantitative: Online	All students n=	UMIC	South Africa	1. The patient Health C	1. 45,6 anxiety and 35% depression	1. Living in informal settlements	1. More relevant and appropria	Accept
33	Pretorius and Padm	A looming mental health pa	https://doi.org/10.1177/0	2021	Quantitaive: Online c	Undetgraduate :	UMIC	South Africa	1. UCLA Loneliness Scal	1. 73,3% clinicallybsignificant anxiety 71,8% Loneliness low levels of fortitude		1. Further research	Discard
34	Padmanabhabunni	The role of fortitude, loneli	DOI: 10.1177/00812463211	2021	Quantitave: Online Cr	All students n= 337		South Africa	1. UCLA LONELINESS Scale 2. Centre for Epidemiological Studies Depression Scale 3. Fortitude Questionnaire 4. Satisfaction with Life Sc				Discard
35	Kim et al.	Korean University Students'	DOI: 10.1177/24705470211	2021	Quantitative: Online	All students n=2	HIC	Korean	1. Alcohol Use Disorde	1. 46,8 Nssi behaviour 2. 35,5 Depression	1. Alcohol use	1. repeated screening to identi	Accept

36	Hee Jun Kim et al.	Pandemic Fatigue and Anxie	doi: 10.3389/ijph.2022.160	2022	Quantitative: Online	Underraduate st	HIC	South Korea	1. Impact of Event Scale	1. 32,3% PTSD SYMPTOMS		1. Crisis appropriate interventi	Discard
37	Zhao et al.	Novel Coronavirus (COVID-19	doi:10.3390/ijerph171866	2020	Quantitative: Online	All students n=8	HIC	Korea, China an	1. Patient Health Quest	1. Depression Japan with the higest	none identified	1. Mental health programs or i	Discard
38	Kostic et al	Perceived Stress among university students in south-e		ast Serbia	during the COVID-19 outbreak								Discard
39	Andrew J. Ross	Impact of COVID-19 - Experiences of 5th year medical s		tudents at	the University of KwaZulu Natal								Discard
40	Dessauvagie et al.	Mental Health of University	DOI: 10.1177/10105395211	2021									Discard
41	Faisal et al.	Mental Health Status, Anxie	https://doi.org/10.1007/s	2021	Quantitative: Online	All students n=8	LMIC	Bangladesh	1. Generalized Anziety	1. 72% depressive symtoms 40% moderate to severe anxiety and 53% moderate		1. Future research , Psychologic	Discard
42	Porter et al.	Impact of COVID-19 pandem	doi:10.1136/bmjopen-202	2021	Quantitative: Online	cohort study							Discard
43	Padmanabhabunni	Wheb coping resources fail	/	2021	Systematic Review	n= 34		Cambodia, Laos, Malaysia, Myanmar, Th		1. 29.4% depresssion 42,4 anxiety and 16,4% st	Internet Addiction	1. Enabling a supportive enviro	Discard
44	Laher et al.	Undergraduate psychology s	DOI: 10.1177/00812463219	2021	Quantitative: Online	1-2nd year psych	UMIC	South Africa	1. General Mental heal	1. Anxiety 2. Fear 3. Loneliness 4. Briedf Copin	1. Online learning 2. Home Dyna	1.	Accept
45	Padmanabhabunni	The unbearable loneliness	https://doi.org/10.1016/j.	2021	Quantitative: Online	All students n=3	UMIC	South Africa	1. Behavioural Insights	1. Loneliness	1. social isolation and social distancing measures		Accept
46	Krifa et al.	Mental Health during COVID	https://doi.org/10.3390/ij	2022									Discard
47	Tlou Raphela	Relationship between Men	ORCID ID: 00000001-7606-	2022	Mixed methods: Both	All students n=3	UMIC	South Africa		1. Loneliness 2. Depression		1. Addressing mental health ar	Discard
48	Uleanya and Alex	Impacts of COVID-19 pander	10.46303/jcve.2022.15	2022	Quantitative: Online	Undergraduates	UMIC	South Africa		1. Depression 2. Anxiety 3. Anger		1. More resources and mental l	Discard
49	Ezgin Akpinar	The effect on online learnir	doi: 10.15405/ejsbs.288	2020									Discard

Appendix D: HSSREC Ethical Approval Letter

UNIVERSITY *of the* WESTERN CAPE

Directorate: DVC: Research and Innovation
Research Development & Postgraduate Support
Tel: +27 21 959 4111
Email: research-ethics@uwc.ac.za

17 May 2022

Ms U Fipaza
Psychology
Faculty of Community and Health Sciences

HSSREC Reference Number: HS22/3/2

Project Title: The psychological impact of COVID-19 on university students in the Global South Countries: A scoping review

Approval Period: 21 April 2022 – 20 April 2025

I hereby certify that the Humanities and Social Science Research Ethics Committee of the University of the Western Cape approved the methodology and ethics of the above-mentioned research project.

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval.

Please remember** to submit an annual progress by 30 November for the **duration of your project. Failure to** submit your annual progress report on time will result in **the immediate lapse of your ethics** approval and you will have to resubmit an entirely new **ethics application.

For permission to conduct research using student and/or staff data or to distribute research surveys/questionnaires please apply via: https://sites.google.com/uwc.ac.za/permissionresearch/home

The permission letter must then be submitted to HSSREC for record keeping purposes.

The Committee must be informed of any serious adverse events and/or termination of the study.

Ms Patricia Josias
Officer: Research Ethics
University of the Western Cape

NHREC Registration Number: HSSREC-130416-049

Appendix E: Confirmation of Editorial Review

CONFIRMATION OF EDITORIAL REVIEW

25 May 2023

Natalie Donaldson
6 Melville Road, Plumstead, Cape Town, 7800
Email: natalied@sacap.edu.za
Tel.: 071 593 3690

To whom it may concern,

This serves to confirm that Unathi Fipaza's Master's in Psychology (Clinical Psychology) mini thesis, titled "*The psychological impact of COVID-19 on university students in the Global South: A scoping review*", underwent a full editorial review that was concluded on 25 May 2023.

There were some changes that the candidate was required to make to the thesis after editing was complete before the final submission. However, editing included: proofreading, editing, checking referencing, and formatting the thesis according to APA 7 guidelines.

Should you have any questions or concerns, please feel free to contact me at natalied@sacap.edu.za.

Kind regards,