UNIVERSITY OF CAPE COAST

THE ROLES OF ACADEMIC RESILIENCE AND SOCIAL MEDIA ADDICTION IN THE LINK BETWEEN ACADEMIC STRESS AND SLEEP QUALITY AMONG UNIVERSITY OF CAPE COAST STUDENTS

SAMUEL EDEM COFIE

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BY

SAMUEL EDEM COFIE

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DECLARATION

Candidate's Declaration

This thesis is the product of my academic research. As such, I declare that no portion of it has been submitted for consideration for another degree at this university or any other.

Candidate's Signature: …… Date: ……..

Name: ……

Supervisor's Declaration

In compliance with the University of Cape Coast's thesis supervision guidelines, I hereby declare that the thesis was prepared and presented under my supervision.

Principal Supervisor's Signature: ……... Date: …….

Name: ……

Co - Supervisor's Signature: ……... Date: …….

Name: ……

ABSTRACT

This study investigated the moderating role of academic resilience and mediating role of social media addiction in the link between academic stress and sleep quality among University of Cape Coast students. Adopting positivist paradigm, the study employed quantitative approach with a descriptive-correlational design. A stratified random sample of 394 students was selected from a population of 29,136. The study used standardized scale to measure academic stress, academic resilience, social media addiction, and sleep quality. Data analysis involved descriptive statistics and inferential statistics, including Pearson's correlation and Hayes' Macro Process analysis. A total of 208 of the respondents were Female and 186 were male. Majority (*32.7%*) were level 200 students with average age of 24.38 ± (5.22) years. The findings revealed moderate academic resilience, high academic stress, prevalent social media addiction, poor sleep quality among UCC students. Academic stress was weakly correlated with sleep quality, and social media addiction mediated this relationship. Academic resilience moderated the link between academic stress and sleep quality. Based on this the researcher recommended implementing stress management interventions, sleep hygiene programs, digital literacy programmes and academic resilience initiatives to support and promote students' well-being.

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DEDICATION

To my family, especially my mother, Madam Jacqueline Patience Asamany, thank you for believing in me and giving me the strength to strive amidst all odds.

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CHAPTER ONE

INTRODUCTION

University life is often marked by intense academic expectations, substantial coursework, familial and social pressures, and rapid personal development, all of which can contribute to elevated levels of academic stress (Chambel & Curral, 2005; Reddy et al., 2018). Such stress has been shown to disrupt sleep patterns and contribute significantly to poor sleep quality among students (Deng et al., 2023; Yan et al., 2018). Although the association between academic stress and sleep quality is well established, recent studies underscore the importance of examining mediating and moderating factors that may shape this relationship (Nugraha et al., 2023; Wang & Fan, 2023). Accordingly, the present study investigated how social media addiction and academic resilience may influence the relationship between academic stress and sleep quality among students at the University of Cape Coast.

Background to the study

Academic stress is widely documented among university students worldwide (Alshahrani et al., 2023). This form of stress arises when students perceive that the demands of academics exceed their available resources, leading to feelings of being overwhelmed (Reddy et al., 2018; Ramachandiran & Dhanapal, 2018). Individual differences—including age, gender, personality, coping mechanisms, and level of social support—modulate how students experience academic stress (Day & Livingstone, 2003; Rahat & İlhan, 2016). Stress tends to intensify during periods of heightened academic pressure, such as during exams, multiple deadlines, or competitive peer environments (Meeks et al., 2023; Misra & Castillo, 2004).

The implications of academic stress are multifaceted. Psychologically, students under high stress are more susceptible to anxiety, depression, lowered self-esteem, fatigue, interpersonal difficulties, and maladaptive behaviors (Gu & Mao, 2023; Pascoe et al., 2020). Physically, typical symptoms include sleep disturbances, gastrointestinal problems, headaches, dietary neglect, and compromised hygiene (Deng et al., 2023; Green et al., 2021). Academically, chronic stress impairs concentration, reduces retention of information, and diminishes performance outcomes (Blashill, 2016).

Sleep quality has been shown to suffer significantly under academic stress. Multiple studies report strong associations between elevated stress levels and poor sleep quality—including shorter sleep duration, poorer sleep continuity, and subjective sleep complaints (Abdalqader et al., 2018; Nugraha et al., 2023; Safhi et al., 2020). Moreover, there is evidence of a bidirectional relationship, whereby poor sleep exacerbates stress, and higher stress levels affecting sleep quality, creating a cyclical pattern (Deng et al., 2023; Li et al., 2019; Wong et al., 2020). University students, more than non-student populations, are particularly vulnerable to these compounding cyclical effects (Oduro et al., 2023).

The effect of poor sleep quality on students has been extensively documented in literature. Studies has consistently shown that poor sleep quality negatively impacts students' mental, social, and physical well-being, which can, in turn, affect their academic aspirations and performance (Jalali et al., 2020; Ramos et al., 2021). This is due to decreased daytime functioning, impaired cognitive ability, and increased risk of mental health issues such as

depression, stress, anxiety, and irritability (Carpi et al., 2022; Jalali et al., 2020; Oduro et al., 2023).

In addition to academic pressures and sleep quality issues, the pervasive use of social media has introduced another layer of complexity to the sleep-stress relationship. Social media platforms are now an essential part of students' life in this digitally connected world. Even though these platforms facilitate communication and exchange of information among students, overuse of them can lead to addiction, which is characterized by obsessive behaviors and detrimental effects (Andreassen et al., 2016).

Research has shown that excessive social media use is associated with increased academic stress and poor sleep quality, according to various studies (Alonzo et al., 2021; Sümen & Evgin, 2021; Ybarra et al., 2017; Zhuang, 2023). This relationship is attributed to factors such as late-night phone use, engaging content that keeps users awake, anxiety-rumination effect, and blue light emission effect (Bezerra et al., 2023; Cao et al., 2020; Chris, 2023; Khan, 2023; Liu et al., 2023; Mesi &; Pelzer et al., 2023; Steinsbekk et al., 2023).

Research suggests that exposure to blue light from electronic devices before bedtime can reduce the production of melatonin, a sleep hormone responsible for initiating and regulating sleep (Bezerra et al., 2023; Khan, 2023; Randjelović et al., 2023). Aside from the direct effect of blue light on melatonin production, other studies suggest that the constant stimulation and comparative environment found on social media platforms can increase anxiety and encourage negative thought patterns, both of which contribute to poorer sleep quality (Cao et al., 2020; Liu et al., 2023; Steinsbekk et al., 2023).

Within the academic setting, university students increasingly utilize social media platforms as a potential tool for mitigating academic stress (Greenhow, 2011; Ryan et al., 2011; Vornholt & De Choudhury, 2021). These platforms have become an integral part of students' life offering opportunities for social interaction and information sharing. Despite its benefits for students, excessive use can lead to addiction, characterized by compulsive behaviors and negative consequences (Andreassen et al., 2016; Cao et al., 2020).

Excessive social media engagement among students is frequently associated with reduced sleep duration due to prioritizing online interaction over sleep. (Dhir et al., 2021). This disrupts the natural sleep-wake cycles, reduces deep sleep, increases nighttime awakenings, and leads to poor sleep quality among students (Khan, 2023; Panova & Carbonell, 2022; Pelzer et al., 2023). Additionally, addictive social media use can also potentiate academic stress through its negative effects on students' concentration, learning, and emotional well-being (Akinci, 2021; Evers et al., 2020).

Amidst the interplay between academic stress, sleep quality and addictive social media usage, academic resilience can act as a potential fortifying force that equips students with coping mechanisms to better manage academic stress effectively (Martin & Marsh, 2006). As a psychological phenomenon, academic resilience is viewed as an adaptive and protective resource capable of moderating the impact of academic-related stressors on students' wellbeing (Neill & Dias, 2001). This is because it equips students with essential coping skills and the ability to mitigate the harmful effect of academic stress on students' well-being (Cassidy, 2016; Demir, 2023).

Students with high academic resilience possess traits like stress management skills, positive coping mechanisms, and self-efficacy, which enable them to navigate academic pressures effectively (Cassidy, 2016; Wilks, 2008). High academic resilient students are better equipped to regulate their emotions, prioritize tasks, and seek support, enabling them to maintain a sense of control and navigate stressful academic situations more effectively (Cassidy, 2016). This can indirectly improve sleep quality by reducing pre-sleep arousal and promoting relaxation and a more balanced well-rested academic experience among students. Conversely, low academic resilience may leave students susceptible to the negative influences of stress and social media usage, further jeopardizing their quality of sleep (Demir, 2023).

Based on the preceding discussion, it is evident that recognizing the complex relationships between academic stress, sleep quality, social media addiction, and academic resilience is vital for creating effective interventions to support university students' well-being. Therefore, investigating the moderating role of academic resilience and the mediating role of social media addiction in the relationship between academic stress and sleep quality is particularly important in this context.

Statement of the Problem

University students are increasingly facing a complex interaction among academic stress, sleep quality, social media addiction, and academic resilience. Academic stress, often resulting from excessive workload, high academic expectations, and competitive academic environments, has become a pervasive issue affecting students' mental health, sleep quality, and academic performance globally (Amponsah & Owolabi, 2011; Nugraha et al., 2023;

Reddy et al., 2018). At the University of Cape Coast (UCC), similar to trends observed internationally, students are confronted with high academic demands that heighten their vulnerability to stress and related psychosocial challenges.

Empirical studies have consistently reported that academic stress contributes significantly to poor sleep quality among university students, with prevalence rates of inadequate sleep ranging from 60% to 84% globally (Almojali et al., 2017; Alotaibi et al., 2020; Safhi et al., 2020). Within the Ghanaian context, recent studies similarly report high rates of poor sleep quality among university students, ranging between 54.1% and 62.4% (Akowuah et al., 2021; Lawson et al., 2019; Oduro et al., 2023; Yeboah et al., 2022). Poor sleep quality, in turn, has been associated with impaired cognitive functioning, decreased academic productivity, and adverse mental health outcomes (Carpi et al., 2022; Jalali et al., 2020).

Parallel to this, social media use has become an integral aspect of students' daily lives. While such platforms offer opportunities for communication, learning, and entertainment, their excessive use can lead to social media addiction—a behavioral problem characterized by compulsive engagement and withdrawal symptoms when deprived of use (Andreassen et al., 2016). Studies indicate that 80–85% of university students globally show moderate to severe levels of social media addiction (Alnjadat et al., 2019; Salari et al., 2023; Sujarwoto et al., 2023). Evidence further suggests that social media addiction exacerbates academic stress and disrupts sleep patterns through mechanisms such as prolonged nighttime use, cognitive stimulation, and exposure to blue light (Bezerra et al., 2023; Khan, 2023; Liu et al., 2023).

Although numerous studies have established the detrimental effects of academic stress on students' sleep quality, mental health, and academic performance, limited research has examined the intricate mechanisms that explain these relationships. Specifically, the potential buffering role of academic resilience and the mediating influence of social media addiction in the relationship between academic stress and sleep quality remain underexplored among university students. These gaps necessitate further investigation, particularly within the Ghanaian higher education context.

While previous studies have explored the relationships among academic stress, social media use, and sleep quality in various international contexts (Abdalqader, 2018; Alotaibi et al., 2020; Deng et al., 2023; Nugraha et al., 2023; Safhi et al., 2020; Sümen & Evgin, 2021; Wang & Fan, 2023), such investigations remain scarce in sub-Saharan Africa, particularly Ghana. Although a few Ghanaian studies have documented the prevalence and correlates of academic stress and poor sleep quality among university students (Amponsah & Owolabi, 2011; Oppong et al., 2022; Oduro et al., 2023), research examining their combined influence with social media addiction and academic resilience is almost nonexistent. The present study, therefore, seeks to bridge this contextual gap by exploring the interrelationships among these variables among students at the University of Cape Coast.

Although several studies have examined social media addiction as a predictor, mediator, or outcome variable (Al-Menayes, 2015; Alonzo et al., 2021; Bilgin & Taş, 2018; Lei, 2021; Sümen & Evgin, 2021; Wong et al., 2020; Zhuang, 2023), there is a paucity of research investigating its mediating role between academic stress and sleep quality, particularly within African

university populations. No known empirical study has tested whether social media addiction explains how academic stress affects students' sleep quality in Ghana. This study addresses this gap by examining the extent to which social media addiction mediates the relationship between academic stress and sleep quality among university students.

Again, although resilience has been widely studied as a predictor, moderator, and outcome variable (Amah et al., 2022; Choi et al., 2023; Duarte et al., 2022; Ho et al., 2023; Kumalasari & Akmal, 2021; Miller et al., 2023; Zhou et al., 2022), there remains limited research specifically addressing academic resilience as a moderating variable in the relationship between academic stress and sleep quality. Existing studies have primarily focused on resilience in general psychological or occupational contexts, with limited attention to academic settings. The current study fills this gap by investigating how academic resilience moderates the effects of academic stress on sleep quality among university students.

In summary, the current study contributes to contemporary empirical literature by addressing three key gaps: (a) the limited understanding of how academic stress, social media addiction, academic resilience, and sleep quality interact within the Ghanaian university context; (b) the absence of research on social media addiction as a mediating variable between academic stress and sleep quality; and (c) the insufficient evidence on the moderating role of academic resilience in the same relationship. By addressing these gaps, the study provides valuable insights into the psychological and behavioral dynamics influencing university students' well-being and academic success.

Purpose of the Study

This study investigated the mediating role social media addiction and the moderating role of academic resilience in the relationship between academic stress and sleep quality among University of Cape Coast students.

Study Objectives

The study's specific objectives were to:

1. Ascertain the prevalence levels of academic stress among UCC students.
2. Ascertain the prevalence level of social media addiction among UCC students.
3. Ascertain the levels of sleep quality among UCC students.
4. Assess the degree of academic resilience among UCC students.
5. Examine the relationships between social media addiction, sleep quality, academic stress, and academic resilience among UCC students
6. Examine the mediating role of social media addiction in the link between academic stress and sleep quality among UCC students.
7. Examine the moderating role of academic resilience in the link between academic stress and sleep quality among UCC students.

Research Questions

The study was guided by these questions:

1. What is the prevalence level of academic stress among UCC students?
2. What is the prevalence level of social media addiction among UCC students?
3. What level of sleep quality do UCC students experience?
4. What is UCC students' academic resilience level?

Research Hypotheses

These hypotheses guided the study:

1. There will be a statistically significant relationship between academic stress, social media addiction, academic resilience and sleep quality among UCC students.
2. Social media addiction will statistically significantly mediate the academic stress and sleep quality link among UCC students.
3. Academic resilience will statistically significantly moderate the relationship between academic stress and sleep quality among UCC students.

Significant of the Study

Since academic stress is one of the main factors that affects students' health and well-being worldwide, research in this area is crucial because it will provide insight into the intricate relationship between academic stress, academic resilience, social media addiction, and sleep quality among university of cape coast students.

More precisely, the research's findings will be helpful to all stakeholders of the university community, the Ghana Psychology Council, and other stakeholders in the development of comprehensive interventions to address the problems of high prevalent rate of academic stress, poor sleep, and social media addiction among university students in Ghana. The study's findings will also help tertiary institutions' guidance and counseling departments plan seminars and other interventions to address social media addiction, poor sleep, and academic stress among university students.

The study's findings and recommendations will also educate university students on the value of academic resilience in helping them control their stress levels and social media addiction in ways that will enhance sleep quality levels. Additionally, the findings of this study will benefit researchers and clinical health psychologists by providing empirical literature and useful implications in the areas of academic resilience, social media addiction, sleep quality, and academic stress.

Overall, the results and recommendation from this study will contribute to an all-inclusive understanding of students' sleep health, social media addiction behavior, academic stress and academic resilience levels, ultimately informing the development of effective interventions to:

Reduce academic stress: By implementing stress-management strategies and fostering supportive learning environments.

Promote healthy sleep habits: Through education on sleep hygiene practices and minimizing late-night social media use.

Enhance academic resilience: By building coping skills, fostering self-efficacy, and promoting peer support networks.

Delimitations

This study primarily was delimited to only regular students at UCC, specifically both regular undergraduate and postgraduate students. It focused mainly on academic stress, social media addiction, sleeps quality and academic resilience as study variables. More specifically, it focused on assessing the prevalence and relationship between academic stress, social media addiction, sleep quality and academic resilience. It also focused on examining the role of social media addiction as a mediator, and the role of

academic resilience as a moderator in the academic stress and sleep quality association.

It adopted a descriptive correlational design and used questionnaire mainly to gather data. It also employed the statistical product for service solution (SPSS) software, version 28.0, to analyze the collected data. Frequency, percentage, mean, standard deviation, Pearson product moment correlation, and Hayes macro process were used for data analysis.

Limitations

The cultural, social, or environmental factors specific to students at the University of Cape Coast may influence the study results and limit generalization to other universities or populations. Additionally, Hayes macro process disorganized and scattered presentation of analyzed results made it difficult for understanding and interpretation of study results. As a result, the findings might be subjected to some level of inaccuracy in interpretation. Nonetheless, the researcher ensured that analyzed results are accurately presented and interpreted by consulting expert statistical data analysts and immediate supervisors.

Definition of Key Terms

Operationally, the following definitions apply to the terms used in the study:

Academic stress: refers to students' psychological state in response to continuous academic-related demands (such as academic expectations, assignment, deadlines, exams, presentations, quizzes, and other heavy academic workloads and school-related stressors) that exceed their adaptive capacity and depletes their psychological reserves.

Sleep quality: refers to a person's general level of satisfaction with all elements of their sleep experience, primarily with regard to sleep efficiency, sleep onset latency, duration, wakefulness following sleep onset, and awakening feeling rejuvenated.

Academic resilience: refers to the ability to adapt and thrive amidst academic adversity.

Social Media Addiction: Excessive preoccupation with social media, driven by strong motivation and significant time spent on it, negatively impacting daily life, relationships, work/study, health, and overall well-being.

The Study's Structure

This study is structured into five chapters:

1. **Introduction**: Establishes the research context, problem, questions, and hypotheses, highlighting significance and limitations.
2. **Literature Review**: Examines existing research, providing theoretical and empirical insights.
3. **Methodology:** Describes research design, sampling, data collection, and analysis methods.
4. **Results and Discussion:** Presents findings and interprets results.
5. **Conclusion and Recommendations**: Summarizes key findings, draws conclusions, and suggests future directions.

CHAPTER TWO

REVIEW OF LITERATURE

Literature Review Overview

This chapter examines existing literature relevant to the study's topic and objectives. Building on the introduction, it explores theoretical foundations, key concepts, and prior research. The review is organized into four sections:

1. Theoretical framework
2. Core concepts
3. Conceptual framework for the study
4. Review of past research findings.

Theoretical framework

This study uses the Transactional Theory of Stress and Coping (Lazarus & Folkman, 1984) as a framework to explore how students cope with academic stress, the Cognitive-Behavioral Model of Internet Addiction (Young, 1998) to examine addictive social media use, and the Masten's Ordinary Magic Model of Resilience (Masten, 2018) to understand academic resilience among university students.

Transactional Theory of Stress and Coping (Lazarus & Folkman, 1984)

The Transactional Theory of Stress and Coping (TTSC) developed by Richard Lazarus and Susan Folkman in 1984 offers a dynamic framework for comprehending the intricate connection between stressful events and a person's coping mechanisms. This theory emphasizes the importance of cognitive appraisal and coping mechanisms in influencing how stress manifests itself in a person's life and how it affects them.

According to this theory, stress arises when an individual believes that their capacity to meet demands exceeds those of others. Stated differently,

stress happens when an individual feels that the difficulties of a situation exceed the means by which they can manage it (Lazarus & Folkman, 1984 as cited in Biggs et al., 2017). This means that how people react to stressors depends on their individual evaluation of the situation and their selected coping methods.

The core concepts of this theory are appraisal, coping and transaction. The idea of cognitive appraisal is fundamental to the theory. According to the theory, an individual appraisal of a stressful situation or an event can be categorized as either a primary or a secondary. During the primary appraisal, an individual assesses the degree of stress associated with a situation or event. In the secondary appraisal, the individual assesses the resources at their disposal to deal with the stressful circumstance. These appraisals shape the individual's emotional and behavioral responses to situations (Biggs et al., 2017; Lim et al., 2024).

According to the transactional perspective, individuals employ different coping strategies to handle stress, primarily using two approaches: Emotion-focused coping (managing emotional responses); Problem-focused coping (addressing the root cause of stress) (Lim et al., 2024; Miller, 2003). The problem-focused coping strategies mainly focus on addressing the underlying causes of stress. It involves efforts to solve or manage the source of the stress. The emotion-focused coping strategies, on the other hand, focus on reducing negative emotions associated with stress. It basically involves efforts to regulate emotional responses to the stressor (Lim et al., 2024).

Overall, the theory emphasizes the active role of individuals in managing stress through constant revision and adjustment of cognitive appraisal and coping strategies, impacting subsequent interactions and outcomes. According to the theory, positive appraisals, such as perceiving a situation as a challenge rather than a threat, can enhance coping and promote resilience. Negative appraisals, on the other hand, can lead to maladaptive coping strategies and increase the likelihood of negative outcomes.

How academic stress is explained by the Transactional Theory of Stress and Coping

The Transactional Theory of Stress and Coping (Lazarus & Folkman, 1984) provides insight into the process of experiencing and managing academic stress. It emphasizes the ongoing interaction between a student and their academic environment, rather than viewing stress as a simple reaction to external pressures.

Central to the theory is the concept of cognitive appraisal. Students constantly assess academic situations to understand their potential impact on their well-being. This appraisal happens on two levels:

Primary Appraisal: This initial evaluation determines if a situation is irrelevant, positive, or stressful. Factors like workload, deadlines, and perceived difficulty of exams can all be appraised as stressful.

Secondary Appraisal: If something is deemed stressful, a secondary appraisal evaluates the person's ability to cope with it. A student might consider their available resources (time management skills, support systems, access to help) and their perceived control over the situation (can they influence the workload or deadlines?).

The transactional perspective highlights that stress isn't just about the demands of academics (exams, assignments), but how a student perceives and copes with those demands. Two students facing the same workload might experience different levels of stress depending on their appraisals. The theory suggests that students who perceive academic challenges as opportunities for growth and who feel confident in their coping abilities will experience less stress. Conversely, students who view challenges as threats and feel overwhelmed by demands are more prone to experience significant academic stress.

This framework is helpful for understanding why some students thrive under pressure while others crumble. It highlights the importance of not just reducing academic demands, but also helping students develop healthy coping mechanisms and fostering a positive academic environment where challenges are seen as opportunities for learning and growth.

The Cognitive-Behavioral Model of Internet Addiction (CBM-IA)

The Cognitive-Behavioral Model (CBM) of internet addiction first proposed by Dr. Kimberly Young in the late 1990s provides a helpful lens to understand how our thoughts, feelings, and behaviors all play a role in compulsive internet use. This theory explains the cognitive and behavioral factors that contribute to the development and persistence of internet addiction, including social media addiction.

The framework rests on the assumption that internet addiction stems from a cycle of unhelpful thinking patterns and behaviors regarding internet use. These thoughts and behaviors reinforce each other, making it difficult to break free from excessive internet use. The key components of the theory are cognitive distortion, behavioral pattern and maintaining cycle.

Cognitive Distortions:

According to the theory as cited in Davis, (2001) and Young, (2011), people struggling with internet addiction often develop negative or unrealistic thinking patterns about the internet and themselves as internet users. Examples include:

Belief in magical thinking: The internet is seen as a magic solution to escape problems or boredom.

Black and white thinking: Internet use is seen as either "all good" or "all bad," making it hard to find balance.

Minimization/Denial: Downplaying the length of time spent online or the drawbacks associated with it.

Behavioral Patterns:

According to the theory, based on the distorted cognition, the individual develops certain behaviors which become ingrained in the addiction cycle. These might include:

Excessive internet use: Spending an inordinate amount of time online, neglecting responsibilities.

Withdrawal symptoms: Feeling anxious, irritable, or restless when unable to access the internet.

Loss of control: Repeated failed attempts to cut down on internet usage (Davis, 2001 & Young, 2011).

Maintaining the Cycle:

The theory adds that the cycle perpetuates itself as negative thoughts about needing the internet to feel good (cognitive distortion) lead to excessive use (behavioral pattern). This use provides temporary relief, reinforcing the belief that the internet is essential (back to cognitive distortion) (Young, 2011; Davis, 2001).

Overall, the model suggest that people become addicted to the internet when they habitually use it to either increase or decrease positive or negative emotions, such as pleasure or excitement, or to alleviate or escape from negative emotions like stress or anxiety. This starts a vicious cycle of reinforcement or the use of unhealthy coping mechanisms, which reinforces the behavior even more (Young, 2011).

How social media addiction is explained by the Cognitive-Behavioral Model of Internet Addiction (CBM-IA)

This study applies the Cognitive-Behavioral Model of Internet Addiction (CBM-IA) to explore the development of social media addiction among students and its impact on their academic performance. This model is particularly useful because it highlights the thought processes and behaviors that contribute to addictive social media use across different age groups. Here is how the CBM-IA explains social media addiction.

1. CBM-IA acknowledges that certain individuals are more likely to get addicted social media due to pre-existing conditions like anxiety or loneliness. These underlying issues can make social media a seemingly attractive escape.

2. Similar to general internet addiction, social media addiction is fueled by unhelpful thinking patterns (distorted cognitive process). These might include:

   Fear of Missing Out (FOMO): The belief that others are having more exciting lives online, leading to compulsive checking and social comparison.

   Need for Validation: Excessively relying on social media "likes" and comments for self-worth and social validation.

   Black and White Thinking: Believing social media is the only way to connect with others, leading to isolation if unable to access it.

3. The Cognitive-Behavioral Model of Internet Addiction (CBM-IA) identifies factors that reinforce addictive behavior. Social media addiction, like internet addiction, involves patterns of behavior and a cycle of reinforcement. As indicated by the CBM-IA, problematic internet use is reinforced by the positive emotions that people get from engaging in the behavior. This reinforcement cycle is also present in social media addiction, where individuals seek to use social media to alleviate undesirable emotions (such as stress, loneliness, anxiety) or enhance positive emotions (such as entertainment, communicating and connecting with friends, seeking validation from social media likes and comments), leading to reinforcement of the addictive behavior.

4. CBM-IA highlights how social media can become a primary coping mechanism for emotional distress. According to the theory, people might turn to social media to avoid negative emotions or to distract

themselves from sadness, loneliness, or anxiety. Others might use social media to feel safe, especially for those with social anxieties.

5. CBM-IA pinpoints potential triggers: The model helps researchers and therapists understand how external cues can trigger cravings for social media use. The CBM-IA places a strong emphasis on how social and environmental factors contribute to the emergence of problematic internet use. It highlights that our surroundings and social circles play a part in how much we use the internet, for good or bad. In the same way, social media addiction can be fueled by things like pressure from friends, social norms, and accessibility of technology. For example, individuals may feel pressure to constantly check their social media accounts due to social norms or peer influence. Additionally, social media platforms are designed to be highly engaging and may encourage addictive behavior through features such as likes, comments, and notifications.

Overall, The Cognitive-Behavioral Model of Internet Addiction (CBM-IA) provides a valuable framework for understanding the cognitive and behavioral factors driving social media addiction, making it a suitable model for explaining this phenomenon in both general and student populations.

Masten's theory of resilience (Masten, 2001)

Masten's theory of resilience also known as Masten's Ordinary Magic Model offers a comprehensive framework for understanding and promoting resilience in individuals facing adversity. This theory departs from traditional deficit-oriented models of resilience by highlighting the inherent capacity for

resilience within individuals and the dynamic interplay between protective and risk factors.

It suggests that individuals possess inherent capacity to continuously navigate a dynamic interplay between protective and risk factors that enables them to adapt and overcome challenges (Masten, 2009). Risk factors, as defined by the theory, are traits or external conditions that raise a person's vulnerability to unfavorable outcomes, like mental illness, abuse, or poverty. Individual strengths and resources that act as a buffer against risk and encourage positive adaptation are known as protective factors, on the other hand (Masten, 2016).

Importantly, the model emphasizes that the balance between these factors can fluctuate over time, and cause individuals with significant risk factors to demonstrate resilience when supported by adequate protective factors (Masten, 2016). This means that the interplay or repeated interactions between risk and protective factors over time shapes an individual's trajectory of adaptation, by either increasing or decreasing their resilience in the face of adversity.

Overall, Masten's Ordinary Magic Model offers a valuable framework for understanding and promoting resilience. By highlighting the inherent capacity for adaptation within individuals and the dynamic interplay of risk and protective factors, the model provides a more nuanced perspective on individual responses to adversity. Despite its limitations, especially the emphasis on individual characteristics, Masten's theory remains a foundational framework in resilience research. It continues to guide interventions and

research that aim to help people adapt and thrive in the face of difficulties (Masten, 2018).

How Masten's theory of resilience underpins academic resilience

Masten's Ordinary Magic Model offers valuable insights into understanding and promoting academic resilience. Here's how it underpins the concept of academic resilience:

1. Ordinary magic in the classroom: Similar to Masten's core concept, all students possess an innate capacity for academic resilience. This "ordinary magic" manifests as individual characteristics like curiosity, perseverance, and positive self-belief. These internal strengths may serve as powerful resources for students when encountering academic challenges.
2. Navigating risk and protective factors: Masten's model emphasizes the interplay of risk and protective factors. Academic risk factors, such as learning difficulties, family issues, or peer pressure, can threaten academic progress. However, protective factors like effective study skills, strong social connections with supportive peers and teachers, and access to academic resources can buffer against these risks and promote positive academic adaptation.
3. Cumulative adaption: Masten highlights the importance of cumulative adaptation, where the repeated interactions between risk and protective factors over time shape a student's academic trajectory. Positive experiences and successful navigation of challenges can strengthen both protective factors and the individual's belief in their abilities (ordinary magic), leading to increased academic resilience.

Conversely, repeated negative experiences or lack of sufficient support can diminish protective factors and weaken the belief in their ability to succeed, potentially hindering academic resilience.

In conclusion, Masten's Ordinary Magic Model offers a valuable framework for understanding academic resilience. By acknowledging the inherent capacity for resilience within students and fostering a supportive environment that addresses risk and protective factors, educators and parents can play a crucial role in promoting positive academic adaptation and fostering resilient learners.

Review of Core Concepts

This section defines key concepts and constructs a framework to illustrate the hypothesized relationships between study variables. It reviews core concepts relevant to the study's variables.

1. Academic stress
2. Sleep Quality
3. Social Media Addiction
4. Academic Resilience

Academic Stress

Academic stress is the term used to describe the physical and mental strain that students endure as a result of the expectations and pressures associated with their academic endeavors (Misra & Castillo, 2004; Suárez et al., 2020). This stress can stem from various factors and greatly affect a student's well-being, academic performance, and overall functioning (Reddy et al. 2028).

The etiology or factors that account for academic stress among students are internal and external in nature, and have been categorized by some researchers into academic work load, academic expectations, family problem, social problem, competitive academic environments, psychological problems, academic-related financial stress, and time pressure (Agolla & Ongori, 2009; Freire et al., 2020).

Academic workload such as heavy course loads, tight deadlines, and demanding course content and assignments can overwhelm students, leading to stress (Feld,2020; Nugraha et al., 2023). Difficulty managing time effectively to meet academic deadlines, juggle multiple commitments, and balance personal life can also be overwhelming and contribute to stress (Feld, 2020). Pressure to achieve good grades, fear of failure and performance anxiety during exams, and the perceived or actual pressure to compete with peers for grades, placements, or scholarship opportunities can contribute to academic stress significantly (Owusu & Essel, 2017; Nandamuri & Gowthami, 2011). Limited access to learning resources, study spaces, and necessary support systems can exacerbate academic stress and hinder academic progress. In addition to creating extra burdens and affecting a student's capacity for effective coping, financial hardships, family problems, and personal struggles can also lead to academic stress (Simpson, 2018).

Stress related to academic pursuit can trigger a cascade of negative effects, impacting students' psychological well-being (anxiety, depression, low self-esteem), physical health (headaches, fatigue, sleep disturbances), behaviour problems (disturbed sleep pattern, eating disorders, difficulty focusing or withdrawal from social activities) and academic performance

(decreased motivation, difficulty focusing, and increased risk of failure) (Nugraha et al., 2023; Owusu & Essel, 2017; Simpson, 2018).

To manage academic stress, students can utilize strategies like effective time management, healthy lifestyle choices, stress management techniques, and building strong social and professional support networks (Aina & Wijayati, 2019; Kumar & Bhukar, 2013;).

In summary, academic stress is a widespread phenomenon with significant consequences for students' well-being and academic achievement. As a result, students can be better equipped to handle academic difficulties and preserve their mental and physical health by learning about the causes of academic stress, its possible effects, and useful coping mechanisms.

Sleep Quality

Sleep is a basic biological process that seems to have a big impact on our mental and physical well-being. (Walker, 2017). Sleep quality, on the other hand, is a measure of both the objective and subjective elements of an individual's sleep experience. The measure encompasses several important dimensions of a person's overall satisfaction with sleep which includes sleep duration, effectiveness, latency of sleep onset, and the sensation of rejuvenation upon waking; (Fabbri et al., 2021; Short et al., 2013).

Subjective sleep quality is the term used to describe how someone feels about their sleep. It encompasses elements such as sleep onset latency (trouble falling asleep), sleep continuity, total duration of sleep, revitalizing effect (waking up feeling rested and refreshed), and feelings of fatigue or sleepiness all day (Krystal & Edinger, 2008; Nelson et al., 2022).

Conversely, objective sleep quality is a measurement of sleep quality based on physiological data obtained from polysomnography, a sleep study that logs breathing patterns, eye movements, muscle activity, and brain activity during sleep to provide details on sleep architecture (a measure of the amount of time spent in various stages of sleep), arousal index (number of brief awakenings during the night), and sleep efficiency (percentage of time actually spent asleep) (Wang, & Bíró, 2021).

A person's sleep can be disrupted by internal factors such as age, genetics, pre-existing medical conditions, and sleep disorders (such as sleep apnea and insomnia) (Nelson et al., 2022; Zou et al., 2020). Environmental factors such as noise, light exposure, temperature, bedroom environment also affect a person overall sleep experience (Thomée et al., 2011; Tan et al., 2016). Behavioral or lifestyle factors like caffeine intake, alcohol consumption, include media use habits, exercise routine, screen time before bed, sleep hygiene practices also affect a person sleep (Hoggard & Hill, 2018; Wang, & Bíró,2021).

Psychological or mental health factors like stress, anxiety, depression, emotional disturbances have been identified to also affect and disrupt a person sleep (Freeman et al., 2020). Work schedules, social commitments, childcare duties, and financial worries are examples of social factors that great affects an individual's overall sleep experience (Goodin et al., 2010; Schlarb et al., 2017). Overall, these factors can improve, worsen, or have no effect on our ability to sleep deeply and wake up feeling rested (Wang, & Bíró, 2021).

Poor sleep quality can have a deleterious effect on one's overall well-being, mental and physical health, and performance and productivity. When it

comes to physical health, a regular lack of sleep can raise one's risk of obesity, diabetes, cardiovascular disease, and weakened immune system (Liew & Aung, 2021; Ramar et al., 2021;). In terms of mental health, getting too little sleep increases the likelihood of experiencing anxiety, depression, cognitive decline, and emotional dysregulation (Freeman et al., 2020).

Inadequate sleep can have a detrimental effect on productivity and performance. It can lead to problem focusing, decreased in level of alertness, memory loss, and decreased in daily functioning (Craven et al., 2022; Hudson et al., 2020; Pilcher & Morris, 2020). A person's energy levels, mood, and ability to withstand stress can all be negatively impacted by getting poor-quality sleep (Nelson et al., 2022; Wang & Bíró, 2021).

In summary, sleep quality is a multifaceted phenomenon influenced by biological, environmental, behavioral, and psychological factors. Understanding this concept and the interplay of these factors is essential for promoting healthy sleep practices and optimizing well-being. Therefore, a comprehensive evaluation of a college student's sleep quality requires an examination of their lifestyle factors, mental health, social environment, and physical environment.

Social Media Addiction

Social media addiction is a type of internet addiction characterized by an unhealthy reliance on social media usage to meet basic needs (Sun & Zhang, 2021). This dependence can lead to compulsive behavior, reduced self-control, and negative impacts on daily life, physical health, and mental well-being (Sümen & Evgin, 2021).

The term "social media addiction" combines "social media" and "addiction" to describe an unhealthy dependence on interactive online platforms like blogs, social network sites, and status update services (e.g., Twitter, WhatsApp, Instagram). These platforms allow users to share content, connect with others, and be entertained (Dewing, 2010). "Addiction," as defined by the American Psychological Association (APA, 2013), refers to excessive and compulsive behaviors that significantly disrupt a person's well-being and way of life.

Although not yet classified as a formal disorder, social media addiction (SMA) is gaining attention as a concerning pattern of addictive behavior. Individuals who suffer from SMA display obsessive and excessive social media use, which can cause serious issues in a number of ways. More specifically, they display traits like losing control over usage, getting obsessed with social media, feeling bad when they can't access it, needing to spend ever-larger amounts of time on social media to feel satisfied, experiencing bad outcomes from their use, and going back to using excessively after making an effort to stop (Andreassen et al., 2017).

According to Andreassen et al. (2017) and Andreassen & Griffiths (2016), social media addiction consists of several key components: Loss of control: Inability to limit social media use despite negative consequences. Preoccupation: Persistent thoughts about social media. Negative emotions: Distress or anxiety when access to social media is restricted. Tolerance: Needing to spend more time on social media to achieve the same satisfaction. Consequences: Negative impact on daily life, including neglect of important activities. Relapse/loss of control: Unsuccessful attempts to control or reduce

social media use.

Individual vulnerabilities and environmental factors are factors that impact a person's level of susceptibility to get addicted to social media (Fabris et al., 2020; Hamutoglu et al., 2020). Personality traits like neuroticism, low self-esteem, sensation seeking, and impulsivity are examples of individual vulnerability. Mental health issues like anxiety, depression, and loneliness can also make an individual more susceptible to social media addiction (Hamutoglu et al., 2020).

Addictive engagement can also be fueled by stress and boredom, which lead people to seek solace from unpleasant feelings or to avoid boredom or perhaps to develop a fear of missing out (Fabris et al., 2020). Social isolation typically lack of real-world connection can also increase reliance on online interactions (Meshi et al., 2020). Platform design and algorithmic feature like notifications, endless scrolling, and personalized content can also perpetuate one's social media engagement leading to addictive social media use behavior (Bergamin, 2021).

Excessive social media use can have negative effects on various aspects of life, including: Mental health: anxiety, depression, loneliness, and low self-esteem. Physical health: headaches, eye strain, sleep disturbances, and reduced physical activity, social relationships and academic/work performance (Ferris et al., 2021; Malak et al., 2022; Zhao, 2021).

Addiction to social media can also affect a person's relationships with others. People start ignoring their in-person relationships as a result, which breeds conflict and loneliness. Furthermore, due to a decrease in focus, attention, and productivity, social media addiction also affects performance

and productivity, particularly on academic and professional performance (Hamutoglu & associates, 2020).

Academic Resilience

Resilience refers to an individual's inner strength that enables them to thrive despite challenges (Cassidy, 2016). In academic settings, this concept is known as academic or educational resilience (Wilks, 2008). Academic resilience is a context-specific manifestation of psychological resilience that describes a student's capacity for positive adaptation and their ability to overcome academic challenges. Overall, it reflects a student's positive adaptation and ability to bounce back to success in the face of acute or chronic academic demands, setbacks, and challenges.

According to Cassidy (2016) the processes of successful adaptation to academic adversity within a given academic context fall within four psychological dimensions namely: perseverance, reflective and adaptive help-seeking, negative affectivity, and emotional response or reaction. The perseverance dimension measures students' capacity to overcome academic hurdles and persist in their studies. It's a vital aspect of academic resilience, enabling students to rebound from setbacks, stay motivated, and push forward toward their goals despite challenges.

The reflective and adaptive help-seeking dimension assesses students' ability to seek assistance and support when facing academic challenges or difficulties in a thoughtful and flexible manner. The reflective and adaptive highlights the importance of students not only recognizing when they need help but also taking deliberate and effective steps to seek the most appropriate assistance to address their specific needs (Cassidy, 2016).

The negative affectivity and emotional response dimension assess students how students manage and cope with their emotions in response to academic challenges and stressors. Negative affectivity refers to a person's tendency to frequently or intensely experience negative emotions like anxiety, sadness, anger, or self-doubt.

The emotional response refers to how students/an individual reacts to and handle the emotional aspect of academic difficulties or failure. It basically encompasses the strategies and coping mechanisms employed to manage emotions when confronted with challenges (Cassidy, 2016).

Research has identified several key characteristics associated with academic resilience: Person with high academic resilience is said to possess positive self-belief and confidence, growth mindset, strong coping and mechanisms, goal oriented and perseverant and strong social support (Sumner, 2018; Zarrinabadi et al., 2022).

Resilient students believe in their ability to learn and succeed, even in the face of setbacks (Zarrinabadi et al., 2022). They often view challenges as opportunities for learning and growth, rather than obstacles that define their abilities (Martin & Marsh, 2008). They effectively manage stress, anxiety, and frustration through healthy coping strategies like problem-solving, self-talk, and seeking support (Martin & Marsh, 2008: Reyes, 2016). They set realistic goals, persevere through difficulties, and remain motivated to achieve their academic aspirations (Martin & Collie, 2016). Resilient students often have supportive relationships with family, teachers, and peers, providing encouragement and guidance (Cefai, 2008; Martin & Collie, 2016).

Academic resilience is shaped by multiple factors, including individual, family, school, social, and cultural influences (Twum-Antwi et al., 2020). Personality traits, cognitive abilities, and prior academic experiences are examples of individual factors that can affect the development of academic resilience among students (Martin & Marsh, 2008).

Supportive and positive family environments can foster resilience among students by providing emotional security and encouraging academic success (Twum-Antwi et al., 2020). Effective teaching practices, positive school climates, and access to resources can contribute to student resilience (Martin & Collie, 2016). Socioeconomic disadvantage, discrimination, and other social barriers can hinder the development of resilience, while supportive communities and cultural values can promote it (Morales & Trotman, 2004).

Conceptual Framework

The study's conceptual framework is founded on the key variables that are examined. The framework was created by the researcher using the literature review as a guide. Figure 1 shows the anticipated relationships between the study's variables. In this framework, sleep quality is the outcome being measured (dependent variable), while academic stress is the factor being examined as a potential influence (independent variable). Social media addiction is the mediating variable, and academic resilience is the moderating variable.

Stress is generally known to affect sleep quality (Martire et al., 2020). As such, as shown in Figure 1, it is anticipated that when students are academically stressed, it may interrupt their sleep and cause them to

experience poor sleep quality, a major consequence on students' physical health, and over all wellbeing. It is anticipated that students may seek ways to relieve academic stress, potentially turning to social media as a coping mechanism. However, excessive social media use can lead to addiction, disrupt sleep patterns, and negatively impact overall sleep quality. This can create a vicious cycle whereby academic stress, social media addiction, and poor sleep quality are all exacerbated.

Conversely, resilience has been shown to strongly support the idea that stress directly affects quality of sleep (Du et al., 2020; Li et al., 2029). High resilience individuals are thought to have specific traits that help them manage stress effectively and enable them to get good quality sleep even when under stress (McCuistion, 2016).

It is expected that academic resilience will mitigate the impact of academic stress on sleep quality among UCC students, acting as a buffer to reduce this relationship. Conversely, social media addiction is projected to exacerbate the link between academic stress and poor sleep quality. Figure 1 presents the conceptual frame work.

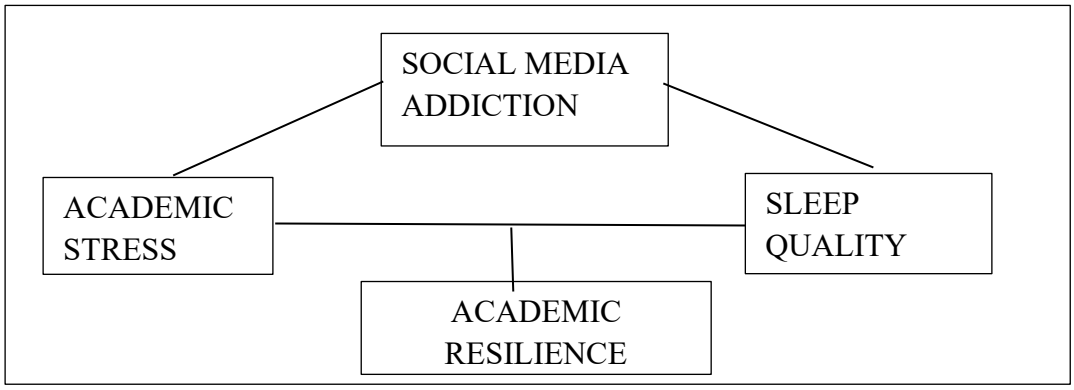

Figure 1: *Conceptual Framework (Researcher's Own Construct):*
Source: Field work (2023)

Empirical Review

This section synthesizes empirical studies relevant to the present research, focusing on the prevalence and interrelations among academic stress, social media addiction, sleep quality, and academic resilience among university students.

Prevalence of Academic Stress among University Students

Empirical evidence consistently indicates that academic stress is pervasive in higher education. Almojali et al. (2017) found that 53% of medical students at King Saud bin Abdulaziz University experienced frequent academic stress. Similarly, Nugraha et al. (2023) reported that 44.5% of students at Airlangga University experienced high stress levels during the COVID-19 pandemic. In Thailand, Saipanish (2003) observed that 61.4% of medical students experienced stress, with 2.4% reporting severe levels. In Pakistan, Waqas et al. (2015) found that 59.7% of students experienced high stress, confirming the global prevalence of academic stress.

In Ghana, Anaman-Torgbor et al. (2021) reported that 73% of nursing students experienced academic stress, with female students twice as likely as males to report stress. Similarly, Amponsah and Owolabi (2011) found that 70% of first-year university students reported moderate stress. Collectively, these findings highlight academic stress as a universal challenge requiring institutional interventions to promote student well-being.

Prevalence of Social Media Addiction among University Students

Social media addiction is an emerging behavioral concern among university students. A global meta-analysis by Salari et al. (2023) estimated that approximately 18.4% of university students exhibit social media addiction.

Regional studies suggest higher prevalence: Sujarwoto et al. (2023) reported widespread addiction among Indonesian students, while Alnjadat et al. (2019) found that 81.6% of students at the University of Sharjah demonstrated addictive tendencies. In Ghana, Otu (2015) revealed that 80% of students reported moderate to mild addiction. These findings underscore the growing dependence on social media among students and its implications for mental health and academic engagement.

Sleep Quality among University Students

Poor sleep quality is a widespread problem among university populations. Alotaibi et al. (2020) found that 77% of Saudi medical students reported poor sleep quality, while Almojali et al. (2017) reported similar findings (76%) at King Saud bin Abdulaziz University. Nugraha et al. (2023) found that 84.7% of medical students experienced poor sleep during the pandemic, and Safhi et al. (2020) reported comparable results (76.4%). Across Africa, Nakie et al. (2024) estimated that 63.3% of students experienced poor sleep. Ghanaian studies by Oduro et al. (2023) and Yeboah et al. (2022) reported prevalence rates between 54.1% and 62.4%, confirming poor sleep quality as a pressing concern among university students.

Relationship between Academic Stress and Sleep Quality

Extensive research supports a reciprocal relationship between stress and sleep. Elevated stress levels often lead to poor sleep quality, while sleep deprivation exacerbates stress (Breus, 2023; Schneider, 2022). Wang and Fan (2023) reported a significant positive correlation ($r = .50$, $p < .001$) between academic stress and poor sleep among Chinese adolescents, while Wong et al. (2020) observed a similar relationship among Hong Kong students ($r = .39$, $p < .001$).

Consistent findings have been reported in Saudi Arabia (Almojali et al., 2017; Safhi et al., 2020), the United States (Valerio et al., 2016), and Indonesia (Nugraha et al., 2023). Collectively, these studies affirm that academic stress reliably predicts poor sleep across diverse student populations.

Social Media Addiction as a Mediator

Recent evidence suggests that social media addiction mediates the relationship between academic stress and sleep quality. Sümen and Evgin (2021) found that academic stress was positively associated with social media addiction among Turkish students, while Wong et al. (2020) reported a significant link between stress, problematic social media use, and poor sleep quality ($r = .35$, $p < .001$). Similarly, Zhuang (2023) and Alonzo et al. (2021) found that social media addiction was strongly associated with diminished sleep quality. These findings indicate that students under stress may turn to social media as a coping mechanism, leading to addictive use patterns that impair sleep.

Academic Resilience as a Moderator

Academic resilience moderates the effects of stress on various outcomes, including sleep quality and academic satisfaction. Li et al. (2019) demonstrated that resilience buffered the impact of stress on sleep among Chinese undergraduates ($\beta = -.22$, $p < .01$), while Kumalasari and Akmal (2021) found that resilience mitigated the negative effect of academic stress on learning satisfaction ($\beta = -.013$, $p < .01$). Similarly, Choi et al. (2023) observed that resilience moderated the relationship between academic stress and school adjustment among Korean students ($\beta = .06$, $p < .05$). These findings collectively highlight resilience as a protective factor that enables students to adapt effectively under stress.

Comparative Analysis of Conflicting Findings

Although research generally supports the prevalence of academic stress, social media addiction, and poor sleep, variations exist in prevalence rates and effect sizes. Global prevalence of academic stress ranges between 44% and 61%, whereas Ghanaian studies report rates exceeding 70%. Discrepancies likely stem from methodological differences, measurement tools, and contextual factors. Similarly, reported social media addiction rates range widely—from 18% globally to over 80% in local contexts—reflecting diverse diagnostic thresholds and cultural attitudes toward technology. While academic resilience consistently emerges as a moderating factor, its effects may differ by context and measured outcomes.

Summary of Reviewed Literature

The empirical literature consistently identifies high levels of academic stress, poor sleep quality, and social media addiction among university students worldwide. These variables are interrelated, with academic stress predicting both social media addiction and reduced sleep quality. Academic resilience emerges as a key moderating factor that mitigates these adverse effects. Collectively, the literature underscores the need for holistic interventions addressing academic stress, digital behavior, and resilience enhancement among university students, particularly in Ghanaian contexts.

CHAPTER THREE

METHODOLOGY

Introduction

The research techniques used in the study are thoroughly explained in this chapter. It covers the target population, sampling strategy, methods for gathering data, approaches for analyzing data, and ethical considerations. The researcher thoroughly explains why each study method was chosen.

Philosophical underpinning

This study was underpinned by the positivist research paradigm, which assumes that reality is objective, measurable, and independent of human perception. Positivism emphasizes the use of empirical evidence, logical reasoning, and structured methodologies to test hypotheses and uncover causal relationships between variables (Creswell, 2014). In this paradigm, researchers maintain a detached and neutral stance to ensure objectivity and reliability. This worldview aligns with the aim of this study, which seeks to investigate quantifiable relationships between academic stress, sleep quality, social media addiction, and academic resilience among university students. This perspective is consistent with the objective of this research, which aims to explore measurable links among academic stress, sleep quality, social media addiction, and academic resilience in university student populations.

Research approach

Following the positivist perspective, this study employs a quantitative research methodology that focuses on gathering and analyzing numerical data to uncover trends, evaluate theoretical propositions, and produce findings that can be generalized to larger populations (Bryman, 2016). Quantitative

research is particularly suited for studies that involve hypothesis testing and measurement of variables using standardized instruments. It allows for statistical analysis and facilitates the interpretation of data in a way that supports the development of evidence-based conclusions. The use of surveys and structured questionnaires in this study reflects the methodological preferences of quantitative research and the positivist paradigm, ensuring the reliability and validity of the results through standardized procedures and objective analysis (Cohen, Manion, & Morrison, 2018).

Research Design

This research employed a descriptive correlational design to explore the associations between academic stress, sleep quality, social media addiction, and academic resilience among university students. Descriptive correlational design is suitable when the goal is to describe and measure the strength and direction of associations between two or more variables without manipulating them (Polit & Beck, 2017). This design is appropriate for this study because it enables the researcher to explore naturally occurring relationships in a real-world setting, providing insight into how these psychological and behavioural variables interact. It does not attempt to establish causality but rather focuses on identifying significant patterns and associations that can inform future interventions or research (Creswell, 2014). By using this design, the study maintains a non-experimental framework aligned with the positivist paradigm, employing statistical techniques such as Pearson's correlation and regression analysis to interpret the data objectively and systematically (Brink, Van der Walt, & Van Rensburg, 2018).

Study Setting

This research was carried out at the University of Cape Coast (UCC), a publicly funded higher education institution located in Ghana. This university, established in 1962, is a prominent institution in Ghana and West Africa, known for its commitment to community development and its strong academic programs. It provides a vast array of graduate and undergraduate programs in a number of fields, including business, education, science, technology, humanities, and social sciences. The university has a well-kept campus with state-of-the-art amenities like fully furnished lecture halls, labs, libraries, sports facilities, and students' residences. It collaborates and partners with organizations and institutions in Ghana and around the globe, offering staff and students the opportunity to participate in exchange programs, research, and other international cooperation opportunities. Overall, the University of Cape Coast is a well-know, diversified and dynamic organization that provides students with a top-notch education and academic experience.

Population

The research or target population refers to the complete group of individuals, objects, or events that possess specific characteristics relevant to the focus of the researcher's study (Stratton, 2021). This broader population serves as the source from which a more readily accessible group (the accessible population) is selected. Generalizations about the entire group are then made based on the findings from the accessible group (Stratton).

The University of Cape Coast (UCC) student body served as the main target population for this study. From this broader group, the researcher identified the accessible population—specifically, regular students enrolled at

UCC. This subgroup formed the actual sampling frame used to determine and select a suitable sample size for the research, with the intention of generalizing the findings to the larger student population.

As of March 2023, the University of Cape Coast has 29,136 regular students, including 27,028 undergraduates and 2,108 postgraduates, out of total student population of 74,720 according to university records. UCC regular students were chosen due to their easy accessibility, typical experience with academic pressure linked to social media use and sleep issues, and suitability based on prior research on stress.

Sample size and sampling procedure

Using the Yamane formula $n = \frac{N}{1+N(e^2)}$ a sample size of 394 was calculated to accurately represent the population of 29,136 regular students at the University of Cape Coast. This calculation was based on a 95% confidence level and a 5% margin of error, ensuring statistical precision in the study's findings. While acknowledging its limitations, the researcher chose this approach due to its simplicity, resource-efficiency, and ability to provide a representative sample.

To obtain the required sample size, the study employed a stratified random sampling method, which ensured that all individuals in the population had an equal opportunity to be selected (Campbell et al., 2020). This approach enhances the reliability of the research outcomes and allows for broader generalization of the results to the target population.

Data collection instruments

The research made use of a standardized questionnaire that incorporated four established and validated measurement tools: the Academic Stress Scale, Academic Resilience Scale, Bergen Social Media Addiction Scale, and the Sleep Quality Scale. Questionnaires were chosen because it gives the researcher the chance to gather both subjective and objective data from a large sample size, even under resource constraints (Abawi, 2017). Additionally, questionnaires offer a degree of anonymity and privacy for participants.

The questionnaire began by collecting demographic information from participants. This included gender, age, education level, religious affiliation, typical sleep hours per night, and total social media usage. These demographics were chosen based on relevant university student data from existing research and aligned with the study's variables of interest. The remaining sections of the questionnaire presented the four pre-existing scales used in the research:

The Academic Stress Scale

The Academic Stress Scale, a well-known 35-item survey created by Kohn and Frazer (1981) to gauge the stress levels of university students, was employed in the study. Students are asked to rate typical college stressors on a 5-point Likert scale, with (1) denoting "not at all stressful" and (5) denoting "extremely stressful," in order to determine their level of academic stress. The scale's total scores fall between 35 and 175, with higher numbers denoting higher levels of stress. A score between 35 and 81 denotes a mild academic stress level, between 82 and 127 a moderate level, and between 128 and 175 a

high level. The scale is a good option for assessing academic stress in UCC students because it has a track record of reliability (i.e., Cronbach's alpha score of .86 in this study and .92 in the original study).

Bergen Social Media Addiction Scale (BSMAS)

The study employed the 6-item self-administered Bergen Social Media Addiction Scale (BSMAS), created by Andreassen et al. (2016), to assess levels of social media addiction among students at the University of Cape Coast. The Bergen Social Media Addiction Scale (BSMAS) assesses an individual's risk of social media addiction by measuring six core components of addictive behavior: preoccupation, mood modification, tolerance, withdrawal, conflict, and relapse, as identified by Griffiths (2014). Responses are captured using a 5-point Likert scale ranging from 1 ("very rarely") to 5 ("very often"), producing total scores between 6 and 30. Higher scores indicate a greater likelihood of addiction. Based on Bányai et al. (2017), a score of 19 or above suggests a potential social media addiction. In this study, the BSMAS showed strong internal consistency (Cronbach's alpha = .83), consistent with previous research where it demonstrated a reliability coefficient of .88.

Academic resilience scale (ARS-30)

The study utilized Cassidy's (2016) 30-item Academic Resilience Scale to assess how university students respond to academic challenges. This scale, tailored to academic settings, captures students' reactions—both positive and negative—in terms of their thoughts, emotions, and behaviors when faced with academic adversity. Each item is rated on a 5-point Likert scale ranging from 1 ("very likely") to 5 ("unlikely"), with total scores falling

between 30 and 150. A score of 120 or higher reflects high academic resilience, scores from 70 to 119 indicate a moderate level, and scores between 30 and 69 represent low academic resilience. The scale demonstrated strong internal consistency in its original validation (Cronbach's alpha = 0.90) and showed acceptable reliability in this study (Cronbach's alpha = 0.73).

Sleep Quality Scale (SQS)

To gauge respondents' levels of sleep quality, this study used the 28-item self-reported Sleep Quality Scale created by Yi et al. (2006). Six domains are covered by the scale: difficulty waking up, restoration from sleep, difficulty initiating and maintaining sleep, and daytime functioning. The scale's items are scored using a four-(4) point Likert-type response system, with the responses ranging from (0) rarely to (3) almost always. All items on the scale are positively structured except for items 2 and 5 that are negatively structured and need to be reversed before tallying total score. The total score on the scale ranges from 0 to 84, with higher scores (42 and above) reflecting poor sleep quality, and lower scores (41 and below) indicating better sleep quality. The scale has demonstrated strong alignment with other established sleep quality tools, such as the Pittsburgh Sleep Quality Index, and has shown good internal consistency, with a Cronbach's alpha of 0.81. In the current study, the scale-maintained reliability with a Cronbach's alpha of 0.76.

Validation and Reliability test of Data Collection instruments

Before the main study commenced, a pilot test was conducted with fifty regular students from the University of Education, Winneba. The goal of this preliminary assessment was to determine the reliability of the questionnaire's measurement scales. The analysis yielded Cronbach's Alpha

values of .86 for the Academic Stress Scale, .83 for the Social Media Addiction Scale, .73 for the Academic Resilience Scale, and .76 for the Sleep Quality Scale. Based on established guidelines (Pallant, 2020; Taber, 2018), which consider a coefficient of 0.70 or higher as indicative of acceptable reliability, all the scales used in the study met the required standard. These findings confirm that the scales were internally consistent and suitable for use in data collection.

The pre-testing also assessed the validity of the instruments, which refers to how accurately they measure the intended concepts (Håkansson et al., 2020). To ensure this, the researcher sought expert feedback from the research supervisors, leveraging their knowledge in the field to analyze the scales adopted to establish the validity of the individual items within each scale.

Method used to collect data

After receiving ethical clearance from the Ethical Review Board of the College of Education, along with approval from the Department of Education and Psychology at the University of Cape Coast, the researcher enlisted two field assistants to collect data from the accessible population between August and October 2023. These assistants underwent a dedicated two-day training to ensure they understood the ethical guidelines and sampling procedures relevant to the study.

To make participation more convenient, data collection took place during daytime hours and targeted regular students at the University of Cape Coast (UCC) living in residence halls, hostels, and accessible locations like shuttle stops and summer huts. The researcher and two field assistants approached potential participants with an official approval letter and clearly

communicated the purpose and ethical principles of the study. Informed consent was obtained from each participant to ensure their involvement was entirely voluntary.

Simple guidelines for completing the scale items were included in the used questionnaires. While providing as much information as possible without disclosing the answers, participants were encouraged to ask questions if they needed assistance understanding any of the material. Additionally, respondents were debriefed about how data collected will be secured and ensure compliance with UCC data storage policies.

Data Analysis and Processing

IBM SPSS Statistics version 28.0 was utilized to analyze the study's data. Descriptive statistics—including percentages, frequencies, means, and standard deviations—were used to present the research questions and summarize participants' demographic characteristics. Various statistical techniques were applied to test the research hypotheses. Specifically, Hypothesis 1 was examined using Pearson's Product-Moment correlation coefficient to assess the strength and direction of relationships between variables. Hypotheses 6 and 7 were analyzed using Hayes' mediation and moderation procedures. Model 4 was utilized in Hayes' process to look into mediation effects, and Model 1 was used to look into moderation effects. These analyses help to understand how one variable might indirectly influence another variable through a mediating variable (mediation) or how the relationship between two variables might be affected by a third variable (moderation). All the analyzed data were then organized and presented in tables for clear reporting in the study.

Data Management

To ensure data security and privacy, all completed questionnaires were stored securely offline in a controlled location to maintain data integrity, authenticity, and confidentiality After data collection, participants' personally identifiable information was removed, coded, and imported into the SPSS program for analysis. In addition, the electronic versions of the data were stored in a safe online location that was only accessible by the researcher. Following data entry and analysis, the researcher scrapped the completed questionnaires. Backups of the electronic data were regularly made on Google Drive to safeguard against potential risks such as human error, hardware failure, software malfunctions, and power outages. This ensured additional security and accessibility in case of technical difficulties.

Ethical Consideration

Ethical statements basically describe one's beliefs about appropriate conduct and inform an individual about what should be done (Drolet et al., 2023). It applies to our everyday lives, just as it does to social science investigation. In adhering to the ethic of a research study, the following was undertaken by the researcher:

The study first obtained ethical clearance from the Ethical Review Board of the College of Education at the University of Cape Coast. After explaining the study's purpose, participants provided verbal consent and willingly chose to take part. To protect anonymity and confidentiality, no names or identifying information were collected on the questionnaires. Participation was entirely voluntary, with no individual being pressured or

obligated to respond. All other applicable ethical standards were carefully upheld throughout the research process.

Chapter Summary

The study employed a descriptive correlational design to examine the associations among the key research variables. A total of 394 students from the University of Cape Coast were selected using a combination of convenience and purposive sampling methods. Data were gathered through four validated instruments: the Academic Stress Scale, Bergen Social Media Addiction Scale, Academic Resilience Scale, and Sleep Quality Scale. Descriptive statistics—means, standard deviations, frequencies, and percentages—were used to summarize demographic details and address the research questions. To test Hypotheses 1 through 5, Pearson's product-moment correlation coefficient was applied, while Hayes' PROCESS macro (Models 4 and 1) was used to analyze Hypotheses 6 and 7.

CHAPTER FOUR

STUDY RESULTS AND DISCUSSION

Overview

This study explored how social media addiction and academic resilience influence the relationship between academic stress and sleep quality among students at the University of Cape Coast. Data were gathered from 394 regular students using stratified random sampling and a descriptive correlational research design, employing a standardized questionnaire measuring Academic Stress, Academic Resilience, Social Media Addiction, and Sleep Quality. Descriptive statistics—percentages, frequencies, means, and standard deviations—were used to summarize demographic characteristics and address research questions. Pearson's product-moment correlation coefficient was used to test Hypothesis 1, while Hayes' PROCESS macro was applied to examine Hypotheses 6 and 7. The findings are organized under five sections: (1) Respondents' demographic characteristics, (2) Descriptive statistics of key variables, (3) Correlational results, (4) Mediation analysis, and (5) Moderation analysis.

Results

This section primarily focuses on presenting and reporting the outcomes of the data analysis. Beyond following the previously outlined sequence, the results are also organized based on the research questions and hypotheses formulated at the beginning of the study.

Demographic information of respondents

The researcher analyzed respondents' demographics using frequencies, percentages, means, and standard deviations. These demographics included

gender, age, education level, religious affiliation, preferred social media platform, daily social media usage (hours), and nightly sleep duration (hours). Categorical variables like gender, educational level and social media platform were summarized and presented in frequencies and percentages, while continuous variables like age, social media usage time, and sleep time were presented in means and standard deviations. Table 1 summarizes these results.

According to the findings, 52.8% of the respondents were female, and 32.7% were in their second year of studies. The respondents' average age was 24.38 ± (5.22) years. With 28.2% of users, TikTok was the most popular social media network used. Respondents slept for 6.28 ± (1.69) hours per night and spent 6.34 ± (4.22) hours on social media on average.

Table 1

Demographic Information of Respondents

Parameter	Frequency (n)	Percentage (%)
Total	394	100
Gender		
Female	208	52.8
Male	186	47.2
Educational level		
Level 100	93	23.6
Level 200	129	32.7
Level 300	89	22.6
Level 400	52	13.2
Postgraduate	31	7.9
Social media Frequently used	46	11.7
Facebook	96	24.4
WhatsApp	96	24.4
Instagram	111	28.2
Tiktok	26	6.6
Youtube	19	4.8
Twitter		

Parameters	Mean	Standard Deviation
Age	24.38	5.22
Hours spent on social media	6.34	4.24
Hours of sleep a day	6.28	1.69

Source: Author's computations (2023)

Descriptive Analysis of the Study's Key Variables

This section outlines the findings on the prevalence of academic stress, social media addiction, academic resilience, and sleep quality among participants. The data were summarized using statistical measures such as means, standard deviations, frequencies, and percentages, and are presented in alignment with the study's research questions.

Research Question One:

What is the prevalence level of academic stress among UCC students?

This initial question explored the frequency and intensity of academic stress within the University of Cape Coast student population. Table 2 shows the findings. The results indicated that academic stress is prevalent among respondents at diverse levels. More specifically, mild level of academic stress was prevalent among 5.4% of the respondents, moderate level was prevalent among 78.4% of respondent, and high level of academic stress was prevalent among 16.2% of the respondents. Overall, the average score on the academic stress scale (out of a maximum 175) was 105.6 ± (16.3). This suggests that, on average, UCC students experience moderate levels of academic stress.

Table 2

Prevalence levels of Academic Stress among UCC students

	Frequency	Percent (%)	Mean ± (SD)
ASS score			105.6 ± (16.3)
Mild (range: 35-81)	21	5.4	
Moderate (range: 82-127)	309	78.4	
High (range: 128-175)	64	16.2	

Source: Field Data, 2023

Research Question Two:

What is the prevalence level of social media addiction among UCC students?

This question aimed to determine how commonly social media addiction occurs within the University of Cape Coast student population. Table 3 below displays the results. The results indicated that low level of social media addictive behavior was prevalent in 13.2% of the respondents. Moderate level of addiction to social media usage was prevalent in 54.8% of the respondents, and high level of addiction to social media use was prevalent in 32.0% of the respondents. On average, students scored 18.4 ± (4.4) on the social media addiction scale, indicating that UCC students, on average, lean towards moderate or high addiction to social media usage.

Table 3

Prevalence of Social media addiction among UCC students

	Frequency	Percent (%)	Mean ± (SD)
BSMA score			18.4 ± (4.4).
Low (range: 6-13)	52	13.2	
Moderate (range: 14-21)	216	54.8	
High (range: 22-30)	126	32.0	

Source: Field Data, 2023

Research Question Three:

What level of sleep quality do UCC students experience?

The third research question was devised to look into the level of sleep quality experienced by UCC students. As shown in Table 4, the results are concerning. A vast majority (79.2%) of respondents reported experiencing poor level of sleep quality levels, while 20.8% reported having good level of sleep quality. This suggests that poor sleep quality is a prevalent issue for UCC students, highlighting a need for further investigation and potential solutions.

Table 4

Sleep Quality levels experienced by UCC students

	Frequency	Percentage (%)	Mean ± (SD)
SQ scores			42.7 ± (7.6)
Good (range: 0-41)	82	20.8	
Poor (range: 42-84)	312	79.2	

Source: Field Data, 2023

Research Question four:

What are the levels of academic resilience among UCC students?

This question aimed to assess how university students at the University of Cape Coast vary in their levels of academic resilience. Table 5 summarizes the findings. The results indicated that majority of respondents (84.3%) demonstrated moderate level of academic resilience, with smaller portion (12.4%) having low level, and only 3.3% exhibiting high level of academic resilience. The average score on the academic resilience scale (out of a

possible maximum score) was 81.8 ± (13.4). This suggests that, on average, UCC students tend to have moderate levels of academic resilience.

Table 5

Academic resilience levels among UCC students

	Frequency	Percent (%)	Mean ± (SD)
AR scores			81.8 ± (13.4)
Low (range: 30-69)	49	12.4	
Moderate (range:70-119)	332	84.3	
High (range: 120-150)	13	3.3	

Source: Field Data, 2023

Hypotheses testing

Three main hypotheses guided the direction of this study. The first examined the relationship among the key research variables, while the second and third focused on the mediating role of social media addiction and the moderating influence of academic resilience, respectively. Each section details the statistical methods and parameters used to test these hypotheses.

Correlational Analysis of Variables

Pearson's product-moment correlation was employed to examine the relationships among academic stress, sleep quality, academic resilience, and social media addiction. This method helped assess both the strength and direction of the associations between these variables. The results of the analysis, aligned with the first research hypothesis, are presented in Table 6.

Table 6

Correlation between measured variables of the study

	1	2	3	4
1. Academic stress	-			
2. Sleep Quality	.365**	-		
3. Academic Resilience	-.206**	-.379**	-	
4. Social Media Addiction	.178**	.383**	-.068	-

N = 394. ** indicates that the association is significant at the 0.01 level (two-tailed). Source: Field Data, 2023.

Research Hypothesis One:

It was proposed that academic stress, sleep quality, social media addiction, and academic resilience would be significantly correlated among students at the University of Cape Coast (UCC).

Null Hypothesis (H_0):

There is no statistically significant relationship among academic stress, sleep quality, social media addiction, and academic resilience within the UCC student population.

This hypothesis aimed to determine whether meaningful statistical associations exist among the key variables under investigation. As presented in Table 6, the results indicate several statistically significant but weak associations among the variables. Specifically, academic stress showed a weak positive correlation with sleep quality ($r = .365$, $p < .01$) and social media addiction ($r = .178$, $p < .01$). Conversely, academic stress was weakly negatively correlated with academic resilience ($r = –.206$, $p < .01$). Additionally, social media addiction demonstrated a weak positive correlation

with sleep quality ($r = .383$, $p < .01$), while academic resilience exhibited a weak negative correlation with sleep quality ($r = –.379$, $p < .01$).

Mediation analysis of the social media addiction

Hayes' PROCESS macro (Model 4) was used by the researcher to examine whether social media addiction acts as a mediator in the relationship between academic stress and sleep quality among students at UCC. This analytical approach allowed for the assessment of whether social media addiction indirectly affected sleep quality as a result of academic stress. To enhance the precision of the findings, the analysis incorporated 5,000 bootstrap samples. The outcomes of this mediation analysis, addressing Hypothesis Two, are displayed in Table 7.

Table 7

Social Media Addiction's Mediating Influence On The Relationship Between Academic Stress And Sleep Quality

	B	β	SE. B	LLCI	ULCI	T	P	%MEDIATION
Direct	0.142	0.306	0.021	0.101	0184	6.825	.000	84.12%
Indirect	0.027	0.059	0.016	0.028	0.092	-	-	15.88%
Total	0.170	0.365	0.022	0.127	0.213	7.759	.000	100%

Model Summary: $R = .365$, $R^2 = .133$; $F\ (1, 392) = 60.19$, $p < .0001$.
Mediation estimates are significant at the 0.001 level (2-tailed).
B = Unstandardized beta; β = standardized beta; SE. B = standard error for the unstandardized beta; T = t test statistics; LLCI = lower limit of 95% confidence interval; ULCI = upper limit of 95% confidence interval.

Research Hypothesis Two:

Social media addiction will statistically significantly mediate the academic stress and sleep quality link among UCC students

Null Hypothesis (H_0):

Social media addiction will not statistically significantly mediate the academic stress and sleep quality link among UCC students**.**

This hypothesis aimed to explore whether social media addiction meaningfully intervenes in the connection between academic stress and sleep quality within the student population. Findings displayed in Table 7 indicate that social media addiction partially and significantly mediated this relationship (B = 0.027, β = 0.059, 95% CI = 0.028 – 0.092). This suggests that social media addiction plays a contributing role in how academic stress impacts sleep quality among students at the University of Cape Coast.

Research hypothesis six: Among UCC students, social media addiction will statistically significantly mediate the academic stress and sleep quality link.

H_0: Among UCC students, social media addiction will not statistically significantly mediate the academic stress and sleep quality link.

This hypothesis investigated whether social media addiction among UCC students acts as a significant mediating factor in the relationship between academic stress and sleep quality. The results presented in table 7 above shows that among UCC students, social media addiction did not significantly mediate the relationship between academic stress and sleep quality (B = 0.027, β = 0.059, 95% CI = 0.028 - 0.092). This finding suggests that there is insufficient data to draw the conclusion that social media addiction entirely and significantly mediates the link between UCC students' academic stress and sleep quality. Based on this finding, the researcher couldn't reject the null hypothesis, which stated that among UCC students, social media addiction will not statistically significantly mediate the academic stress and sleep quality

link.

Moderation analysis of academic resilience

The researcher applied Hayes' PROCESS macro using Model 1 to determine whether academic resilience moderates the relationship between academic stress and sleep quality among students at UCC. This moderation analysis explores how the presence of a third variable—academic resilience—might alter the strength or direction of the relationship between academic stress and sleep quality. To enhance the reliability of the findings, the analysis incorporated 5,000 bootstrap samples. Results from this assessment are presented in Tables 8 and 9.

Research Hypothesis Three:

It was proposed that academic resilience will statistically significantly moderate the relationship between academic stress and sleep quality among University of Cape Coast (UCC) students.

Null Hypothesis (H_0):

Academic resilience will not statistically significantly moderate the relationship between academic stress and sleep quality among UCC students.

This hypothesis examined whether academic resilience alters the strength or direction of the association between academic stress and sleep quality. The results presented in Table 8 reveal that academic resilience partially and weakly moderated this relationship ($B = 0.004$, $p < 0.001$, CI = 0.002–0.006, $T = 3.75$). These findings suggest that academic resilience may help to buffer the negative impact of academic stress on sleep quality, offering students a protective psychological resource in managing stress-related sleep disruptions.

To examine how academic resilience influences the relationship between academic stress and sleep quality, the researcher analyzed its conditional effects at three levels: one standard deviation below the mean, at the mean, and one standard deviation above the mean (as detailed in Table 9).

The results indicated that the moderating effect was not statistically meaningful for students with resilience levels one standard deviation below the mean (B = .076, p = 0.005). However, for those with average and above-average resilience, academic resilience significantly weakened the impact of academic stress on sleep quality (B = 0.134, p < 0.001 and B = 0.191, p < 0.001, respectively). This implies that students with moderate to high resilience experience a more pronounced protective effect against the negative influence of academic stress on sleep quality, unlike their lower-resilience peers. Full results are presented in Tables 8 and 9.

Table 8

Interaction Effect of Academic Resilience On The Association Between Academic Stress And Sleep Quality

	B	SE. B	T	P	LLCI	ULCI
Academic Stress	0.134	0.021	6.415	.000	0.093	0.174
Academic Resilience	-0.185	0.025	-7.294	.000	-0.235	-0.135
Int_1	0.004	0.001	3.7521	.000	0.002	0.006

Model Summary: R = .506, R^2 = .256; *F* (3, 390) = 44.85, p =.000.
Moderation estimates are significant at the 0.001 level (2-tailed).
Int__1: Academic stress *Academic resilience: R2-chng = .027; *F* (1, 390) = 14.08, P < .0001.
Criterion variable: Sleep Quality.
Source: Field Data, 2023

Table 9

Interaction Effect of Different Levels Of Academic Resilience On The Association Between Academic Stress And Sleep Quality

	B	SE.B	T	P	LLCI	ULCI
Average	.134	0.021	6.415	.000	0.093	0.174
Low (-1SD)	**.**076	0.027	2.821	.005	0.023	0.128
High (+1SD)	.191	0.025	7.665	.000	0.142	0.241

Source: Field Data, 2023
Moderation estimates are statistically significant at the 0.001 level (2-tailed).

Discussion of Main Results

This section interprets and contextualizes the key findings of the study in relation to existing literature, theoretical perspectives, and the researcher's philosophical orientation.

Prevalence of Academic Stress among UCC Students

The study revealed that academic stress is highly prevalent among students at the University of Cape Coast (UCC), with most reporting moderate to high stress levels. This aligns with prior studies conducted in similar contexts (Nugraha et al., 2023; Amponsah & Owolabi, 2011; Almojali et al., 2017). The widespread stress may stem from academic workload, tight schedules, and multiple competing demands typical of university life. This finding underscores the urgent need for institutional interventions to mitigate stress and enhance student well-being.

Prevalence of Social Media Addiction

Results indicated substantial levels of social media addiction among UCC students, comparable to findings from global university populations (Salari et al., 2023; Sujarwoto et al., 2023; Otu, 2015). The pervasive use of social media for communication and emotional relief may contribute to dependence,

which has implications for mental health and academic engagement. Preventive education and digital literacy initiatives are essential to reduce the adverse effects of excessive social media use.

Sleep Quality among UCC Students

Findings showed that only a minority of UCC students (20.8%) experienced good sleep quality, consistent with previous reports of poor sleep among university students (Alotaibi et al., 2020; Safhi et al., 2020). Academic stress and extended social media use may account for this trend. These results call for sleep hygiene promotion and stress management programs tailored to university environments.

Academic Resilience among UCC Students

Most students exhibited moderate levels of academic resilience, with a small proportion showing high resilience. These findings partially diverge from studies reporting higher resilience in other university settings (Kumalasari & Akmal, 2021; Li et al., 2019). Cultural and contextual factors may explain this discrepancy. Students with low resilience are particularly vulnerable to the negative effects of academic stress, underscoring the importance of resilience-building programs to enhance academic persistence and psychological well-being.

Correlations among Study Variables

Correlational analyses demonstrated significant relationships among most variables, except between social media addiction and academic resilience. Academic stress correlated negatively with sleep quality, confirming that higher stress predicts poorer sleep (Wang & Fan, 2023; Nugraha et al., 2023). Similarly, a positive relationship between stress and social media addiction

supports the notion that social media is often used as a maladaptive coping mechanism (Sümen & Evgin, 2021). A negative correlation between academic stress and resilience reaffirms that resilience buffers against the effects of stress (Fullerton et al., 2021; Kassymova et al., 2023). Furthermore, social media addiction correlated positively with poor sleep quality, consistent with evidence linking screen exposure and late-night use to sleep disruption (Silvani et al., 2022). Lastly, academic resilience correlated positively with sleep quality, suggesting that resilient students tend to maintain better sleep patterns.

Mediation Analysis

The mediation analysis revealed that social media addiction partially mediated the relationship between academic stress and sleep quality. This suggests that students experiencing academic stress may turn to social media for relief, inadvertently compromising sleep. This finding aligns with prior research indicating that stress-induced media use exacerbates sleep problems (Yau et al., 2020; Tandon et al., 2020). Addressing maladaptive coping through media literacy and stress-reduction initiatives could improve sleep outcomes.

Moderation Analysis

Academic resilience significantly, though weakly, moderated the relationship between academic stress and sleep quality. Higher resilience levels appeared to buffer the detrimental impact of stress on sleep. Although the moderating effect was limited, it underscores the protective function of resilience and the need for resilience-based interventions. However, since resilience alone did not fully neutralize stress effects, complementary strategies targeting stress management, social support, and responsible media use are recommended.

Conclusion

Overall, the findings emphasize the interrelated nature of academic stress, social media addiction, sleep quality, and academic resilience among UCC students. Promoting resilience, improving sleep hygiene, and addressing social media dependence may collectively enhance students' academic performance and psychological well-being.

CHAPTER FIVE

SYNOPSIS, CONCLUSIONS AND RECOMMENDATIONS

Overview

This chapter presents a concise summary of the research methodology, outlines the main findings of the study, and offers practical recommendations for relevant stakeholders. It also proposes potential directions for future research to build on the study's insights.

Synopsis of the Research Process

This research adopted a strictly quantitative approach, employing a descriptive correlational design to explore how social media addiction mediates and academic resilience moderates the relationship between academic stress and sleep quality among students at UCC. A thorough review of theoretical, conceptual, and empirical literature relevant to the study was carefully conducted and presented.

From a population of 29,136 regular students at UCC, a sample of 394 participants was selected through a combination of convenience and purposive sampling techniques. Data collection was conducted using a standardized questionnaire, which included demographic details and four validated measurement tools: the Academic Stress Scale (Kohn & Frazer, 1981), the Sleep Quality Scale (Yi et al., 2006), the Academic Resilience Scale (Cassidy, 2016), and the Bergen Social Media Addiction Scale (Andreassen et al., 2016).

The collected data were analyzed using the Statistical Package for the Social Sciences (SPSS), version 28.0. Descriptive statistics—including frequencies, percentages, means, and standard deviations—were computed for

the key variables: academic stress, social media addiction, sleep quality, and academic resilience. To explore associations among these variables, Pearson's product-moment correlation analysis was conducted. Additionally, Hayes' PROCESS macro was utilized: Model 4 assessed the mediating role of social media addiction in the relationship between academic stress and sleep quality, while Model 1 evaluated the moderating role of academic resilience in the same relationship.

The specific objectives of the study were to:

1. Ascertain the prevalence levels of academic stress among UCC students.
2. Ascertain the prevalence level of social media addiction among UCC students.
3. Ascertain the levels of sleep quality among UCC students.
4. Assess the degree of academic resilience among UCC students.
5. Examine the relationships between social media addiction, sleep quality, academic stress, and academic resilience among UCC students
6. Examine the mediating role of social media addiction in the link between academic stress and sleep quality among UCC students.
7. Examine the moderating role of academic resilience in the link between academic stress and sleep quality among UCC students.

Based on these objectives, four (4) research questions and seven (7) research hypotheses were developed to guide the study.

Summary of Key findings

Based on the research question and the hypotheses formulated to guide the inquiry, the principal findings of the study are outlined as follows.

1. The study's findings reveal that 84.3% of UCC students demonstrate a moderate level of academic resilience, while 94.6% experience high academic stress. Additionally, 32.9% show signs of social media addiction, and 79.2% report poor sleep quality. These results suggest that a majority of UCC students grapple with academic pressure, rely heavily on social media, maintain moderate resilience, and frequently encounter sleep-related difficulties on campus.
2. The findings of the present study revealed that, aside from the connection between social media addiction and academic resilience, all measured variables demonstrated statistically significant relationships. Specifically, among UCC students, there was a weak but statistically significant positive correlation between academic stress and both sleep quality and social media addiction. Additionally, weak but statistically significant negative correlations were found between academic stress and academic resilience, as well as between academic resilience and sleep quality.
3. The findings of the study offer clear evidence that, among UCC students, social media addiction played a statistically significant mediating role in the relationship between academic stress and sleep quality.

4. The study further revealed that academic resilience had a statistically significant moderating effect on the relationship between academic stress and sleep quality among UCC students.

Conclusions

The following deductions were made in light of the study's findings:

1. Notably, the prevalence of academic stress, poor sleep quality, and social media addiction was alarmingly high, signaling critical areas of concern in students' academic and personal well-being.
2. The study revealed a significant relationship among academic stress, sleep quality, social media addiction, and academic resilience among UCC students.
3. Among UCC students, social media addiction plays a significant role in mediating the association between academic stress and sleep quality.
4. Among UCC students, academic resilience can significantly weaken or mitigate the link academic stress and sleep quality even when struggling with social media addiction.

Recommendations

In view of the findings and conclusions drawn from the study, the following proposals were put forward:

1. Stakeholders such as Ghana Education Service (GES), Ministry of Health (MOH), Ghana Psychology Council (GPC), and Tertiary institutions should implement and make available evidence-based stress management interventions and programs that cultivate study skills, time management, stress management techniques, mindfulness training, and positive coping mechanisms necessary to address the

issue of academic stress, poor sleep quality and social media addiction among university students in Ghana.

2. University management through the Counseling Unit and in collaboration with educational psychologists, academic counselors and advisors at the University of Cape Coast (UCC) should foster academic resilience among students through initiatives and programs such as peer mentoring, skill development workshops. This initiatives and programs will help equip students with better coping mechanisms and build their level of resilience to navigate academic challenges more efficiently.
3. University management at UCC through the Counseling Unit should organize educational campaigns and workshops on healthy and responsible technology use to promote awareness of the potential downsides of social media usage and encourage responsible usage habits. Additionally, the University management should explore the potential benefits of implementing responsible technology usage initiatives, such as technology-free study zones to encourage mindful social media use and help address social media addictive behavior among students.
4. University management in collaboration with the Counseling Unit and the Student representative counsel at UCC should also organize workshops and awareness campaigns to teach and encourage students on healthy sleep habits and access to sleep hygiene resources. Additionally, information and resources on essential practices for good sleeping hygiene, such as keeping a regular sleep schedule, creating a

relaxing bedtime routine, and limiting screen time before bed, should be made available to students to assist them prioritize sleep and improve their sleep behavior and overall sleep quality.

Suggestions for future Studies

This research explored how social media addiction mediates, and academic resilience moderates, the relationship between academic stress and sleep quality among university students in Ghana, with a particular focus on regular students at the University of Cape Coast. To expand the existing knowledge on academic stress, social media addiction, sleep quality, and academic resilience within this population, the study offers the following recommendations for future research in the field.

1. Future studies should replicate the study with larger and more diverse samples (students) from multiple universities to enhance generalizability of study findings.
2. Since social media addiction didn't mediate the stress-sleep association, other potential mediators, such as rumination, anxiety, or coping mechanisms, should be explored by future studies.
3. 3. Future studies should explore whether social media addiction moderates the relationship between academic stress and sleep quality among university students.
4. Subsequent research endeavors should look at the potential influences of individual factors on the relationships between the study variables, such as personality traits, coping mechanisms, cultural norms, and pre-existing mental health conditions.

5. To help determine causal relationships between variables and clarify the direction of influence, future research should employ experimental or quasi-experimental designs.

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APPENDICES

APPENDIX A

RESEARCH QUESTIONNAIRE

I am Samuel Edem Cofie, an MPhil. Clinical Health Psychology student at the University of Cape Coast. This survey seeks to gather information on the mediating and moderating role of social media addiction and academic resilience in the association between academic stress and sleep quality among university students in Ghana. Your participation in this survey is vital in advancing clinical knowledge and literature. I would be grateful if you could provide honest responses to the items in the questionnaire voluntary. You can stop at any point in time. Please be assured that responses will be kept highly confidential and anonymous, and used for academic purposes only. The questionnaire should take 10-15 minutes to complete and does not pose any possible risk or danger to you. Please tick the responses that are applicable to you.

Thank you.

PART A

Respondent Information

Please choose the option for each question that best describes you.

1. What is your Gender? Male [ ] Female [ ]
2. What is your age _____?
3. What level are you? Level 100 [ ] Level 200[ ] Level 300[ ] Level 400 [ ] Postgraduate [ ]
4. What social media do you frequently use?

   _____
5. How many hours do you spend on social media in a day?

   _____
6. How many hours of sleep do you have in a day?

   _____

PART B

INSTRUCTION: Please indicate your level of stress in your academic life to each of the issues below, using the rating scale: ***1= Not at all stressful, 2= Rarely stressful, 3= Sometimes stressful, 4= Fairly stressful, 5= Extremely stressful.***						
AS01	Final grades	1	2	3	4	5
AS02	Excessive homework	1	2	3	4	5
AS03	Term papers	1	2	3	4	5
AS04	Examinations	1	2	3	4	5
AS05	Studying for examinations	1	2	3	4	5
AS06	Class speaking	1	2	3	4	5
AS07	Waiting for graded tests	1	2	3	4	5
AS08	Fast-paced lectures	1	2	3	4	5
AS09	Pop quizzes	1	2	3	4	5
AS10	Forgotten assignments	1	2	3	4	5
AS11	Incomplete assignments	1	2	3	4	5
AS12	Unclear assignments	1	2	3	4	5
AS13	Unprepared to respond to questions	1	2	3	4	5
AS14	Announced quizzes	1	2	3	4	5
AS15	Studied wrong material	1	2	3	4	5
AS16	Incorrect answers in class	1	2	3	4	5
AS17	Missing class	1	2	3	4	5
AS18	Buying text books	1	2	3	4	5
AS19	Learning new skills	1	2	3	4	5
AS20	Unclear course objectives	1	2	3	4	5
AS21	Hot classrooms	1	2	3	4	5
AS22	Nonnative language lectures	1	2	3	4	5
AS23	Boring classes	1	2	3	4	5
AS24	Attending wrong class	1	2	3	4	5
AS25	Late dismissals of class	1	2	3	4	5
AS26	Cold classrooms	1	2	3	4	5
AS27	Arriving late for class	1	2	3	4	5
AS28	Forgetting pencil/pen	1	2	3	4	5
AS29	Note-taking in class	1	2	3	4	5
AS30	Noisy classroom	1	2	3	4	5
AS31	Irrelevant classes toward major	1	2	3	4	5
AS32	Crowded classes	11	2	3	4	5
AS33	Classes without open discussion	1	2	3	4	5
AS34	Evaluating classmates' work	1	2	3	4	5
AS35	Poor classroom lighting	1	2	3	4	5

PART C

INSTRUCTION: Read this short vignette and indicate your response to the questions using the scale provided ***1= Likely; 2=Somewhat Likely; 3= Neutral; 4= Somewhat Unlikely; 5= Unlikely***

Short vignette

You have received your mark for a recent assignment and it is a 'fail.' The marks for two other recent assignments were also poorer than you would want as you are aiming to get as good a degree as you can because you have clear career goals in mind and don't want to disappoint your family. The feedback from the tutor for the assignment is quite critical, including reference to 'lack of understanding' and 'poor writing and expression,' but it also includes ways that the work could be improved. Similar comments were made by the tutors who marked your other two assignments.

AR01	I would not accept the tutors' feedback	1	2	3	4	5
AR02	I would use the feedback to improve my work	1	2	3	4	5
AR03	I would just give up	1	2	3	4	5
AR04	I would use the situation to motivate myself	1	2	3	4	5
AR05	I would change my career plans	1	2	3	4	5
AR06	I would probably get annoyed	1	2	3	4	5
AR07	I would begin to think my chances of success at university were poor	1	2	3	4	5
AR08	I would see the situation as a challenge	1	2	3	4	5
AR09	I would do my best to stop thinking negative thoughts	1	2	3	4	5
AR10	I would see the situation as temporary	1	2	3	4	5
AR11	I would work harder	1	2	3	4	5
AR12	I would probably get depressed	1	2	3	4	5
AR13	I would try to think of new solutions	1	2	3	4	5
AR14	I would be very disappointed	1	2	3	4	5
AR15	I would blame the tutor	1	2	3	4	5
AR16	I would keep trying	1	2	3	4	5
AR17	I would not change my long-term goals and ambitions	1	2	3	4	5
AR18	I would use my past successes to help motivate myself	1	2	3	4	5
AR19	I would begin to think my chances of getting the job I want were poor	1	2	3	4	5
AR20	I would start to monitor and evaluate my achievements and effort	1	2	3	4	5
AR21	I would seek help from my tutors	1	2	3	4	5
AR22	I would give myself encouragement	1	2	3	4	5
AR23	I would stop myself from panicking	1	2	3	4	5
AR24	I would try different ways to study	1	2	3	4	5
AR25	I would set my own goals for achievement	1	2	3	4	5
AR26	I would seek encouragement from my family and friends	1	2	3	4	5
AR27	I would think more about my strengths and weaknesses to help me	1	2	3	4	5
AR28	I would feel like everything was ruined and was going	1	2	3	4	5

	wrong					
AR29	I would start to self-impose rewards and punishments base on my output	1	2	3	4	5
AR30	I would look forward to showing that I can improve my grades	1	2	3	4	5

PART D

INSTRUCTION: Below you find some questions about your relationship to the use of social media (Facebook, Twitter, Instagram, and the like). Choose the response alternative for each question that best describes you, using this scale: ***1 = Very rarely, 2= Rarely, 3=Sometimes, 4=Often, 5=Very often. Every question below starts with:***						
How often during the last year have you;						
SM01	Spent a lot of time thinking about social media or planned use of social media?	1	2	3	4	5
SM02	Felt an urge to use social media more and more?	1	2	3	4	5
SM03	Used social media to forget about personal problems?	1	2	3	4	5
SM04	Tried to cut down on the use of social media without success?	1	2	3	4	5
SM05	Become restless or troubled if you have been prohibited from using social media?	1	2	3	4	5
SM06	Used social media so much that it has had a negative impact on your job/studies?	1	2	3	4	5

PART E

INSTRUCTION: The items below assess the quality of sleep you had for the last one month. Read the questions and check the closest answer using s using the scale provided: *0= few or rarely; 1=Sometime; 2= often; 3= Almost always*					
SQ01	I have difficulty falling asleep.	0	1	2	3
SQ02	I fall into a deep sleep.	0	1	2	3
SQ03	I wake up while sleeping	0	1	2	3
SQ04	I have difficulty getting back to sleep once I wake up in the middle of the night.	0	1	2	3
SQ05	I wake up early because of noise.	0	1	2	3
SQ06	I toss and turn	0	1	2	3
SQ07	I never go back to sleep after awakening during sleep.	0	1	2	3
SQ08	I feel refreshed after sleep.	0	1	2	3
SQ09	I feel unlikely to sleep after sleep	0	1	2	3
SQ10	Poor sleep gives me headaches	0	1	2	3
SQ11	Poor sleep makes me irritated	0	1	2	3
SQ12	I would like to sleep more after waking up	0	1	2	3
SQ13	My sleep hours are enough	0	1	2	3
SQ14	Poor sleep makes me loss my appetite	0	1	2	3
SQ15	Poor sleep makes it hard for me to think	0	1	2	3
SQ16	I feel vigorous after sleep	0	1	2	3
SQ17	Poor sleep makes me lose interest in work or others	0	1	2	3
SQ18	My fatigue is relieved after sleep	0	1	2	3
SQ19	Poor sleep cause me to make mistakes	0	1	2	3
SQ20	I am satisfied with my sleep	0	1	2	3
SQ21	Poor sleep makes me forget things more easily	0	1	2	3
SQ22	Poor sleep makes it hard for me to concentrate	0	1	2	3
SQ23	Sleepiness interferes with my daily life	0	1	2	3
SQ24	Poor sleep makes me loss desire in all things	0	1	2	3
SQ25	I have difficulty getting out of bed	0	1	2	3
SQ26	Poor sleep makes me easily tired	0	1	2	3
SQ27	I have clear head after sleep	0	1	2	3
SQ28	Poor sleep makes my life painful	0	1	2	3

APPENDIX B

INTRODUCTORY LETTER

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
FACULTY OF EDUCATIONAL FOUNDATIONS
DEPARTMENT OF EDUCATION AND PSYCHOLOGY

Telephone: 0332091697
Email:dep@ucc.edu.gh

UNIVERSITY POST OFFICE
CAPE COAST, GHANA

Our Ref: DEP/26/VOL.6

18th April, 2023

Your Ref:

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

LETTER OF INTRODUCTION – MR. SAMUEL EDEM COFIE

We introduce to you Mr. Samuel Edem Cofie, a student with registration number **(EF/CHP/21/0020),** from the Department of Education and Psychology, University of Cape Coast. He is pursuing a Master of Philosophy degree in Clinical Health Psychology, and is currently at the thesis stage.

Mr. Samuel Edem Cofie is researching on the topic: **"ACAMEDIC STRESS AND SLEEP QUALITY: MEDIATING AND MODERATING ROLES OF SOCIAL MEDIA ADDICTION AND ACADEMIC RESILIENCE AMONG UNIVERSITY STUDENTS IN GHANA".**

He has opted to collect or gather data at your institution/establishment for his thesis work. We would be most grateful if you could provide him with the opportunity and assistance for the study. Any information provided would be treated strictly as confidential.

We sincerely appreciate your cooperation in this direction.

Thank you.

Yours faithfully,

Ama Ocran (Ms)
Prin. Admin. Assist.
For HEAD

APPENDIX C

ETHICAL CLEARANCE

UNIVERSITY OF CAPE COAST
COLLEGE OF EDUCATION STUDIES
ETHICAL REVIEW BOARD

UNIVERSITY POST OFFICER
CAPE COAST, GHANA

Our Ref: CES/ead/ucc/eds/108-23/64

Date: 1st August, 2023

Your Ref.....

Dear Sir/Madam,

ETHICAL REQUIREMENTS CLEARANCE FOR RESEARCH STUDY

Chairma CES-ERB
Prof. J. O. Omotosho
jomotosho@ucc.edu.gh
0243784739

Vice Chairman, CES-ERB
Prof. K. Edjah
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0244742357

Secretary CES-ERB
Prof. Linda Dzama Forde
forde@ucc.edu.gh
0244786680

The bearer, Samuel Edem Cofie,
Reg. No. EF/CHP/21/0020
M.Phil./Ph.D student in the Department of Education and Psychology in the College of Education Studies University of Cape Coast, Cape Coast, Ghana. He/She wishes to Undertake of research study on the topic:
Academic Stress and sleep quality: Mediating and Moderating roles of Social Media Addiction and Resilience.

The Ethical Review Board (ERB) of the College of Education Studies (CES) has assessed his/~~her~~ proposal and confirmed that the proposal satisfies the College's ethical requirements for the conduct of the study.

In view of the above, the researcher has been cleared and given approval to commence his/~~her~~ study. The ERB would be grateful if you would give him/~~her~~ the necessary assistance to facilitate the conduct of the said research.

Thank You.

Yours faithfully,

Prof. Linda Dzama Forde
(Secretary, CES-ERB)