

**MENTAL HEALTH STATUS AND COPING STRATEGY OF POST-GRADUATE
STUDENTS AT STRATHMORE UNIVERSITY, NAIROBI KENYA**

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MBA 145426/2021

**A RESEARCH DISSERTATION SUBMITTED TO STRATHMORE UNIVERSITY
BUSINESS SCHOOL IN PARTIAL FULFILLMENT FOR THE DEGREE OF
MASTER OF BUSINESS ADMINISTRATION OF STRATHMORE UNIVERSITY**




SEPTEMBER 2024

DECLARATION

I confirm that I have solely composed this work, and I also confirm that this work has not been submitted previously, in part or in whole, for the award of any previous degree.

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ABSTRACT

World Health Organization defines mental health as a state of well-being where individuals realize their potential, cope with life's stresses, work productively, and contribute to their community. This definition emphasizes that mental health is not merely the absence of mental disorders but a positive state of well-being that includes emotional, psychological, and social aspect. The Sustainable Development Goals has identified mental health as one of the goals and a target set to reduce preventable deaths from non-communicable diseases and positively contribute to good psychological well-being.

Postgraduate students face significant pressures such as the monetary costs, academic performance and family issues that can negatively influence their mental health. Having clear ways of coping with these pressures is necessary for the success in the academic, professional and personal life of the postgraduate students. The study is based on the transactional theory of stress and coping that describes different strategies of stress management adopted by people facing challenging situation – also called the Stress and Coping theory by Lazarus and Folkman (1984). This study aimed at establishing effects of different coping strategies to stressors, on the mental well-being of postgraduate students at Strathmore University.

The main objectives of the study were to assess and analyze the mental health status of the postgraduate students and the effect of three different coping approaches adopted by the students on their mental health status - problem-focused coping strategy, emotion-focused coping strategy and avoidant coping strategy. A total of two-hundred and forty two postgraduate students at Strathmore university were enrolled as study participants. Data from the study was collected using online questionnaires and analysis involved use of a multiple linear regression model. The research design used was cross-sectional descriptive design. The study findings were that coping strategies have significant influence on the mental well-being of postgraduate students. Specifically, while problem-focused coping strategies had negative effects on student's, the study ascertained that emotion-focused and avoidant coping all had positive effects on student's mental health. Recommendation were for students to familiarize themselves with effective coping strategies to improve their mental well-being. The study further recommended that universities ensure they put policies and interventions in place to destigmatize mental health services and ensure they are more accessible and friendlier to postgraduate students. Finally, the study called on all universities to have policy documents detailing how to prevent mental disorders among postgraduates, how to promote mental well-being in the postgraduates, and how to screen and manage mental disorders and illnesses among postgraduates.

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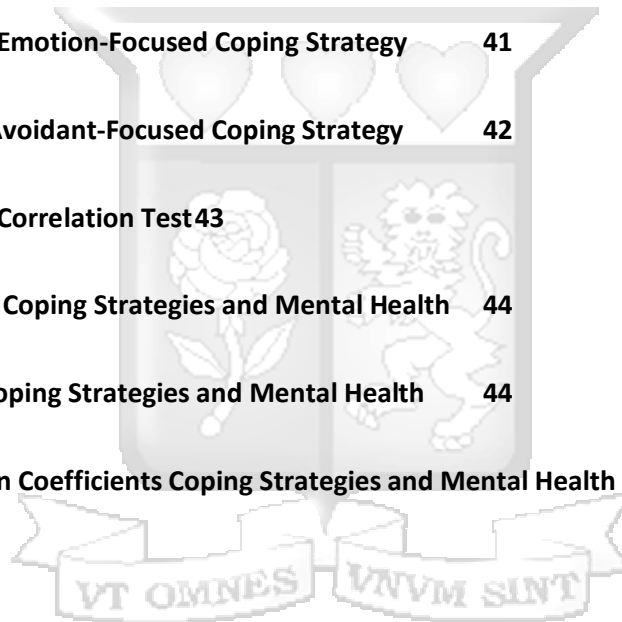
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DEFINITION OF TERMS

Anxiety	A sensation of fear, unease, nervousness, or dread
Depression	A constant feeling of loss of interest, sadness and inability to derive or feel pleasure
Economic shocks	Is an unpredictable event cause wide-spread disruption on the normal functioning of an economy.
ISO certified	A seal of approval of an organization's business process that is awarded based on the International Organization for Standardization
Pandemic	A disease outbreak that actively spreads over a multiple region
Postgraduate students	A student who is undertaking further studies, having completed an undergraduate degree
Public health	Health measures that are targeted towards safeguarding and improving the health of a population.
Social distancing	Maintaining a minimum distance between people to minimize contact with other people, so as to avoid transmission of an infectious disease or condition
Transmission	The spread and transfer of a disease from person to person
Working from home	A modern working model where one performs their job away from a typical office set-up.

LIST OF ABBREVIATIONS

COVID 19	Coronavirus Disease 2019
COPE inventory	Coping Orientation to Problems Experienced
DSM	5 Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition
IGD	Internet Gaming Disorder
ISO	International Organization for Standardization
WHO	World Health Organization



CHAPTER ONE: INTRODUCTION

1.1 Introduction

This chapter introduces the study by providing a discussion on the background of the study from which the problem statement is presented. The objectives of this study are then presented and later expressed in the form of questions that the study sought to provide answers to. In the end, the chapter presents the significance of the study as well as the scope.

1.2 Study Background

Good health is not only a fundamental human right but also a critical driver of economic development, productivity, and stability. Globally, the international community has made commitments to improve the health of their populations by ensuring availability and reducing inequities to accessing quality health care. One commitment is the Sustainable Development Goals, which are a set of 17 goals adopted by all United Nations member states as a call to action to end poverty, protect the planet and ensure peace and prosperity for all by the year 2030. Another commitment is the Universal Health Coverage – one of the major targets under SDG 3 – and is meant to ensure people have access to the health services they need – when and where they need them - without suffering financial hardship. These and other commitments form a framework that guides international, regional and national policies, partnerships and funding for health.

While physical health has historically been the main focus for interventions, in recent years, mental health has gained recognition as a critical component of global development and human well-being, prompting growing international commitment to address it systematically and equitably. Mental health is included in the UN Sustainable Development Goals 3: "Ensure healthy lives and promote well-being for all at all ages," with a specific target (3.4) to reduce premature mortality from non-communicable diseases, including mental health. World Health Organization has laid out a roadmap for countries to promote mental well-being, strengthen services, and protect rights in the Comprehensive Mental Health Action Plan (2013–2030) and under Universal Health Coverage (UHC), mental health is now increasingly recognized as a fundamental part of UHC, calling for its integration into primary health care systems. The global community is increasingly unified in recognizing the need to invest in mental health, protect rights, and ensure that mental well-being is prioritized in health systems, policies, and communities around the world.

Excellent mental health is a precondition for health, happiness and satisfaction in life. It influences an individual's capacity to adjust to tough and problematic situations and to enjoy gratifying moments. It is associated with the way a person thinks, feels and operates in their day-to-day life. World Health Organization (WHO 2013) explains mental health as “a situation where a person is able to contribute and give back to their community by working productively, and realizing their potential while coping with the normal pressures of life. There are three major components of mental health: cognitive health or intelligence - this comprises of a person's thoughts; emotional health that includes attitudes and feelings; and behavioral health that looks at an individual's interaction with their environment and the strength of their relationships (Keyes, 2014).

Mental illness is acknowledged as a major cause of disease burden (Patel, et al., 2018) with the 2019 Global Burden of Diseases, Injuries and Risk Factors Study (GBD) reporting that it is among the leading causes of disease. The COVID-19 pandemic has a profound impact on global mental health, underscoring the connection between public health crisis and mental well-being.

The COVID-19 pandemic had a profound impact on global mental health, highlighting the significant connection between public health crises and mental well-being. The pandemic caused disruptions in social, economic, and health systems worldwide, leading to increased mental health challenges for many individuals and communities. To reduce COVID-19 infection transmission, there was wide-spread enforcement of public health measures, that included quarantine, isolation, curfews, social distancing with limited gatherings, working away from the office. (Steeb, 2020). This brought about disruption to the routines in the lives of people as reported by Alradhawi et al., (2020) by adoption of remote working, job lay-offs or reduced remunerations as a result of decreased operations and profits, virtual learning among other measures adopted and increased stress and anxiety due to fear, loss or loved ones and/or isolation. A cross-sectional population based online survey across 78 countries was conducted between April and June 2020 - at the peak of the COVID-19 pandemic - that revealed increased stressed and depressive symptoms in people (Gloster, 2020). In the US, research done that compared the prevalence of depressive symptoms before the pandemic period and during the COVID-19 pandemic, revealed that the prevalence had more than tripled during the COVID-19 pandemic (Ettman, 2020).

Stress causes anxiety and depression, the top two contributors of mental disorders globally. (Asif, et al., 2020; Kang, et al., 2021; Dimitriadou, 2021). And while stress can trigger negative

emotions and behaviors, different individuals cope differently with some having the ability to effectively cope with adverse emotions and can more responsibly manage their stress according to Huang, et al., (2017). Depending on the coping styles used, an individual can experience favorable or unfavorable consequences on their mental health asserts Alanazi, Given, Deka, Lehto, and Wyatt (2023).

Students mental well-being is important for good academic performance. While a number of studies on student's mental health have been conducted, little emphasis has been placed on the influence of postgraduate student's coping strategies influence on their mental health. To advance and sustain psychological well-being, it is paramount for one to be cognizant of the problems they are encountering and the proactive ways they address the problems, and if they seek support. Acquiring the skills on how to positively cope with life's pressures and challenges is a key pillar for mental wellbeing (Mkumbo, Otieno, & Rufyiriza, 2023). Understanding the coping strategies and their influence on mental well-being will facilitate tailored mental health services and programs offered at by universities that enhance and facilitate access to psychosocial support and management.

1.1.1 Mental Health and Mental Illness

Good mental health is more than just the absence of mental illness—it includes emotional well-being, coping with adversity, forming and maintaining healthy relationships and ability to work and contribute to society. Mental illness is quite common worldwide and can affect anyone irrespective of age, status and background. The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (**DSM-5**) describes a mental illness or disorder as “a syndrome characterized by clinically significant disturbance in an individual's cognition, emotion regulation, or behavior that reflects a malfunction of the psychological, biological, or development processes fundamental for mental functioning.” Mental illnesses, according to the Global burden of diseases 2019, report that one in every eight people live with a mental disorder with mental illnesses among the top ten causes of health burden worldwide. Anxiety and depression are the two leading mental illnesses in the population and suicide due to stress is a major cause of death in young people.

A number of factors can cause mental illness, key among them are a strong family history, trauma or abuse, chronic stress, socioeconomic factors and substance use. There has been a rise in mental illness diagnosis due to increased public awareness coupled with reduced stigma

encouraging people to seek help, additionally there is greater societal pressure in a global village brought about by social media interconnectedness and increased frequencies of humanitarian crises with public health emergencies and climatic shocks all of which can negatively affect mental well-being.

Globally, the prevalence of mental illness varies by country and region. Europe and North America report higher prevalence mental illness of between 20% - 30% but this can be attributed to better mental health infrastructure for diagnostics and treatment, better awareness and less stigma surrounding mental health issues. However, lifestyle stressors like a weaker social network fabric, higher work and economic pressure may contribute to the higher prevalence.

Mental illness is a significant public health concern across Africa, with varying prevalence rates influenced by factors such as conflict, economic challenges, cultural stigma, and limited access to mental health services. Lesotho and Mozambique have some of the highest suicide rates globally, while in Uganda approximately 68% of rural population has been found to have some form of mental illness. In Africa, persistent conflict, poverty, stigma associated with culture and suboptimal availability and access to mental health service have influenced the reporting rates for mental illness masking the scope of the problem.

Locally, WHO ranks Kenya as a country with a high burden of depression cases among its population with local mental health experts estimating 25% of the population suffer from a mental disorder (Murunga, 2019). A study done at a teaching university hospital in Kenya among medical residents actively managing patients during the COVID-19 pandemic, reported the following prevalence of mental disorders among the medical residents: - anxiety 51.5%, depression 64.3%, burnout 51.0%, distress 35.4%, and insomnia 40.5%. (Ali, 2022).

Drawing from this study, it can be presumed that students face pressure and stress as they navigate an environment that demands self-motivation, discipline, and a drive to achieve academic success. This pressure and stress may tip the student to suffer from mental disorders depending on their coping ability. The study can be extrapolated to postgraduate students who need to balance several responsibilities in their work, personal life and academic studies against a backdrop of limited support and guidance, the risk of mental disorders may be more pronounced among them.

1.1.2 Determinants of Mental health

1.1.2.1 Stress

Stress is a shift that leads to strain of the physical, emotional or psychological well-being of a person – according to World Health Organization. Stress is a reaction to any incident or occurrence that necessitates an undertaking, attention or some action. Stress will exhibit in various and diverse ways in individuals for example as concern or worry, jitteriness or an inability to relax, fear, altered sleep pattern, concentration challenges, a tendency to use alcohol or drugs that alter one's mood. Stress experienced persistently over a long duration, can cause anxiety, depression, psychosis, anxiety, and increased use of alcohol and other drugs according to Babicka-Wirkus, Wirkus, Stasiak, and Kozłowski (2021).

Depending on the period of the stressful event, stress is categorized into three types – acute stress that is short term, chronic stress that is persistent and is for a long duration and episodic-acute stress which are frequent bouts of short-term stress experienced over a period of time.

Zegeye, et al., (2018) assessed the prevalence of stress and the relation between stress and substance use in postgraduate students in Ethiopia. The study reported that academic burden is one of the key causes of strain among postgraduate scholars. In these students, khat (*miraa*) chewing and cigarette smoking served as predictors of stress. In a study among 21-40-year-olds who were worried about the impact of the COVID-19 pandemic on the future and the economic challenges posed by the pandemic, increased levels of depression, stress, and anxiety were revealed among the study participants who were categorized as being in the work-force and as a result directly affected by potential job furloughs and business closures as a result of the pandemic. (Moghanibashi-Mansourieh, 2020).

1.1.2.2 Coping

Coping is where through thoughts or behaviors, a person will mobilize or tap into efforts, in an endeavor to manage or reduce the stress brought about by the situation, challenge or event. Skill acquisition on coping to stress and life's challenges are crucial for a person's well-being, both mental and physical. While there exists various approaches adopted by people to manage stress, the coping strategies identified are grouped into three as follows: problem focused where the individual actively tries to find a solution to the problem encountered; emotional-oriented described as where one regulates the feelings that arise due to the stressful situation and problem-avoidant coping where the person circumvents the problem that is causing stress or is in denial.

Reyes, 2021, conducted a study in Columbia among older adults to examine the role of coping strategies on individual well-being among older adults showed different coping strategies to have different impact on the subjective well-being of a person. The study suggested that that problem-focused coping had a positive effect, whereas emotion-focused coping had a negative effect on subjective well-being. In China, during the COVID-19 pandemic (Huang, 2021) - a multicenter survey among college students, examined how student's mental health was influenced by coping style adopted by the student and perceived social support. The survey reported poor mental health outcomes among the students who had a passive coping strategy (e.g. smoking and drinking) in comparison to those with active coping strategies

1.1.3 University System in Kenya

Kenya has a Commission for University Education that was established in 2012 whose mandate is to regulate and accredit universities and university programs across the country. Kenya has over 70 private and public education institutions offering university education. These include 33 public universities private and 37 private ones. According to the Commission for University Education (2016), 23 of the public universities are chartered universities.

The country has three categories of universities which are stem from the institution's governance structure, the academic program available and the university's legal status. The three categories are public universities, described as universities that receive funding from the state and are also under the state's authority; private universities which are founded and managed non-state institutions or organizations, and chartered universities described as public or private universities are accorded autonomy by the Commission for University Education allowing them to award degrees as independent institutions.

Based on the categories, there exist different funding models of the three universities ranging from public universities that receive significant funding from the government to cover their costs, to private universities that rely on tuition fee and/or private investors as a funding source for their operations. Students who enroll into private universities are required to pay for their tuition in comparison to those who enroll into public universities which needs to be taken into consideration when selecting a university for advanced studies.

1.3 Statement of the Problem

Universal health coverage states that all people receive the health services they need, when they need them without suffering financial hardship. With mental health accounting for a

significant portion of the global disease burden and essential for overall well-being and productivity, its contribution to UHC is critical. Mental health is also closely tied to the Sustainable Development Goal 3.4 whose target is to reduce premature mortality from non-communicable diseases through prevention and treatment and promote mental health and well-being. Good mental health is also a crosscutting issue that touches on a number of other SDGs, for example SDG 1 - poverty can cause undue stress increasing the risk to mental illness while mental illness can lead to lower productivity with loss of income; SDG 4 – mental well-being is a cornerstone for learning and academic achievement; SDG 16 – exposure to conflict can directly affect mental health.

COVID-19 pandemic uncovered gaps in accessibility and availability of psychosocial support services in the midst of increased mental disorders amongst communities. This was more marked in developing countries that had substantial treatment gaps coupled with inadequate mental health professional staff (Awoke, Mamo, Abdu, & Terefe, 2021). Countries need to establish mental health and well-being prevention and treatment programs, as they are a prerequisite for addressing the emerging burden mental health disorders.

Locally, mental health services in the country are allocated less than 1% of the government's health budget. The government has not adequately addressed gaps in providing services for those with mental illness (Ali, Shah, Du, Leekha, & Talib, 2022) This situation is further aggravated by lack of mental health workers in health facilities. According to Bitta, 2017, availability of mental health services to Kenya's is greatly hindered inadequate resources and persistent shortage of mental health workers.

Postgraduate students face numerous academic and social pressures to be outstanding role models and to succeed in school. However, these pressures are also cause stress and anxiety among university students and studies confirm that more and more university students are grappling with mental health disorders and engaging in harmful adaptive practices such as substance abuse. Asif, et al., (2020) add that financial challenges and personal and/or family responsibilities in addition to balancing career expectations have increased stress and anxiety levels among post graduate students.

Effective coping is essential to responding to different stressors and improving or maintaining a positive mental health status (Awoke, et al., 2021). However, while important, Akim, Miima, and Nthusi (2022) concede that there has been little analysis into the association between coping strategies and mental health outcomes of postgraduate students. The studies by Babicka-Wirkus, et al., (2021) and Byrne (2021) were from developed countries, with Babicka-

Wirkus, et al., (2021) specifying coping during the COVID-19 pandemic, and Byrne (2021) specifying coping with cyberbullies. The studies by Melodia, et al., (2020) and (Asnani, et al., 2021) were limited as they only focused on one coping strategy. Alanazi, et al., (2023), on the other hand had a methodological gap having used a literature review and desktop analysis. These studies provide contextual gaps.

Locally, the study by Akim, et al., (2022) was unique to the coping strategies used by medical students while Kilel, Othuon, and Kabuka (2023) based their assessments on coping among secondary going students. The study by Ogoma (2020) was also different since it only explored burnout among medical students.

This study confirms that the design of meaningful and effective mental health interventions in universities requires accurate understanding of how postgraduate students cope with stress and how the strategies they use affects their mental well-being. It will fill these gaps by focusing on the three main coping strategies and using primary data and descriptive methods in analysis of the association between coping strategies and mental health outcomes of postgraduate students actively enrolled into Master's programs at Strathmore university.

1.4 Research Objectives

The main objective of the research was to conduct an assessment of the mental health status and coping skills of postgraduate students actively enrolled into Master's programs at Strathmore university.

1.4.1 Specific Objectives

The study has the following objectives:

- i. To assess the mental health status among postgraduate students.
- ii. To assess the coping strategies employed during stress by postgraduate students
- iii. To assess any relationship between the postgraduate student's coping strategy and their mental health status.

1.5 Research Questions

The study sought to answer the following questions:

- i. What is the mental health status among postgraduate students?
- ii. What are the coping strategies adopted by the postgraduate students?

- iii. What is the relationship between the coping strategy adopted and mental health status of postgraduate students?

1.6 Scope of the Study

This research focused on the mental health status and coping strategies employed among students at Strathmore university studying in the post-graduate studies. Data, inform of questionnaires and validated mental health tests, was collected from 242 post-graduate students over a two-month period.

1.7 Significance of the Study

Investigating the mental health of postgraduate students is important for a number of reasons:

1.7.1 To universities and institutions of higher learning

This study will reveal the prevalence of mental well-being and mental illness among postgraduate students.

1.7.2 To Government of Kenya

The government of Kenya may utilize the evidence-based information to develop or formulate policies and guidelines that touch on the psychological well-being and availability of mental health support services for postgraduate students.

1.7.3 To post-graduate Students

The evidence from this study will increase awareness on the mental well-being and how coping strategies influence one's mental health. For postgraduate students balancing multiple responsibilities – personal life, work and academics information, the knowledge that there is a relationship between coping strategies and mental health status will empower the students to proactively seek support during periods of stress and pressure.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter discusses the theoretical background that underpins this study by exploring propositions of various relevant theorists and authors. It follows with a review of empirical evidence on mental well-being and coping strategies. At the end, this chapter presents gaps that currently exist on the subject effect of different coping strategies on mental well-being of postgraduate students.

2.2 Theoretical Framework

To provide a foundation to understand, analyze, and interpret the subject of a study, a conceptual structure is employed. Swanson (2013) describes a theoretical framework as a conceptual structure made up of facts that have been demonstrated, proven and tested that help to support and direct a study.

Various theories of stress and coping have been established that provide a lens through which to understand how stress is experienced, interpreted and managed. These theories provide crucial frameworks to comprehend both the physiological and emotional response to stress and also the cognitive appraisal, behavioral strategies and environmental factors that influence how one copes with life's challenges. The theories posit that stress is a dynamic interaction between the person and their environment with coping regarded as an adaptive process aimed at managing the stressful event or situation.

While many theories exist, two theories were selected for purposes of the literature review. the Cognitive Appraisal Model and the Transactional Model of Stress. Unlike other theories, these two theories look at the stress appraisal and the coping styles adopted by individuals. They are closely related and were both developed by Richard Lazarus.

The Cognitive Appraisal Model explains how people evaluate and interpret stressful situations. According to this model, the experience of stress is not just about the event itself, but about how the person perceives it. The Transactional Model of Stress builds upon the Cognitive Appraisal Model, viewing stress as a transaction between the person and their environment. It emphasizes that how a person appraises a situation and what coping mechanisms they use determine their stress outcome.

2.2.1 The Transactional Theory of Stress and Coping

The transactional model of stress and coping posits that stress is influenced by an individual's cognitive evaluation of a circumstance and their coping action. This theory differentiates between initial appraisal when the set of circumstances are assessed as either a threat or a problem and secondary assessment, where one assesses their capability to manage the problem or situation. The coping reaction then evolves following the assessment and evaluation.



Figure 2.1 The Transactional Theory of Stress and Coping

The cognitive appraisal model explains the way individuals decipher and react to situations and circumstances that in turn affect their emotions and behaviors using a psychological framework. Through the use of the cognitive appraisal model, a situation is assessed as being pertinent or not to one's wellbeing. In this model, an event can be appraised as being pertinent or not to one's wellbeing.

For an event that is pertinent, the event is regarded as either beneficial, non-beneficial, a potential harmful event or a challenge. Based on this assessment, a person then evaluates their capacity to manage the situation by drawing on resources at hand, previous experiences and self-confidence in their capacity. It is the outcome of the secondary evaluation that has an impact on the psychological and behavioral reactions. This model posits that it is the individual's interpretation of an event that will determine their psychological reaction that bring about the differences seen in the emotional and behavioral responses.

The transactional model of Stress and coping draws attention to the fact that stress is an unfolding event and by embracing different coping strategies, a person can grow even in the face of a stressful situation through determination and intent. This model buttresses on the Transactional model by adding a third phase where there is re-assessment of the stressful circumstance and based on emerging information, adjustment or modification of coping strategies are made as the situation unfolds.

This study is founded on Lazarus and Folkman's transactional model of stress and coping and it highlights the fact that stress is due to a person's assessment of a situation or event and based on the assessment, a coping action is developed based to manage the stress. Therefore, understanding the intellectual and emotional processes involved in coping may lead to an appreciation of the intricate effect that coping strategies exert on mental well-being.

2.2.2 Stress and Coping Theory

According to Lazarus and Folkman's (1984) transactional model of stress and coping, "psychological stress is a strain between an individual and the conditions they are facing that causes emotional, physical or mental pressure and this condition is judged by the person as surpassing their resources and puts their well-being at risk". This theory hypothesizes that when demands on a person is much greater their ability to manage, stress arises affecting the persons mental well-being. Stress can be brought about by a multitude of factors that arise from one's obligations. The obligations can be family related, work related, financial, health, unpleasant experiences during childhood etc. which negatively affect a lifestyle that the individual was accustomed to.

According to the World Health Organization, stress is any changes in an individual's life that brings about a strain - physical, emotional or psychological. The strain caused has an effect on the person's capacity to adapt manifesting as distress, panic, a change in sleep and eating patterns, difficulty in concentration, increased use of mood-altering substances including tobacco and alcohol. A survey conducted in USA among undergraduate students, assessed the correlation between the student's academic performance and stress. The student's cumulative Grade Point Average scores (GPA), was used to check for academic performance with reports lower GPAs, lower coping ability, lower resilience, and inadequate social support among students who were identified as being stressed. Frazier (2019) This study links stress to a student's academic performance. Extrapolating to postgraduate students who have multiple responsibilities of family, work and studies which have the potential to cause stress, it would be safe to conclude anecdotally that the student's with lower academic grades may also be stressed underscoring the need for stress reduction interventions for the students' optimal academic output.

When someone goes through a difficult situation or event, they undergo internal changes from the moment the stress is encountered till resolution. These changes occur in three distinct

phases and are depicted in a model called the General Adaptation Syndrome, Selye 1950. (Figure 1.) The three stages are - the alarm stage, the resistance or denial stage and the fatigue or exhaustion stage and are further elaborated below.

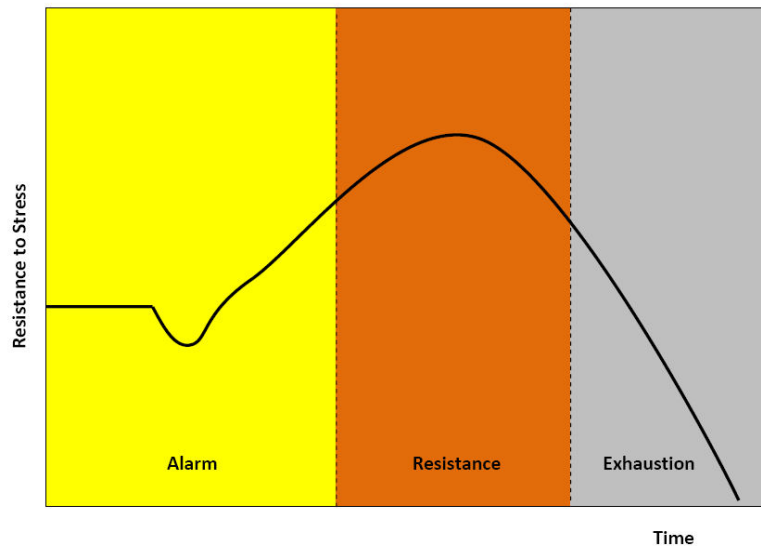


Figure 2.2 General Adaptation Syndrome Model of The Response to Stress

The alarm stage, is the first reaction to any threat or danger. It is also called the “fight or flight” response and determines if the person will either face the situation or run away from it. At this stage, the body undergoes an internal acute physiological reaction that manifests as increased heart rate and raised blood pressure where heart rate and the individual’s blood pressure are raised due to activation of the nervous system and a release of stress hormones (Bourne & Yaroush, 2003). The “fight or flight” stress reaction occurs irrespective of the cause of stress and in everyone. After the initial shock has been brought under control, the physiological response is normalized, however the high state of alert continues until the stressful situation is settled or fixed.

In a case where the stressful situation does not abate, secretion of the stress hormones will persist. The individual moves from the alarm stage into the second stage which is the resistance stage. In this stage, a person will experience negative emotions such as anger, annoyance, irritability and have poor concentration. It is important to ensure that anyone in this stage is identified and provided with the requisite psychological support. If the resistance stage is not managed appropriately, it will lead into the final stage which is the exhaustion stage.

Exhaustion stage is the final stage where mental disorders emerge. This stage is characterized by depression, tiredness, low energy levels and burnout. It is the stage where mental illness

manifests in various forms. The body's immune system is also affected by the circulating stress hormones, suppressing it and reducing the capacity to fight off infections.

To study the ramifications of long-standing stress on health, cardiac patients with symptoms of exhaustion were observed for individual variances of continued stress and its effect on continued general body fatigue. A baseline assessment of multiple chronic stressors, like events in early life/childhood, eusocial stress, marital stress, and work-related stress, were conducted in the patients, with the assessments done regularly for a period of 2-year after treatment intervention. The results reported delayed recovery in patients with persistent stress as compared to other patients (Doedee, 2021).

Coping is how a person adapts to emotional, psychological or physical strain through mobilization of their own internal resources, to help manage the situation. Coping can be intentional, conscious reaction or an unconscious response. (Lazarus & Folkman, 1984). There are three categories of coping styles: Problem-based coping that involves active efforts to solve problems such as brainstorming possible solutions, planning interventions and implementing a defined plan to resolve the situation or challenge (Batte, et al., 2024). By focusing on what is under someone's control, this coping style is pro-active and enables the person to set realistic strategies to manage the stressful situation for example time management, goal setting, communication etc. (Neufeld & Malin, 2021)

Another coping style is when emotional responses are employed as a means of stress reduction. The responses can resign themselves to the situation, blame, vent, meditate, accept the situation or seek external support. The coping style is known as emotion-oriented coping (Alanazi, et al., 2023). By adopting this coping style, one may either evoke feelings of guilt/regret that can push one into depression or increase a person's awareness of the distressful situation thus motivating them to change. Results from studies focused on this coping style have varied results some revealing long-term psychosocial well-being in individuals with this coping method (Kariv 2005) and others report increased depression and anxiety (Matheson 2003).

Problem-avoidance coping is the third coping method where one avoids thinking about the problem through procrastination, minimization, denial and/or distraction, denial, minimization and eventually gives up solving it. Suls (1995) opined that avoidance coping has strong linkages to an individual developing depression as the problem continues to fester affecting other areas of the person's life.

Even with wide acceptance of Lazarus and Folkman Transactional theory of stress, there are some limitation. The theory only focuses on cognitive appraisal while ignoring physiological aspects of stress reaction. It also relies on subjective evaluation, that is influenced by individual

variations in assessment and management of the stressor. Despite these limitations, Lazarus and Folkman theory in stress and mental health still has continued relevance.

2.2.3 Cognitive Appraisal Theory

The concept of cognitive appraisal was pioneered by Richard S. Lazarus a psychologist. Lazarus (1966, 1991) proposed that stress is not an automatic reaction to external stimuli, but rather the result of an individual's interpretation of the significance of a situation. According to this theory, the way individuals appraise a situation largely determines their emotional and coping responses (Lazarus & Folkman, 1984).

The cognitive appraisal method is based on some key assumptions. First, it views stress as a dynamic and transactional process between an individual and their environment. Individuals interpret events actively, meaning that their subjective perception of the event plays a critical role (Folkman et al., 1986). Finally, the model emphasizes that appraisal is dynamic with continuous reappraisals done in light of new information (Lazarus, 1991).

For this model, appraisals influence the choice of the coping strategy adopted and it can be either problem focused, emotion focused or problem avoidant. The main strengths of this model are that it recognizes the interactive nature between an individual and their environment and integrated both the cognitive and the emotional process of the individual. However, there are limitations to this model as it overlooks other social factors that can influence stress. It is also a challenge to measure appraisals objectively. The theory offers essential insights into adaptive and maladaptive coping, as well as guiding principles for designing stress management interventions.

This study applied Lazarus and Folkman's transactional theory of stress and cognitive appraisal model to examine how postgraduate university students perceive and cope with stress. Using a psychological assessment tool (DASS21) and Brief COPE inventory, the study assessed relationships between both mental well-being and coping strategy of postgraduate students. In the context of postgraduate scholars, this study revealed the coping approaches adopted by the postgraduate students as described by Lazarus and Folkman (1984) and the mental health outcomes.

2.3 Empirical Review

The review of empirical literature concentrates on the relationship between coping strategies and the mental well-being. Several studies have been done and analyzed on this subject area looking at different population cohorts in different regions and settings. The results have been similar in some cases while in other cases the outcomes are unexpected in terms of theoretical expectations. These results have been presented as a review of literature related to the study objectives that touch on mental health and illness, coping strategies and mental health and a deep dive into the three coping strategies – problem focused, emotion oriented and problem avoidant coping.

2.3.1 Prevalence of Mental Health and Illness

Mental health has been defined as a state where an individual is able to contribute and give back to their community by working productively, and realizing their own potential while coping with emerging life stressors. (WHO 2013). It is a fundamental component of health and well-being that buttresses our individual and collective capability for decision making, establish and nurture relationships and shape one's community and world. Puspitasari et al. (2020) explain that mental health is often associated with lack of distress and indicates one's social, psychological, and emotional well-being, affecting the way people think, feel, and behave. The World Health Organization (WHO, 2020) notes that positive mental health is a state of well-being whereby a person can work productively and achieve their potential, can handle normal stressors of life, and contribute to the society in general. Mental health is at every stage of development is essential for quality of life and well-being.

While important, however, Rehm and Shield (2019) report that more than one billion people live with a mental or addictive disorder globally and they struggle to attain a stable state of mental health. Puspitasari et al. (2020) explain that mental illness includes symptoms of depression, anxiety, schizophrenia and bipolar disorder, referring to depression and anxiety as common mental disorders and schizophrenia, and bipolar disorders as severe cases of mental illness. Asif et al. (2020) defined depression as a constant feeling of sorrow, despair and loss of, and anxiety as described as excessive worry and alarm, about routine work or school performance and occurring regularly over a period of at least six months. Rehm and Shield (2019) revealed that while symptoms of depression are prevalent in both sexes, men have a higher likelihood than women, of struggling with substance use disorders.

According to Harat and Taher (2023), while mental illness is usually associated with stressful life circumstances, they can also occur even without such stressful experiences, such as increased job or home responsibilities resulting from promotions or parenthood. Asif et al. (2020) explain that there is emerging evidence that confirms that mental disorders have both direct cost such as the cost of hospitalizations, care, and outpatient visits, and indirect costs, referring to the losses that result from reduced productivity, and increased illegal activities. In this sense, mental health conditions lead to loss of income, self-esteem and value which worsen mental health illness and perpetuates the vicious cycle of poverty and illness (Rehm & Shield, 2019).

Belle et al. (2022), and Harat and Taher (2023) confirm that mental health problems are prevalent among university students and graduates, explaining that these result from stress-related to academic load, work integration and career anxiety, coping with work and changing family demands (young parents), and other potentially stressful experiences. Harat and Taher (2023) assert that these issues contribute to increased anxiety, depression, absenteeism, drug and substance abuse, suicidal ideation and intent, and eating disorders. According to Dimitriadou (2021), many students in higher institutions of learning experience persistent mental disorders and substance use challenges, with little to no treatment received by the students. Mutwiri et al. (2023) confirm that reduced academic performance, and dropping out are among the most common outcomes of students struggling with mental disorders in university settings.

Evans et al. (2018) carried out a survey among graduates from 269 universities in 32 countries, looking at the prevalence of mental illness and disorders, the survey reported high levels of mental disorders. 82%, 39% and 41% of the graduate students in Master's, PhD and Postdoctoral programs had stress, anxiety and depression respectively, that was categorized as either moderate or severe. The survey concluded that the likelihood of graduate students to experience anxiety and depression was increased six-fold, as compared to the general public. Another survey of 274 institutions revealed that the last five years had seen an increase in cases of "severe" psychological problems linked to eating disorders, substance use, learning disabilities, self-injuries, and sexual assaults. (Pedrelli, Nyer, Yeung, Zulauf, & Wilens, 2019). Sharma's (2022) study on mental health among university students in various disciplines reported high depression levels among Masters of Business Administration (MBA) students and high stress levels among BALLB (integrated law degree) students.

According to Pedrelli et al. (2019), anxiety disorders such as generalized anxiety disorders (GAD), panic disorder, social phobia, and post-traumatic stress disorder (PTSD) affect up to 12 percent of college students, making them the most prevalent mental health disorders in universities. Pedrelli et al. (2019) reported that depression affects up to 9 percent of university students, eating disorders such as binge eating, anorexia and bulimia, affects approximately 9.5 percent of students, while Attention-deficit/hyperactivity disorder (ADHD) affects between 2 and 8 percent of students globally. Kang, Rhodes, Rivers, Thornton and Rodney (2021) posit that even with the scarce literature to show the prevalence of schizophrenia among college students, evidence shows that its earliest symptoms appear in young people between 18 and 25 the average age of university students.

Mental illnesses are also prevalent in African institutions of higher learning where according to Fentahun et al. (2024), students face unique challenges including the cost of university education, the burden of meeting family expectations, institutional challenges, career worries and other challenges. In an Ethiopian study, Dachew et al. (2022) reported that more than one third of university students in Ethiopia suffer from a form of mental distress but have not accessed adequate treatment. The study revealed that 35 percent of students were experiencing financial distress, engaging in drug and substance abuse, lost interest in their field of study and lacked belief in themselves. Ahorsu, Adjaottor, Yeboah and Opoku (2021) found a high prevalence of depression (75%), anxiety (88.4%) and stress 84.4% among university students in Ghana, calling for early interventions at intermediary age to reduce stress and anxiety to first year students.

Musyoka, Mbwayo, Donovan and Mathai (2020) conceded that Kenya graduates struggle with a host of mental disorders, with more than a quarter confirming that they are actively engaging in substance and drug abuse, experience feelings of anxiety, and other behavioral disorders. Ndegwa, Mbwayo, and Kiarie (2020) evaluated the occurrence of depression among University Students from Nairobi County and observed that depression rates averaged 33%, with 16.9% reporting moderate levels of depression levels, and 1.2% reporting severe depression levels. A similar study by Mutiso et al. (2022) reported that while 3.2% of university students struggle from Binge Eating Disorders (BED), depression, panic disorder, obsessive compulsive disorder (OCD), and generalized anxiety disorder were singled out as the main predictors for binge eating disorder. Ndegwa, et al. (2020) assert that the persistence of depression and other mental

illnesses in Kenyan universities is a matter of public concern that has to be addressed more effectively given current interventions are not having the desired effects.

Even with such dire statistics, it is worth noting that people living with mental disorder while living with debilitating or distressing mental symptoms can achieve a meaningful standard of living, contribute positively to life and achieve satisfactory levels of well-being (Asif, et al., 2020). To effectively provide support for mental illnesses among university students, it is essential to evaluate the prevalence of mental illness to justify the case for investing in and designing more effective mental health interventions (Rehm & Shield, 2019). Ndegwa, Mbwai, and Kiarie (2020) add that it is key to informing public health officials and in setting priorities necessary to scale up mental health interventions that can produce the desired outcome of mentally healthy graduates in Kenyan Universities. It is also key to understand the coping strategies used by students to address these challenges because understanding the effectiveness of these coping mechanisms is key to improving how graduates respond to and manage their mental health issues (Kilel, Othun, & Kabuka, 2023).

2.3.2 Coping Strategies and Mental Health

When someone is faced with a stressor, they will assess and evaluate the situation – first to assess if the situation poses imminent danger or not and then if they are able to manage to that stressor. Lazarus (1991) describe coping as "an individual's efforts to master conditions that are perceived as surpassing his or her capabilities while according to Awoke, Mamo, Abdu, and Terefe (2021), coping is an individual's capacity to respond to, and recover from a stressful event. Neufeld and Malin (2021) concede that generally, coping refers to all the efforts made to minimize distress emerging from negative life experiences such as increased work and home responsibilities, job loss, fear of failure, and others. Babicka-Wirkus, Wirkus, Stasiak and Kozłowski (2021) confirm that coping efforts are highly dynamic as they are largely dependent on an individual's personal preference, and the environmental context.

According to Neufeld and Malin (2021), while there are two main dimensions of coping strategies deployed in response to stressors; problem-focused and emotion-focused coping, these could be categorized into adaptive and maladaptive coping strategies. In the study, Neufeld and Malin (2021) explained that adaptive coping involves flexible approaches to solving problems, actively engaging the problem to find a solution, while maladaptive coping are those approaches that are more avoidant. Çapkın and Vatansever (2023), who also used the dimensions provided by Neufeld and Malin (2021) highlighted strategizing, reappraisal, and

emotional regulation and expression as examples of adaptive coping strategies, and confrontation, emotional suppression, venting, social isolation and abandonment as examples of inactive coping strategies.

Babicka-Wirkus, et al., (2021) assert that while various frameworks exist, the COPE inventory is one of the most common frameworks used to contextualize the range of distinct coping reactions to stress highlighted in the studies by Çapkin and Vatansever (2023), and Neufeld and Malin (2021). Çapkin and Vatansever (2023) assert that to control/respond to a stressor, individuals who use a problem-focused approach at coping direct their efforts directly towards manipulating the stressor, those who use an emotional approach direct efforts at manipulating the emotions associated with the stressor, while those who use an avoidant approach seek to escape the stressor. Neufeld and Malin (2021) associate problem-focused coping with mental well-being, and avoidant coping with mental disorders since they never really solve the problem, and can exacerbate the underlying issue and create additional stress (Dimitriadou, 2021).

These dimensions of coping strategies have been employed in previous studies to contextualize and evaluate the effect of coping approaches used in different environments, and was useful in the current study which seeks to evaluate the coping strategies deployed by university graduates to regulate stressful situations/events.

2.3.2.1 Problem Focused Coping

Problem-focused coping also referred to as direct or adaptive coping, is used when an individual is confident in their own resources aimed at managing the stressor. (Zaman & Ali, 2019). Schoenmakers (2015) note that the main problem-focused coping strategies include active coping which involves concentrating one's efforts to improve a situation, planning, which implies thinking hard about possible solutions to a problem/the origin of stress, seeking support to get more informed advice on how to better deal with the situation, or disengage oneself from the situation.

A study on stressed parents by Asnani (2021), revealed how the stress led to anxiety and depression, in cases where the parent did not have adequate internal resources to cope. This was escalated in cases where the parent had a child requiring constant care and treatment. In the study, it was noted that there was a risk of depression among mothers of infants diagnosed

with sickle-cell disease. When these mothers were given intervention using problem-solving skills therapy, their depression scores improved significantly

Shermeyer, Morrow and Mediate (2019) used a single multilevel multivariate regression model in analysis of the effect of day-to-day coping on the emotional state and quality of life of college students, specifying active against disengaged coping strategies. Findings from the research were that students who use a problem-focused engagement strategy reported less negative moods and felt they led a high quality of daily life, whereas problem-and-engagement-focused disengagement, as well as emotion-focused engagement had negative effects on the students' daily functioning.

Neufeld and Malin (2021) also sought after the coping strategies employed by medical students to manage stress, but in the context of medical students in one university in Canada. The study relied on Pearson correlations in analysis and findings which showed that the coping strategies adopted by medical students are primarily healthy and they are mostly problem-focused and active, with the students choosing to plan, actively cope or seek instrumental support rather than deploying passive and avoidant coping. However, the study reported significant differences in coping approaches used by female and male medical students, with the female students relying more on disengagement approaches, while males had less reliance on emotional support. Moreover, the higher the academic level, the likelihood of engaging in denial coping increased, suggesting a need to develop coping strategies for higher-level students.

Arguing that many medical students exhibit characteristics indicative of burnout, Ogoma (2020) sought after the effect of the three coping strategies (problem-focused, emotion-focused, and avoidant coping) on burnout outcomes of medical students in Kenya. The study used correlational analysis and findings were that while problem-focused coping has an attenuating effect on burnout (alienation, emotional fatigue, and a decreased sense of personal accomplishment), avoidant and emotion-focused coping have an aggravating effect. More specifically, problem-focused coping reduced emotional fatigue and the feeling of reduced personal accomplishment. while avoidant coping made students more callous which had a detrimental effect on their motivation.

Mkumbo, Otieno, and Rufyiriza (2023) evaluated the challenges and coping strategies used by first year students to cope with the stressors associated with transitioning into colleges in

Tanzania. The study identified a host of challenges and revealed that problem and emotional focused coping strategies such as attending orientation courses, avoiding peer groups, seeking support from senior students and joining class, sports or community-based social groups that provide support to first years. This study evaluated how post-graduate students cope with school stressors, which can include supporting and mentoring undergraduate students.

Togoh (2019) researched on the coping strategies of high school students from poor backgrounds in Ghana, collecting data using questionnaires and semi-structured interviews. Descriptive statistics results revealed a host of direct and indirect coping strategies, with practical problem-solving solutions such as after school trading, and part-time working being the most commonly deployed coping strategies. The study revealed that when passive coping is irrelevant, active problem solving becomes the only solution; but that these strategies are ineffective at addressing mental concerns considering the students were still unable to address academic anxiety, and in some instances, exacerbated academic-induced stress owing to lower grades.

Confirming that mental health issues have become more concerning among high school students, Kilel, Othuon and Kabuka (2023) sought after the approaches used by high school students to cope with mental health issues in Kenya, and their impact on their wellbeing. The study used descriptive statistics in analysis and it was observed that students mostly preferred to contact their parents rather than the school counsellor. Students were also confirmed to use religious escapism and avoidance, and recommendations were for schools to involve parents more when designing mental health interventions as these problem-focused interventions have a consequential impact on students' mental health, relationships and school grade performance.

2.3.2.2 Emotion-Oriented Coping

Emotion-focused coping is an adaptive problem-solving strategy that involves adjusting one's feelings and emotional response to the issue or difficulty faced instead of confronting the problem (Neufeld & Malin, 2021). Orines & Sunga-Vargas (2023) note that it is mainly used when a person evaluates a stressful situation as being beyond their ability to manage or to change. According to Schroer (2023), emotive problem solvers approach a problem by controlling their feelings using various methods such as meditation, prayer, delusion, self-blame, humor, seeking social support and/or therapy aimed at coming to terms with the challenge. These strategies involve attempts to modify the way that the stressful situation is

interpreted, inducing a feeling of resignation and acceptance (Alanazi, Given, Deka, Lehto, & Wyatt, 2023).

Research into emotion-coping strategies reveal a host of outcomes on an individual. Frei (2021) evaluated the influence of emotion-oriented coping styles on patients' outcomes, focusing on people diagnosed with borderline personality disorder in Australia. The study involved patients who filled out self-report measures of coping styles used to cope with the stress of acute hospitalization and findings were that younger patients who use emotion-oriented coping are more likely to harm themselves. This study implied that emotion-oriented coping predicts self-harm, but was unique to hospitalized patients.

Çapkın and Vatansever (2023) linked emotion-focused coping style to an increased likelihood of aggressive outbursts in a study that explored the effect of problem-focused and emotion-focused coping styles among university students in Turkey. Pearson correlation analysis results were as follows; while males were more aggressive, students who had experienced detrimental life events and relied on emotion-focused coping approaches had more aggressive outbursts, while those who deployed a problem-focused approach were less likely to react aggressively. The study highlighted the value of designing interventions for people who had experienced adverse life events.

On the other hand, in an analysis that delved into the effect of emotion-oriented coping on substance abuse among first-time mothers, who had anxiety and depressive symptoms, Wu (2018) hypothesized that women are more likely to use emotional coping than men. The study based conducted secondary analysis of clinical data and findings were that use of emotion-oriented coping increased awareness and highlighted the negative outcomes of drug abuse, it also increased motivation for change, and resulted in a faster decline in alcohol and drug use. The study confirmed that emotion-oriented coping can increase patients' motivation to reduce their drug use. This study was however unique to women with young children.

Babicka-Wirkus, et al., (2021) focused their research in Poland and in the period during the COVID-19 pandemic which was linked with elevated stress circumstances, from social isolation, illness anxiety and anxiety of the future. The study evaluated students at different levels and from the analysis, it was revealed that students mostly relied on acceptance, planning, and seeking emotional support strategies to manage stress. Students who expected

emotional support adopted strategies that sought interpersonal relationships for social support, and religious coping. Those who expected financial and organizational support, on the other hand, sought to find practical ways to improve their income-earning capacity and were less likely to use venting, religious coping, substance use, behavioral disengagement, and self-blame as coping strategies. The study was specific to stress management during crisis periods.

In Nigeria, Nwadi, et al., (2024) carried out analysis into the influence of stress coping, on stress perceptions among students of Home Economics and Indigenous Textiles Education. The experimental study specified cognitive behavior therapy as a coping strategy and its impact on healthy thinking and used control cohorts of participants exposed to the CBT, and those not involved. Components of cognitive behavior therapy comprising cognitive restructuring, reinforcement, motivational enhancement, problem solving, and mood monitoring techniques were deployed and results were that CBT interventions are effective coping strategies that have the potential to reduce examination-induced stress and stress levels of undergraduates.

The value of emotion-focused coping was also demonstrated in a study by Batte, et al., (2024) that evaluated the effect of coping strategies on the mental health of school-going adolescents during the COVID-19 pandemic in Uganda. This study used a cross-sectional design and factor analysis that relied on one-way ANOVA in analysis. Findings were that many of the students employed adaptive, positive emotion coping and social support, featuring reappraisal and relaxation techniques, and that these techniques improve emotional regulation and resilience. Avoidance and negative emotion-focused coping such as resignation were linked to increased anxiety and depression. The study focused on adolescents hence, its findings may not be extrapolated to the general population.

2.3.2.3 Problem Avoidance Coping

Problem avoidance is where a person distracts themselves with an activity, procrastinates in dealing with the situation, or totally despairs and gives up on solving a stressful situation. (Perez-Tejada, et al., 2019). According to Danielson, et al., (2024), avoidance/denial is common when an individual experiences a traumatic event that they conclude that they have little control over. Danielson, et al., (2024) enrolled 238 youth to analyze the association between avoidant coping, depressive symptoms, and alcohol use. The study

employed Chi-square, t-test, bivariate, and group path analysis and correlational results were that avoidant coping is has crucial predictive ramifications on problematic drinking and depressive symptoms.

Bartone (2020) conducted a study among US veteran soldiers who were returning from deployment in Afghanistan. The study reported that soldiers who used avoidance coping strategies as their preferred coping strategy, had an increase rate of depression. The findings were that soldiers who experienced extreme levels of adverse conflict exposure and used avoidance coping strategies experienced more depressive symptoms. Moreover, the study found a positive influence of training programs and policies aimed at increasing soldiers' hardiness attitudes and active coping skills on reduced depression among soldiers. The study was unique to U.S. soldiers who returned from a year deployment in Afghanistan, while the current study examines the mental health of students.

Khan (2023) evaluated the link between academic self-efficacy, coping, and school grade performance of college students in the United States. The study used correlation analysis and findings were that while the planning, positive reinterpretation and acceptance component all predict increased self-efficacy and academic performance, avoidance, substance use and faculty sponsor support had a drawback on the students' academic performance. This study did not explore academic performance outcomes but mental health outcomes that result from different coping strategies. Zaman and Ali (2019) also ascertained that medical students who deploy this avoidant coping strategy are slower in making their career decisions, suffer from low self-efficacy and career optimism.

Similar observations were made in the United Kingdom where Fluharty (2021) sought after the effect of coping strategies on mental health trajectories during the first three months of the COVID-19 lockdowns. Analysis involved use of the growth-curve modelling method and findings were that people who used problem-focused and avoidant coping strategies experienced increased depressive and anxiety symptoms at the start of lockdowns. Moreover, emotion-focused coping resulted in reduced mental health symptoms, while socially-supportive coping increased the rate of recovery from depression and anxiety over a period of time. The findings suggested that socially-supportive approaches have a protective effect on people's mental health while avoidant coping exacerbates the issue.

Confirming that clinical training can be stressful, Onieva-Zafra, et al., (2020) used a cross-sectional correlational descriptive design in analysis of the anxiety, stress and the coping strategies used by clinical students in Spanish universities. Correlation and regression analysis revealed that avoidance strategies comprising self-criticism, wishful thinking and social withdrawal all had significant negative effects on stress outcomes. Problem solving and cognitive restructuring, whereby students talked about their negative emotions with their peers and reframed their negative experiences were shown to reduce anxiety and symptoms of depression.

Avoidance coping was found to have benefit in a study among American students who experienced cyberbullying and victimization in higher education settings (Byrne, 2021). The study sampled 459 undergraduates from a research university and findings were that while students were highly reluctant to seek support from campus faculty and staff, they are most likely to use technical coping approaches such as blocking the bully or adjusting privacy settings. The study revealed that such technical coping strategies are offering online students' peace of mind and isolation of online stressors.

In another study, Varela, Hernández, Berger, Souza, and Pacheco (2022) used ordinary least squares regressions in analysis of the effects of avoidance coping on mental well-being of adolescents who were cyber bullied and confirmed that depending on the frequency of cyberbullying, avoidance coping can have positive or negative effects on the victim's mental wellbeing. The study revealed that when the frequency of cyberbullying is low, switching off from social media increases depressive symptoms, when the frequency of cyberbullying is high disconnecting from social media reduced depressive symptoms. On the other hand, when the frequency of cyberbullying was high, coping through ignoring increased depressive symptoms and reduced depressive symptoms when the frequency is low. This study was unique to cyberbullying and its use can be actively controlled with minimal effects on one's wellbeing.

Melodia, Canale, and Griffiths (2020) carried out literature synthesis of the relationship between Avoidance Coping and Escape Motives on the development of Internet Gaming Disorder (IGD), arguing that short-term gaming can be a useful adaptive coping strategy for de-stressing or to reduce tension. Content analysis revealed that escapism and avoidance of real-life problems has significant predicting effects on IGD, and that these two coping mechanisms also have a mediating effect on the relationship between psychological factors

such as anxiety, loneliness, and self-esteem, and IGD. Playing to escape was linked to depressive, musculoskeletal and psychosomatic symptoms which result in sleeping challenges, eating disorders and social isolation.

2.4 Summary of Research Gap

Analysis of the three main coping approaches reveals that it is clear that depending on the stressor, there are benefits and disadvantages to each coping method. It is also clear that it is impossible to determine which approach works best on the mental health of postgraduates in Kenya. What becomes clear is that it is important to consider individuals as having various ways of assessing and managing stressful events and situations, and that these coping strategies can exert positive or negative mental health outcomes. This study examined these three strategies in tandem and evaluate their impact on the mental well-being of university postgraduate students in Kenya.

Review of empirical literature show that research have been performed on mental health and illness among scholars in basic and tertiary education institutions (Asif, Mudassar, Shahzad, Raouf, & Pervaiz, 2020; Byrne, 2021; Ali, Shah, Du, Leekha, & Talib, 2022; Harat & Taher, 2023). Some of the studies explored the impact of different factors on the mental health of the students and independent variables such as stressors, psychosocial support and coping strategy. Literature reviewed, report a focus on students in high school and those undertaking undergraduate studies in university. Few have explored the relationship between coping strategies and mental health outcomes of postgraduate students.

Majority of research conducted on mental well-being of postgraduate scholars have been done in Asia, Europe, and America (Babicka-Wirkus, Wirkus, Stasiak, & Kozłowski, 2021; Bartone & Homish, 2020; Puspitasari, et al., 2020). There is a shortage of research among post-graduate students in Kenya, within the context of their mental well-being, the coping strategy employed and any relationship between mental well-being and the coping strategy of the postgraduate students. This demonstrates a gap that the current study strived to bridge.

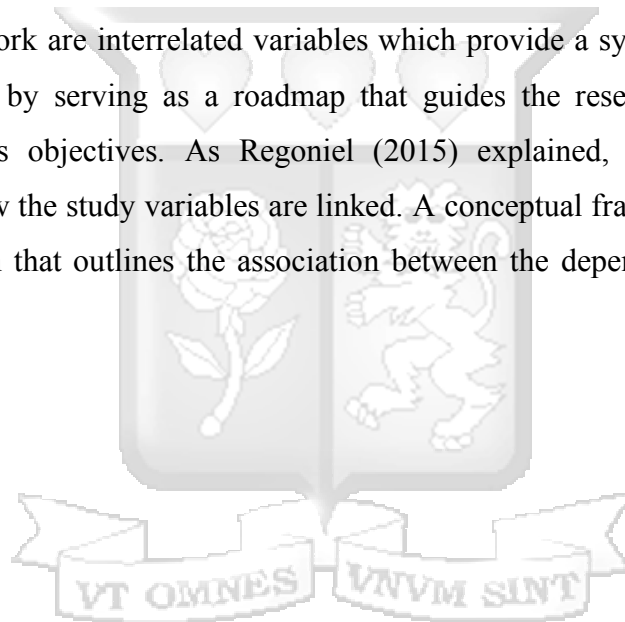
Kenya is has seen a surge in the student numbers who enroll for postgraduate studies. These students comprise a growing populace who need contextualized and comprehensive support to be able to successfully take on their academic studies while balancing other areas of their life. By providing insights on the magnitude of mental health and disorders among postgraduate students, the coping strategies they take up when under pressure and the relationship between the two, this study adds to the existing knowledge that can inform policies and programs on

mental health, for universities to support the scholars while enrolled into their pedagogical programs.

The Empirical literature review revealed a number of studies conducted globally (Alanazi, Given, Deka, Lehto, & Wyatt, 2023). Studies have been done locally in Kenya that show mental well-being of postgraduate students. Majority of these local studies were conducted on medical residents and nurses (Ali, Shah, Du, Leekha, & Talib, 2022). There is paucity of empirical evidence on studies among postgraduate scholars, that show a correlation between mental health status and coping strategies. As a result, the researcher explored this area for application in academia and for policy makers in the education and health sectors.

2.5 Conceptual Framework

A conceptual framework are interrelated variables which provide a systematic foundation to conduct the research by serving as a roadmap that guides the research exercise towards achieving the study's objectives. As Regoniel (2015) explained, it is the researcher's comprehension of how the study variables are linked. A conceptual framework is represented in diagrammatic form that outlines the association between the dependent and independent variables in the study.



Independent variables

Dependent variable

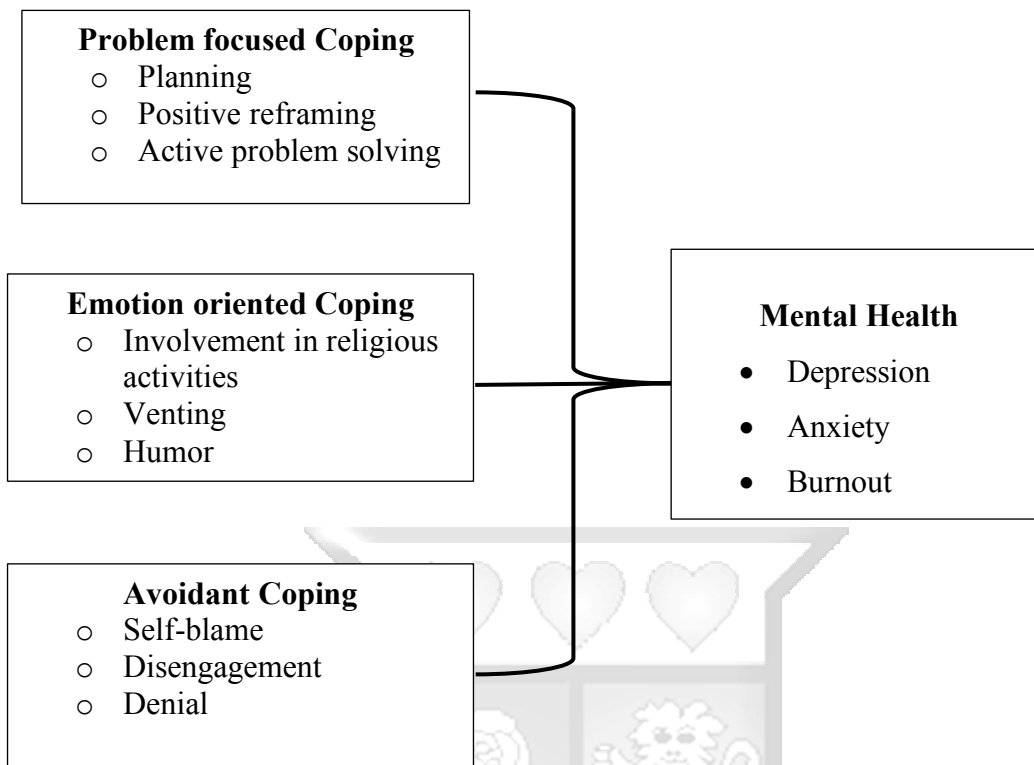


Figure 2.3 Conceptual Framework
Source Author (2023)

This study is guided by Lazarus and Folkman's (1984) Transactional Model of Stress and Coping, which conceptualizes coping as a process dependent on individual cognitive appraisal of stressors. According to the model, individuals use primarily problem-focused, emotion-oriented and avoidant coping to manage perceived stress. These coping responses are the primary variables of interest in this study, with a focus on understanding their prevalence, and potential implications in the selected population. The model provides a lens through which to interpret the influence of different coping strategies on the postgraduate students mental health.

2.6 Operationalization of Variables

This subsection has outlined the means by which the variables was measured.

Table 2.1 Operationalization of Variables

Variable	Indicators	Measurement	Data analysis	Supporting literature
Mental health	<ul style="list-style-type: none"> ● Depression ● Anxiety ● Burnout 	Ordinal 5-pt Likert Scale (Quantitative) Qualitative data	Descriptive analysis Correlation analysis Regression analysis	Carver, Scheier, & Weintraub, (1989); Dimitriadou, 2021; Fentahun, et al., (2024).
Problem focused Coping	<ul style="list-style-type: none"> ● Planning ● Positive reframing ● Active problem solving 	Ordinal 5-pt Likert Scale (Quantitative) Qualitative data	Descriptive analysis Correlation analysis Regression analysis	Akim, Miima, and Nthusi (2022); Asnani, et al., (2021)
Emotion oriented Coping	<ul style="list-style-type: none"> ● Involvement in religious activities ● Venting ● Humor 	Ordinal 5-pt Likert Scale (Quantitative) Qualitative data	Descriptive analysis Correlation analysis Regression analysis	Akim, Miima, and Nthusi, (2022); Frei, Sazhin, Fick, and Yap (2021)
Avoidant Coping	<ul style="list-style-type: none"> ● Self-blame ● Disengagement ● Denial 	Ordinal 5-pt Likert Scale (Quantitative) Qualitative data	Descriptive analysis Correlation analysis Regression analysis	Akim, Miima, and Nthusi, (2022); Bartone and Homish (2020)

2.7 Chapter Summary

The literature has been reviewed focusing on mental health and illness and the three types of coping strategies which are problem solving, emotion oriented and avoidance coping strategies. These and the supporting theories and the conceptual framework, form the foundation for studying the mental health status and coping strategy of postgraduate students in Kenya.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter presented the approach that was applied by the study. It provides details on the research design, the target population, the sampling technique selected, and the sample size. The chapter also presents the methodology utilized to collect data, data collection tools and ethical consideration.

3.2 Research Philosophy

This research uses a positivism research philosophy where knowledge is acquired using scientific methods. The main goal of the study was to discover objective and verifiable facts on the topic area under research. The study relied on quantitative methods using questionnaires to gather and analyze data. These methods allow for the quantification and measurement of the research event.

3.3 Research Design

Research design is the strategy and plan of the research process. It includes collection and analysis of data and writing of the report. (Creswell, 2014) A research design framework guides the researcher on how the study answered the research questions using the data collected and analyzed. Sousa, Driessnack, and Mendes (2017). For this study, a quantitative research approach was adopted with a descriptive research design. In a descriptive design, the relationships and nature of variables are contextualized and described. (Zikmund, Babin, Carr, & Griffin, 2012). Additionally, descriptive designs assist in describing the relationships between the dependent and independent variables (Choy, 2014). In this study, quantitative data was collected and analyzed, to describe the phenomena and establish any correlations. Using a descriptive design, the researcher attempted to reveal the phenomena of mental well-being of postgraduate students, coping strategies adopted and any associations between coping strategy adopted and the student's mental well-being.

3.4 Target Population

According to Zikmund, Babin, Carr, & Griffin, (2012), population refers to a total number of entities or objects that can be incorporated in a particular study while target population is the specific number of individuals the researcher is concerned with generalizing the study

conclusions from (Sekaran & Bougie, 2010). The target population was postgraduate scholars at Strathmore University actively enrolled into an academic program.

3.5 Sampling Technique and Sample Size

This study adopted a random stratified sampling whereby all postgraduate scholars were considered. This was to ensure representation across key demographic subgroups, such as academic program, gender, family status. Given the likelihood that coping strategies vary across these characteristics, stratifying the sample enhanced the accuracy of findings and allowed for meaningful comparisons. Within each stratum, participants were randomly selected, reducing sampling bias and increasing the overall validity of the study.

Using records obtained from the School administration, there are approximately 612 postgraduate students at Strathmore university in 9 masters programs. The different master's programs at Strathmore university formed the strata or subgroups from where the random sample was drawn from. The sample size for the study is determined using the Yamane formula as shown below;

$$n = \frac{N}{1 + N(e)^2}$$

In the formula above;

n is the required sample size from the population under study

N is the whole population that is under study

e is the precision or sampling error which in this study is 0.05 (=95% CI)

Using this formula for a total population of approximately **612 postgraduate students** at Strathmore university the sample size is **242 students**.

Students records of Strathmore university was used in selecting study respondents. The determined sample was distributed accordingly into each stratum relative to the whole sampling frame.

3.6 Data Collection Instruments and Procedure

In this study, questionnaires and screening tools was used to collect data and were sent electronically to the study population.

The questionnaire collected demographic information on details of the student's personal information on their personal, work and academic. The following validated screening tools were used to measure mental health status, stressors, coping strategies and social support: Depression, Anxiety and Stress Scale (DASS2) and COPE (Coping Orientation to Problem Experienced) inventory. These two questionnaires measured the mental health status of the postgraduate student and the coping strategy employed during stress, respectively.

DASS2 is a self-reported questionnaire created to assess the levels of depression, anxiety and stress experienced by an individual. It consists of 42 items in three subscales of 14 items. Each subscale is related to, anxiety, depression, and stress to which the respondent rates the extent it applies to them on a Likert scale, within a specified time frame.

The COPE inventory is a self-reported questionnaire that assessed the ways in which an individual cope with stress and challenging events. It contains items that assess different coping strategies. It was developed by (Carver, Scheier, & Weintraub, 1989). The questionnaires were explained to the students with an option of either physical or online administration.

3.7 Pilot Testing

A pilot test is whereby the questionnaires and screening tools are administered to a percentage of the total target population. It determined any deficiencies in the questionnaire design to facilitate correction before the study is implemented. Kothari (2018). This is important as it assists in testing for the reliability and validity of the instruments for data collection. A sample size recommended for a pilot test should be about 10% of the sample size of the main research. (Connelly, 2008)

3.8 Data Analysis and Presentation

Data once collected, was cleaned, coded and entered into SPSS (version 23) software for analysis. Descriptive analysis was used to organize the characteristics of the study population.

Inferential statistics (multiple regression and correlation analysis) was used to assess an association between the study variables.

The below equation was used to assess this association:

$$Y = \beta_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_3 + \varepsilon$$

Where;

Y = Mental health status

X1 = problem-focused coping

X2 = emotion-oriented coping

X3 = problem-avoidance coping

B₁-B₃ = coefficients of the predictors

B₀ = the constant of the model

ε = the error term of the model

3.9 Ethical consideration

This study was conducted in conformity with the ethical standards and procedures. Ethical approval was sought from the Strathmore University Ethics and Research Committee (ERC) and National Commission for Science, Technology and Innovation (NACOSTI). The study objectives were explained to the study population and participants were informed of their right to take part in the study and exit at any stage as part of the information shared electronically. By proceeding with answering the questionnaire, it was presumed that consent had been given by the postgraduate student for their participation in the study. All data collected was utilized only for purposes of this study, with confidentiality maintained using codes instead of participants names as the identifier.

CHAPTER FOUR: PRESENTATION OF RESEARCH FINDINGS

4.1 Introduction

The fourth chapter was utilized in the survey to presents the findings drawn from the analysis of the study data. The key areas in the chapter are the background results, descriptive results, correlation results and the regression results.

4.2 Background Results

The background section focused on the profile of the respondents involved in the survey as well as their characteristics of mental health service utilization among students.

4.2.1 Response Rate

The research sought to obtain 247 responses from Masters students within Strathmore Business School. The survey obtained 245 responses representing 99% response rate which was deemed sufficient for utilization in the research. This high response rate was achieved by continuous engagement of students and reminders sent through electronically on the study. The response rate indicated that findings derived from the study can be generalized for the overall population in making meaningful and stational inferences.

4.2.2 Masters Programme of Respondent

The study queried participants on the programme being pursued in the institution and summary of the results is shown in Table 4.1

Table 4.1 Respondent Masters Programme

	Frequency	Percent
Master in Business Administration	79	32.2
Master of Management in Agribusiness	17	6.9
Master in Healthcare Management	49	20.0
Master of Science in Development Finance	33	13.5
Master in Public Policy and Management	45	18.4
Master of Commerce	22	9.0
Total	245	100.0

The findings indicate that most of the participants (32%) are enrolled in Master in Business Administration, 20% in Master in Healthcare Management, 18% in Master in Public Policy and Management with only 7% in Master of Management in Agribusiness. The implication of the results is that responses were obtained from a diverse pool of Masters students within the university thus the research obtained information from the right sample.

4.2.3 Year of Study

The research demonstrated that 27% of the respondents were in the Year 1 and Year 3 of their studies with 39% in their Year 2 of studies. This revealed that participants included in the survey have varying period of study thus have been exposed to the Masters programme differently thus can help in identifying how they have been coping with any mental health issues within the period.

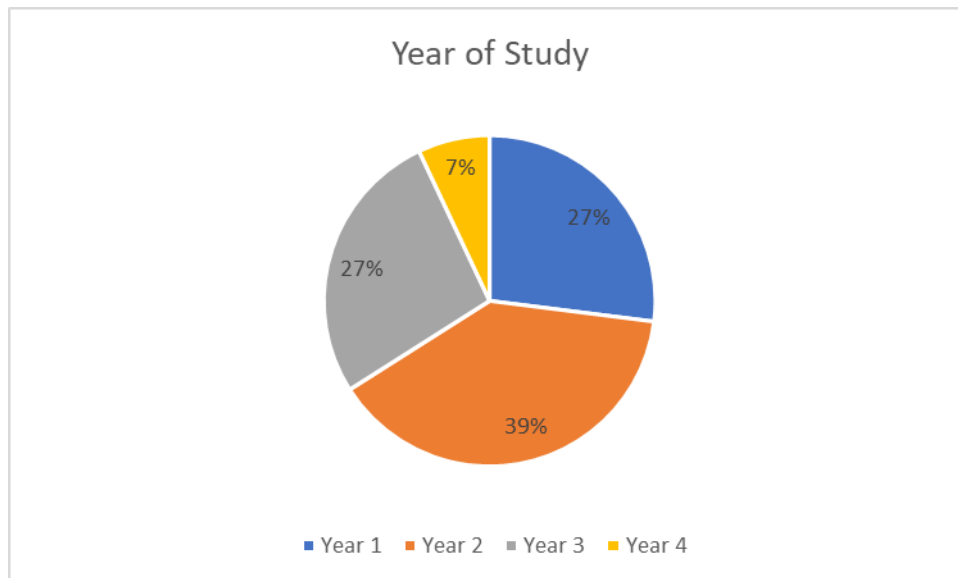


Figure 4.1 Year of Study

4.2.4 Family Background of Respondent

The research further focused on the background of the respondents particularly; their family status, living status, employment status and payment of their programme fees. The summary of the results is shown in Table 4.2

Table 4.2 Family Background of Respondent

		Frequency	Percent
Family Status	Unmarried	50	20.4
	Married	42	17.1
	Single parent	118	48.2
	Widowed	34	13.9
	Total	244	99.6
Living status	Alone	66	26.9
	Family	158	64.5
	Friends	20	8.2
	Total	244	99.6
Employment status	Employed	32	13.1
	Self-employed	165	67.3
	Unemployed	45	18.4
	Total	242	98.8
Fee Payment	.00	21	8.6
	Self-sponsored	169	69.0
	Scholarship	55	22.4
	Total	245	100.0

Results showed that 48% of the students were single, 17% were married with just 14% of the participants being widowed indicating diverse marital status among Masters students in the school. The analysis indicated majority of the Masters students, 64% have a live-in family, 27% lived alone with 8% living with friends. Findings revealed that 67% of the were self-employed with 18% of the students being employed. Analysis further showed that 69% of the students were self-sponsored with 22% of the students under a scholarship indicating high self-dependence in the tuition payment.

4.2.5 Utilization of Mental Health Services

The research reviewed the status of usage of mental health support services and summary of the responses obtained is shown in Table 4.3

Table 4.3 Utilization of Mental Health Services

Statement		Frequency	Percent
Utilization of mental health support services offered by the university	Yes	91	37.1
	No	153	62.4
	Total	244	99.6
Description of mental health services	No response	12	4.9
	Excellent	44	18.0
	Good	37	15.1
	Not a good fit for me	141	57.6
	Total	234	95.5
Access to mental health services	By one-self	3	1.2
	Referral	9	3.7
	Total	12	4.9
Importance of Mental Health Support services	Yes	233	95.1
	No	12	4.9
	Total	245	100.0

Analysis showed that majority of respondents 62% (n =153) of the students were not utilizing the mental health support services offered by the university with only 37% using the services. This was indicative of a very low uptake of the services among the Masters student. The research showed that 58% (n =141) of the students felt the mental health services were not a good fit for them while 18% indicated they can be excellent. This revealed diverse opinions among the students on the utilization of mental services. Results indicated 4% of the respondents accessed the mental health services through referral by colleagues. Further analysis showed that 95% of the participants viewed mental health support services as important for postgraduate students demonstrating a positive overview of the mental services among the students.

4.3 Descriptive Analysis

The study collected research data using the Depression, Anxiety and Stress Scale (DASS2) and COPE (Coping Orientation to Problem Experienced) inventory. The various responses obtained were analyzed using descriptive measures such as means and standard deviation. The interpretation of the results is presented in this section.

4.3.1 Results on Depression, Anxiety and Stress Scale

The analysis of the DASS 2 scale was interpreted using the following scale; > 3.5 applied to me very much, 2.5 – 3.49 applied to a considerable degree, 1.5 – 2.49 applied to some degree, < 1.49 did not apply to me. The summary results are shown in Table 4.4

Table 4.4 Results on Depression, Anxiety and Stress Scale

	N	Mean	Std. Deviation
I found it hard to wind down	244	2.6230	.85902
I was aware of dryness of my mouth	243	2.2881	1.05203
I couldn't seem to experience any positive feelings at all	245	2.4531	.99735
I experienced breathing difficulty (rapid breathing, breathlessness) in the absence of any physical activity or exertion.	244	2.3811	1.00524
I found it difficult to work up the initiative to do things	243	2.6379	.95807
I tended to over-react to situations	244	2.6352	.94833
I experienced trembling (e.g. in the hands)	242	2.3802	1.07600
I felt that I was using a lot of nervous energy.	244	2.5410	.99088
I was worried about situation in which I might panic and make a fool of myself	244	2.7336	.99315
I felt I had nothing to look forward to	244	2.4959	1.01226
I found myself getting agitated	244	2.6844	1.00349
I found it difficult to relax	243	2.6502	.96481
I felt down-hearted and blue	244	2.6066	.97337
I was intolerant of anything that kept me from getting on with what I was doing	242	2.5992	.93817
I felt I was close to panic	245	2.5388	.97695
I was unable to become enthusiastic about anything	241	2.5394	1.04458
I felt I wasn't worth as a person	244	2.4385	1.05033
I felt I was rather touchy	243	2.4938	.96368
I was aware of the action of my heart in the absence of physical exertion (increased heart rate, heart beat missing a beat)	244	2.4549	1.06285
I felt scared without any good reason	244	2.5246	1.04005
I felt that life was meaningless	245	2.2367	1.01277

The majority of the respondents (mean = 2.623) revealed to a considerable degree they found it hard to wind down. Results showed to a considerable degree (mean = 2.637) the respondents found it difficult to work up the initiative to do things. Participants revealed to a considerable degree they feel worried about situation in which they might panic and make a fool of themselves (mean = 2.733). The study indicated to some degree (mean = 2.438) they felt not

worth as a person; (mean = 2.453) couldn't seem to experience any positive feelings at all. The respondents also demonstrated that to some degree (mean =2.495) they felt they had nothing to look forward to.

4.3.2 Coping Orientation to Problem Experienced

The Coping Orientation to Problem Experienced was conceptualized using problem-focused approach, emotion-focused and avoidant coping strategy. The Likert statements were interpreted using the following key; 4.20 and above fully agree, 3.50- 4.19 = agree, 2.50 -3.49 = neither agree nor disagree, 1.50 – 2.49 = disagree, less than 1.49 = fully disagree.

4.3.2.1 Problem-Focused Coping Strategy

The first indicator in the COPE inventory reviewed the problem-focused coping strategy and the analysis of the various items is shown in Table 4.5 below.

Table 4.5 Results on Problem-Focused Coping Strategy

		N	Mean	Std. Deviation
1.	I've been concentrating my efforts on doing something about the situation I'm in.	245	3.5224	1.15433
2.	I've been taking action to try to make the situation better.	244	3.4590	1.15931
3.	I've been getting help and advice from other people	243	3.4074	1.25419
4.	I've been trying to see it in a different light, to make it seem more positive.	244	3.4959	1.13492
5.	I've been trying to come up with a strategy about what to do.	245	3.4776	1.21319
6.	I've been looking for something good in what is happening	244	3.5902	1.10929
7.	I've been trying to get advice or help from other people about what to do	243	3.3704	1.23427
8.	I've been thinking hard about what steps to take	244	3.5164	1.13481

The respondents were in agreement (mean =3.522) they have been concentrating efforts on doing something about the situation they're in. Results agreed they have been looking for something good in what is happening (mean = 3.590). The participants further neither agreed or disagreed (mean =3.370) they've been trying to get advice or help from other people about

what to do. Analysis showed lack of agreement among respondents on whether they've been trying to see it in a different light, to make it seem more positive (mean = 3.495).

4.3.2.2 Emotion-Focused Coping Strategy

The second item assessed in the COPE inventory were the various emotion-focused strategies and the findings are shown in Table 4.6

Table 4.6 Results on Emotion-Focused Coping Strategy

			Std.
		N	Mean Deviation
1.	I've been getting emotional support from others.	243	3.3374 1.26021
	I've been saying things to let my unpleasant feelings escape.	244	3.1803 1.24071
2.	I've been criticizing myself.	244	3.3402 1.22519
3.	I've been getting comfort and understanding from someone	243	3.4733 1.21386
4.	I've been making jokes about it.	245	3.2531 1.24517
5.	I've been accepting the reality of the fact that it has happened.	243	3.5226 1.20369
6.	I've been expressing my negative feelings	243	3.3621 1.23672
7.	I've been trying to find comfort in my religion or spiritual beliefs	244	3.3934 1.21755
8.	I've been learning to live with it	243	3.5844 1.14816
9.	I've been blaming myself for things that happened	245	3.3510 1.25092
10.	I've been praying or meditating	243	3.5144 1.18304
11.	I've been making fun of the situation	245	3.0816 1.31256

The results revealed agreement (mean =3.584) they've been learning to live with problem while a mean of 3.522 showed agreement they've been accepting the reality of the fact that it has happened. Analysis showed participants agreed they've been praying or meditating (mean 3.514). Further results revealed neither agreement or disagreement (mean = 3.337) they've been getting emotional support from others; while mean of 3.473 have been getting comfort and understanding from someone. Findings showed neither agreement or disagreement respondents have been making fun of the situation (mean = 3.081).

4.3.2.3 Avoidant-Focused Coping Strategy

The third item assessed in the COPE inventory were the various avoidant-focused strategies and the findings are shown in Table 4.7

Table 4.7 Result on Avoidant-Focused Coping Strategy

		N	Mean	Std. Deviation
1.	I've been turning to work or other activities to take my mind off things	244	3.4057	1.09023
2.	I've been saying to myself "this isn't real	244	3.0041	1.34714
3.	I've been using alcohol or other drugs to make myself feel better	245	2.9429	1.39848
4.	I've been giving up trying to deal with it	244	2.9754	1.30187
5.	I've been refusing to believe that it has happened.	243	3.0617	1.23328
6.	I've been using alcohol or other drugs to help me get through it	244	3.0574	1.37765
7.	I've been giving up the attempt to cope.	243	3.1111	1.34840
8.	I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.	242	3.4628	1.27238

The analysis showed neither agreement nor disagreement (mean =3.462) they've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping. A mean of 3.405 showed neither agreement nor disagreement respondents have been turning to work or other activities to take their mind off things. The results indicated that respondents have neither or either been using alcohol or other drugs to help them get through it (mean = 3.057). The research showed respondents indicated they neither agreed or disagreed they've been giving up trying to deal with it (mean = 2.975).

4.4 Correlation Analysis

Correlation's analysis was done to determine the degree of the relationship between the independent variable and dependent variable using the Spearman rank correlation. The correlation coefficient ranges from - 1.0 to +1.0 and the closer the coefficient is to +1 or -1, the stronger the relation.

Table 4.8 Results on Correlation Test

		Mental Health	Problem Focused Coping	Emotion Focused Coping	Avoidant Coping
Spearman's rho	Mental Health	Correlation Coefficient	1.000		
		Sig. (2-tailed)	.		
		N	245		
Problem Focused Coping		Correlation Coefficient	.302**	1.000	
		Sig. (2-tailed)	.000	.	
		N	245	245	
Emotion Focused Coping		Correlation Coefficient	.494**	.726**	1.000
		Sig. (2-tailed)	.000	.000	.
		N	245	245	245
Avoidant Coping		Correlation Coefficient	.559**	.509**	.664**
		Sig. (2-tailed)	.000	.000	.000
		N	245	245	245

** . Correlation is significant at the 0.01 level (2-tailed).

The findings on the first objective confirmed there was a weak positive and significant relation between problem-focused coping strategies and the mental health of postgraduate students at Strathmore University ($r = .302^{**}$, $N (245)$, $sig = .000 < .05$). The second objective analysis showed there was a moderate positive relation between emotion-focused coping strategy and mental health of postgraduate students at Strathmore University ($r = .494^{**}$, $N (245)$, $sig = .000 < .05$). Lastly, the results established there was moderate positive relation between avoidant-focused coping strategy and mental health of postgraduate students at Strathmore University ($r = .559^{**}$, $N (245)$, $sig = .000 < .05$).

4.5 Regression Analysis

Regression analysis was used to determine the strength of the relationship between the dependent variable (usually denoted by Y) and the independent variables (denoted as X). The summary of the research model is shown in Table 4.9 below.

Table 4.9 Regression Coping Strategies and Mental Health

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.634 ^a	.402	.395	.48755

a. Predictors: (Constant), Avoidant Coping, Problem Focused Coping, Emotion Focused Coping

The strength and significance of the regression model was determined by using the coefficient of determination (R^2) and F-test. The findings of the regression model showed a (R^2) = .402 which revealed that holding all other factors constant 40.2% of the mental health of the postgraduate students is predicted by the coping strategies. This indicates other factors not considered in the model account for 59.8% of the variations in the model.

Table 4.10 ANOVA Coping Strategies and Mental Health

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	38.502	3	12.834	53.991	.000 ^b
	Residual	57.288	241	.238		
	Total	95.790	244			

a. Dependent Variable: Mental Health

b. Predictors: (Constant), Avoidant Coping, Problem Focused Coping, Emotion Focused Coping

The study used ANOVA to determine whether the regression model was statistically significant or not. The findings showed a f-value = 53.991 which was greater than the F- critical of 3.902 with a sig value .000<.05. This confirmed there was a positive and statistically significant relationship between the coping strategies and the mental health of postgraduate students of Strathmore University.

Table 4.11 Regression Coefficients Coping Strategies and Mental Health

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.068	.156		6.857	.000
	Problem-Focused Coping	-.189	.062	-.235	-3.062	.002
	Emotion-Focused Coping	.307	.076	.356	4.071	.000
	Avoidant Coping	.344	.047	.486	7.264	.000

a. Dependent Variable: Mental Health

$$\gamma = 1.068 + -.189x_1 + .307x_2 + .344x_3 + .156$$

The findings on the first variable revealed interaction between problem-focused coping strategies on the mental health of postgraduate students of Strathmore University. Results of the coefficient analysis revealed a $\beta_1 = -.189$, sig = .002 < .05 showing a negative and significant effect of problem-focused coping on the mental health of postgraduate students.

The analysis of the second variable was focused on the relationship between emotion-focused coping strategies on the mental health of postgraduate students of Strathmore University. Findings showed a coefficient of a $\beta_2 = .307$, sig = .000 < .05 showing a positive and significant effect of emotion-focused coping on the mental health of postgraduate students.

Lastly, the third variable examined the relationship between avoidant-focused coping strategies on the mental health of postgraduate students of Strathmore University. Findings showed a coefficient of a $\beta_3 = .344$, sig = .000 < .05 showing a positive and significant effect of avoidant-focused coping on the mental health of postgraduate students.

CHAPTER FIVE: DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This is the final chapter of the study and it presented a discussion of the study's findings, the conclusions and recommendations that can be drawn from the study's findings. The study further indicates the main limitations of the study and presents suggestions for further studies that can address the limitations identified in the current research.

5.2 Summary of the Study

Post-graduate students face significant pressures and responsibilities during the duration of their course that, if not well attended, can lead to the development of stress, depression, anxiety and other mental disorders which can significantly affect their academic performance. Studies have depicted many challenging and stressful conditions that have contributed to a high prevalence of anxiety and depression symptoms among post-graduate students. Career and job choice anxiety, time and financial management, limited knowledge about life outside university, the burden of mentorship, impending family decisions and academic anxiety are among the most common challenges faced by post-graduate students. Consequently, it is essential that they employ coping mechanisms that enable them to cope with these stressors effectively and maintain a stable health status.

The objective of this study was to conduct an assessment of the mental health status and coping strategies employed to deal with stressors by postgraduate students at Strathmore university. The study based its foundations on the assertions of Lazarus and Folkman's (1984) Stress and Coping Theory and the Transactional Theory of Stress and Coping which identified problem focused coping, emotion-oriented coping and avoidance coping as the three main coping strategies. These three formed the study's specific objectives. The study adopted a positivist research philosophy, was guided by a descriptive research design and targeted postgraduate students actively enrolled into Master's programs at Strathmore university.

The study sought to obtain 247 responses from Masters students and obtained 245 responses, representing a 99% response rate. From analysis of the response rate, the researcher obtained most responses from students enrolled in Master in Business Administration, followed by Master in Healthcare Management students, Master in Public Policy and Management students, and Master of Management in Agribusiness students. Most of these were second year students, single, lived with their families, and were self-employed. Moreover, most of the students confirmed that they are self-employed and self-sponsored, indicating a high degree of diversity,

independence and likelihood of exposure to different stressors; from financial, familial to academic and even personal stressors.

Upon analysis of their mental health status, majority of the students responded that they find it hard to wind down, struggle to work up the initiative to do things, and are worried and dealing with anxiety symptoms. There was also a smaller degree of agreement that many of the students do not feel appreciated as a person, they struggle to get excited, and have nothing to look forward to. This makes these students suitable candidates for counselling and other forms of psychological treatments; and also, suitable samples for which to carry out assessment of how coping strategies used by post graduate students affect their mental wellbeing.

The study sought after the students' opinions and use of the mental health services offered within the premises of the school and from the responses, there was a high degree of agreement that many of the students consider mental health support services to be important and necessary within school premises. However, despite this, a majority of the respondents had not utilized the mental health support services offered by the university. Less than five percent of the respondents had accessed the mental health services through referrals by others students and those who had accessed the mental health services offered in the school felt that the services were not a good fit for them. This perception that the mental health services offered in the school are not a good fit could explain why most of the respondents had not accessed the mental health services within the institution. This could also imply a need to involve the students in the design and implementation of mental health services offered within the school to ensure the developed interventions are a fit for the post-graduate students.

Correlation analysis was conducted to assess the degree of the relationship between coping strategies and the mental health of post-graduate students and findings were that problem-focused coping strategies have a weak positive and significant relation, that emotion-focused coping strategies have a moderate positive relation, while avoidant coping had a moderate positive relation with the students' mental health. Regression results further clarified the direction of this relationship and regression results were that problem-focused coping had a negative and significant effect on mental health, that emotion-focused coping has a positive and significant effect, and that avoidant coping had a positive and significant effect. These findings were discussed further in the section below.

5.3 Discussion of Findings

This section presents a discussion of the study's main findings. These were presented in line with the study objectives and were compared to findings from other researchers.

5.3.1 Problem-Focused Coping Strategy

The first objective of the study was on the relationship between the problem-focused coping strategy and the mental health of postgraduate students at Strathmore University and based on the correlation analysis, it was confirmed that the relationship is significant, but that the direction of the relationship is negative. These findings imply that problem-focused coping strategies which are mostly action oriented exacerbate mental health illnesses among postgraduate students. These findings are in line with the findings made by Togoh (2019) who confirmed that in some instances, direct coping strategies offer only short-time benefits and a great deal of harm in the long-term. In the U.K, Fluharty, et al., (2021) also confirmed that during the first three months of COVID-19 induced lockdowns, people who used problem-focused and avoidant coping strategies experienced higher depressive and anxiety symptoms, implying that avoidant coping exacerbates a stressor's negative effects on one's mental wellbeing.

These findings that problem-focused coping has negative impacts on students' mental health go against the expectations of the stress and coping theory which stresses that dealing directly with a stressor is the most effective way to address it. The study was, however, unique as it sought after coping strategies used by poor students. The finding that problem-focused coping strategies have negative effects on an individual's mental health also contradicts expectations made by researchers (Zaman & Ali, 2019; Ogoma, 2020; Neufeld and Malin, 2021; Mkumbo, Otieno, and Rufyiriza, 2023) who all revealed a positive effect of problem-focused coping on an individual's mental health. The study by Zaman and Ali (2019), for instance found out that problem focused coping influences mental health through its influence on the autonomy of university students, Neufeld and Malin (2021) linked it to reduced anxiety and stress among medical students, while Ogoma (2020) revealed that problem-focused coping attenuates burnout (depersonalization, emotional exhaustion, and a reduced sense of personal accomplishment) among medical students.

In the study by Onieva-Zafra, et al., (2020), Spanish undergraduate students who used Problem solving practices comprising cognitive restructuring, activity pacing and visualization all reported improved health-related quality of life. Mkumbo et al., (2023) also linked problem

focused coping to the education outcomes of first-year students in Tanzania. Most of the respondents were in agreement that they actively think hard about what steps to take and concentrate their efforts into doing something about the situation they are in, and these factors were shown to improve the mental wellbeing of university students by Neufeld and Malin (2021). In the study, problem focused coping comprising planning, actively coping or seeking instrumental support were revealed to be healthy to medical students. Ogoma (2020) also confirmed that problem-focused coping reduces emotional exhaustion and improves one's sense of personal accomplishment.

There was also moderate agreement that students are actively looking for something good in what is happening, whether it is good or bad. This is a form of positive reinforcement that was identified in the study by Nwadi, et al., (2024) who assessed the influence of cognitive behavior therapy on the stress perceptions of students in vocational training schools. In the study, forms of cognitive restructuring, reinforcement, motivational enhancement, and mood monitoring techniques were shown to significantly improve mental health outcomes. Other researchers, Batte, et al., (2024) also linked reappraisal and relaxation therapy to improved emotional regulation and resilience among adolescent children in Uganda. Actively engaging a stressor was also revealed by Shermeyer, Morrow and Mediate (2019) to improve moods and daily functioning and life of students.

Another strategy that the students confirmed they employed to deal with stress, albeit moderately, was seeking advice or help from other people about what to do about the problem. This form of coping was confirmed to improve people's mental health in studies by Asnani (2021) and Neufeld and Malin (2021). Asnani (2021), for instance, confirmed that positive framing of a problem that cannot be controlled, and seeking help from more experienced people is instrumental to improving disease management and reducing the incidence of depression among women whose children had been diagnosed with sickle-cell disease. Neufeld and Malin (2021) conceded that actively seeking instrumental support improves mental resilience of medical students. Akim, Miima, and Nthusi (2022) pointed out the fact that postgraduate students (peers) may be in a better position to provide the support needed by medical students. While the analysis results confirmed a negative effect of problem-focused coping on the mental health of post-graduate students, much of the empirical evidence suggests that the right application of problem focused coping such as seeking counsel, advice and encouragement from other people should have positive impacts on an individual's mental health. Akim, Miima, and Nthusi (2022) explains that such strategies enable students to accept the gravity of the situation, initiate plans on how to deal with it, and find a way to grow from it. Akim et al.,

(2022) and Mkumbo, et al., (2023) also confirmed that peer support is essential to improving the mental health and resilience of students at all levels of studying.

5.3.2 Emotion-Focused Coping Strategy

The second variable under investigation was on the relationship between the emotion-focused coping strategies on the mental health of postgraduate students of Strathmore University and analysis results revealed a positive relation, with emotion-focused coping having a positive and significant effect on the postgraduate students' mental health. Neufeld and Malin (2021) considered emotion-focused coping to be an adaptive problem-solving strategy that involves adjusting one's feelings and emotional response to a stressor and explained that this strategy should improve one's peace of mind once they accept the state of the stressor's effects. The finding that emotion-focused coping improves one's mental health is as predicted by the stress and coping theory which confirmed that emotion-focused coping is meant to help change how a stressor is perceived, regulate emotions and alleviate stress.

This study's respondents agreed that they have been learning to live with the problem they are facing, a form of active acceptance that was highlighted in the study by Alanazi et al., (2023) together with other emotion-focused coping strategies such as meditation, therapy, acceptance and seeking social support as among the coping strategies that are more useful when the source of stress is out of the individual's control. In the study, nurse-led interventions and active emotional coping strategies comprising acceptance, humour, and spiritual practices were shown to reduce anxiety and depressive symptoms among patients diagnosed with heart failure. In China, Wu (2018) also found a positive effect of emotion-oriented coping comprising therapy and acceptance on the mental health of first-time mothers by increasing their motivation to reduce their drug use.

There was also agreement that many of the students are coping by accepting the reality and turning to meditation and prayer for spiritual support. These forms of coping were valuable during the COVID-19 pandemic according to Babicka-Wirkus, et al., (2021) who revealed that acceptance and other adaptive emotion-based coping strategies had positive impacts on the mental status of students struggling with the anxiety associated COVID-19 restrictions. Batte, et al., (2024) also specified the impact of religious coping and linked it to improved emotional regulation and resilience. Avoidance and emotion-focused coping such as resignation and spiritual focus were linked to an improvement in the mental health of school-going adolescents in Uganda.

While these studies posit that emotion-focused coping improves people's mental wellness, there is also evidence that they can have adverse effects on an individual. Researchers such as Frei (2021) revealed that emotion-oriented coping predicts self-harm among people diagnosed with borderline personality disorder and according to Çapkın and Vatansever (2023), emotion-focused coping increases one's propensity for aggressive outbursts. The study revealed that people with low self-esteem and cognitive skills are more likely to become violent as they would blame themselves for the problem. Acceptance, prayer, humour, and meditation were identified as positive emotional response by Schroer (2023), while wishful thinking, self-blame and venting were confirmed to exert negative effects on a patient struggling with depression. In the current study, a large number of respondents revealed that they were using meditation, acceptance and finding comfort in their religion to cope with stressors. Shermeyer, Morrow and Mediate (2019) linked these practices with increased problem disengagement and had significant negative effects on students' daily functioning.

The finding that it may be better for an individual to accept the gravity of the problem they are experiencing is an important distinction that was observed in the literature review by Alanazi, et al., (2023). According to the findings of the study, using problem-focused and active emotional coping is crucial to improving one's physical and emotional health-related quality of life. However, findings by Orines and Sunga-Vargas (2023) implied that an increase in perceived stress reduces the positive impact of acceptance, meditation coping and other emotion-based coping strategies. Babicka-Wirkus, et al., (2021) also conceded that a high rate of perceived stress can lead to the use of negative emotion coping such as venting and self-blame, which, in turn, exacerbate mental health conditions.

5.3.3 Avoidant-Focused Coping Strategy

The final coping strategy assessed in this study is the avoidant coping strategy whereby the effects of practices such as self-distraction, denial, substance use, and behavioural disengagement on the mental health of postgraduate students of Strathmore University were evaluated. Findings were that these strategies have a positive and significant effect on the mental health of postgraduate students, contradicting the assertions made by the stress and coping theory that this coping style is a maladaptive strategy that should increase stress and anxiety over time. The theory predicts that while avoidant coping behaviours such as procrastination and passive-aggression may provide temporary relief, they do not address the problem and stressor and may exacerbates the stress factor.

From the analysis, the student respondents confirmed that some of the strategies they use to improve their mental wellness involves distancing themselves from the stressor by getting involved in extracurricular activities such as reading, sleeping, shopping, watching movies, playing games, and even swimming. Researchers Byrne (2021) had made similar observations in their study and confirmed that avoiding active confrontation of some problems could be the key to a peace of mind. The study evaluated the influence of technical avoidance mechanisms that enable one to block an online bully and confirmed that these avoidance coping is key to protecting victims from bullies. In the study by Varela et al., (2022), depending on the frequency of cyberbullying, ignoring the bullies or disconnecting from social media were shown to be effective coping mechanisms that can improve adolescent victim's mental wellness. The evidence from these studies confirmed that strategic avoidance approaches can indeed lead to a peace of mind and active avoidance of engaging with stressors.

Few of the respondents further confirmed that they were turning to small projects and work to distract themselves from school stress and according to Onieva-Zafra, et al., (2020), these predict calm and a sense of accomplishment. Despite these, the researches went on to confirm that many students deploy harmful practices such as self-criticism, wishful thinking and social withdrawal which negatively influence their mental wellbeing. Melodia et al., (2020) also revealed that distracting oneself through playing video games is key to relieving pressure, reducing stress and improving one's acceptance of a stressing event.

However, while these studies, and the current find a positive effect of avoidance coping, these findings contradict the observations made by Khan (2023), Bartone (2020), Onieva-Zafra, et al., (2020), and others whose findings all confirmed that avoidance strategies comprising self-criticism, wishful thinking and social withdrawal all have significant negative effects on stress outcomes. According to Khan (2023), for instance, avoidance strategies such as substance use have a negative effect of on students' motivation and academic performance. Bartone (2020), in research that was unique to army soldiers who experienced post-traumatic combat also linked avoidance coping with increased depressive symptoms, anxiety and likelihood of violent outbursts.

Similarly, Danielson, et al., (2024) linked avoidant coping with depressive symptoms and the onset of problematic drinking. In the study, people who relied on social withdrawal after experiencing a traumatic event experienced increased stress and signs of depressive symptoms. The negative effect of this form of social isolation was also reported to exacerbate mental illnesses in the study by Melodia et al., (2020) which revealed that while gaming can help alleviate stress, use of gaming as a form of escapism can lead to the development of problematic

gaming which increases depressive, musculoskeletal and psychosomatic symptoms. From these studies, it is clear that different types of avoidant coping have different effects on one's mental wellbeing, with elements of self-blame, substance abuse and denial predicting reduced mental wellness, and behavioural disengagement, active avoidance predicting improved mental health. Moreover, it is clear that the effect of avoidant coping differs depending on the frequency, severity and degree of control of the patient/victim.

5.4 Conclusions

5.4.1 Problem-Focused Coping Strategy

From the results of the study, the study concludes that Problem Focused Coping strategies comprising planning, active problem-solving, cognitive restructuring and positive reframing have a negative and significant effect on the mental health of postgraduate students of Strathmore University. Specifically, concentrating efforts on thinking about what to do to confront the stressor, coming up with a strategy, actively engaging the problem, and positive reinforcement were shown to improve mental health while seeking social support and advice from other people did not improve the post graduate student's mental health.

5.4.2 Emotion-Focused Coping Strategy

Based on the results of the second study objective, the study concludes that emotion-focused coping strategies involving relaxation techniques, meditation, acceptance, use of humour, and religious dependence have a positive and significant effect on the mental health of postgraduate students of Strathmore University. Specifically, the study concludes that while accepting and learning to live with the stressor, expressing negative feelings, praying and meditating predicts improved mental health, venting, self-blame and making fun of the situation does not improve post graduate student's mental health.

5.4.3 Avoidant-Focused Coping

Analysis of the final coping strategy reveals that avoidant-focused coping comprising active denial of the problem, behavioural disengagement, and self-blame have a positive and significant effect on the mental health of postgraduate students of Strathmore University. Specifically, the study concludes that while thinking less and less about a stressor, distracting oneself from a stressor, and even using technical means to block an active stressor improves student's mental health, drinking alcohol, using games as escape mechanisms, giving up, active

denial of the problem and refusing to accept the gravity of a situation all increase stress, anxiety, and signs of depression.

5.5 Recommendations

From the study's conclusions, it is clear that while postgraduate students experience a lot of stress that contribute to cases of increased mental distress, various effective mechanisms exist. The following recommendations can be drawn from the findings of the study.

5.5.1 Problem-Focused Coping Strategy

This study confirmed that postgraduate students at Strathmore University rarely access the mental health programs and counsellors offered in the school and its first recommendation is that students make use of the services even if they feel that these programs are not a strategic fit with their needs. The study further recommends that postgraduate students feel comfortable to engage their problem with more experienced members of the faculty and staff as these can provide advice that can help alleviate a stress factor. The study also calls on the university to guarantee elements of intervention fit by involving students in the design of these interventions and by ensuring an integrated approach comprising privacy guarantees and presence of professionally accredited counsellors to psycho-educate students on the main signs of depression and functional coping strategies that students can use to cope with stress in school.

5.5.2 Emotion-Focused Coping Strategy

The study findings confirm that Emotion-Focused Coping Strategies improve postgraduate student's mental health and this study recommends that students be educated on how best to use adaptive emotion coping strategies such as relaxation techniques, acceptance and use of humor to address stress. The study also recommends that the school promotes the use of adaptive emotion-focused coping strategies comprising meditation, acceptance, expressing negative feelings, prayer, and learning to live with the stressor to curb the growing mental health crisis within Kenyan universities. The study further recommends that students avoid the used of destructive emotional reactions such as venting, substance abuse and self-harm which were shown to increase mental stress and psychological challenges.

5.5.3 Avoidant-Focused Coping

This study observed that avoidant coping improves mental health of university students and it recommends that the students should deploy these strategies, but only when the problem can be avoided or ignored. The study calls for the university to provide training initiatives to inform students on the technical strategies that can be used to mitigate stressors. The study further recommends that students engage in a host of extracurricular activities such as sports, dancing and acting or learning new skills as a means of escaping their struggles, reducing pressure and stress factors. The study further calls on the university to design individual and group-based structured interventions to coach students' on how they can effectively manipulate a stressor, and enhance their adaptive coping skills while minimizing the use maladaptive coping styles which exacerbate mental problems.

5.6 Limitations of the Study

The results of this study confirm that different types of coping strategies have different effects on the mental health of postgraduate students. However, these findings are limited to coping strategies used by postgraduate students in Strathmore University and its findings cannot be generalized to the entire population of university students in Kenya. The study was also limited in its approach which was descriptive in nature. A more experimental study could untangle the differences in approaches used by different students and how they affect their mental wellbeing.

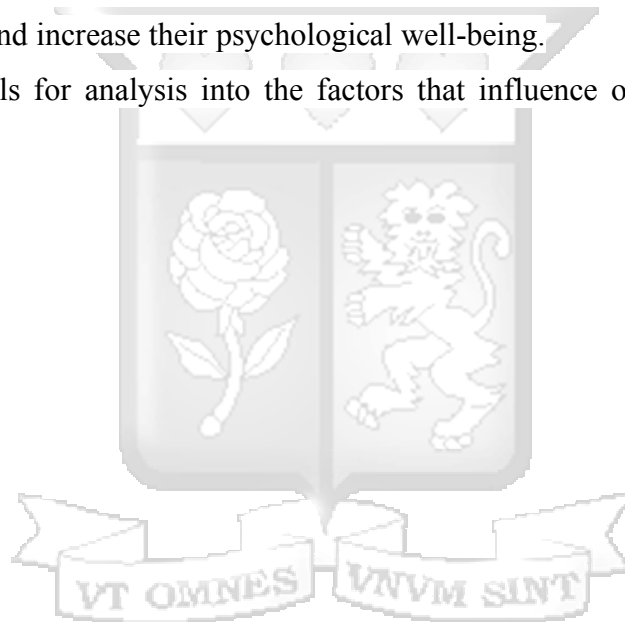
5.7 Areas for Further Studies

This study recognizes that there is a need for further analysis into the relationship between the type of stressor, its influencing factors, coping strategies available and the effects of these outcomes on mental health over time. This study calls for more analysis into how students deal with specific stressors such as cyberbullying or academic and financial worries they face. Moreover, this study recognizes the need to assess how different demographics of post graduate students such as their age, type and duration of course, their sense of control, and spiritual beliefs influence the type of coping strategy employed and its effect on student's psychological well-being. This could be instrumental to designing interventions for specific types of students; such as interventions for those in technical and those in less technical courses. This will provide more information regarding how different types of interventions influence the mental health

outcomes of students attending different types of courses, while also filling a current research gap.

The study also calls for analysis into how coping strategies influence the mental health outcomes of students in lower levels of upper learning such as first years who also face numerous challenges adjusting to adult life in school. Such an analysis would improve our understanding of how coping strategies influence the mental health of students with different experiences in terms of the level of study and even institution they are studying in. The study also calls for analysis into the coping strategies used by higher education students in multiple institutions to increase the findings generalizability. The study also recognizes the importance of cognitive restructuring interventions on student's self-efficacy and calls for analysis into the moderating influence of such interventions on student's perception of stressors and their ability to manage the stress and increase their psychological well-being.

The study further calls for analysis into the factors that influence one's choice of coping strategies.



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APPENDICES

Appendix I: Participant Information and Consent Form

Title of Study

Mental health status and coping strategies of postgraduate students, attending Strathmore University, Nairobi, Kenya

PRINCIPAL

Name: Laura Bonareri Angwenyi

Department: Strathmore Business School

Address: P.O Box Nairobi, Kenya

Phone: 0700595475

Email: laura.bonareri@strathmore.edu

INVESTIGATOR

PURPOSE OF STUDY

A research study is being conducted among postgraduate students and you are being requested to participate. It is crucial for you to be cognizant of why the research is being conducted and what it will entail, before you decide to participate in this study.

The following information has been provided, do read through it carefully. If there is any area that is not clear or if you would like more details, feel free to ask the researcher.

The objective of this study is to look at the mental health status and coping strategies of postgraduate students at Strathmore University.

STUDY PROCEDURES

The study participant is administered with a survey questionnaire and checklist assessments in English. There are three sets of questionnaires that look at the postgraduate student's demographics, mental well-being and coping strategies. The questionnaire is accessible via a link shared electronically and will take approximately 20 - 25 minutes to complete.

RISKS

The risks to participate in the study are minimal. However, every effort was made to ensure that the information obtained from the participants is kept securely and de-identified so as not to link any information to a particular study participant. All results will be coded so as not to

match any individual responses to any publications. There are no foreseeable risks associated with taking part in this study.

You are at liberty to decline to answer any or all questions and you may discontinue your involvement at any time.

BENEFITS

The study participants will not be reimbursed for their time. However, the information obtained may be used to inform the design and delivery mental health support services for post-graduate students at Strathmore University and other universities. It will also add to the pool of research on mental health.

CONFIDENTIALITY

All efforts have been made to keep your identity confidential with the anonymous responses to this study. The following measures have been taken to protect the identity of respondents:

- Allocating unique code numbers for study participants which will be used on all research documentation.
- Storing any identifying study participant information locked in an electronic folder that is only assessable to the researcher.

In specific situations that include, but may not be limited to, incidents of risk of self-harm, suicide and abuse, the researcher is legally obliged to report the specific incidence. In such a case, participant data and details may be shared with an aim of assisting the study participant.

CONTACT INFORMATION

The researchers contact has been provided on the first page for communication purposes to areas limited to that under study. This relates to questions pertaining to the study or any adverse experience as a direct result of taking part in this study. If you have questions regarding your rights as a research participant, or if problems arise which you do not feel you can discuss with the Primary Investigator, please contact Strathmore University Institutional Ethics Review Committee (SU-IERC)

VOLUNTARY PARTICPATION

Participation in this study is voluntary. To proceed with the study, you are requested to sign a consent form below electronically. Do note that you are at liberty to withdraw from the study at any point of time, even after the consent form is signed.

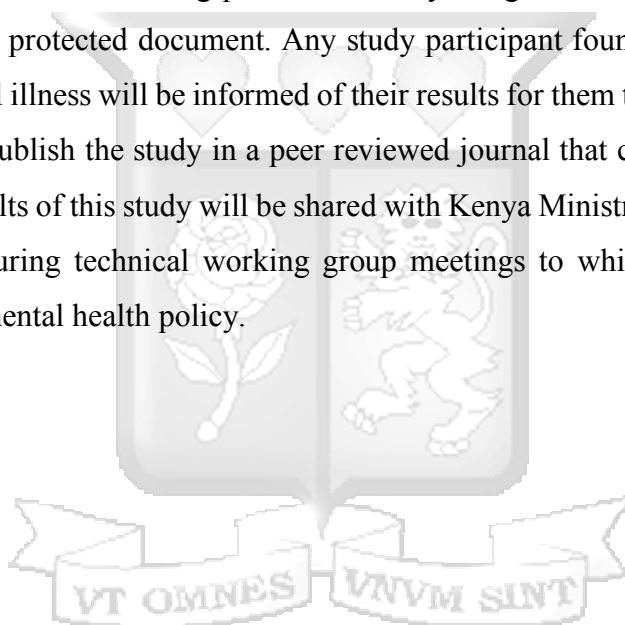
Consent.

I understand that I received an emailed a copy of this consent form.

I voluntarily agree to take part in this study

DISSEMINATION OF RESULTS

All participants who consent to taking part in this study are given an option to receive their results via a password protected document. Any study participant found to have moderate to severe forms of mental illness will be informed of their results for them to seek further support. The researcher shall publish the study in a peer reviewed journal that can be assessed online. Additionally, The results of this study will be shared with Kenya Ministry of Health – Division of Mental health – during technical working group meetings to which the researcher is a member – to inform mental health policy.



Appendix II: Study Questionnaire

Socio Demographics

For each of these, tick one the most applies to you.

1. Master program

- | | |
|---|---|
| <input type="checkbox"/> Master in Business Administration | <input type="checkbox"/> Master of Management in Agribusiness |
| <input type="checkbox"/> Master in Healthcare Management | <input type="checkbox"/> Master of Science in Development Finance |
| <input type="checkbox"/> Master in Public Policy and Management | <input type="checkbox"/> Master of Commerce |

2. Year of study

- | | |
|---------------------------------------|---------------------------------------|
| <input type="checkbox"/> Year one (1) | <input type="checkbox"/> Year two (2) |
|---------------------------------------|---------------------------------------|

- Year three (3)

3. Mode of study

- | | |
|----------------------------------|----------------------------------|
| <input type="checkbox"/> Modular | <input type="checkbox"/> Evening |
|----------------------------------|----------------------------------|

4. Gender

- | | |
|-------------------------------|---------------------------------|
| <input type="checkbox"/> Male | <input type="checkbox"/> Female |
|-------------------------------|---------------------------------|

5. Age

- | | |
|--|---|
| <input type="checkbox"/> Below 30years | <input type="checkbox"/> 30 – 35 years |
| <input type="checkbox"/> 35 – 40 years | <input type="checkbox"/> 40-45 years |
| <input type="checkbox"/> 45 – 50 years | <input type="checkbox"/> Above 50 years |

6. Family status

- | | |
|--|----------------------------------|
| <input type="checkbox"/> Unmarried | <input type="checkbox"/> Married |
| <input type="checkbox"/> Single parent | <input type="checkbox"/> Widowed |

7. Employment status

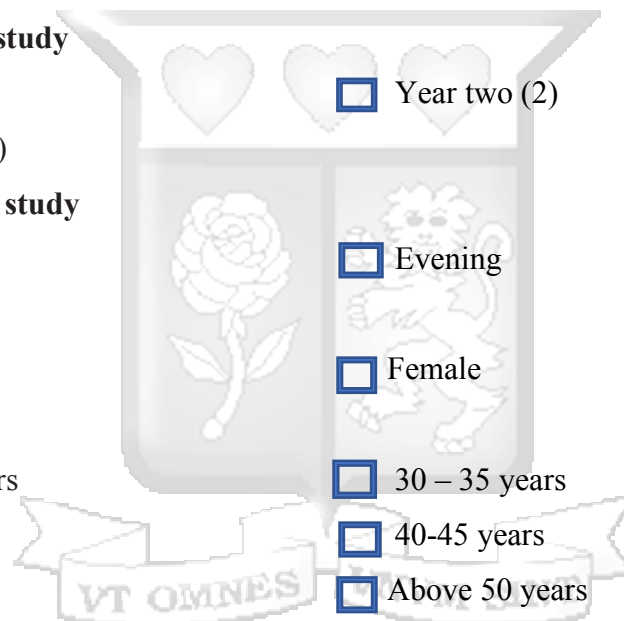
- | | |
|-------------------------------------|--|
| <input type="checkbox"/> Employed | <input type="checkbox"/> Self-employed |
| <input type="checkbox"/> Unemployed | |

8. Living with

- | | |
|----------------------------------|---------------------------------|
| <input type="checkbox"/> Alone | <input type="checkbox"/> Family |
| <input type="checkbox"/> Friends | |

9. Tuition cost payment

- | | |
|---|--------------------------------------|
| <input type="checkbox"/> Self-sponsered | <input type="checkbox"/> Scholarship |
|---|--------------------------------------|



Awareness and uptake of mental health support services

1. Have you ever utilized mental health support services offered by the university?

- Yes No

2. If yes, how can you describe the mental health services you received?

- Excellent Good
 Not a good-fit for me

3. Have you ever utilized mental health support services?

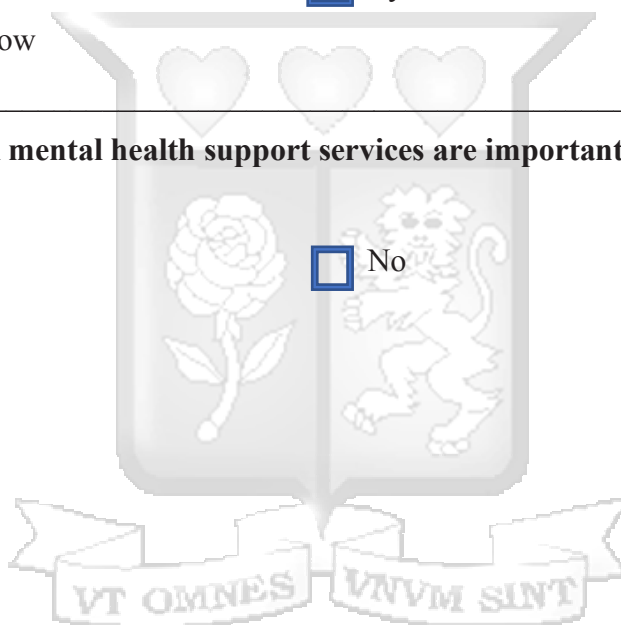
- Yes No

4. If yes, how did you access them?

- Referral By one-self
 Other, explain below

5. Do you think mental health support services are important for postgraduate students?

- Yes No



Depression Anxiety and Stress Scale (DASS21)

DASS21

Name:

Date:

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you **over the past week**. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

- 0 Did not apply to me at all
- 1 Applied to me to some degree, or some of the time
- 2 Applied to me to a considerable degree or a good part of time
- 3 Applied to me very much or most of the time

1 (s)	I found it hard to wind down	0	1	2	3
2 (a)	I was aware of dryness of my mouth	0	1	2	3
3 (d)	I couldn't seem to experience any positive feeling at all	0	1	2	3
4 (a)	I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5 (d)	I found it difficult to work up the initiative to do things	0	1	2	3
6 (s)	I tended to over-react to situations	0	1	2	3
7 (a)	I experienced trembling (e.g. in the hands)	0	1	2	3
8 (s)	I felt that I was using a lot of nervous energy	0	1	2	3
9 (a)	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10 (d)	I felt that I had nothing to look forward to	0	1	2	3
11 (s)	I found myself getting agitated	0	1	2	3
12 (s)	I found it difficult to relax	0	1	2	3
13 (d)	I felt down-hearted and blue	0	1	2	3
14 (s)	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15 (a)	I felt I was close to panic	0	1	2	3
16 (d)	I was unable to become enthusiastic about anything	0	1	2	3
17 (d)	I felt I wasn't worth much as a person	0	1	2	3
18 (s)	I felt that I was rather touchy	0	1	2	3
19 (a)	I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat)	0	1	2	3
20 (a)	I felt scared without any good reason	0	1	2	3
21 (d)	I felt that life was meaningless	0	1	2	3

Brief COPE inventory

Brief COPE

These items deal with ways you've been coping with the stress in your life since you began your postgraduate studies. There are many ways to try to deal with problems. These items ask what you've been doing to cope with this one. Each item says something about a particular way of coping.

I want to know to what extent you've been doing what the item says. How much or how frequently. Don't answer on the basis of whether it seems to be working or not—just whether or not you're doing it.

Use these response choices.

Try to rate each item separately in your mind from the others.

Make your answers as true FOR YOU as you can using the below rating.

agree, fully agree, neither agree nor disagree, disagree, and fully disagree

1 = fully disagree

2 = disagree

3 = neither agree nor disagree

4 = agree

5 = fully agree

1. I've been turning to work or other activities to take my mind off things. _____
2. I've been concentrating my efforts on doing something about the situation I'm in. _____
3. I've been saying to myself "this isn't real." _____
4. I've been using alcohol or other drugs to make myself feel better. _____
5. I've been getting emotional support from others. _____
6. I've been giving up trying to deal with it. _____
7. I've been taking action to try to make the situation better. _____
8. I've been refusing to believe that it has happened. _____

9. I've been saying things to let my unpleasant feelings escape. _____
10. I've been getting help and advice from other people. _____
11. I've been using alcohol or other drugs to help me get through it. _____
12. I've been trying to see it in a different light, to make it seem more positive. _____
13. I've been criticizing myself. _____
14. I've been trying to come up with a strategy about what to do. _____
15. I've been getting comfort and understanding from someone. _____
16. I've been giving up the attempt to cope. _____
17. I've been looking for something good in what is happening. _____
18. I've been making jokes about it. _____
19. I've been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping. _____
20. I've been accepting the reality of the fact that it has happened. _____
21. I've been expressing my negative feelings. _____
22. I've been trying to find comfort in my religion or spiritual beliefs. _____
23. I've been trying to get advice or help from other people about what to do. _____
24. I've been learning to live with it. _____
25. I've been thinking hard about what steps to take. _____
26. I've been blaming myself for things that happened. _____
27. I've been praying or meditating. _____
28. I've been making fun of the situation. _____

Scales are computed as follows (with no reversals of coding):

Coping strategy	Item	Item
Self-distraction	1	19
Active coping	2	7
Denial	3	8
Substance use	4	11
Use of emotional support	5	15

Use of instrumental support	10	23
Behavioral disengagement	6	16
Venting	9	21
Positive reframing	12	17
Planning	14	25
Humor	18	28
Acceptance	20	24
Religion	22	27
Self-blame	13	26

Appendix III: Institutional Ethics Review Permit



12th April 2024

Dr Angwenyi Laura,
bonarerimk@gmail.com

Dear Dr Angwenyi,

RE: Mental Health Status and Coping Strategy of Post-graduate Students at Strathmore University, Nairobi Kenya

This is to inform you that SU-ISERC has reviewed and **approved** your above **SU-masters** research proposal. Your application reference number is **SU-ISERC1992/24**. The approval period is from **12th April 2024 to 11th April 2025**.

This approval is subject to compliance with the following requirements:

- i. Only approved documents including (informed consents, study instruments, MTA) will be used.
- ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-ISERC.
- iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-ISERC within 72 hours of notification.
- iv. Any changes anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-ISERC within 72 hours.
- v. Clearance for the export of biological specimens must be obtained from relevant institutions.
- vi. Submission of a request for renewal of approval at least 60 days prior to the expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- vii. Submission of an executive summary report within 90 days of completion of the study to SU-ISERC.

Before commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology, and Innovation (NACOSTI) <https://research-portal.nacosti.go.ke/> and obtain other clearances needed.

Yours sincerely,

Mr Ambrose Rachier,
Chairperson; SU-ISERC



Appendix IV: NACOSTI Research Permit

 REPUBLIC OF KENYA	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
Ref No: 383882	Date of Issue: 10/November/2023
RESEARCH LICENSE	
	
<p>This is to Certify that Dr., Laura Bonareri Oyiengo of Strathmore University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: Influence of coping strategies on mental health of postgraduate students, Kenya for the period ending : 10/November/2024.</p>	
License No: NACOSTI/P/23/31320	
383882	
Applicant Identification Number	Director General NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
	Verification QR Code
	
<p>NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.</p>	
See overleaf for conditions	

THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013 (Rev. 2014)
Legal Notice No. 108: The Science, Technology and Innovation (Research Licensing) Regulations, 2014

The National Commission for Science, Technology and Innovation, hereafter referred to as the Commission, was established under the Science, Technology and Innovation Act 2013 (Revised 2014) herein after referred to as the Act. The objective of the Commission shall be to regulate and assure quality in the science, technology and innovation sector and advise the Government in matters related thereto.

CONDITIONS OF THE RESEARCH LICENSE

1. The License is granted subject to provisions of the Constitution of Kenya, the Science, Technology and Innovation Act, and other relevant laws, policies and regulations. Accordingly, the licensee shall adhere to such procedures, standards, code of ethics and guidelines as may be prescribed by regulations made under the Act, or prescribed by provisions of International treaties of which Kenya is a signatory to
2. The research and its related activities as well as outcomes shall be beneficial to the country and shall not in any way;
 - i. Endanger national security
 - ii. Adversely affect the lives of Kenyans
 - iii. Be in contravention of Kenya's international obligations including Biological Weapons Convention (BWC), Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO), Chemical, Biological, Radiological and Nuclear (CBRN).
 - iv. Result in exploitation of intellectual property rights of communities in Kenya
 - v. Adversely affect the environment
 - vi. Adversely affect the rights of communities
 - vii. Endanger public safety and national cohesion
 - viii. Plagiarize someone else's work
3. The License is valid for the proposed research, location and specified period.
4. The license any rights thereunder are non-transferable
5. The Commission reserves the right to cancel the research at any time during the research period if in the opinion of the Commission the research is not implemented in conformity with the provisions of the Act or any other written law.
6. The Licensee shall inform the relevant County Director of Education, County Commissioner and County Governor before commencement of the research.
7. Excavation, filming, movement, and collection of specimens are subject to further necessary clearance from relevant Government Agencies.
8. The License does not give authority to transfer research materials.
9. The Commission may monitor and evaluate the licensed research project for the purpose of assessing and evaluating compliance with the conditions of the License.
10. The Licensee shall submit one hard copy, and upload a soft copy of their final report (thesis) onto a platform designated by the Commission within one year of completion of the research.
11. The Commission reserves the right to modify the conditions of the License including cancellation without prior notice.
12. Research, findings and information regarding research systems shall be stored or disseminated, utilized or applied in such a manner as may be prescribed by the Commission from time to time.
13. The Licensee shall disclose to the Commission, the relevant Institutional Scientific and Ethical Review Committee, and the relevant national agencies any inventions and discoveries that are of National strategic importance.
14. The Commission shall have powers to acquire from any person the right in, or to, any scientific innovation, invention or patent of strategic importance to the country.
15. Relevant Institutional Scientific and Ethical Review Committee shall monitor and evaluate the research periodically, and make a report of its findings to the Commission for necessary action.

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