International Journal of Human Kinetics, Health and Education
ISSN: 2449-0326
Vol 11, No1 2026
IJoHKHE

Internet Addiction and Sleep Problems among Tertiary Institution Students in Nsukka Local Government Area, Enugu Sate: A Cross-Sectional Study

Jennifer Ginikachukwu Okolo[1], Lovelyn Chinenyenwa Ezeossai[2], Obianuju Chioma Dibia[3], Getrude Chisom Agbo[4], Evelyn Nwanebe Nwagu[5*]

[1-5]Department of Human Kinetics and Health Education, University of Nigeria, Nsukka

*Corresponding author: Evelyn NwanebeNwagu. E-mail:evelyn.nwagu@unn.edu.ng; Telephone: 08139707903; https://orcid.org/0000-0003-0466-224X

Abstract

The high reliance on digital technology among tertiary institution students has introduced dual public health challenges: maladaptive internet use and compromised sleep architecture. This study investigated the level of internet addiction and the proportion of students experiencing sleep problems among tertiary institution students in Nsukka Local Government Area (LGA), Enugu State, Nigeria. A descriptive cross-sectional survey design was adopted for the study. A multi-stage sample of 436 undergraduate students was selected from tertiary institutions within Nsukka LGA. Data were collected using a validated structured questionnaire integrating the adapted Young's Internet Addiction Test (IAT) and the Pittsburgh Sleep Quality Index (PSQI). Data were analyzed using descriptive statistics (mean, standard deviation, frequency, and percentage) and inferential statistics (One-way Analysis of Variance, Independent Samples t-test, and Chi-squared test of independence) at a 0.05 level of significance. The findings revealed that students presented mild overall level of internet addiction ($\bar{x}$ = 38.1, SD = 28.8). On the other hand, 89.2% (n = 389) of the student population suffered from severe sleep problems ($\bar{x}$ = 10.939, SD = 6.96). Inferential analyses indicated that internet addiction significantly differed based on gender (p = 0.000), with males showing higher dependency, as well as study year (p = 0.003) and daily exposure time (p = 0.000). Strikingly, age was the only factor that significantly differentiated sleep problem proportions (p = 0.022), while gender (p = 0.575) and financial stipends (p = 0.104) showed uniform, pervasive sleep issues across the entire cohort. Among others, the researchers recommended that mandatory seminar on sleep hygiene should be integrate into orientation programmes for first-year students in tertiary.

Keywords: Internet addiction, Sleep problems, Tertiary institution students, Nsukka LGA, Public health.

Introduction

Internet addiction (IA) and sleep problems among young people have become a major public health concern globally. The rapid advancement of digital technology and internet accessibility in the past two decades have revolutionized communication, learning, and entertainment platforms worldwide leading to increase in internet use especially by tertiary institution students. In contemporary educational landscapes, the internet has transitioned from a luxury tool into an indispensable academic utility, particularly in tertiary institutions (Alimoradi et al., 2019). While these digital tools enhance learning efficiencies, their unregulated and excessive usage has introduced complex public health concerns, among which are internet addiction with its resultant sleep problems

(Fehintola et al., 2023). Internet addiction is conceptualized broadly as the inability to control internet use (Cai et al., 2022). Internet addiction is marked by excessive time spent online, obsessive engagement with Internet activities and failed attempts to limit usage (Ezekiel et al., 2025). Tertiary institution students make use of the internet for various purposes and they may be experiencing internet addiction.

Tertiary institution students are highly vulnerable to developing maladaptive internet use habits. This is related to several overlapping developmental and situational factors among these students. One is that entering a tertiary institution often coincides with emerging adulthood, a developmental phase that is marked by diminished parental supervision, increased personal autonomy, and a reliance on peer-group integration typically facilitated by social media networks (Garett et al., 2018). Secondly, the structural demands of modern tertiary institutions require extensive computer-mediated interactions for research, virtual learning, assignments, and peer communication. This continuous scholastic exposure can easily blur the boundary between functional academic utilisationleading to compulsive, non-essential internet consumption.From a public health perspective, the consequences of internet addiction are multi-dimensional, heavily disrupting the physical health domains of young adults. Garett et al., (2018) opined that social media use may be associated with sleep quality among students.

Sleep is a fundamental physiological process required for cognitive consolidation, cellular repair, metabolic regulation, and optimal neurobehavioral functioning (Word Health Organization, 2019). Internet addiction has been linked to mental health and sleep problems. A systematic review conducted by Kuss and Lopez-Fernandez (2016) presented a conceptual model of the relationship between IA and depression, in which IA influences neurological changes and sleep problems, causing anxiety and stress and eventually depression. Sleep problems include; poor sleep quality, delayed sleep onset, insomnia, and erratic sleep schedules. In many countries of the world, digital media use has been associated with shorter sleep duration and poorer sleep quality (Brautsch, et al., 2023).

In developing countries,particularlyNigeria, the dynamic of internet dependency is compounded by several socio-economic factors. Young Nigerians are rapidly adopting mobile technology, using internet spaces as a primary mechanism to cope with systemic academic stress, high unemployment anxieties, and socio-economic pressures. Although local literature has increasingly documented behavioural addictions to internets across Nigerian tertiary institutions, significant empirical gaps remain regarding how socio-demographic variables regulate these burdens. Understanding how variables such as age, gender, level of study, monthly stipends, parental involvement with internet, and daily internet exposure times co-exist with internet addiction and sleep patterns will help tailor public health interventions to address internet addiction and sleep problems among tertiary education students in NsukkaLocal Government Area (LGA).

Nsukka LGA of Enugu State represents a majoracademic hub in southeastern Nigeria, hosting prestigious University of Nigeria, Nsukka, alongside three other tertiary institutions namely: School of Nursing, Bishop Shanahan Hospital, Nsukka; School of Health Technology, Nsukka; and the College of Education, Nsukka. These tertiary education settings provide ample opportunities for academic activities that require internet use. However, many tertiary education students use the internet for other unhealthy activities that may be problematic for their overall wellbeing.Despite the strategic position of Nsukkaas an educational center, there is a scarcity of local

empiricalevidence assessing how internet addiction explicitly interacts with sleepquality through the lens of socio-demographic variables.Investigating these localized dynamics is vital for institutional healtheducators and policymakers to design targeted behavioural interventions.To address these empirical deficits, this study determined the level of internet addiction and theproportion of students experiencing sleep problems among students oftertiary institutions in Nsukka LGA, Enugu State. Furthermore, this studyevaluates how these baseline indices differ across criticalsocio-demographic and behavioural boundaries, including age, gender, yearof study, parental education, parental involvement in internet use, monthlystipend, and time of daily exposure to the internet. Findings of this study will be of immense benefit to public health educator, and tertiary institution administratorsbecause it will help them plan and implement targeted public health interventions against internet addiction and sleep problems among tertiary education students in the study area.

Methods

Study design and setting

This study adopted a descriptive cross-sectional survey design to examine internet addiction and sleep problems among tertiary institution students in Nsukka LGA. Thisdesign allows the researchers to collect data on internet addiction, sleepproblems, and socio-demographic variables simultaneously from arepresentative sample at a single point in time. The successful use of this design by Akanni and Adayonfo (2020) in a similar study to investigate the internet addiction and its association with anxiety, substance use, and academic performance among secondary school students in Benin City, Edo State, Nigeria informed the choice of this design by the researchers.

The study was conducted in Nsukka LGA, Enugu State. There are four tertiary institutions in Nsukka LGA, namely: University of Nigeria, Nsukka; Bishop Shanahan School of Nursing; School of Health Technology and the College of Education, Nsukka. The tertiary education settings provide ample opportunities for academic activities that require internet use.

Study population

The population of the study comprised 41,979 full-time undergraduate studentsenrolled in the tertiary institutions located within Nsukka LGA during the 2019/2020 session. Thispopulation was chosen because emerging adults in higher education facehigh academic stress and have significant freedom over their internetusage and sleep schedules.All postgraduate students were excluded from the study.

Sample size and sampling technique

The sample size for this study consisted of 436 tertiary institution students in Nsukka LGA, Enugu State. The sample size was determined using Taro Yamane (1967) sample size determination formula. To make up for attrition, 10 % was added to the minimum sample size of 396. Thus, 10 % non-response rate (i.e. 0.1) was used to multiply the estimated minimum sample size of 396 (i.e., 396 x 0.1 =39. 6). Subsequently, 39. 6 was added to 396 (396 + 39. 6 = 435. 6), which yielded 435.6. The sample size was thus approximated to 436. To address attrition, Stoop (2017) recommended that researchers should increase estimated sample size for a survey.A multi-stage sampling procedure was used to select the participants.Stage One: Simple random sampling (balloting without replacement) was used to select specificdepartments within the institutions.Stage Two: Proportionate stratified random sampling was applied to ensure fairrepresentation across

different years of study and genders.Stage Three: Simple random sampling (balloting without replacement) was used to selectFifty (50) students from Bishop Shanahan School of Nursing students; 100 students from School of Health Technology; 50 students from College of EducationNsukka and 236 students from University of Nigeria, Nsukka.

Data collection instrument

A structured, self-administered questionnaire titled"Internet Addictionand Sleep Problems Questionnaire (IASPQ)" was used. The instrument wasdivided into three main sections:Section A: Collected socio-demographic information (age, gender, yearof study, parental education, parental involvement in internet use,monthly stipend, and daily hours of exposure to theinternet).Section B: Contained 20 standard items to measure the level of internetaddictionadopted from Young's Internet Addiction Test (Young, 1998).Section C: Contained 19 items adopted from The Pittsburgh Sleep Quality Index (PSQI) developed by Buysse et al. (1998). This section measured sleep quality and disturbance over the past one month.

The instrument was face-validated by three experts in Health Education. To ensure internal consistency, apilot study was conducted on a small sample of 20 students from a Godfrey Okoye University, a tertiaryinstitution outside the study area. Cronbach's alpha was used to establish the internal consistency of the instrument, which yieldeda coefficient of 0.76, indicating that the instrumentwas reliable for the study.

Data collection procedure

The researchers, with the help of trained research assistants, administered the questionnaires directly to the undergraduates in their respective lecture hallsand halls of residence. Prior to administering the instrument, informed consent was obtained from each participant and they were assured that the information will be kept confidential and used solely for research purposes. Only those who consented participated in the study. A total of 436 copies of the questionnaire were administered to the students. Copies of the questionnaire were collected from those who are able to complete the questionnaire within the school period while others who did not complete their copies immediately were asked to submit to the lecturer who served as research assistants and collectedcopies for the researchers on an agree date and time.

Completedquestionnaires were retrieved immediately with a return rate of 100 percent.

Data analysis

The collected data were cleaned, coded, and analysed using statisticalsoftware.The data were analysed using the Statistical Package for Social Sciences (SPSS) version 25. Descriptive statistics (mean andstandard deviation) were calculated for the 20 items of Young’s InternetAddiction Test (IAT). The level of internet addiction was determined usingthe overall mean total score, interpreted against the established scoringprotocol (0–30: Normal usage; 31–49: Mild addiction; 50–79: Moderateaddiction; 80–100: Severe addiction).

For sleep problems, descriptive statistics (frequencies,percentages, means, and standard deviations) were calculated for theseven components of the Pittsburgh Sleep Quality Index (PSQI). Theoverall presence of a sleep problem was determined using a cut-off pointwhere a global PSQI total score of 5 or greater indicates the presenceof a sleep problem, while a score less than 5 indicates the absence

of asleep problem.Inferential Statistics (Independent sample t test, One-way Analysis ofVariance (ANOVA) and Chi-square tests of independence)were utilized to test the nullhypotheses at a 0.05 levelof significance.

Results

Table 1: **Mean Responses on Level of Internet Addiction among Tertiary Institution Students in Nsukka LGA (n = 436)**

	IAT Items	$\overline{X}$	SD
1.	How often do you find that you stay online longer than intended?	2.58	1.30
2.	How often do you neglect household chores to spend more time online?	1.78	1.29
3.	How often do you prefer the excitement of the Internet to intimacy with your partner?	1.43	1.55
4.	How often do you form new relationships with fellow online users?	1.86	1.34
5.	How often do others in your life complain to you about the amount of time you spend online?	1.68	1.32
6.	How often do your grades or school work suffers because of the amount of time you spend online?	1.19	1.24
7.	How often do you check your email before something else that you need to do?	1.58	1.33
8.	How often does your job performance or productivity suffer because of the Internet?	1.26	1.22
9.	How often do you become defensive or secretive when anyone asks you what you do online?	1.76	1.50
10.	How often do you block out disturbing thoughts about your life with soothing thoughts of the Internet?	2.28	1.48
11.	How often do you find yourself anticipating when you will go online again?	2.20	1.43
12.	How often do you fear that life without the Internet would be boring, empty, and joyless?	2.64	1.79
13.	How often do you snap, yell, or act annoyed if someone bothers you while you are online?	1.61	1.36
14.	How often do you lose sleep due to being online?	2.10	1.49
15.	How often do you feel preoccupied with the Internet when off-line, or fantasize about being online?	1.85	1.38
16.	How often do you find yourself saying “just a few more minutes” when online?	2.46	1.57
17.	How often do you try to cut down the amount of time you spend online and fail?	1.96	1.42
18.	How often do you try to hide how long you’ve been online?	1.74	1.56
19.	How often do you choose to spend more time online over going out with others?	2.20	1.63
20.	How often do you feel depressed, moody, or nervous when you are off-line, which goes away once you are back online?	1.89	1.57
	IAT total score	**38.1**	**28.8**

Scoring protocol for interpretation of IAT scores

0-30 = Normal level of internet usage

31-49 = Mild level of internet addiction

50-79 = Moderate level of internet addiction

80-100 = Severe level of internet addiction

Source: Young (1998).

Data in Table 1 show that the highest individual mean scores werereported for item 12 (How often do you fear that life without the Internetwould be boring, empty, and joyless?), followed by item1 (How often do you find that you stay online longer than intended?), and item 16 (How often do you find yourself saying 'justa few more minutes' when online?). Conversely, thelowest mean response was observed for item 6 (How often do yourgrades or school work suffer because of the amount of time you spendonline?).Overall, the aggregate IAT total mean score for the students was 38.1. Based on the scoring protocol, this overall mean score falls within the31 - 49 range. This indicates that the students of tertiary institutions inNsukka LGA, on average, present a mild level of internet addiction.

Table 2: **Proportion of Tertiary Institution Students who Experienced Sleep Problem in Nsukka LGA (n=436)**

S/N	PSQI Items	$\overline{X}$	SD
1.	Component 1 (sleep quality)	0.844	1.89
2.	Component 2 (sleep latency)	1.836	1.50
3.	Component 3 (sleep duration)	1.351	0.99
4.	Component 4 (sleep efficiency)	2.896	0.48
5.	Component 5 (sleep disturbance)	1.434	0.55
6.	Component 6 (sleep medication use)	1.980	0.96
7.	Component 7 (daytime dysfunction)	0.598	0.73
	PSQI Total Score	**10.939**	**6.96**
	Sleep Problem Categorization	f	%
	Presence of sleep problem	389	89.2
	Absence of sleep problem	47	10.8

Note. Sleep problem categorization

PSQI<5 = Absence of sleep problem

PSQI Total score ≥5 = presence of sleep problem

Source: Young (1998).



Data presented in Table 2 show that the highest mean component scorewas recorded for Component 4 (sleep efficiency),followed by Component 6 (sleep medication use) andComponent 2 (sleep latency). Conversely, the lowestmean score was observed for Component 7 (daytime dysfunction). The overall PSQI total score for the sample was (10.939), which is well above the clinical cut-off value of 5.Regarding the prevalence categorization, the vast majority of therespondents, 389 students representing 89.2%, met the criteria for thepresence of a sleep problem. Only 47 students (10.8%) recorded scoresindicating an absence of a sleep problem. These findings demonstrate anexceptionally high burden of poor sleep quality and related sleepdisturbances among the sampled student population.

Table 3: **Summary of Independent samples t-test Showing Difference in the Internet Addiction Level of Students in Nsukka LGA based on Gender (n=436)**

Variable	**N**	$\overline{x}$	**SD**	**Std.Em**	**T**	**Df**	***p*-value**
Gender							
Male	160	41.64	16.87	1.334	3.655	434	0.000
Female	276	35.92	15.03	0.905			

Significant at $p \leq 0.05$

The data in Table 3 reveal that male students recorded a higher meaninternet addiction score (41.64) compared to their femalecounterparts (35.92).The independent samples t-test showed that this mean difference wasstatistically highly significant. Because the p-value isless than the 0.05 level of significance, the null hypothesis was rejected forgender. This indicates that gender significantly influences internetaddiction tendencies among the study participants, with male studentsexhibiting a significantly higher vulnerability to online addiction thanfemale students.

Table 4: **Summary of one-way ANOVA showing Difference in the Level of Internet Addiction among Students of Tertiary Institutions in Nsukka LGA (n=436)**

Variable	Sources	Sum of squares	Df	Mean square	F	*p*-value
Age						
	Between Groups	63.711	2	31.855	0.125	0.883
	Within Groups	110637.104	433	255.513		
	Total	110700.814	435			
Year of Study						
	Between Groups	2869.038	2	1434.519	5.760	0.003
	Within Groups	107831.776	433	249.034		
	Total	110700.814	435			
Parent education qualification						
	Between Groups	259.799	2	129.900	0.509	0.601
	Within Groups	110441.015	433	255.060		
	Total	110700.814	435			
Parental internet involvement,						
	Between Groups	2900.503	3	966.834	3.875	0.009
	Within Groups	107800.311	432	249.538		
	Total	110700.814	435			
Monthly Stipend						
	Between Groups	1971.808	3	657.269	2.611	0.051
	Within Groups	108729.006	432	251.688		
	Total	110700.814	435			
Time of internet exposure						
	Between Groups	5644.424	3	1881.475	7.737	0.000
	Within Groups	105056.390	432	243.186		
	Total	110700.814	435			

* Significant at p≤ 0.05

The ANOVA results indicate that there were no significant differences in thelevel of internet addiction across different age groups, F(2, 433) = 0.125, p= 0.883 and based on the educationalqualifications of the parents,F(2, 433) = 0.509, p = 0.601. Statistically significant differenceswere observed in the level of internetaddiction based on: the students' year of study, F(2, 433) = 5.760, p =0.003; the extent of parental internet involvement, F(3, 432) = 3.875, p =0.009 and based on the daily duration of internet exposure,F(3, 432) = 7.737, p = 0.000. The difference in internet addiction levels across varying monthly stipendbrackets approached significance but did not cross the threshold, F(3,432) = 2.611, p = 0.051.

Table 5:**Summary of Chi-squared Test showing Difference in the Proportion of Tertiary Institution Students with Sleep Problem in Nsukka LGA based on Demographic Factors (n=436)**

Variable	Group	N	Sleep Problem		df	χ^2	*p*-value
			Yes $\sigma(\epsilon)$	**No** $\sigma(\epsilon)$			
Age							
	15 -19 years	117	100(104.4)	17(12.6)	2	7.675	0.022
	20 -24 years	248	230(221.3)	18(26.7)			
	≥25 years	71	59(63.3)	12(7.7)			
Gender							
	Male	160	141(142.8)	19(17.2)	1	0.315	0.575
	Female	276	248(246.2)	28(29.8)			
Study Year							
	Year1-2	212	189(189.1)	23(22.9)	2	0.488	0.783
	Year3-4	180	162(160.6)	18(19.4)			
	≥Year 5	44	38(39.3)	6(4.7)			
Parental Education Qualification							
	FSLC &	141	120(125.8)	21(15.2)	2	3.816	0.148
	SSCE/OND/HND	125	115(111.5)	10(13.5)			
	B.Sc/M.Sc/PhD	170	154(151.7)	16(18.3)			
Parental internet involvement							
	Very High Level	180	167(160.6)	13(19.4)	3	6.515	0.089
	High Level	53	46(47.3)	7(5.7)			
	Moderate level	117	98(104.4)	19(12.6)			
	Low Level	86	78(76.7)	8(9.3)			
Monthly Stipend							
	₦5000- ₦ 10,000	168	155(149.9)	13(18.1)	3	6.164	0.104
	₦ 11,000- ₦15,000	84	71(74.9)	13(9.1)			
	₦ 16,000- ₦20,000	68	57 (60.7)	11(7.3)			
	≥₦ 21,000	116	106(103.5)	10(12.5)			
Time of internet exposure							
	Early Morning	104	91(92.8)	13(11.2)	3	2.084	0.555
	Mid-day	81	71(72.3)	10(8.7)			
	Evening/Late at night	209	191(186.5)	18(22.5)			
	Midnight	42	36(37.5)	6(4.5)			

The Chi-squared test revealed a statistically significant difference in theproportion of students experiencing sleep problems across different agebrackets. The data indicate that the proportionof students suffering from sleep problems fluctuates significantlydepending on their age group, with the 20–24 age range reporting the highest number of sleep problems.

No statistically significant differenceswere observed in theproportion ofsleep problems: between male and female tertiary institution students; students' level of academic progression;educational

backgrounds of the students' parents; parental involvement levels withtechnology; and specific preferred time of day for internet exposure.

Discussion

Internet addiction among the study population

This study evaluated the level of internetaddiction and the prevalence of sleep problems among students oftertiary institutions in Nsukka Local Government Area (LGA), Enugu State. The study further investigated how critical socio-demographicand behavioral factors differentiate these burdens among the students.The baseline findings revealed that the sampled students exhibited mean Internet Addiction Test (IAT) score of 38.1 (SD = 28.8).According to Young's diagnostic criteria, this places the cohort within themild level of internet addiction. This finding indicates that although internetusage is becoming increasingly popular, it has not yet evolved into severe compulsive dependency for theaverage student in Nsukka LGA. This finding is similar to earlier findings reported by Chase et al., (2022) that emerging adults maintain high digital engagement primarily for socialization and informal networking without completely derailing their functional baseline.A closer look at the individual items, however, reveals hidden risks.The highest mean scores were recorded for emotional attachment items,specifically item 12 (fearing that life without the internet would be boring,empty, and joyless) and item 1 (staying online longer than intended).This indicates that although students maintain operational boundaries, astrong underlying emotional dependency exists. Interestingly, item 6(grades or school work suffering because of time spent online) recordedthe lowest mean score.. This suggests that students within theNsukka academic community are consciously shielding their primaryscholastic obligations from their digital habits, prioritizing lectures andexam preparation over recreational internet indulgence.This finding is in line with those of Iluku-Ayoola, Awogbami, Agunbiade-Olu and Asoh-Chika (2020) who reported that, significant percentages of the students were moderate users of the internet while few students were excessive user of the internet.

Prevalence and burden of sleep problems

In contrast to the mild levels of internet addiction, the evaluation ofsleep health with the Pittsburgh Sleep Quality Index (PSQI) among the study participants revealed asevere public health crisis. An alarming 89.2% of the surveyed studentsmet the clinical criteria for the presence of a sleep problem, with anoverall global PSQI score of 10.939 (SD = 6.96), vastly exceeding the cut-off value of 5. This unusually high prevalence demonstrates that poorsleep quality is an endemic issue among tertiary students in Nsukka LGA.The component breakdown highlighted that Component 4 (sleepefficiency) and Component 2 (sleep latency) were major drivers of thisburden. Students face massive struggles falling asleep within healthytimeframes and maintaining uninterrupted rest. It is equally of great concern that, Component 6 (sleep medication use) recorded a high mean score. This indicates a worrying trend where students are actively relyingon pharmacological aids to manage their sleep deficits rather thanadopting healthy sleep hygiene practices. These severe disruptions arelikely compounded by the demanding academic environment of tertiary institutions where heavy courseloads, intense examination schedules, and peer pressure merge with poorhostel living conditions.

Sociodemographic variations in internet addiction

The inferential analysis showed that internet addiction levels variedsignificantly based on gender, year of study, parental involvement, anddaily exposure time.The independent samples t-test conclusively rejected the null hypothesisfor gender, revealing that male students presented significantly higherinternet addiction scores (than female students as shown in Table 3. This variance agrees with previous literature suggesting that male and female students use the internet forfundamentally different purposes (Winds et al., 2024). Male students oftenengage more heavily in highly addictive online activities such as gaming, sports betting platforms, and crypto-currency tradingactivities characterized by high psychological rewards. Female students, on the other hand, tend to dominategeneral social media communication platforms, which, while highlyengaging, are typically easier to disconnect from throughout the day.

The significant differences observed across the year ofstudy and time of internet exposure in Table 4 demonstrate that structural and behavioural freedom regulates addiction.Junior undergraduates often experience sudden independence fromparental monitoring, leading to erratic browsing schedules. As exposuretime scales up, behavioural control breaks down, driving the aggregateaddiction index higher. The significance of parental internetinvolvement emphasizes that early behavioural boundarysetting at home continues to influence how students manage their screentime even after transitioning into tertiary environments.

Sociodemographic variations in sleep problems

The Chi-squared tests of independence (Table 5) for the sleep problemrevealed a radically different trend. Age was theonly demographicvariable that demonstrated a statistically significant differenceacross the sleep indices, with the 20–24 age bracket carrying the largestabsolute burden. This specific age group corresponds directlywith peak undergraduate years, a phase characterized by intenseacademic pressure, lifestyle adjustments, and biological transitions incircadian rhythms(Wolburg&Pokrywczynski, 2001).Remarkably, gender, study year, parentalbackground, monthly stipend, and even reportedinternet exposure times showed absolutely no statisticallysignificant differences. This means that the 89.2% prevalence of poorsleep is almost completely uniform across the entire student population.

While male students suffer from significantly higher internet addictionlevels, female students experience severe rate of sleepdegradation. This uniform distribution indicates that sleep problemsamong Nsukka tertiary students are structural and systemic rather thanmerely behavioural. The problem may not be solely driven by late-night browsinghabits; it is probably deeply reinforced by institutional factors such as overnightstudy traditions (night class), poor campus infrastructure (erraticelectricity forcing students to stay up at odd hours to charge devices orstudy), and the general stress of the university environment.

Conclusion

This study establishes a critical public health paradox within the studentpopulation of Nsukka LGA. While the average undergraduates successfullymanage internet use to prevent severe internet addiction and directacademic failure, their physiological sleep quality is awkward.The exceptionally high prevalence of sleep problems acrossalmost all demographic, economic, and behavioural strata indicates thatpoor sleep quality is no longer just an individual behavioural failure but anendemic, structural issue within the local tertiary ecosystem.Furthermore, it is noteworthy that gender

divergence in internet addiction suggests that male students face unique psychological vulnerabilitiesdriven by high-engagement with digital platforms (e.g., gaming, sportsbetting). However, the uniform distribution of sleep disturbances acrossgenders and financial boundaries reveals that the sleep crisis may be rooted inbroader issuessuch as suboptimal campusenvironmental conditions. Ultimately, preserving the health andacademic vitality of these emerging adults requires a systematictransition from passive observation to proactive health education andinstitutional intervention.

Recommendations

Based on the findings of this study, the following recommendations are made:

1. Tertiary institutions administrations and health education departments should integrate mandatory seminars and workshops on sleep hygiene into orientation programmes for first-year students. These programmes should emphasize the pathomechanisms of blue-light exposure, sleep tracking, and regular sleep schedules.
2. Given the alarming reliance on sleep medications highlighted in the data, campus medical centers should actively establish counseling pathways utilizing Cognitive Behavioral Therapy for Insomnia (CBT-I) and mindfulness- based stress reduction techniques to steer students away from early substance dependencies.
3. Health educators should design and execute sex-specific behavioural interventions focused on male student clusters (e.g., in campus hostels and off-campus lodges) to educate them on the addictive architectures of online sports wagering, crypto-trading, and gaming platforms.
4. Institutional authorities should review operational infrastructure, ensuring stable power supply configurations during healthy evening hours to discourage students from altering their natural circadian rhythms just to utilize digital utilities or charge essential learning apparatus at late hours.

References

Akanni, O.O., &Adayonfo, E.O. (2020).Problematic internet use and its association with anxiety, substance use, and academic performance among secondary school students in Nigeria. *International Journal of School of Health.*, *7*(3), 15-22.

Alimoradi, Z., Lin, C. Y., Broström, A., Bülow, P. H., Bajalan, Z., Griffiths, M. D., Ohayon, M. M., &Pakpour, A. H. (2019). Internet addiction and sleep problems: A systematic review and meta-analysis. *Sleep medicine reviews*, *47*, 51–61. https://doi.org/10.1016/j.smrv.2019.06.004

Brautsch, L. A., Lund, L., Andersen, M. M., Jennum, P. J., Folker, A. P., & Andersen, S. (2023). Digital media use and sleep in late adolescence and young adulthood: A systematic review. *Sleep Medicine Reviews*, *68*, 101742.https://www.sciencedirect.com/science/article/pii/S1087079222001551

Buysse,D.J., Reynolds, C.F., Monk,T. H., Berman, S. R., &Kupfer, D.J. (1998). The Pittsburgh Sleep Quality Index: a new instrument for psychiatric practice and research. *Psychiatry Research.28,* 193-213 Elsevier.

Cai, H., Bai, W., Yue, Y., Zhang, L., Mi, W. F., Li, Y. C., Liu, H. Z., Du, X., Zeng, Z. T., Lu, C. M., Zhang, L., Feng, K. X., Ding, Y. H., Yang, J. J., Jackson, T., Cheung, T., An, F. R. & Xiang, Y. T. (2022) Mapping network connectivity between internet addiction and residual depressive symptoms in patients with depression. *Front. Psychiatry 13*:997593. doi: 10.3389/fpsyt.2022.997593

Chase, G. E., Brown, M. T., & Jensen, M. (2022).Emerging adults' digital technology engagement and mental health during the COVID-19 pandemic. *Frontiers in psychology*, *13*, 1023514.https://doi.org/10.3389/fpsyg.2022.1023514

Ezekiel, E. A., Balogun, M., Maduafokwa, B., Nwohiri, I., Wika-Kobani, B., Giwa, O., Ibenye-Ugbala, C., OluwadamilolaMatti, O., &Abdulkareem, A.(2025). The prevalence of Internet addiction and its impact on undergraduates' mental health in Lagos state, Nigeria. *Journal of Public Health in Africa*, *16*(1), 1254. https://doi.org/10.4102/jphia.v16i1.1254

Fehintola, F.O., Hassan, T. A., Kolapo, I. A., Kolawole, J. O. &Akinsulore, A. (2023). Internet addiction and perceived sleep quality amongst undergraduate students in ObafemiAwolowo University Ile-Ife, Nigeria. *Ethiopian Journal of Public Health and Nutrition (EJPHN)*, *6*(2), 107–112. doi:10.20372/ejphn.v6i2.209.

Garett, R., Liu, S., & Young, S. D. (2018). The relationship between social media use and sleep quality among undergraduate students. *Information, Communication and Society*, *21*(2), 163 –173. https://doi.org/10.1080/1369118X.2016.1266374

Iluku-Ayoola, O., Awogbami, S. O., Agunbiade-Olu, O. P., &Asoh-Chika, F.O. (2020).Prevalence of internet addiction and its effects on academic performance among college students in semi-urban settlement of Ijero-Ekiti, Ekiti State Nigeria.*Global Journal of Engineering and Technology Advances, 04*(03), 012-022.

Kuss, D.J., & Lopez-Fernandez O. (2016). Internet addiction and problematic Internet use: A systematic review of clinical research. *World Journal of Psychiatry*, *6:*143–176. Doi: 10.5498/wjp.v6.i1.143.

Stoop, I.A.L. (2017). Handling non-response rate in surveys. In C. Wolf, D. Jove, T.W. Smith & Y. FU (Eds), *The SAGE handbook of survey methodology* (pp. 1-24). USA: SAGE Publications

Winds, K., Aebi, M., &Plattner, B. (2024). Problematic internet use among adolescent male and female psychiatric inpatients: a gender perspective. *Child Psychiatry & Human Development*, *55*(2), 497-509.https://link.springer.com/article/10.1007/s10578-022-01408-6

Wolburg, J. M., &Pokrywczynski, J. (2001).A psychographic analysis of Generation Y college students. *Journal of advertising research*, *41*(5), 33-47. https://epublications.marquette.edu/cgi/viewcontent.cgi?article=1151&context=comm_fac

World Health Organization.(2019). Guidelines on physical activity, sedentary behaviour and sleep for children under 5 years of age.World Health Organization. https://www.who.int/news-room/fact-sheets/detail/physical-activity

Yamane, T. (1967). Statistics: An Introductory Analysis, 2nd Edition, New York: Harper and Row. Retrieved from: http://www.sciepub.com/reference/180098

Young, K. C. (1998). Psychometric properties of the internet addiction test in Turkish. *Journal of Behaviour Addict, 5* (1):130-134.