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Assessment of Impacts of Mobile Phone Usage on Sleep Quality and Concentration Among Undergraduate Students of Crescent University, Abeokuta

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ABSTRACT

In recent years, mobile phone usage among undergraduates has reached unprecedented levels, raising serious health and academic concerns. This study assessed the impact of mobile phone usage on sleep quality and concentration among undergraduate students of Crescent University, Abeokuta. A descriptive cross-sectional study was used to assess this study. The study population consists of 2,202 undergraduate students. Multistage sampling technique, Taro Yamane (1967) Formula, Finite Population Correction (FPC), and Undergraduate Resource-Constraint Adjustment Rule (50–60% of Yamane) were used to select 180 respondents. A validated and self-developed structured questionnaire was constructed to elicit information on research-specific objectives, and the distributed questionnaire was analyzed using SPSS 26.0 version. The result showed that, among 180 undergraduate students, most were females (61.1%), aged 20–23 years (43.3%), in Nursing (50.0%), and at the 200 level (29.4%). Sleep quality was high in 26.7%, moderate in 42.2%, and low in 31.1%. All (100%) owned smartphones, mainly Android (52.7%). Primary use was social media (70.6%), followed by assignments (57.2% always), educational clips (42.2% always), and phone use during lectures/tutorials (26.7% sometimes). The study concluded that about 120(66.7%) of the students have a high level of concentration during academic activities in relation to mobile phone usage, while 60(33.3%) have a low level of concentration respectively. The study recommended that parents and school administrators should urge students to limit social media screen time, activate Do Not Disturb mode/app blockers during classes, and enforce phone-free hours before bed to enhance concentration and sleep quality.

Introduction

In recent years, mobile phone usage has become deeply entrenched in the daily lives of individuals, particularly among students. What was once a tool primarily for voice calls has evolved into a multifunctional device for learning, entertainment, and social connection. Among university students, mobile phones are not only a means of communication but also serve as essential tools for accessing educational content, informational resources and collaborating on academic tasks. This shift has made mobile phones a vital part of student routines across the globe (Izquierdo-Condoy J et al., 2025). The impact of mobile phone usage on students' daily lives is multifaceted. On one hand, mobile phones enhance learning, time management, and academic collaboration through access to digital resources, reminders, productivity apps, and learning platforms. Students use them to download lecture slides, join virtual discussions, set academic goals, and receive real-time updates (Hasan et al., 2024). They also use health and productivity apps to monitor sleep patterns and manage stress (Guerrero, 2024). However, on the other hand, unregulated and excessive use, especially during the night, has introduced cognitive and health-related concerns.

According to a global study, more than 70% of teenagers use mobile devices within 30 minutes of sleep, a habit strongly linked to delayed sleep onset, insomnia, and reduced academic productivity (WHO, 2023; Health.com, 2024). One of the most pressing concerns is sleep disruption. Late-night mobile phone use, particularly for entertainment or social interaction, has been linked to delayed sleep onset, reduced sleep duration, and poor sleep quality (Mao et al.). According to the National Sleep Foundation, good sleep quality includes falling asleep within 30 minutes, staying asleep through the night, and waking up refreshed (National Sleep Foundation, 2020). However, many students now experience difficulties in falling asleep, frequent night-time awakenings, and increased restlessness, largely due to screen exposure and psychological stimulation caused by mobile phone use (Joshi et al.,2021).

These sleep disturbances are often caused by overstimulation from digital content such as social media notifications, interactive apps, and entertainment platforms, which increase arousal levels and delay sleep onset(Joshi et al., 2021). Furthermore, the blue light emitted from phone screens suppresses melatonin, which is the hormone that regulates sleep, making it harder for the body to recognize bedtime (Goel et al.,2023). As a result, students experience sleep debt, leading to difficulties concentrating during the day, poor memory retention, and a decline in academic engagement. The habit of checking phones during the night further fragments sleep and contributes to fatigue the next day (Balan et al., 2021). This cascade of effects reduces students' alertness, memory retention, and focus in class, all of which are key components of academic performance.

A Norwegian survey involving over 45,000 young adults found that every additional hour of screen time before bed results in 24 fewer minutes of sleep and a 59% higher risk of insomnia (Health, 2025). Studies show that prolonged mobile phone usage not only disrupts sleep but also contributes to poor academic concentration and increased stress levels. Some students experience what is known as "nomophobia," which is the fear of being without their phones, leading them to compulsively check their devices even during rest or study hours. This habit creates a cycle in which poor sleep leads to poor concentration, which then leads to academic struggles, thereby reinforcing greater reliance on phones for distraction or comfort (Abreu et al., 2022).

Concentration, or sustained attention, is a vital cognitive function that allows students to absorb and retain information during lectures, reading sessions, and assessments. Concentration, defined as the ability to focus on specific academic tasks without distraction, is also affected by high mobile phone engagement. Students are frequently distracted by notifications, social media updates, and multitasking between study and phone use. This leads to cognitive overload, mental fatigue, and lower academic productivity (Perez-Juarez et al., 2024). However, with the rise of mobile phone use, students report reduced ability to focus, driven by constant notifications, the compulsion to check messages, and the habit of multitasking during study sessions. Multitasking, such as switching between reading and replying to chats, divides cognitive resources and diminishes the effectiveness of learning. Even the mere presence of a mobile phone can distract students and limit their capacity to engage deeply with academic material (Perez-Juarez et al., 2024)

In Nigeria, evidence indicates a growing problem of smartphone overuse among undergraduates. Owoeye et al. (2025) found that 86% of nursing students used mobile phones daily for education, while 85.6% showed signs of addiction. A study in Kano metropolis reported that 65.6% of youths were habitual users, 10.3% had problematic use, and 10% were at risk, with over 74% spending more than five hours daily on their phones and more than half waking at night due to phone use (Amole et al., 2021). Joshua et al. observed that 16.1% of Nigerian university students reported low smartphone addiction, 66.8% moderate, and 17.1% high addiction levels. At the University of Lagos College of Medicine, more than half of undergraduates (53.4%) were addicted to smartphone use (Akodu et al., 2020). Furthermore, Anosike et al. (2024) revealed that 96.1% of pharmacy undergraduates experienced poor sleep quality, with significant levels of depression (28.3%) and anxiety (23.6%). These local findings confirm that the challenges of mobile phone overuse, sleep disturbances, poor concentration, and reduced mental health are widespread among Nigerian students.

At Crescent University, Abeokuta, the situation is no different. While mobile phones provide students with access to educational platforms, communication tools, and online libraries, many undergraduate students also use their phones late into the night for social media, games, and entertainment. These patterns may contribute to disturbed sleep, fatigue, and reduced ability to concentrate. Despite anecdotal evidence, little empirical data currently exists on how mobile phone usage specifically affects these areas in the Crescent University student population. Given the essential role of sleep and concentration in academic success, and the widespread dependence on mobile phones among undergraduates, there is a pressing need to investigate how these devices are influencing student well-being and academic functioning. This study seeks to explore the relationship between mobile phone usage, sleep quality, and concentration among undergraduate students of Crescent University, thereby contributing to the limited body of research within the Nigerian university context.

Statement of the problem

Traditionally, mobile phones were designed primarily for voice communication and simple text messaging. Over time, technological advancements transformed them into powerful handheld devices that provide access to lecture materials, digital libraries, collaborative platforms, and time management applications. For students, these features supported learning, enhanced connectivity, and created new opportunities for academic engagement. Mobile technology thus shifted from being a tool for basic communication to a key enabler of education and social interaction. Today, mobile phone usage among undergraduates has reached unprecedented levels, raising serious health and academic concerns. Globally, over 70% of teenagers report using mobile devices within 30 minutes of going to bed, a behavior strongly associated with delayed sleep onset, insomnia, and reduced academic performance (WHO, 2023; Health.com, 2024). A Norwegian survey involving more than 45,000 young adults found that just one extra hour of screen time before bedtime resulted in 24 fewer minutes of sleep and a 59% higher risk of insomnia (Health, 2025).

Similarly, The Times (2023) reported that the average young person may spend up to 25 years of their life staring at screens, with nearly 47% experiencing sleep problems linked to excessive phone use. In Africa, and particularly in Nigeria, the trend is equally alarming. Owoeye et al. (2025) found that 86% of nursing students used mobile phones daily for educational purposes, while 85.6% met the criteria for likely smartphone addiction. A study in Kano metropolis reported that 65.6% of youths were habitual users, 10.3% showed problematic use, and another 10% were at risk, with 74.4% spending over five hours daily on their phones and 54.7% being awakened at night due to phone use (Amole et al., 2021). Joshua et al. reported that among students in selected Nigerian universities, 16.1% had low, 66.8% had moderate, and 17.1% had high levels of smartphone addiction. At the University of Lagos College of Medicine, 53.4% of 837 undergraduates were addicted to smartphone use (Akodu et al., 2020).

Likewise, among pharmacy undergraduates, 96.1% reported poor sleep quality, alongside high rates of depression (28.3%) and anxiety (23.6%) (Anosike et al., 2024). These findings confirm that smartphone overuse among Nigerian undergraduates is not only widespread but also closely linked to poor sleep quality, reduced concentration, and declining mental health. Ideally, mobile phones should serve as supportive tools that enhance students' academic performance, well-being, and productivity without compromising sleep or mental health. In Nigeria, particularly in private universities such as Crescent University, there is limited evidence on how mobile phone use impacts sleep quality and concentration. Addressing this gap is crucial, as the academic environment, cultural context, and digital habits of students may differ from global patterns. Therefore, this study aims to fill that gap by assessing the impact of mobile phone usage on sleep quality and concentration among undergraduate students of Crescent University. Understanding these relationships will provide a foundation for digital wellness programs and institutional strategies that support both academic performance and student well-being.

Research objectives

The Broad objective of the research is to assess the impact of mobile phone usage on sleep quality and concentration among undergraduate students of Crescent University, Abeokuta.

Specific Objectives

The Specific Objectives of the research are:

1. To assess the average patterns of mobile phone use among undergraduate students of Crescent University, Abeokuta.
2. To assess the sleep quality of undergraduate students of Crescent University in relation to their mobile phone usage habits
3. To determine the level of concentration of undergraduate students of Crescent University during academic activities in relation to mobile phone usage

Research questions

1. What is the average pattern of mobile phone use among undergraduate students of Crescent University, Abeokuta?
2. What is the level of sleep quality of students in relation to their mobile phone usage habits in Crescent University, Abeokuta?
3. What is the level of concentration during academic activities in relation to mobile phone usage in Crescent University, Abeokuta?

Methodology

Research design

The study adopted a descriptive cross-sectional survey design to assess the impact of mobile phone usage on sleep quality and concentration among undergraduate students of Crescent University, Abeokuta. This approach allows for the collection of quantitative data at a single point in time, capturing relevant demographic information, awareness, and behavioral factors associated with mobile phone usage.

Research setting

The study will be conducted at Crescent University, Abeokuta, Ogun State, a private university with a diverse undergraduate population. This setting provides a suitable environment as it consists of undergraduate students from various faculties and departments who are regularly exposed to mobile phone usage. The academic environment will provide an appropriate context to examine how mobile phone use may influence sleep quality and concentration among students. It is a private university established by Judge Bola Ajibola under the banner of the Islamic Mission

for Africa. It is located at KLM 5 Ayetoro Rd, Lafenwa, Abeokuta 111105, Ogun State. CUAB was established in 2005 by the Islamic Mission for Africa (IMA).
The university's mission is to provide an education that emphasizes personal discipline, integrity, and positive societal values.

It has the following colleges: The Bola Ajibola College of Law (BACOLAW), The College of Environmental Sciences (COES), The College of Information and Communication Technology (CICOT), The College of Natural Sciences (CONAS), and The College of Health Sciences (COHES).

It has 14 departments: Law, Accounting, Business Administration, Mass Communication, Economics, Political Science, Islamic Studies, Architecture, Microbiology, Biochemistry, Computer Science, Nursing, Anatomy, and Physiology.

Population of the study

The target population comprises all undergraduate students currently enrolled at Crescent University during the data collection period. These students typically fall within the 15–30 years age range, with varying socio-demographic backgrounds, making them the relevant group for investigating mobile phone usage and its relationship with sleep and concentration.

Sample size determination

The total undergraduate population at Crescent University, Abeokuta, is 2,202. Using Taro Yamane's (1967) formula at 95% confidence level and 5% margin of error:

$n = N / [1 + N(e)^2]$
$n = 2202 / [1 + 2202(0.05)^2]$
$n = 2202 / [1 + 2202 \times 0.0025]$
$n = 2202 / [1 + 5.505]$
$n = 2202 / 6.505$
$n = 338.43 \approx 339$

Due to typical undergraduate constraints (time, budget, logistics), the sample was adjusted using the Finite Population Correction (FPC) as recommended by Israel (1992):

$n_1 = n_0 / [1 + (n_0/N)]$
$n_1 = 339 / [1 + 339/2202]$
$n_1 = 339 / 1.154 \approx 294$

Further reduced to 53% of the Yamane value (n = 180) following common Nigerian practices for resource-limited studies (Adam, 2020; & Israel, 1992), where 50–60% adjustments are widely accepted while maintaining representativeness.
Thus, a final sample size of one hundred and eighty (180) undergraduate students was selected for this study.

Sampling technique

A multistage sampling technique was used: First, faculties within the university were identified as clusters. Within selected faculties, simple random sampling was employed to select participants from student lists. Inclusion criteria: Undergraduate students registered at Crescent University who consent to participate. Exclusion criteria: Students unwilling or unable to provide consent, or those absent during data collection.

Instrumentation

Data were collected using a structured, self-administered questionnaire developed for the study, adapted from validated tools and relevant literature related to mobile phone usage, sleep quality, and concentration. It was divided into four sections:

Section A: Socio-demographic data (age, gender, faculty, year of study, residence type)

Section B: Patterns of mobile phone usage (e.g., duration, purpose, and timing of use).

Section C: Assessment of sleep quality (e.g., sleep duration, sleep disturbances, use of phones before bed).

Section D: Evaluation of concentration levels (e.g., ability to focus during lectures, study sessions, and academic tasks)

Validity of the instrument

The questionnaire was subjected to content and face validity by experts in public health and behavioral studies, as well as the research supervisor at Crescent University. Necessary revisions were made to ensure clarity, relevance, and comprehensiveness.

Reliability of the instrument

A pilot study was conducted with a few undergraduate students from a comparable university to test the instrument's reliability. Internal consistency was evaluated using Cronbach's alpha, aiming for a value of 0.7 or above for key scales. The tool was refined based on pilot feedback.

Method of data collection

Upon obtaining ethical approval from Crescent University and the Ogun State Ministry of Health research ethics committee, permission was obtained from the university authorities. Questionnaires were distributed and collected in person with the assistance of trained research assistants. Participation was voluntary with informed consent, and confidentiality and anonymity were assured. Completed questionnaires were collected immediately to reduce data loss and ensure accuracy.

Method of data analysis

Data will be coded, entered, and analyzed using the Statistical Package for Social Sciences (SPSS) version 25. Descriptive statistics (frequencies, percentages, means) will summarize the socio-demographic characteristics, mobile phone usage patterns, sleep quality, and concentration levels. Inferential statistics, such as Chi-square tests, will assess associations between mobile phone usage and both sleep quality and concentration. Logistic regression analysis may be employed to identify predictors of mobile phone usage. The significance level will be set at $p < 0.05$.

Results

All the 180 questionnaires distributed were retrieved, found suitable for entry and used for the analysis.

Table 4.1 Showing the Demographic Characteristics (N= 180)

Variable	Frequency (n= 180)	Percent (%)
Age		
16-19	65	36.1
20-23	78	43.3
24-27	26	14.4
28 & above	11	6.1
Sex		
Male	70	38.9
Female	110	61.1
Department		

Nursing		90	50.0
Computer science		18	10.0
law		25	13.9
Economics		5	2.8
Biochemistry		5	2.8
Mass com		11	6.1
Accounting		8	4.4
Business admin		4	2.2
Islamic studies		4	2.2
Architecture		4	2.2
Pol science		6	3.3
Level of study			
100		23	12.8
200		53	29.4
300		41	22.8
400		51	28.3
500		12	6.7
Marital status	Single	154	85.6
Married		20	11.1
Divorcee		3	1.7
Widow		3	1.7
Ethnicity:	Yoruba	132	73.3
Igbo		24	13.3
Hausa		9	5.0
Others		15	8.3

Source: Field Survey 2025

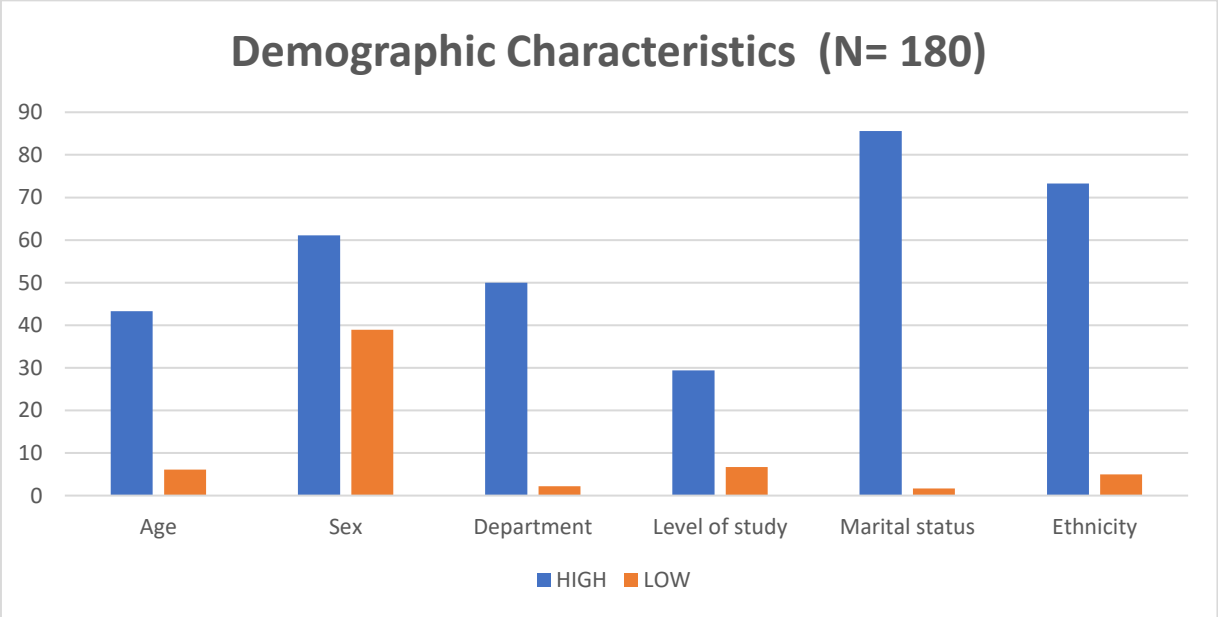


Figure 4.1 Demographic Characteristics

Research Question 1: What is the average pattern of mobile phone use among undergraduate students of Crescent University, Abeokuta?

Table 4.2: Patterns of Mobile Phone Usage (N= 180)

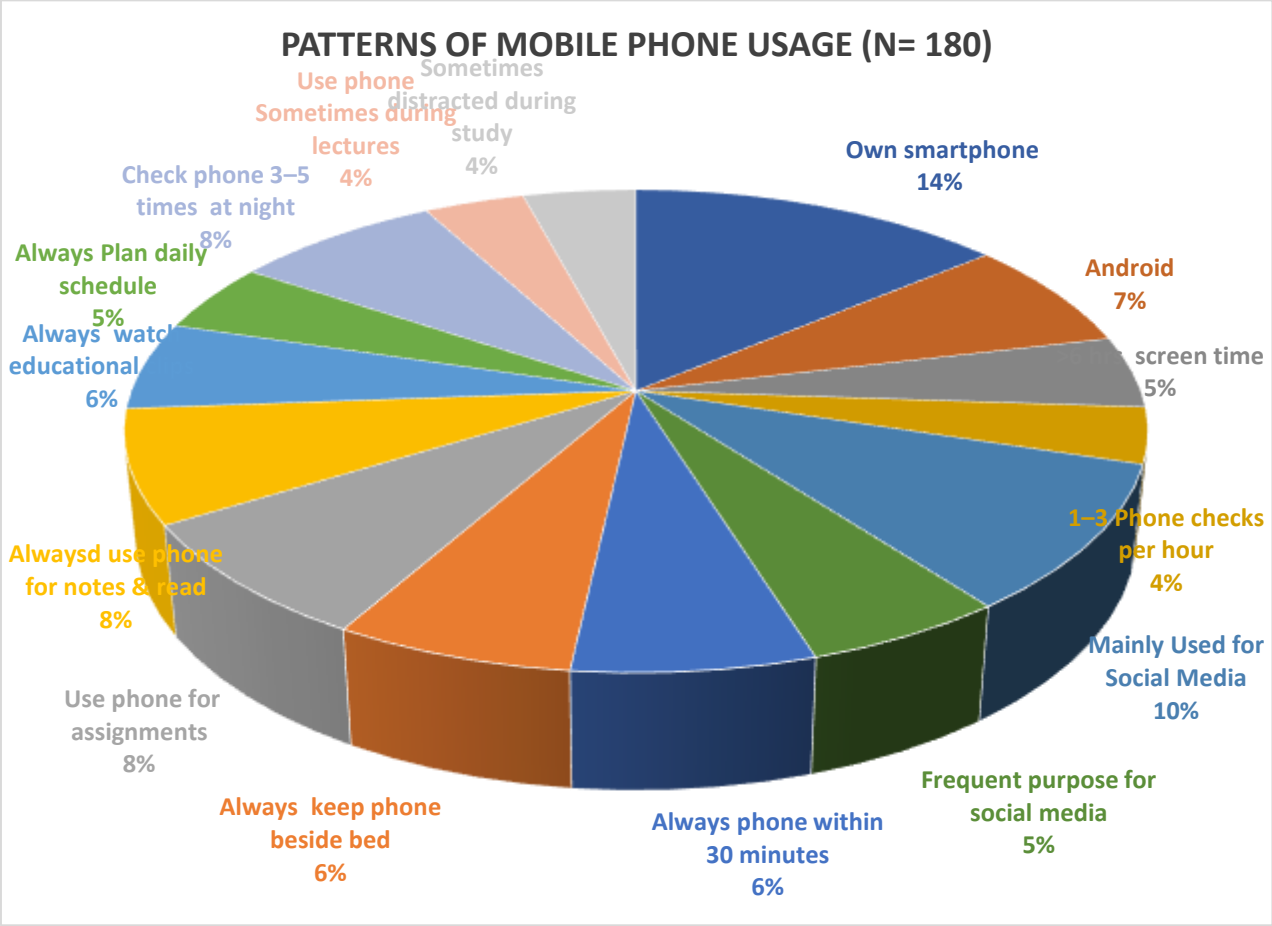
Variables	FREQUENCY(180)	PERCENTAGE (%)
Do you own a smartphone?		
Yes	180	100
No	0	0
What is your primary phone type?		
Android	95	52.7
iPhone	84	47.7
Other	1	0.6
Average screen time per day:		
<1 hr	9	5.0
1–2 hrs	28	15.6
3–4 hrs	38	21.1
5–6 hrs	43	23.9
>6 hrs	62	34.4
Typical number of phone checks per hour:		
<1	17	9.4
1–3	48	26.7
4–6	47	26.1
7–10	37	20.6
>10	31	17.2
Main purposes of phone use (tick all that apply):		
Social Media	127	70.6
Academic	117	65.0
Entertainment	100	55.6
Communication	113	62.8
News/Political	51	28.3
Others	20	11.1
Which is your most frequent purpose?		
social media	71	39.4
Academic	49	27.2
Entertainment	23	12.8
Communication	21	11.7
News/Political	6	3.3
Others	10	5.6
Do you use your phone within 30 minutes before sleeping?		
Always		
Often	85	47.2
Sometimes	40	22.2
Rarely	29	16.1
Never	12	6.7
	14	7.8
Do you keep your phone beside your bed while sleeping?		
Always		

Often	84	46.7
Sometimes	32	17.8
Rarely	30	16.7
Never	11	6.1
	23	12.8
Do you use your phone for assignments?		
Always	103	57.2
Often	43	23.9
Sometimes	25	13.9
Rarely	7	3.8
Never	2	1.1
Do you use your phone to write notes, store notes or to read?		
Always		
Often	98	54.4
Sometimes	31	17.2
Rarely	30	16.7
Never	11	6.1
	10	5.6
Do you use your phone to watch educational clips?		
Always	76	42.2
Often	50	27.8
Sometimes	33	18.3
Rarely	9	5.0
Never	12	6.7
Do you use your phone to plan your daily schedule or set study reminders?		
Always	60	33.3
Often	31	17.2
Sometimes	34	18.9
Rarely	29	16.1
Never	26	14.4
Have you woken up at night to check your phone?		
Never 1–2 times	15	8.3
3–5 times	100	55.6
>5 times	33	18.3
	32	17.8
14. How often do you use your phone during lectures/tutorials?		
Never		
Rarely	41	22.8
Sometimes	43	23.9
Often	48	26.7
Always	23	12.8
	25	13.9
How often does your phone distract you during studying?		
Never		
Rarely	39	21.7
Sometimes	39	21.7

Often	54	30.0
Always	28	15.6
	20	11.1

Source: Field Survey 2025

The study showed that 180(100%) of the total students own a smartphone, about 95(52.7%) of the respondent own an Android phone type, exact 62(34.4%) of the participants claimed that the average screen time per day >6hrs, about 127(70.6%) of the sample size maintained that the main purposes of phone use is for social media, exact 103(57.2%) of the respondents claimed that they always use their phone for their assignments, 76(42.2%) of the participants agreed that they always use their phone to watch educational clips, about48(26.7%) of the sample size maintained that they use their phone during lectures/tutorials sometimes, 54(30.0%) of the students claimed that their phone distract them during studying sometimes.



Research Question 2: What is the level of sleep quality of students in relation to their mobile phone usage habits in crescent university, Abeokuta?

Table 4.3.1: Assessment of Sleep Quality (N=180)

ITEMS	FREQUENCY (180)	PERCENTAGE (%)
During the past month, what time do you usually go to bed after using your phone at night?		

Before 10 p.m.	46	25.6
10 p.m.–12 a.m.	82	45.6
After 12 a.m.	52	28.9
During the past month, how long has it usually taken you to fall asleep after putting your phone down?		
< 15 min	79	43.9
15–30 min	70	38.9
31–60 min	16	8.9
> 60 min	15	8.3
During the past month, what time do you usually wake up in the morning after night-time phone use?		
Before 6 a.m.	65	36.1
6–8 a.m	89	49.4
After 8 a.m.	26	14.4
During the past month, how many hours of actual sleep do you get each night?		
< 5 h	48	26.7
5–7 h	83	46.1
> 7 h	49	27.2
How often have you had trouble sleeping because you stayed up using your phone (scrolling, chatting, gaming?		
Never	56	31.1
< 1 times/week	74	41.1
1–2 times/week	33	18.3
≥ 3 times/week	17	9.4
How often have you had trouble sleeping because you received phone notifications or calls at night?		
Never	55	30.6
< 1 times/week	38	21.1
1–2 times/week	75	41.7
≥ 3 times/week	12	6.7
How often have you had trouble sleeping because you watched videos or used social media before bed?		
Never	57	31.7
< 1 times/week	26	14.4
1–2 times/week	81	45.0
≥ 3 times/week	10	5.6
Do you avoid screentime at least 30 minutes before bed?		
Always	20	11.1
Often	28	15.6
Sometimes	50	27.8
Rarely	42	23.3
Never	40	22.2
How often have you had trouble sleeping because you checked your phone during the night?		
Never	48	26.7

< 1 times/week	46	25.6
1–2 times/week	71	39.4
≥ 3 times/week	15	8.3
How often have you had trouble sleeping because of bright screen light or notifications?		
Never	53	29.4
< 1 times/week	37	20.6
1–2 times/week	72	40.0
≥ 3 times/week	18	10.0
Does keeping your phone away during sleep help you rest better?		
Always		
Often	39	21.7
Sometimes	37	20.6
Rarely	47	26.1
Never	30	16.7
	27	15.0
Do you feel alert and energetic after a night of limited phone use?		
Always		
Often	33	18.3
Sometimes	32	17.8
Rarely	75	41.7
Never	21	11.7
	19	10.6
Do you wake up feeling rested even after using your phone?		
Always	24	13.3
Often	24	13.3
Sometimes	32	17.8
Rarely	55	30.6
Never	45	25.0
During the past month, how would you rate your overall sleep quality considering your phone habits?		
Very good	23	12.8
Fairly good	95	52.8
Fairly bad	52	28.9
Very bad	10	5.6
Overall, how satisfied are you with your sleep pattern and phone usage balance?		
Very satisfied	36	20.0
Fairly satisfied	82	45.5
Dissatisfied	50	27.8
Very dissatisfied	12	6.7

Source: Field Survey 2025

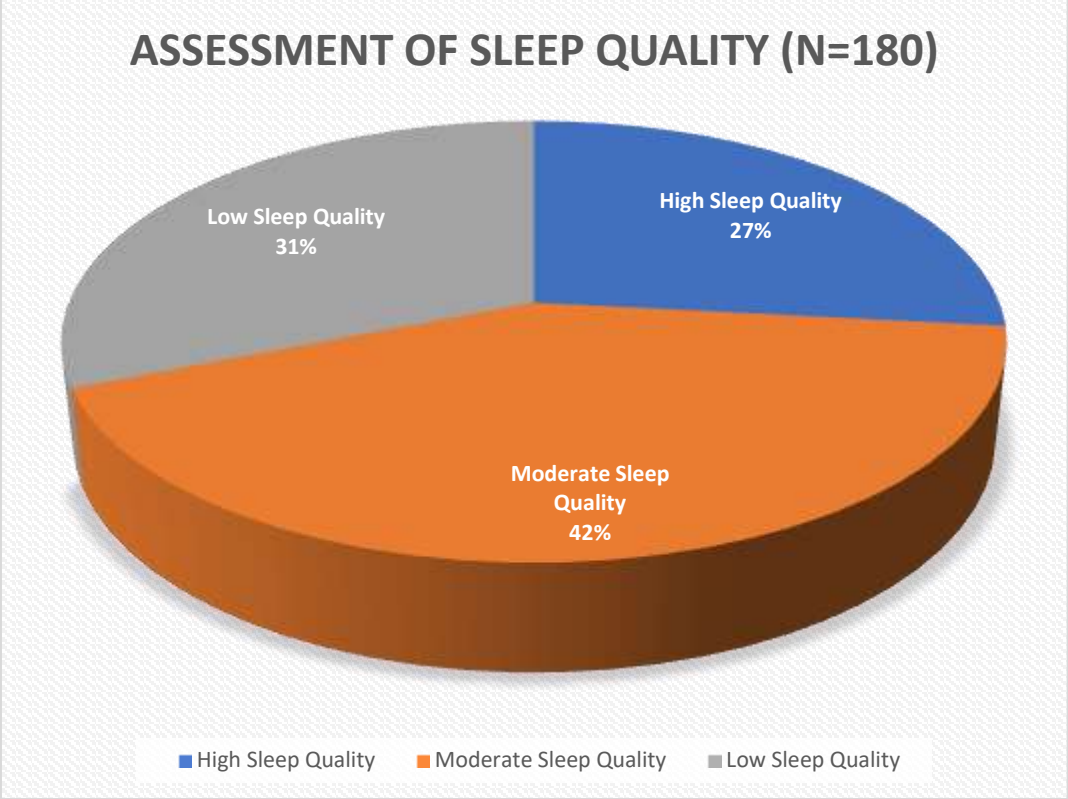
Mean Score =2.5

This means that the rating responses from 2.5 and above are category as High Sleep Quality while responses below mean score were categorized as Low Sleep Quality.

Table 4.3b: Overall Score on assessment of Sleep Quality (N=180)

Level of Sleep Quality	Frequency (%)
High Sleep Quality (%)	48(26.7)
Moderate Sleep Quality (%)	76(42.2)
Low Sleep Quality (%)	56(31.1)

Table 4.3b shows the overall score on the sleep quality of undergraduate students of crescent university in relation to their mobile phone usage habits. The overall table shows that about 48(26.7%) of the students have high sleep quality, 76(42.2%) of the respondent have moderate moderate sleep quality while 56(31.1) have low sleep quality respectively.



Research Question 3: What is the level of concentration during academic activities in relation to mobile phone usage in Crescent University, Abeokuta?

Table 4.4: Evaluation of Concentration Levels

Statements	Yes (%)	No (%)
Do you often feel sleepy during lectures as a result of using your phone late at night?	74(41.1)	106(58.9)
Do you find it easy to stay focused in class when you sleep early and avoid your phone?	123(63.3)	57(31.7)
Does late night phone use make it difficult for you to focus on reading or assignments?	75(41.7)	105(58.3)
Has your academic performance in the last session dropped?	76(42.2)	104(57.8)
Do phone notifications or messages easily distract you during study hours?	85(47.2)	95(52.8)
Do you experience mental tiredness in class after heavy use at night?	91(50.6)	89(49.4)
Does reducing your phone use before bedtime improve your alertness during the day?	126(70.0)	54(30.0)
Does mobile phone use make you procrastinate on academic activities?	112(62.2)	68(37.8)

Are you able to concentrate better when you limit phone use during study hours?	135(75.0)	45(25.0)
Do you manage your phone time effectively to balance academics and rest?	134(74.4)	46(25.6)
Do your mobile phone habits generally interfere with your concentration and productivity?	108(60.0)	72(40.0)
Do you think mobile phones can help in organizing academic schedules when used moderately?	158(87.8)	22(12.2)

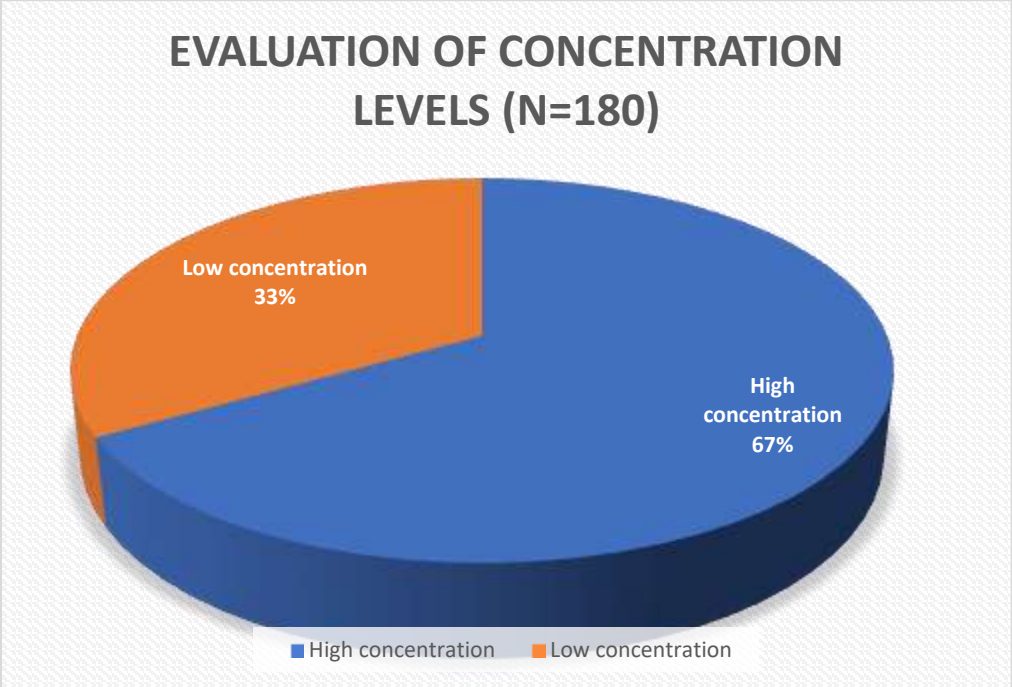
Source: Field Survey 2024

Mean Score =0.5
This means that the rating responses from 0.5 and above are category as concentration levels while responses below mean score were categorized as concentration levels.

Table 4.4b: Overall Score on evaluation of concentration levels (N=180)

Level of concentration	**Frequency (%)**
High concentration levels (%)	120(66.7)
Low concentration levels (%)	60(33.3)

Table 4.3b shows the overall score on the level of concentration of undergraduate students of crescent university during academic activities in relation to mobile phone usage. The overall table shows that about 120(66.7%) of the students have high level of concentration during academic activities in relation to mobile phone usage while 60(33.3%) have low level of concentration respectively.



Discussion of the findings
Demographic characteristics
This study showed that majority 78(43.3%) of the respondents were belong to age categories of 20 to 23 years, where about 110(61.1%) of the student were female, about 90(50.0%) of the participants were in the nursing department,

53(29.4%) of the sample size were in 200 level of education, about 154(85.6%) of the students were single, while about 132(73.3%) have were from the Yoruba ethnic group.

Patterns of mobile phone use

The study showed that 180(100%) of the total students own a smartphone, about 95(52.7%) of the respondent own an Android phone type, exact 62(34.4%) of the participants claimed that the average screen time per day >6hrs, about 127(70.6%) of the sample size maintained that the main purposes of phone use is for social media, exact 103(57.2%) of the respondents claimed that they always use their phone for their assignments, 76(42.2%) of the participants agreed that they always use their phone to watch educational clips, about48(26.7%) of the sample size maintained that they use their phone during lectures/tutorials sometimes, 54(30.0%) of the students claimed that their phone distract them during studying sometimes.

The finding of this study confirmed the study of Izquierdo-Condoy et al., (2025) who surveyed over 1,000 university students in South America and found that over 70% used their phones for 4–6+ hours daily, mainly at night and for non-academic purposes. Prolonged use led to sleep deprivation and poor screen-time regulation. This study support the study of Ragupathi et al., (2020) conducted a cross-sectional study among 385 students and found that bedtime phone use led to poor sleep quality, longer sleep latency, shorter duration, and frequent awakenings. These students also showed reduced attention and memory.The finding of this study confirmed the finding of a study conducted by Akodu et al., (2020) conducted a cross sectional survey among 837 undergraduates (500 females, 337 males) with outcome of this study revealing that more than half, 447 (53.4%), of the undergraduates were addicted to smartphone use. This study support the study of Perez-Juarez et al., (2024) studied 419 students and found that multitasking with phones caused mental fatigue and lower academic performance. Even having a phone nearby reduced attention, due to subconscious distractions. This study support the study of Joshua et al.,2023) study on 498 students had results indicated that 16.1% reported low smartphone addiction, 66.8 reported a moderate level and 17.1 reported a high level of smartphone addiction.

Sleep quality in relation to mobile phone usage

The study shows that about 48(26.7%) of the students have high sleep quality, 76(42.2%) of the respondent have moderate moderate sleep quality while 56(31.1) have low sleep quality respectively. This proved that majority 82(45.6%) of the student usually go to bed within 10 p.m.–12 a.m. after using your phone at night, about 79(43.9%) of the respondents usually taken < 15 min to fall asleep after putting their phone down, about 75(41.7%) of the participants had trouble sleeping 1–2 times/week because they received phone notifications or calls at night, about 75(41.7%) of the sample size felt alert and energetic after a night of limited phone use sometimes, while about 82(45.5%) of the student are fairly satisfied with their sleep pattern and phone usage balance.

The findings of this study confirmed the findings of a study conducted by Goel et al. (2023), which conducted an experimental study showing that blue light from phone screens suppresses melatonin and disrupts circadian rhythms. Students using phones for 30+ minutes before bed had delayed sleep onset and reported insomnia, restlessness, and next-day fatigue. This supports the biological link between phone use and poor sleep. This study supports the study of Balan et al. (2021), which surveyed over 600 students and found that bedtime phone use was associated with trouble falling asleep, frequent awakenings, and low-quality rest. Nighttime notifications and habitual checking of phones were identified as key factors fragmenting sleep. A Norwegian survey involving over 45,000 young adults found that every additional hour of screen time before bed results in 24 fewer minutes of sleep and a 59% higher risk of insomnia. (Health 2024). This study support the study of Ragupathi et al. (2020), which studied 385 undergraduates and found that phone use before sleep reduced total sleep time and increased next-day drowsiness. The study identified sleep quality as a mediating factor between excessive phone use and poor academic performance.

Concentration In Relation To Mobile Phone Usage

The study revealed that about 120(66.7%) of the students have high level of concentration during academic activities in relation to mobile phone usage while 60(33.3%) have low level of concentration respectively. This showed that majority 106(58.9%) of the student claimed that they do not feel sleepy during lectures as a result of using your phone late at night, about 123(63.3%) of the respondents agreed that they find it easy to stay focused in class when you sleep early and avoid your phone, about 126(70.0%) of the participants agreed that reducing your phone use before bedtime improve your alertness during the day, about 134(74.4%) of the sample size agreed that they were able to manage their phone time effectively to balance academics and rest, while about 158(87.8%) of the students thought mobile phones can help in organizing academic schedules when used moderately.

The finding of this study confirmed the finding of Perez-Juarez et al. (2024) studied 419 undergraduates and found that multitasking between academic tasks and phone activities led to reduced attention span, slower task completion, and cognitive overload. Even the presence of a phone on a desk disrupted concentration, emphasizing how constant connectivity weakens mental focus. This study support the study of Abreu et al. (2022) surveyed 522 students and found that compulsive phone use during lectures and study sessions caused fragmented attention, increased procrastination, and poor memory. The study concluded that phone dependency fuels academic disengagement. This study reinforce a study conducted by Liu & Li (2022) conducted an experiment showing that students with high Fear of Missing Out (FoMO) performed worse on attention tasks when their phones were nearby even when switched off. The psychological urge to stay connected distracted students from academic work.

Implication of the Findings

The finding of this study raises awareness among students on how prolonged mobile phone use affects sleep and academic focus, encouraging healthier digital habits. It also help parents and guardians understand related academic and psychological challenges, while guiding lecturers in classroom management and early student support. It provides university administrators and policymakers with evidence to develop wellness programs and digital usage guidelines that promote balanced technology habits.

The study highlights the emerging public health implications of excessive mobile phone usage all of which have long-term health consequences. This equipped nurses to identify at-risk individuals, provide targeted health education, and advocate for healthier digital habits. The study aid health professionals in identifying sleep and concentration issues linked to mobile phone use, support early intervention through counselling, and enhance holistic patient care by promoting lifestyle modifications for better wellbeing. The study contribute to the growing body of literature on mobile phone usage and its effects in the Nigerian context, where such localized research is still emerging.

Limitations of the Study

The researcher had limited availability of fund to carry out the research work.
The researcher had a limited time for the study
Obtaining permission to gather data from participants

Summary

This study assessed the impact of mobile phone usage on sleep quality and concentration among undergraduate students of Crescent University, Abeokuta. The objectives of the study are to: assess the average patterns of mobile phone use; assess the sleep quality of undergraduate students of crescent university in relation to their mobile phone usage habits; and determine the level of concentration of undergraduate students of crescent university during academic activities in relation to mobile phone usage. The study adopted a descriptive cross-sectional will be used to assess the impact of mobile phone usage on sleep quality and concentration among undergraduate students of Crescent University, Abeokuta. Simple random sampling technique and Taro Yamane's sample determination formula was

used to select 180 respondents. A self-developed questionnaire and validated question that elicit information based on the research specific objectives. A structured questionnaire was constructed by the researcher and presented to expert to assess the instrument's validity and to certify that items are relevant to the area of research for which it is designed and contribution from expert in the field and statistician was sought to modify the final draft. Ethical approval was obtained from the institution authority and informed consent was signed by respondents. Research assistant was recruited and trained to ensure easy collection of data. the researcher took the questionnaires personally to the respondents to administer questionnaires and I collected them back immediately for compilation and analysis. The data obtained from the study was analyzed and presented using simple frequency table, percentage, bar chart, pie chart. The results of the study were presented accordingly putting into consideration the research questions. Interpretations of the results were done, followed by the discussion of findings. Consequently, summary was given, conclusion was drawn, recommendations were made and limitations to the study were stated.

Conclusion

This study assessed the impact of mobile phone usage on sleep quality and concentration among undergraduate students of Crescent University, Abeokuta. This study showed that majority 78(43.3%) of the respondents were belong to age categories of 20 to 23 years, where about 110(61.1%) of the student were female, about 90(50.0%) of the participants were in the nursing department, while 53(29.4%) of the sample size were in 200 level of education. The study shows that about 48(26.7%) of the students have high sleep quality, 76(42.2%) of the respondent have moderate moderate sleep quality while 56(31.1) have low sleep quality respectively. The study revealed that the average pattern of mobile phone use among undergraduate students of Crescent University, Abeokuta are: The study showed that 180(100%) of the total students own a smartphone, about 95(52.7%) of the respondent own an Android phone type, about 127(70.6%) of the sample size maintained that the main purposes of phone use is for social media, exact 103(57.2%) of the respondents claimed that they always use their phone for their assignments, 76(42.2%) of the participants always use their phone to watch educational clips, while about48(26.7%) of the sample size maintained that they use their phone during lectures/tutorials sometimes. The study concluded that about 120(66.7%) of the students have high level of concentration during academic activities in relation to mobile phone usage while 60(33.3%) have low level of concentration respectively.

Recommendations

Based on the outcomes of the findings analyzed, the following points are hereby recommended:

School administrative and management should encourage students to set phone-free hours, especially before bedtime, to improve sleep quality.

School administrative and management should educate students on sleep hygiene practices, such as maintaining a consistent sleep schedule and creating a sleep-conducive environment.

Patient should encourage students to limit screen time, especially for social media, to reduce distractions and improve concentration.

School administrative and management should promote effective utilization of phone features like Do Not Disturb mode, app blockers, or phone-limiting apps to minimize distractions during academic activities.

The university should promote alternative study methods, such as textbooks or note-taking, to reduce reliance on phones for assignments.

School administrative and management should develop guidelines for phone use in academic settings, such as allowing phone use for educational purposes only.

Health care provider and counsellor should offer support services for students struggling with phone addiction or excessive phone use.

Teachers and lecturers educate students on responsible phone use, digital etiquette, and online safety. They should conduct regular assessments of phone use patterns among students to identify areas for improvement.
School administrative and management should establish clear policies on phone use in academic settings, such as during lectures or exams, to minimize distractions and promote concentration.

Recommendations for further study

This study should be carried out in different Nigerian institutions, both private and government university institutions, with a large sample size, in order to assess the impact of mobile phone usage on sleep quality and concentration among undergraduate students.

Ethical considerations

Ethical clearance was sought from the Crescent University Health Research Ethics Committee and the Ogun State Ministry of Health before the study began. Participants were fully informed about the study purpose, procedures, risks, and benefits, with written informed consent obtained. Confidentiality was maintained by assigning codes instead of names. Participants had the right to decline or withdraw at any time without penalty.

This methodological framework adapts well-established approaches from similar studies on mobile phone usage, sleep quality, and concentration in Nigeria and other contexts, ensuring rigor and relevance to Crescent University's setting.

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