

**NATURE-BASED INTERVENTIONS ON MANAGING ACUTE ANXIETY
SYMPTOMS AND ENHANCING RESILIENCE AMONG UNIVERSITY OF
BENIN STUDENTS.**

BY

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BENIN CITY**

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**A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF HUMAN
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CERTIFICATION

I certify that this project was carried out by ISIAKA LATIFAT MOJIRAYO with Matriculation No: EDU2102455 in the Department of Human Kinetics and Sports Science, University of Benin, Benin City, in partial fulfillment of the requirements for the award of Bachelor of Science (Education) degree in Human Kinetics and Sports Science.



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DEDICATION

This project is dedicated to Almighty Allah for His mercy, grace and guidance throughout my academic journey of this study. His faithfulness has been a source of strength and inspiration in every stage of this work. I also dedicated this project to my late father, Mr . Isiaka Adeniyi, and my beloved mother, Mrs. Ajoke Isiaka Adeniyi whose love, sacrifice, and prayers have been the foundation of my success.. Your unwavering support has been a great source of motivation.

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ABSTRACT

This study examined the level of knowledge of student towards the use of nature-based intervention in managing anxiety; assessed the level of awareness among the University of Benin students on Nature-Based Interventions (NBIs) for managing anxiety and enhancing resilience; and determined the perceived effectiveness of implementing Nature-Based Interventions in promoting mental health strategy within the University of Benin. These were with a view to provide information on the impact of nature-based intervention on the perceived anxiety management among students of the University of Benin.

The study utilised the descriptive research design. Data for the study were collected from both primary and secondary sources. Primary data were sourced through the administration of questionnaire. A total number of 360 respondents which were randomly selected across all faculties from 60,000 UNIBEN students that made up the study population. Secondary data were sourced from the Internet materials, and journal articles. The data collected were analysed using statistical packages for social sciences (SPSS) and Pearson statistical analysis.

Findings revealed that students have informal contact with nature-based activities. Also, the study established that students at the University of Benin are moderately engaging in NBIs to manage anxiety and improve their resilience, with the majority reporting awareness of NBIs and recognizing their benefits, especially in managing stress and emotional well-being. The study showed that greater engagement in Nature-Based Interventions (NBIs) significantly improves students' mental health, particularly in managing anxiety. Students not only perceive NBIs as effective, but this perception is strongly linked to their actual participation in nature-based activities. Therefore, integrating NBIs into campus mental health strategies can enhance student well-being and should be prioritized.

The study concluded that formal education and structured integration of NBIs into mental health strategies are essential to maximize their impact.

CHAPTER ONE

INTRODUCTION

Background to the Study

Anxiety has become a prevalent health concern among university students worldwide, and this trend is no different in Nigeria. In UNIBEN, the students are regularly engaged in solving problems of an academic nature, social challenges, and personal uncertainties that make them anxious (Aigbokhaevbo, 2024). While pharmacotherapy and cognitive behavioural therapy have been widely used, increasing interest in complementary approaches utilizing the therapeutic potential of the natural environment is evident. NBIs, such as walking in nature, gardening, and mindfulness activities conducted outdoors, are emerging as effective ways to manage anxiety and improve psychological resiliency.

Studies have shown that exposure to natural environments can reduce stress and anxiety. One such study, led by academics at the University of York, discovered that outdoor nature-based activities significantly improved the mood of participants and reduced anxiety (Coventry, 2021). Interventions that lasted between 20 and 90 minutes over 8 to 12 weeks produced the most positive outcomes, with gardening and exercises showing most promise. A systematic review and meta-analysis of studies assessing nature

exposure during the COVID-19 pandemic showed that access to gardens was associated with lower odds of depression and anxiety, thus suggesting that nature exposure could be a promoter of psychological resilience during crises (Patwary, 2022).

Nature-based interventions can be defined as activities that involve direct or indirect engagement with natural environments, with the intention of improving psychological well-being. The interventions range from guided nature walks to horticultural therapy and nature-based mindfulness exercises. That is, the theoretical underpinning of NBIs is based on several key psychological and environmental theories that explain the mechanism by which the exposure to nature influences mental health. For instance, SRT argues that natural environments elicit positive emotional responses linked to reductions in stress and anxiety. Also, Kaplan and Kaplan's ART posits that natural environments are rich in "soft fascinations" things that effortlessly capture attention, allowing cognitive resources to replenish and reduce mental fatigue associated with anxiety (Ulrich et al., 1991; Kaplan & Kaplan, 1989). Wilson's biophilia hypothesis asserts a human innate affinity for nature, and interactions with natural environments can promote psychological well-being.

Empirical research demonstrated the effectiveness of NBIs in reducing anxiety and enhancing resilience among students at universities. For example, Roberts et al. (2019) found that depressive moods decreased significantly after short-term exposure to

natural environments. In addition, nature-based guided imagery reduced state anxiety levels effectively and proved to be a cost-effective and accessible intervention for students (Nguyen & Brymer, 2018). Furthermore, nature mindfulness training in groups was related to lower anxiety and better coping for college students (Smith, Johnson, & Thompson, 2023). The benefits of NBIs could go beyond reduction in anxiety. Nature-based activities were related to improved mood, improved attention, and higher levels of physical activity. In one such study, North Carolina State University found that college students' mental health significantly improved when they engaged in bird-watching, a nature-based activity. This group had the highest improvement in well-being compared to other groups, indicating the potential of accessible nature activities in urban settings.

In the Nigerian context, NBIs are fast becoming integrated into mental health strategies. The Tertiary Institution Mental Health Programme-University of Ilorin, TIM-Healthcare, is typical of a multidisciplinary initiative that integrates nature-based activities for the implementation of students' mental health needs. Buhari, Olalusi, Alatishe-Muhammad, Ajokpaniovo, Ogunmodede, & Bolarinwa (2024) identified other organizations such as SustyVibes, which are harnessing environmental and mental health awareness through nature-based activities across campuses in Nigeria. At UNIBEN, incorporating NBIs into students' support services is a likely area for intervention into anxiety. The UNIBEN University campus is characterized by green open spaces and natural environments that provide an appropriate setting for such interventions. Nature-

based activities in the form of guided nature walks, mindfulness practices, gardening initiatives, and animal-assisted therapies are some of the proposed activities. These activities would require liaising between university administrators, mental health professionals, and students to get the benefits from nature exposure as an important step toward successful integration.

Statement of the Problem

The prevalence of mental health challenges among university students has increased considerably in recent years; as such, Nigerian universities have not been excluded from these prevalent conditions. Students at UNIBEN experience a myriad of stressors: stress emanating from academic workload, financial instability, family expectations, social pressures, and uncertainty about the future. This often culminates in symptoms of acute anxiety, likely to negatively influence students' academic performance, social relationships, and overall psychological well-being if left unaddressed. At UNIBEN, the institutionally provided counselling units and health centres are underutilized, partly because of stigma, lack of awareness, and limited resources. New, innovative, and accessible interventions-which do not carry a stigma-are therefore urgently called for both to manage anxiety and enhance resilience.

While clinical interventions, such as psychotherapy and medication, are effective for some, these methods remain inaccessible to the average student due to financial

constraints and long waiting times, not to mention cultural reluctance toward formal psychological treatment. In this respect, there is increased global interest in the potential of complementary strategies that may support mental health by way of engagement with the natural environment. NBIs, which involve activities such as nature walks, green exercise, therapeutic gardening, and outdoor mindfulness practices, have been shown to reduce symptoms of anxiety and improve emotional resilience among university populations abroad. However, empirical evidence of the application and effectiveness of such interventions within the Nigerian university system, of which UNIBEN is a part and has sufficient green and open spaces under-utilized for such purposes, is scant.

This places the University of Benin in a good position to implement NBIs, considering the natural features at the institution, such as the university's botanical garden, green walkways, and recreational fields. If well utilized, these could be a strong tool in the enhancement of the mental health status of students without the stigma associated with clinical intervention. However, lack of structured nature-based mental health programs, coupled with a lack of awareness about their benefits, leaves such opportunities largely unexplored. There is also a gap in knowledge concerning how such interventions interact with cultural and environmental factors specific to the Nigerian context, thus further underlining the need for localized research.

This study, therefore, seeks to investigate the role that Nature-Based Interventions can play in managing acute anxiety symptoms and enhancing psychological resilience among students at the University of Benin. It aims to fill this research gap by investigating perceptions, accessibility, and perceived effectiveness of NBIs within this academic environment.

Research Questions

The following research questions were formulated for the successful completion of the study:

- i. What is the level of knowledge of students towards the use of Nature-based intervention in managing anxiety?
- ii. To what extent do students at the University of Benin use of Nature-Based Interventions (NBIs) for managing anxiety and enhancing resilience?
- iii. What is the perceived effectiveness of implementing Nature-Based Interventions on students' anxiety management within the University of Benin?

Hypothesis

The following hypotheses were formulated and tested at the 0.05 level of significance:

H₀: There is no significant relationship between the Nature-Based Interventions (NBIs) and perceived anxiety management.

Purpose of the Study

The purpose of the study was to investigate the impact of nature-based intervention on the perceived anxiety management among students of the University of Benin. Specifically, to

- i. Examine the level of knowledge of student towards the use of nature-based intervention in managing anxiety.
- ii. Assess the level of awareness among the University of Benin students on Nature-Based Interventions (NBIs) for managing anxiety and enhancing resilience
- iii. Determine the perceived effectiveness of implementing Nature-Based Interventions in promoting mental health strategy within the University of Benin.

Significance of the Study

This study would be of benefit to the students, the university and the policy makers concerning the research topic in question. The study will be able to establish nature-based intervention as a viable alternative to traditional methods of anxiety management among students. As anxiety remains one of the most common psychological disorders affecting students' academic performance and overall well-being, identifying innovative approaches like Nature-Based Interventions (NBIs) can offer timely and culturally appropriate solutions, therefore, the study will help the government to

formulate policies that will encourage the promotion of Nature based projects that are relevant in the Nigeria institutions.

Findings of the study will also offer a potential pathway among students to improve mental health without the stigma often associated with traditional counseling/psychiatric treatment. NBIs are often informal and can be embedded into daily routines, which renders them appealing and practical for young adults who are facing academic and social stressors. The study will also present how students are aware of, perceive, and are willing to take part in such interventions, thereby helping to design on-campus interventions regarding mental health that are more engaging and acceptable.

The findings also recommend evidence-based advice to university administrators, counselors, and policy-makers for the integration of NBIs into student support services. Facilities within the University of Benin, such as green spaces and botanical gardens, are still grossly underutilized for therapeutic benefits. This study may, therefore, be useful in helping institutions transform such facilities into functional wellness areas by upgrading infrastructure while advancing student health.

Finally, this study contributes to the wider literature in the fields of psychology, public health, and environmental studies through its contextualization within the Nigerian higher education system. It lays the foundation for subsequent studies across other universities and points at novel directions toward mental health interventions that are to

be sustainable, eco-friendly, and responsive to the unique needs of the university population in Nigeria.

Scope and Delimitation of the Study

This study is delimited to the students in the University of Benin. The variables of the study covered the prevalent level of anxiety among students: the awareness of the Nature-based intervention on anxiety management; the effectiveness of implementing Nature-based intervention in promoting mental health within the University of Benin.

Definition of Terms

Nature-Based Interventions (NBIs): In this study, NBIs refer to structured or unstructured activities that involve direct interaction with natural environments to promote ecological well-being. Examples include nature walks, gardening, outdoor mindfulness, spending time in green spaces, or any therapeutic use of the natural landscape available within the University of Benin campus.

Acute Anxiety Symptoms: These are intense, short-term emotional and physiological responses to perceived stress or threat, typically characterised by rapid heartbeat, nervousness, restlessness, difficulty concentrating, and a sense of impending doom. In this study, acute anxiety symptoms will be assessed based on students' self-reported experiences using standardised ecological scales.

Mental Health: Mental health in this study encompasses emotional, psychological, and social well-being, influencing how students think, feel, and behave. It includes the presence or absence of symptoms such as anxiety, stress, and depression, and the overall capacity to cope with academic and social life.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter will review literature related to the study. It will be organized under the following sub-headings:

Conceptual Review

Theoretical Framework

Students' awareness of Nature-based intervention in anxiety management

Utilization of Nature-based Intervention in Anxiety Management among Students

Nature-based intervention and Benefits on Students' anxiety management

Psychological factors affecting students' anxiety level

Empirical Reviews

Summary of Reviewed Related Literature

Conceptual Review

Nature-based interventions include structured exposure or unstructured exposure to natural environments, such as green spaces, gardens, or guided nature walks. NBIs are based on the biophilia hypothesis, postulated by Wilson in 1984, that humans have an innate tendency to connect with nature and other forms of life. Regular contact with

natural settings may reduce levels of stress, improve emotional regulation, and promote good mental health. In support, some recent studies suggest that nature walks can reduce psychological distress among students by as much as (Zachery 2024). Hence, NBIs are considered one of the major independent variables affecting the psychological states of students, specifically anxiety levels.

Anxiety among university students is an increasing concern and is usually associated with academic pressure, money matters, and social expectations. In this context, the anxiety of the student is the main dependent variable-measured with symptoms like excessive worry, restlessness, and impaired concentration. The environmental factors, especially access to nature, are included as non-pharmacological anxiety reduction methods. For example, it has been found that nature-based mindfulness interventions reduce anxiety effectively among the college students (Luke et al, 2023).

Mediating variables include the frequency of exposure and type of nature-based activity, which are crucial in helping to understand the effectiveness of the intervention. For instance, students exposed to regular nature-based activities, such as daily or weekly walks through green spaces or gardening, are likely to show increased anxiety reduction compared to students with limited or no exposure. Additionally, the types of activities-whether passive, such as viewing nature, or active, such as participating in gardening or nature walks-can influence the degree of psychological benefit that results from the

intervention. Research has suggested that even brief nature-based mindfulness interventions can be efficacious in reducing anxiety among college students (Luke et al., 2023).

Lastly, individual demographic characteristics among students, like gender and academic level-whether undergraduate or postgraduate-may have a moderating effect on the influence of NBIs on anxiety. For instance, female students could exhibit higher baseline levels of anxiety but might also demonstrate greater improvement from NBIs, considering their typically greater receptivity to emotional interventions. Similarly, postgraduate students might experience more workload pressure that affects the magnitude of benefit brought about by NBIs. The proposed conceptual framework posits that nature-based interventions, driven appropriately by type, frequency, and characteristics of the participants, hold measurable potential to improve anxiety management among students.

Theoretical Framework

According to Attention Restoration Theory (ART), developed by Kaplan and Kaplan in 1989, exposure to natural environments helps restore an individual's directed attention, which is usually depleted through prolonged mental effort. Modern life, especially tasks entailing sustained concentration-for example, studying-leads to mental fatigue, according to ART. In natural environments, "soft fascination" stimuli offer mild

levels of engagement without being overwhelming, thereby allowing the brain's attention system to rest and recover. Key components of restorative environments include a sense of being away, extent (rich, coherent environment), fascination, and compatibility with one's goals (Kaplan and Kaplan, 1989).

In line with the present study, ART therefore provides a sound theoretical basis that explains how NBIs can assist university students at the University of Benin in managing anxiety. The university environment often is cognitively demanding; thus, students face academic overload, social pressures, and emotional strain, all contributing to the depletion of attentional capacity and thereby contributing to anxiety. Participation in NBIs such as nature walks, gardening, or even time spent in green spaces provides restorative experiences that help people to restore cognitive resources. This, in turn, diminishes mental fatigue and its associated symptoms of anxiety. For this reason, ART forms a suitable framework for assessing the psychological impact of nature-based interventions on students.

Students awareness of Nature-based Intervention in Anxiety Management

Over the past few years, there has been a growing recognition of the therapeutic potential of nature-based interventions, or NBIs, in the management of mental health conditions, with an especial emphasis on anxiety. There is a growing burden of academic pressures, social challenges, and environmental stressors associated with university

students, and the awareness and knowledge of NBIs as a mainstream anxiety management modality remain limited. According to Bratman et al. (2019), Nature-based interventions have been described as structured or unstructured interactions with natural environments, which include various activities such as forest bathing, gardening, green exercise, or simply spending time in green or blue spaces, with evidence showing that it reduces symptoms of anxiety and improves emotional well-being (Bratman et al., 2019). Their efficacy notwithstanding, many students have poor information or awareness about these options when compared to more conventional pharmacological or psychological interventions (Shanahan et al., 2021).

The levels of awareness among the students regarding NBIs are usually affected by academic exposure, socio-cultural background, and access to natural spaces. For instance, it is expected that students pursuing programs related to environmental or health studies might be more aware of the health benefits of nature-based strategies than their peers in other disciplines (Maller et al., 2020). Furthermore, urbanization and digital lifestyles result in minimal interactions with natural environments, which could result in limited personal experiences and, thus, a poor awareness of the same. Evidence suggests that students living in campuses with green infrastructure and outdoor recreational facilities are more likely to self-report positive perceptions and understanding of the mental health benefits derived from being in nature (Twohig-Bennett & Jones, 2018). However, there is a gap in systematically embedding NBIs into student wellness

programs, particularly within developing contexts where mental health literacy is still growing. If not promoted deliberately through evidence-based guidance, the role of nature in anxiety mitigation and resilience enhancement can easily be underestimated by students.

As recent findings by Marselle et al. (2021) have shown, even short-term exposure to natural settings may yield significant mental health benefits underlining the urgency of making NBIs more visible and accessible in academic environments. For this reason, raising student knowledge in the area will be of paramount importance not only for individual well-being but also for fostering a more sustainable and health-conscious educational culture.

Utilization of Nature-based Intervention in Anxiety Management among Students

Nature-based interventions have become recognized as effective and low-cost methods of managing mental health challenges, especially anxiety. Knowledge and awareness of these interventions among students, however, remain widely variable and are influenced by academic discipline, availability of green space, and cultural attitudes toward mental health. NBIs like nature walks, mindfulness in green spaces, and horticultural therapy have been shown to significantly reduce symptoms of anxiety among participants (Bratman et al., 2019; Marselle et al., 2021), yet many students are not fully aware of their benefits and/or how to engage with them. The current evidence

suggests students in the health and environmental sciences are usually better informed about the relationship between nature and well-being than others (Shanahan et al., 2021).

Despite a lack of knowledge, more and more students are starting to utilize NBIs either on purpose or unconsciously. Research has shown that even short lengths of time in green environments reduce cortisol levels and increase relaxation (Hunter et al., 2019). Still, use will often be determined by the level of infrastructural and institutional support. Where green space exists on campus, and mental health programs encourage holistic approaches to well-being, students are much more inclined to integrate NBIs into daily life (Moll et al., 2022). Conversely, highly urbanized or resource-limited campuses offer fewer opportunities for meaningful interaction with nature, thus limiting practical application despite any knowledge of the potential benefits of NBIs.

For better utilization, universities need to move beyond awareness campaigns and integrate NBIs into structured wellness programs and counseling services. The development of nature-rich environments and the encouragement of outdoor mindfulness activities and green exercise in the recreational schedules will facilitate regular use by students. As Richardson et al. (2023) have stated, interventions planned in coherence with students' daily routines and academic life show greater likelihood of sustainability and success. Ultimately, reducing the knowledge-to-utilization gap regarding NBIs among students necessitates a supportive campus culture, integration into the curriculum,

and institutional recognition of nature as an essential component of managing mental health.

Nature-Based Intervention and Benefits on Students' Anxiety Management

Nature-based interventions are fast becoming explored within Nigeria both as complementary and alternative methods of addressing the mental health challenges among university students. As academic and social stressors continue to increase, both Nigerian students and athletes experience increased anxiety levels with inadequate mental health support, according to Olanrewaju et al. 2020. NBIs, such as spending time in green spaces, gardening, walks in the forest, and any form of exposure to natural environments, also serve as recreational activities that help reduce stress and anxiety levels. Ajibola et al. (2022) have also established in current research that among Nigerian university students who regularly interact with the natural setting, emotional regulation and symptoms of anxiety were improved compared to those with poor exposure.

These beneficial effects of NBIs are based on the promotion of mindfulness, physical activity, and positive emotional experiences. For example, a study at Obafemi Awolowo University revealed that students who regularly visited the botanical gardens on campus to relax or study exhibited less anxiety and enhanced their level of concentration. Such natural environments act as therapy areas that provide a psychological escape from university life stresses and social alienation. Moreover, NBIs

are culturally adaptable and inexpensive interventions, hence appropriate for implementation in resource-poor university settings across the nation.

These benefits notwithstanding, infrastructural challenges and lack of awareness have continued to restrict the application of NBIs in Nigerian universities. Most institutions have not developed green spaces or included nature therapy as part of wellness programs for their students. According to Chikezie and Nwafor (2021), for NBIs to be fully integrated into mental health strategies in Nigeria, there must be intentional policy support and collaboration between university management, health professionals, and urban planners. Indeed, there is an urgent need for Nigerian universities to take advantage of their natural environments as a holistic approach toward the mental well-being of students, as evidence continues to build on how contact with nature has positive impacts on the mental health of people, especially in terms of anxiety among students.

Psychological Factors Affecting Students' Anxiety Level

Several key psychological factors affect anxiety level of students, each playing a significant role in how individuals experience, manage, or worsen anxiety. The important psychological factors which affect the anxiety level among students are as below:

Personality Traits

Personality traits are enduring patterns of thoughts, feelings, and behaviors that distinguish individuals from one another. These traits are viewed as relatively stable

across time and situations, forming the core of how a person interacts with the world. To date, the most widely accepted framework for understanding personality traits is the Five-Factor Model, often referred to as the Big Five. The five broad dimensions in which personality is organized include Openness to Experience, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. Each trait exists on a continuum; rather, individuals can fall anywhere between high and low on each dimension, which shapes their unique personality profile.

Of the aforementioned, neuroticism has been closely related to psychological distress and anxiety. Neuroticism is characterized by negative emotions, including fear, sadness, guilt, and anger. High emotional reactivity gives way to neurotic anxiety and other mood disorders. Individuals high in neuroticism thus show greater vulnerability to anxiety and other mood disorders (Widiger & Oltmanns, 2017). In turn, traits such as conscientiousness and extraversion tend to be positively associated with good mental health. People characterized as conscientious have good impulse control and are goal-directed, which makes their coping adaptive. Extraverted individuals benefit from social engagement that serves to buffer stress and anxiety (John & Srivastava, 1999).

Understanding personality traits has practical implications for clinical psychology, education, and workplace settings. For instance, in conducting interventions to deal with anxiety among students, awareness of personality traits can appropriately guide such

interventions. Students high in neuroticism may be treated with therapies aimed at emotional regulation and managing stress, while students low in openness might need encouragement toward the exploration of new coping methods.

The Table below represents the Big Five Personality Model, illustrating each domain and associated characteristics:

Table 1: The Big Five Personality Traits Model

Trait	Characteristics
Openness to Experience	Curious, imaginative, new experiences
Conscientiousness	Organized, dependable, self-disciplined
Extraversion	Sociable, energetic, assertive
Agreeableness	Compassionate, cooperative
Neuroticism	Anxious, moody, insecure

Source: The structure of phenotypic personality traits (Goldberg, 1993).

Cognitive Distortions

Cognitive distortions are biased, irrational patterns of thinking that negatively influence a person's perception of reality, often leading to emotional distress such as anxiety, depression, or low self-esteem. These distortions occur automatically and are usually rooted in deeply held beliefs or core assumptions developed through life experiences, especially early ones (Beck, 2011). First introduced in Aaron T. Beck's Cognitive Theory of Depression and later expanded by David Burns (1980), cognitive distortions are at the heart of cognitive-behavioral therapy (CBT), whose aim is to

identify and restructure these flawed thought processes. Common distortions include catastrophising, overgeneralisation, black-and-white thinking, and personalisation, each contributing to exaggerated and often inaccurate interpretations of events.

For example, a student who is anxious may catastrophise and believe that failing one test will mean their life is no good, even if evidence indicates the contrary. Such distorted thinking blows problems out of proportion while fueling emotional responses well beyond what the situation requires. Another example is personalisation, in which one assumes full responsibility for events beyond one's control—for example, "It is my fault the group failed" can lead to feelings of guilt and anxiety. According to Clark and Beck (2012), these distortions maintain negative emotions because information is filtered through the pessimism-prism, as it were, perpetuating anxiety and avoidance behavior. If left unchallenged, they distort nothing but how individuals interpret life events, themselves, and the world around them.

Cognitive distortions are particularly relevant to understanding mental health challenges among students who, very often, have to face high levels of academic pressure, uncertainty, and social comparison. In CBT, practitioners support individuals in identifying such distortions and replacing them with more balanced, realistic thoughts through a process called cognitive restructuring. This is not to say anything about forcing "positive thinking," but instead adopting thoughts that can be both realistic and helpful.

The figure below represents some of the most common cognitive distortions, which often co-occur and overlap.

Table 2. : Common Cognitive Distortions

Distortion	Description
Catastrophizing	Expecting the worst-case scenario
Overgeneralization	Making broad assumptions from a single event
Black-and-white thinking	Seeing things as all good or all bad
Personalization	Blaming oneself for events outside one's control.
Mind reading	Assuming you know what others think
Fortune-telling	Predicting the future negatively
Labeling	Defining oneself or others by one negative trait

Source: The Anxiety and Worry Workbook: The Cognitive Behavioral Solution (Clark & Beck, 2012)

Motivation

Motivation is defined as the internal processes responsible for starting, directing, and sustaining goal-directed behaviors. Motivation plays a profoundly important role in anxiety management, with students facing academic, social, and personal problems. Abraham Maslow's Hierarchy of Needs, from a psychological point of view, helps explain how unfulfilled needs can influence individual levels of anxiety and suppress motivation. Maslow (1943) described human needs arranged in a five-tiered pyramid: physiological, safety, love/belonging, esteem, and self-actualization. Gravitation to higher-level needs occurs only when the lower ones are reasonably met. For instance, unfulfilled needs at the root of the hierarchy, including hunger, lack of appropriate sleep, or financial uncertainty, will stress individuals out to such an extent that little concentration ability or coping mechanisms are left for academic tasks (Neher, 1991).

Anxiety heightens when students' safety needs-both physical and emotional-are threatened. For example, fear of academic failure, bullying, or unstable home lives can trigger psychological defenses and interfere with learning. Unless safety and predictability are assured, motivation focuses on survival rather than growth or development (Woolfolk, 2016). The belongingness and love needs include peer relationships, teacher support, and social acceptance. These needs tend to be more pressing during adolescence and early adulthood, and students who report higher levels of loneliness and neglect tend to also report more anxiety and disengagement. Conversely,

students who feel connected are more resilient and inherently motivated (Deci & Ryan, 2000). Consequently, promoting schools as emotionally safe and inclusive environments develops anxiety management and fosters motivations that are sustainable.

At higher levels of the hierarchy, esteem and self-actualization become central to a student's motivation. Esteem needs deal with achievement, competence, and recognition. For students to receive feedback, achieve goals, or develop self-efficacy, their anxiety decreases and further advances them in pursuing meaningful tasks with confidence. At a final level, self-actualization-or realizing one's full potential-drives students to explore, create, and grow beyond external validation. Chronic anxiety blocks the pursuit by keeping people bound to the lower-level fears. Consequently, systems that support all levels of Maslow's hierarchy-address basic needs, foster emotional safety, promote belonging, and encourage esteem-are more likely to nurture the motivated and mentally healthy learner.

Fig 1: Maslow's Hierarchical Pyramid of Needs.



Source: Maslow's Hierarchy of Needs (adapted for student anxiety management)

One can conclude that motivation is a force, a drive which prompts, compels, and energizes an individual to act or behave in a particular manner, at a particular time, for attaining the specific goal or purpose. Motivation is basic to overcome the hurdles which otherwise could have influenced. Without proper attention, Keen interest, setting of right attitude, and the resulting optimum level of motivation, many top class students have failed to accomplish their task. It is thus necessary to find out ways and means of motivating students for better mental health. (Kamlesh, 1998).

Resilience

Resilience is the individual's capacity to adapt positively in the context of stress, adversity, or trauma. In academic settings, resilience plays a critical role in helping

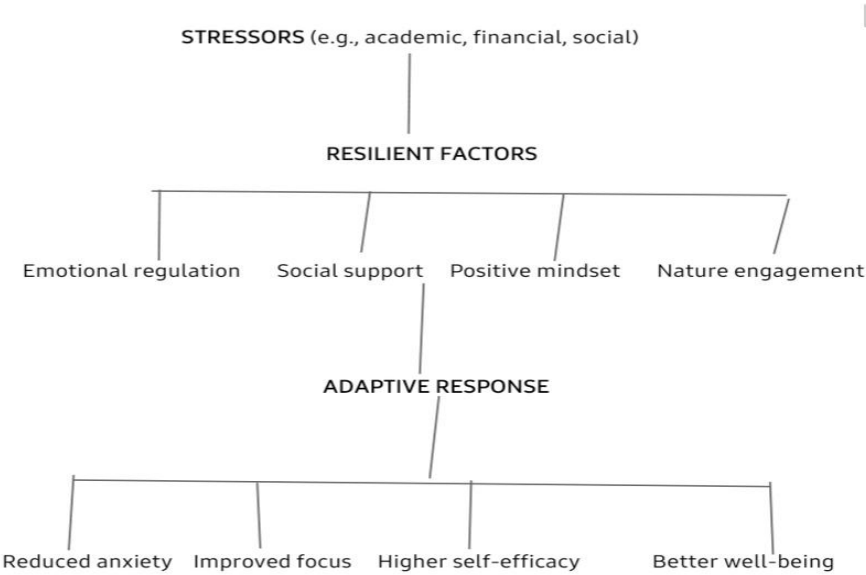
students manage anxiety by enabling them to cope with challenges such as academic failure, financial stress, social pressures, and mental health problems effectively (Southwick et al., 2014). For university students, the ability to stay focused, emotionally balanced, and optimistic during setbacks is core to mental well-being. Anxiety often arises out of perceived inability to cope; resilience acts as a buffer by fostering a mindset that obstacles are transient in nature and surmountable (Ungar, 2012).

Nature-based interventions significantly build up resilience among students. A natural setting develops emotional regulation and cognitive clarity, which are part of resilience itself, according to Richardson et al. (2016). Other activities that might reduce levels of cortisol and allow recovery from psychological fatigue at school and in emotions include walking in green spaces, gardening, and even mindful nature observation. It allows for improvements in stress tolerance by developing mental stamina that enables students to cope more effectively during stressful situations, like anxiety during examinations, deadlines, or conflicts with people. This is according to Bratman et al. (2019).

In addition, resilience is often enhanced through social and environmental supports. Group activities using nature promote community, empathy, and mutual coping strategies, developing a safety net of emotional support. These social networks, in concert with calming natural settings, help students internalize perceptions of control and stability.

Longitudinally, students who regularly participate in nature exhibit better coping behaviors, increased flexibility, and decreased susceptibility to anxiety disorders (Masten & Cicchetti, 2016). Thus, resilience supported by nature is an active process that turns stressful academic experiences into opportunities for growth.

Fig 2.: Resilience and Nature-Based Anxiety Management



From the diagram above, it can be inferred that nature acts as a catalyst for resilience, enabling students to respond to stress more effectively.

Low self-efficacy

Low self-efficacy refers to an individual's belief that they lack the capacity to succeed in specific tasks or overcome challenges. This psychological construct significantly affects motivation, emotional regulation, and behavior. Among Nigerian students, low self-efficacy is increasingly recognized as a factor that undermines academic success and exacerbates anxiety. According to Ojeleye et al. (2022), students with low self-efficacy are more prone to emotional distress and tend to give up when faced with academic difficulties, as they doubt their ability to influence outcomes. This lack of confidence creates a cycle of underachievement and increased anxiety, especially in high-stakes academic environments.

Recent Nigerian studies have revealed that students with low self-efficacy exhibit higher levels of avoidance behavior and test-related stress. In a study conducted in Delta State, Lugard and Osuafor (2024) found that self-efficacy significantly predicted students' academic performance in computer studies. Students with low self-belief were less likely to engage in sustained learning, even when they had the intellectual capacity to succeed. Similarly, Ifeakor and Erutujiro (2021) used structural equation modeling to demonstrate that academic self-efficacy indirectly influenced test anxiety, suggesting that when students feel academically inadequate, they become more susceptible to emotional overload during examinations. These findings underscore the need to address internal belief systems as part of anxiety management strategies in schools.

To enhance student outcomes and reduce anxiety, Nigerian scholars recommend building self-efficacy through targeted interventions. This includes teacher encouragement, peer modeling, mastery experiences, and the development of problem solving skills. Ude and Ekwe (2023) emphasized that when students are supported in developing confidence in their academic abilities, their anxiety levels drop and their motivation increases. Programs that prioritize student centered learning, goal-setting, and consistent feedback can strengthen self-efficacy, helping learners interpret challenges as opportunities rather than threats. Addressing low self-efficacy, therefore, is not only crucial for academic performance but also for psychological wellbeing in the Nigerian educational context.

Empirical Reviews

Adeola et al. (2024) conducted research on the Impact of Sustainable Landscape Planning on Student Well-Being in the University of Ibadan. This research was aimed at assessing how well-maintained green campus surroundings affect students' mental health, reduction of stress, and academic performance. With the adoption of survey-based quantitative among University of Ibadan students in exploring perceptions of landscaped surroundings and correlating them with self-reported well-being, stress levels, and academic engagement, the study found out that a substantial majority of students perceived green campus features as beneficial for mental clarity, stress reduction,

physical health, and a stronger connection to nature; the statistical analyses confirmed significant positive associations between green infrastructure and well-being metrics.

The study therefore concluded that the act of investing in and maintaining green landscapes in educational settings can markedly improve students' mental health and performance, further reinforcing the role of nature-based design in an academic environment.

Lydia (2024) examined community gardens on mental well-being among urban dwellers in Lagos. The study aimed to explore how people involved in Lagos community gardens perceive their contribution to improving their mental health, specifically stress, mood, social connection, and a sense of belonging. The research utilized phenomenological qualitative study using semi - structured interviews with five urban dwellers actively gardening in community plots across Lagos. The study established that participants self-reported improved social connection, improved mood, reduced stress, increased mindfulness, physical activity, and strong sense of community belonging. Consequent benefits from this type of gardening are meaningful improvements in mental health. Community gardens offer a culturally relevant and accessible nature intervention which might alleviate stress and improve general well-being in densely urban Nigerian settings such as Lagos.

James, Sati, and Erekpitan (2024) assessed the impact of community green spaces on social cohesion and public health in Jos metropolis during covid-19. The paper sought to present an investigation into the impact of community green spaces on social cohesion and public health in Jos metropolis during the COVID-19 pandemic. This study is based on Social Capital Theory and Biophilia Theory. Social Capital Theory states that one should place value on social networks, while Biophilia Theory maintains that humans have an innate orientation to nature. A sample size of 400 respondents was targeted for this survey with the aid of a structured questionnaire. Quantitative analysis was achieved via a regression and correlation test to verify the varying relationships of green space access to social cohesion and public health outcomes. Following the statistical tests, the null hypotheses were rejected since there was no significant impact brought by green spaces on social cohesion and public health. The study showcased findings where community green spaces improve social cohesion through providing areas of interaction that can lead to improved public health due to reduced stress and increased physical activity. This can be achieved through the creation and maintenance of green areas as vital parts of urban infrastructure in the intent of strengthening community resiliency and well-being, especially during pandemic crises. The study concluded that green open spaces can be considered an appropriate means of promoting social cohesion and improving public health, taking into account urban planning policies' focus on green infrastructure.

Oladiran et al. (2025) studied urban heat island and vegetation Change in Lafia. The objective of the study was to investigate the UHI effect in Lafia, Nigeria, and relate vegetation cover changes with thermal comfort and well-being. Using remote sensing analysis through the Landsat and Sentinel dataset in order to monitor vegetation loss and land surface temperature, as well as urban development. The results from the study indicated that rapid urbanization reduced vegetation, hence increasing LST and intensifying thermal discomfort, which indirectly can heighten the level of stress and anxiety among residents. The study recommended that preservation and restoration of urban greenery is critical not only for environmental sustainability but also for mitigating heat-related psychological distress in Nigerian cities.

David and Julius, (2024) studied user perceptions of green spaces in public parks: a case study of Ndubuisi Kanu Park, Ikeja, Lagos. This study aimed to review Nigeria's green infrastructure initiatives and their implications for residents' mental well-being. The study used a systematic review of the literature on urban green infrastructure, such as parks, street trees, and communal gardens, focusing on psychological effects. Findings from the study showed that green infrastructure is positively associated with reduced stress and improved mood; however, in Nigeria, the empirical data remains scanty and are also unevenly distributed across cities. The paper concluded that investment in urban

green infrastructure may support anxiety reduction and promote mental health; however, country-specific evaluative studies will be required to guide implementation.

Yawei et al. conducted research in 2023 on how forest therapy programs help in reducing stress levels. The review was aimed at identifying the main results of previous studies to explore how the programs of forest therapy affect the reduction of stress, both on the physiological and psychological level. This was conducted according to PRISMA. In February 2023, the studies that had a comparison between the interventions of a forest therapy program and urban exposure on quantitative measures were searched through CINAHL, EMBASE, Medline, PsycINFO, PubMed, and Web of Science databases (core collection). A total of 17 relevant articles were included in this review from 495 separate studies, as per the inclusion and exclusion criteria. The outcomes of this review stated that forest therapy programs are useful for stress relief, specifically on a psychological level. Forest therapy programs can be part of stress reduction projects. However, the results related to physiological effects are yet to be confirmed, and there is a need for more in-depth, well-designed research in the future.

Bala et al., 2022, conducted an investigation into university students' perceptions on the use of campus green spaces at Hambe State University. Quantitative data collected through questionnaires were digitalised and analyzed using the MS Excel statistic package. Descriptive statistics, including measures of percentage and frequency to

analyze the associations between perceptions and use of CGS and students' well-being on campus. Qualitative data generated were analyzed using content analysis. Results from the study showed that the majority of respondents both use and are aware of campus green spaces, and the CGS is important for the image of the university and also is an integral part of the campus environment. Further, the study has also shown that campus aesthetic quality and its design and management style affect the perception and use of its green spaces. A majority of the students preferred areas with manicured gardens, seats, and lawns over those areas without these facilities. It has recommended that a university campus needs manifold forms of green spaces to satisfy the needs of the increasing number of student users.

Summary of Reviewed Related Literature

Nature-based intervention has, therefore, been seen to have a strong influence on anxiety management among students according to related literature reviewed. These elements, including motivation, stress, and mental toughness, interact in a very complex way to possibly lead a student journey towards success. Presence of natural vegetation around academic environment often translate into improved mental stability of students afford to believe in their abilities and approach challenges with a positive mindset. Motivation, whether intrinsic or extrinsic, serves as the driving force behind an students' dedication and commitment, impacting their academic efforts and overall well-being.

Stress, if managed well, may serve as a motivating factor; however, high levels of stress can interfere with productivity through breaking one's focus and creating anxiety. And finally, there is a need to take care of the low-self esteem among students without natural aid serving as a cushion to overcome such mental drainage and maintain stable academic excellence under pressure.

The “Attention Restoration Theory” or ART was reviewed in the literature, which theorizes that the exposure to natural environments restores an individual's directed attention that may become depleted through prolonged mental effort. In this regard, it is expected that government, school management, NGOs, and other international organisations will ensure enabling environments and nature-based climates that are conducive for students to thrive, succeed, and find stable mental health and satisfaction in the course of their academic sessions on campus.

Related literature proves that recognizing the critical role of nature-based intervention as an alternative to conventional medical routen, the government, school authority, and NGOs alike work collaboratively to enhance nature-based environments on campus. These interventions not only contribute to reductions in students' anxiety and stress levels but also foster a healthier academic environment. Furthermore, understanding the intricacies of green life allows for the development of personalized approaches to deal with each student's needs and challenges. In the academic world,

where mental capabilities often reach a plateau, learning to harness the power of natural environments or green life becomes an important factor in being able to tap into and unleash all of the potential that lies dormant within a student. Ultimately, students who build up a sound state of mind will not only be able to achieve academic success but also find solace in natural vegetation and satisfaction and fulfillment in their academic efforts.

The related literature was also reviewed under sub-headings as conceptual framework; students' awareness of Nature-based intervention in anxiety management, utilization of Nature-based Intervention in Anxiety Management among Students, nature-based intervention and benefits on students' anxiety management, psychological factors affecting students' anxiety level, and empirical reviews.

CHAPTER THREE

METHODOLOGY

This chapter discuss research methodology to be adopted in carrying out this study. It encompasses the following sub-headings:

Research Design

Population of the Study

Sample and Sampling Technique

Research Instrument

Validity of the instrument

Reliability of the instrument

Method of Data Collection

Method of Data Analysis

Research Design

The study adopted descriptive research design using a qualitative method. This choice of research design was appropriate considering the nature of the topic under study which required input of the respondents who has full understanding of the nature based environment and it implication on human anxiety level. Both primary and secondary

source of data will be deployed. Primary data will be sourced through the adoption of questionnaires . While secondary data on the other hand will be sourced from relevant literature, journals, reports and archive records. Data collected from the field will analysed using Chi-square analysis.

Population of the Study

The population for this study is the total register students of the University of Benin. According to school website, a total number of 60,000 students spanning across 15 faculties which are Agric, Art, Basic Medical Sciences, Dentistry, Education, Engineering, Environmental Sciences, Law, Life Sciences, Management Sciences, College of Medicine, Pharmacy, Physical Sciences, Social Sciences, School of Medical Sciences on both campuses irrespective of gender or social status.

Sample and Sampling Technique

The study will adopt a sample size of 360 students which are randomly selected from population of 60,000 that made up the study. This sampling size is arrived at using Yemane sampling technique ($n = N / (1 + N \times e^2)$), with the confident rate of 95% and the margine error of 5%.

Research Instruments

The study will make use of a questionnaire to generate data from the selected key respondents. The instrument is preferable due to large numbers of data required. To get

information regarding the impact of Nature-based intervention on students anxiety. The questionnaire will be divided into two sections. Section A will be for the collection of information on personal data of respondents, while Section B will be statements formulated from the variables of the study under the modified Likert scale response options of: Strongly Agreed (SA), Agreed (A), Disagreed (D) and Strongly Disagreed (SD).

Validity of Research Instrument

Research instrument which is questionnaire will be subjected to rigorous professional scrutiny by both the supervisor and other academic experts in Human Kinetics and Sports Science, for vetting, correction and approval before distributing it to the respondents to ensure its credibility.

Reliability of Research Instrument

Reliability of the instrument will be carried out through administration of the test instrument to respondents once, and thereafter, Cronbach alpha statistics will be used to analyse the data.

The reliability coefficient of 0.81 for a questionnaire is typically determined through the use of Cronbach's Alpha, a statistical method used to assess the internal consistency of items measuring the same construct. To arrive at this figure, the questionnaire is first developed with a set of related items, then administered to a

representative sample, usually consisting of at least 30 respondents. The collected responses are input into statistical software such as SPSS, where a reliability analysis is performed. Using Cronbach's Alpha, the software calculates how closely related the items are, generating a coefficient value. A result of 0.81 indicates good reliability, meaning the items consistently measure the intended concept. Generally, a coefficient above 0.70 is considered acceptable, and a value of 0.81 confirms that the questionnaire has strong internal consistency.

Method of Data Collection

The questionnaire will be distributed to the respondents (student) and retrieved on the spot to avoid loss.

Method of Data Analysis

The data collected from the respondents through the questionnaire forms will be analyzed using descriptive statistics of frequency and percentage for their bio-data and research question 1, while mean and standard deviation was used for the analysis of research questions 2 and 3. Thereafter, inferential statistics of Pearson correlation will be used in testing hypothesis.

CHAPTER FOUR

PRESENTATION OF RESULTS AND DISCUSSION OF FINDINGS

In this chapter is the data analysis, interpretation of data analysis and discussion of findings.

Presentation of Results

Demographic Data Analysis

Table 3 : Showing the Percentage Distribution of Respondents Age range

Age Group	Frequency (f)	Percentage (%)
16–20 years	84	23.30%
21–25 years	162	45.00%
26–30 years	77	21.40%
30 and above	37	10.30%
Total	360	100%

The data in table 3 showed that the majority of respondents fall within the 21–25 years age group (45.0%), followed by 16–20 years (23.3%), 26–30 years (21.4%), and 30

years and above (10.3%). This indicates that most participants are in the typical undergraduate age range, while a smaller proportion represents mature students, suggesting that the sample captures both traditional and non-traditional students.

Table 4: Showing the Percentage Distribution of Respondents based on Gender

Gender	Frequency (f)	Percentage (%)
Male	171	47.50%
Female	184	51.10%
Other / Prefer not to say	5	1.40%
Total	360	100%

Table 4 showed that the sample is relatively balanced with 51.1% female, 47.5% male, and a small proportion (1.4%) identifying as other or preferring not to say. This nearly equal gender representation ensures that insights from the survey reflect both male and female perspectives, with minimal bias toward one gender.

Table 5: Showing the Percentage Distribution of Respondents based on Academic Level

Level	Frequency (f)	Percentage (%)
100L	66	18.30%
200L	91	25.30%
300L	109	30.30%
400L and above	94	26.10%
Total	360	100%

In table 5, respondents are distributed across all levels of study, with 300 level students making up the largest group (30.3%), followed by 400 level and above (26.1%), 200 level (25.3%), and 100 level students (18.3%). This indicates that more senior students participated in the survey, which could reflect higher engagement with wellness practices or greater availability for research participation.

Table 6: Showing the Percentage Distribution of Respondents by Faculty Engagement

Faculty	Frequency (f)	Percentage (%)
Agriculture	21	5.80%
Arts	27	7.50%
Basic Medical Sciences	22	6.10%
Dentistry	13	3.60%
Education	32	8.90%
Engineering	36	10.00%
Environmental Sciences	17	4.70%
Law	18	5.00%
Life Sciences	33	9.20%
Management Sciences	31	8.60%
College of Medicine	20	5.60%
Pharmacy	19	5.30%
Physical Sciences	29	8.10%
Social Sciences	30	8.30%
School of Medical Science	12	3.30%
Total	360	100%

Table 6 shows the faculty Distribution. It reveals that students from Engineering (10.0%), Life Sciences (9.2%), Education (8.9%), Management Sciences (8.6%), and Social Sciences (8.3%) constitute the largest shares of the sample. Smaller faculties, including the School of Medical Science (3.3%), Dentistry (3.6%), and Environmental Sciences (4.7%), are less represented. Overall, the survey captures a broad spectrum of faculties, allowing for meaningful comparisons across academic disciplines while reflecting the relative sizes of faculties within the university.

research Question 1: What is the level of knowledge of students towards the use of Nature-based intervention in managing anxiety?

Table 7: Showing the Response of Respondents to Research Question one

Students' level of Knowledge towards NBI	Frequency	Percentage (%)
Low Knowledge	92	25.60%
Moderate Knowledge	118	32.80%
High Knowledge	150	41.60%
Total	360	100%

Table 7 above showed that students' overall knowledge of Nature-Based Interventions (NBIs) is generally positive, with 41.6% demonstrating a high level of understanding and awareness of the concept. A moderate proportion of students (32.8%) fall within the medium knowledge category, indicating partial awareness but limited clarity or practical exposure. Meanwhile, 25.6% of respondents exhibit low knowledge of NBIs, reflecting minimal familiarity, uncertainty, or lack of engagement with nature-based approaches to anxiety management. Overall, the findings suggest that although most students possess meaningful knowledge of NBIs, targeted awareness campaigns and structured educational programs could further strengthen understanding among those with moderate or low knowledge levels.

Research Question 2: To what extent do students at the University of Benin use of Nature-Based Interventions (NBIs) for managing anxiety and enhancing resilience?

Table 8: Showing the Response of Respondents to Research Question two

Item	Mean	Std. Deviation	Decision (Extent of Use)
I engage in nature-based activities to manage anxiety	3.00	0.93	Moderate Extent
I set personal wellness goals involving time in natural environments	2.88	0.98	Moderate Extent
I use outdoor relaxation techniques to reduce stress	3.03	0.91	Moderate Extent
Spending time in nature boosts my confidence and emotional well-being	3.15	0.91	Moderate Extent
NBIs are promoted within my school or peer group	2.87	1.01	Moderate Extent

The table 8 showed that students' engagement with Nature-Based Interventions (NBIs) is generally moderate, as all five items have mean scores between 2.88 and 3.15. This suggests that while students are somewhat aware of and use NBIs to manage anxiety

and enhance resilience, there is room for improvement, particularly in formal promotion and structured use within the school or peer groups

Research Question 3: What is the perceived effectiveness of implementing Nature-Based Interventions on students' anxiety management within the University of Benin?

Table 9: Showing the Response of Respondents to Research Question three

Item	Mean	Std. Deviation	Decision
Regular exposure to NBIs helps reduce stress or anxiety	3.09	0.92	Agree
Spending time in natural environments improves focus	3.07	0.91	Agree
NBIs positively contribute to students' emotional well-being	3.15	0.88	Agree
NBIs can complement therapy or medication	3.08	0.95	Agree
Access to green spaces should be part of campus mental health strategy	3.17	0.87	Agree

In the table 9, the mean scores for all five items fall between 3.07 and 3.17, indicating that respondents generally agree with the effectiveness of Nature-Based

Interventions (NBIs) in managing anxiety and enhancing resilience. The standard deviations (0.87–0.95) show some variability in responses, but most students perceive NBIs positively. No item reached the Strongly Agree threshold, suggesting moderate but consistent support for integrating NBIs into student mental health strategies.

Hypothesis 1: There is no significant relationship between the Nature-Based Interventions (NBIs) and perceived anxiety management among students of the University of Benin.

Table 10: Showing the Pearson Statistics on use of Nature-Based Intervention and Anxiety Management.

Variable	N	Mean	Std. Deviation	r-value	p-value	Decision
Nature-Based Interventions (NBI Usage)	360	2.99	0.93			
				0.612	0.000	Reject H_0 (Significant Positive Relationship)
Perceived Anxiety Management (Effectiveness)	360	3.11	0.91			

In table 10, the Pearson correlation coefficient ($r = 0.612$) indicates a strong positive relationship between students' engagement in Nature-Based Interventions and their perceived anxiety management. The p-value ($p < 0.001$) is less than the 0.05 significance level, meaning the null hypothesis is rejected. This suggests that higher use of NBIs is associated with better perceived anxiety management among students at the University of Benin.

Discussion of the Findings

The results from objective one indicate that students at the University of Benin have generally a moderate to high level of knowledge concerning NBIs, with 66.9% having heard of NBIs and 75.3% believing in their effectiveness for anxiety management. This is consistent with the literature which asserts that awareness of NBIs among university students is very instrumental to their adoption and hence their effectiveness in reducing stress and improving mental health. These are in support of the calls made by Amali & Buthelezi 2025 and Shanahan et al., 2016. The data, however, showed that only 18.1% of students have received formal training on NBIs, showing that there is a gap between awareness and structured knowledge. In agreement with previous studies, these findings revealed that students may have informal contact with nature-based activities and may be aware of the benefits derived from them, yet institutional education and training in NBIs are pivotal for full integration into mental health strategies and the reinforcement of their impacts on anxiety management.

The findings of objective two indicate that students at the University of Benin are moderately aware of NBIs to manage anxiety and improve their resilience, with the majority reporting awareness of NBIs and recognizing their benefits, especially in managing stress and emotional well-being. This finding is consistent with existing literature, which has established that awareness is an essential precursor to NBIs engagement and that students with more awareness are most likely to adopt the

intervention for managing mental health (Shanahan et al., 2016; Bratman et al., 2019). However, the relatively lower proportion of students who have received formal training or institutional guidance reflects a gap between general awareness and structured knowledge, similar to earlier findings that call for organized educational programs and the integration of NBIs into university wellness programs to enhance resilience and outcomes on mental health.

The results for objective three suggest that students find NBIs effective in improving their mental health status, with mean scores ranging from 3.07 to 3.17, insinuating general agreement that NBIs decrease levels of stress, improve focus and emotional wellbeing, supplement therapy, and should be included in campus mental health strategies. This agrees with the literature, which shows that both exposure to natural environments and more structured nature-based activities can significantly reduce symptoms of anxiety and improve psychological well-being and resilience in students (Bratman et al., 2019; Hartig et al., 2014). The moderate to high perception in the present study further supports previous evidence that NBIs are not only perceived to be useful but are also sensible adjuncts to formal mental health strategies, and thus universities should provide institutionalized green spaces and structured nature engagement programs within student wellness frameworks.

The findings from the perceived effectiveness analysis, which indicated that students generally agree that NBIs support mental health, are consistent with the results of the hypothesis test. It showed a strong positive relationship between engagement in NBIs and perceived anxiety management, thus establishing the fact that greater utilization of NBIs will mean better mental health outcomes. That relationship confirms that students' perceptions of the overall effectiveness of NBIs about anxiety management reflect their knowledge of, and engagement with, nature-based activities. Overall, the descriptive findings and the correlation analysis both point to the importance of incorporating NBIs into campus mental health strategies in order to enhance the well-being of students.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter encapsulates the summary, conclusion as well as the necessary recommendations.

Summary

Anxiety Management through Nature-Based Interventions among Students of the University of Benin: The Influence This study examined the influence NBIs have on perceived anxiety management among students of the University of Benin. It was set out to determine the level of knowledge of students towards the use of NBIs in managing anxiety; the extent of students' use of NBIs for managing anxiety and enhancing resilience; the perceived effectiveness of NBIs in promoting mental health strategies; and the relationship between the use of NBIs and perceived anxiety management. To guide the study, three (3) research questions were raised, out of which one (1) was hypothesized and tested at 0.05 level of significance.

A descriptive survey research design was adopted for the study. The study's population consisted of 60,000 students from various faculties in the University of Benin. The sample size used for this work was 360 students to ensure full representation. The research instrument used for this study was a self-constructed questionnaire. Descriptive statistics of frequency, percentage, mean, and standard deviation were used in analyzing

the research questions, while inferential statistics of Pearson correlation was used in testing the formulated hypothesis at the 0.05 alpha level.

The findings of the research based on the research questions raised and hypotheses formulated were as follows:

A majority of students had a moderate to high level of knowledge of the use of Nature-Based Interventions in managing anxiety.

Students used NBIs to a moderate extent in managing anxiety and enhancing resilience.

The perceived effectiveness of NBIs included reducing stress, improving focus and concentration, enhancing emotional well-being, complementing therapy or medication, and promoting the inclusion of green spaces in campus mental health strategies.

Conclusion

Based on the research findings, the following conclusion were made: students at the University of Benin had a moderate to high level of knowledge on the use of Nature-Based Interventions (NBIs) in managing anxiety, thereby engaging with these interventions to a moderate extent. Additionally, the perceived effectiveness of NBIs in promoting mental health was generally positive, highlighting various benefits such as stress reduction, improved focus, and enhanced emotional well-being. Furthermore, there

exists a significant positive relationship between students' engagement in NBIs and their perceived anxiety management, demonstrating that greater use of these interventions is associated with better mental health outcomes.

Recommendations

Based on the research findings, some recommendations were made:

1. It was recommended that the University should implement structured educational programs, workshops, or seminars that teach students about the principles, practices, and benefits of Nature-Based Interventions. This will help bridge the gap between general awareness and practical knowledge, ensuring students can effectively use NBIs to manage anxiety.
2. It was recommended that the University should invest in creating and maintaining more green spaces on campus, such as gardens, walking trails, and outdoor relaxation areas. Easy access to natural environments will encourage regular engagement with NBIs, promoting stress relief and overall mental well-being among students.
3. It was recommended that Nature-Based Interventions should be incorporated into existing campus mental health programs and counseling services. By combining NBIs with formal therapy and wellness initiatives, the University can provide a more holistic approach to anxiety management and resilience building.

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APPENDIX I

QUESTIONNAIRE

DEPARTMENT OF HUMAN KINETICS AND SPORTS SCIENCE (HKS),

FACULTY OF EDUCATION

UNIVERSITY OF BENIN, BENIN CITY

**QUESTIONNAIRE ON THE ROLE OF NATURE-BASED INTERVENTIONS IN
MANAGING ANXIETY AND PROMOTING MENTAL HEALTH AMONG
UNIVERSITY OF BENIN STUDENTS**

(QRNBI-MH)

Dear Respondent,

This questionnaire is designed to assess acute anxiety symptoms, awareness of Nature-Based Interventions (NBIs), and the perceived effectiveness of NBIs as a mental health strategy among students at the University of Benin. Your responses will be used solely for academic purposes and will be treated with utmost confidentiality. Kindly respond honestly by ticking (✓) where applicable.

The Researcher,

Isiaka Latifat Mojirayo

Instruction: Please tick (✓) the response that best reflects your opinion for each item.

SECTION A: Demographic Information

1. Age: 16-20 21–25 26–30 30 and above

2. Gender: Male Female Other

3. Level of Study: 100L 200L 300L 400L and above

4. Faculty: _____

Section B: What is the level of knowledge of students towards the use of Nature-based intervention in managing anxiety?

Tick (✓) the option that best applies:

1. Have you heard of Nature-Based Interventions (e.g., forest walks, gardening, green space exposure)? Yes No Not sure

2. How did you learn about NBIs? Lectures Friends Internet Workshops Others

3. Do you believe NBIs can help manage anxiety or stress? Yes No Not sure

4. Have you personally engaged in any nature-related activities for stress relief? Yes No Not sure

5. Have you received formal training or education on Nature-Based Interventions (NBIs) for managing anxiety before? Yes No Not sure

SECTION C: To what extent do students at the University of Benin use of Nature-Based Interventions (NBIs) for managing anxiety and enhancing resilience?

Please indicate the extent to which you agree or disagree with each of the following statements by ticking the appropriate option.

(Strongly Agree = SA, Agree = A, Disagree = D, Strongly Disagree = SD)

S/N	ITEM	SA	A	D	SD
1.	I engage in nature-based activities, such as walking in green spaces, to manage anxiety.				
2.	I set personal wellness goals that involve time spent in natural environments.				
3.	I use outdoor relaxation techniques, such as sitting quietly in a garden or park, to reduce stress.				
4.	I find that spending time in nature boosts my confidence and emotional well-being.				
5.	Nature-Based Interventions are part of wellness or mental health practices promoted within my school or peer group.				

SECTION D: What is the perceived effectiveness of implementing Nature-Based Interventions on students' anxiety management within the University of Benin?

Please indicate the extent to which you agree or disagree with each of the following statements by ticking the appropriate option.

(Strongly Agree = SA, Agree = A, Disagree = D, Strongly Disagree = SD)

S/N	ITEM	SA	A	D	SD
1.	Regular exposure to Nature-Based Interventions help reduce stress or anxiety during academic or personal challenges.				
2.	Spending time in natural environments has ability to improved focus and concentration.				
3.	Nature-Based Interventions have positively contributed to students' overall emotional well-being.				
4.	Nature-Based activities can complement therapy or medication.				
5.	Access to green spaces should be part of campus mental health strategy				