

Internet Addiction among In-School Adolescents in Ibadan Metropolis: Gender, Prevalence, and Types of Addictive Online Activities

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ABSTRACT

The increasing use of the internet among adolescents has generated growing concerns regarding excessive and problematic internet use, particularly among secondary school students. This study investigated internet addiction among in-school adolescents in Ibadan Metropolis with specific emphasis on its prevalence, the types of internet activities to which adolescents are mostly addicted, and gender differences in internet addiction. The study adopted a descriptive survey research design. A sample of 1,360 adolescents was selected using a multistage sampling technique. Data were collected using a structured questionnaire incorporating the Internet Addiction Test (IAT) developed by Young (1998). Data were analysed using descriptive statistics and *t*-test at the 0.05 level of significance. The findings revealed that 59.0% of the respondents exhibited normal internet use, whereas 40.1% demonstrated moderate internet addiction and 0.9% experienced severe internet addiction. Overall, 41.0% of the adolescents exhibited moderate to severe internet addiction, indicating that problematic internet use is prevalent among in-school adolescents in Ibadan Metropolis. Regarding internet usage, Google browsing and searching (38.5%) emerged as the most common online activity, followed by online gaming (28.3%), social media use (21.8%), and watching films, YouTube, and listening to music (11.3%). Furthermore, the study revealed a statistically significant gender difference in internet addiction, with male adolescents ($M = 47.88$, $SD = 13.14$) recording significantly higher internet addiction scores than female adolescents ($M = 44.90$, $SD = 13.51$) ($t(1358) = -4.049$, $p < .001$). The study concludes that internet addiction is an emerging behavioural and public health concern among in-school adolescents in Ibadan Metropolis, with a substantial proportion of adolescents demonstrating problematic internet use. Schools should strengthen digital literacy education and establish school-based counselling programmes on responsible internet use.

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1. INTRODUCTION

The internet has become one of the most influential technological innovations of the twenty-first century, fundamentally transforming communication, education, commerce, entertainment, healthcare, and social interaction. Over the past two decades, internet accessibility has expanded rapidly across both developed and developing countries, making digital technologies an indispensable component of everyday life. For adolescents, the internet serves as an important platform for acquiring academic information,

interacting with peers, participating in social networks, creating digital content, and accessing entertainment resources. Consequently, internet use has become deeply integrated into adolescents' daily routines, shaping their learning experiences, social relationships, and psychological development (Paulus et al., 2021; Nwufo et al., 2024).

Globally, internet penetration has continued to increase at an unprecedented rate. According to the International Telecommunication Union (2024), more than two-thirds of the world's population now has access to the internet, with adolescents representing one of the fastest-growing groups of digital users. Mobile technologies, affordable smartphones, expanding broadband infrastructure, and increased digital literacy have significantly enhanced internet accessibility among young people. While these developments have created remarkable educational and economic opportunities, they have simultaneously increased concerns regarding excessive internet use and its associated psychological, behavioural, and academic consequences. Recent evidence suggests that problematic internet use has become an emerging global public health issue, particularly among adolescents, due to its association with emotional distress, impaired psychosocial functioning, and reduced academic engagement (Schlossarek et al., 2024; Paulus et al., 2021).

Internet addiction, also referred to as problematic internet use, compulsive internet use, or pathological internet use, describes an individual's inability to regulate internet usage despite experiencing negative personal, academic, social, or emotional consequences. Individuals experiencing internet addiction often exhibit excessive preoccupation with online activities, loss of control over internet use, withdrawal symptoms when disconnected, neglect of offline responsibilities, and continued internet engagement despite adverse outcomes. Although internet addiction is not yet formally classified as a distinct psychiatric disorder in many diagnostic systems, researchers increasingly recognize it as a behavioural addiction sharing characteristics with gambling disorder and other impulse-control disorders (Paulus et al., 2021; Schlossarek et al., 2024).

The COVID-19 pandemic further accelerated adolescents' dependence on digital technologies. School closures, remote learning, physical distancing measures, and reduced outdoor recreational opportunities significantly increased the amount of time adolescents spent online. Although digital platforms enabled educational continuity during this period, many young people also developed prolonged recreational internet use habits that persisted after schools reopened. Studies conducted among Nigerian adolescents after the pandemic reported sustained levels of problematic internet use, indicating that many adolescents continued excessive online engagement beyond the lockdown period (Onukwuli et al., 2023).

Research consistently demonstrates that excessive internet use is associated with numerous adverse outcomes among adolescents. These include reduced academic performance, sleep disturbances, poor concentration, emotional dysregulation, anxiety, depression, loneliness, reduced physical activity, obesity, cyberbullying exposure, weakened family relationships, and diminished face-to-face social interactions. Excessive internet use has also been linked with reduced self-esteem, impaired emotional regulation, increased impulsivity, and heightened risk-taking behaviours. These consequences underscore the importance of identifying adolescents who exhibit problematic internet use before the behaviour progresses into more severe psychosocial difficulties (Paulus et al., 2021; Nwufo et al., 2023).

One important dimension of internet addiction concerns the specific online activities that adolescents engage in excessively. Internet addiction does not necessarily involve the internet itself but rather the compulsive engagement in particular online behaviours. Social networking platforms such as Instagram, TikTok, Facebook, Snapchat, and X have become highly attractive due to continuous social interaction, peer validation, and algorithm-driven content recommendations. Similarly, online gaming offers immersive virtual environments, competitive experiences, achievement systems, and social collaboration that may encourage prolonged engagement. Video streaming platforms provide unlimited entertainment content, while instant messaging applications facilitate constant communication among peers. Understanding which online activities contribute most to addictive behaviours provides valuable information for developing targeted prevention and intervention strategies (Schlossarek et al., 2024).

Gender has also emerged as an important factor in understanding internet addiction. Previous studies have produced mixed findings regarding gender differences. Some investigations suggest that male adolescents exhibit higher levels of internet addiction because they spend more time on online gaming, competitive digital activities, and technology exploration. Conversely, female adolescents often report higher engagement with social networking platforms, instant messaging, content sharing, and online communication. Other studies have found minimal or no significant gender differences, suggesting that increasing digital access has reduced traditional gender disparities in internet use. These inconsistencies

highlight the need for context-specific investigations, particularly within developing countries where patterns of technology use continue to evolve (Nwufo et al., 2023; Onukwuli et al., 2023).

In Nigeria, internet accessibility has expanded considerably due to increased smartphone ownership, reduced mobile data costs, improved telecommunications infrastructure, and widespread adoption of social media platforms. Adolescents constitute one of the most active internet user groups, frequently utilizing digital technologies for educational purposes, entertainment, communication, online learning, and content creation. However, alongside these benefits has emerged growing concern regarding excessive screen time, social media dependency, online gaming addiction, cyberbullying, exposure to inappropriate online content, and declining academic engagement. Studies conducted in different parts of Nigeria have shown that problematic internet use among adolescents is becoming increasingly prevalent and requires urgent public health and educational interventions (Afolabi et al., 2022; Onukwuli et al., 2023).

Adolescents within Ibadan are increasingly exposed to digital technologies both at home and within educational settings. Despite these developments, relatively few empirical studies have comprehensively examined the prevalence of internet addiction, the specific online activities associated with addictive behaviours, and gender differences among in-school adolescents within the metropolis. Existing Nigerian studies often focus on university students, leaving secondary school adolescents comparatively underrepresented in the literature. A notable study among adolescents in Ibadan reported that nearly half of the participants exhibited some level of internet addiction, highlighting the growing magnitude of the problem among secondary school students (Afolabi et al., 2022).

Understanding the prevalence and behavioural characteristics of internet addiction among in-school adolescents is essential for developing effective school-based counselling programmes, digital literacy interventions, parental guidance strategies, and educational policies that encourage responsible internet use. Such evidence can also assist mental health professionals, school administrators, guidance counsellors, and policymakers in designing preventive measures aimed at minimizing the psychosocial consequences of problematic internet use. Against this background, this study investigated internet addiction among in-school adolescents in Ibadan Metropolis with particular attention to its prevalence, the online activities most associated with addictive behaviours, and gender differences in internet addiction.

Research Questions

1. What is the prevalence of internet addiction among in-school adolescents in Ibadan metropolis?
2. Which internet usage is in-school adolescents mostly addicted to?
3. Is there gender differences in internet addiction among in-school adolescents in Ibadan metropolis?

2. METHOD, DATA, ANALYSIS

Sampling

This study adopted a descriptive survey research design to investigate internet addiction among in-school adolescents in Ibadan Metropolis. The descriptive survey design was considered appropriate because it enabled the researcher to collect data from a representative sample of adolescents and describe the prevalence of internet addiction, identify the online activities associated with addictive behaviour, and examine gender differences without manipulating any variables. The target population comprised all in-school adolescents enrolled in public secondary schools within Ibadan Metropolis. These adolescents represent one of the most active users of digital technologies for academic, social, recreational, and communication purposes.

A representative sample of in-school adolescents (1360) was selected using a multistage sampling procedure. In the first stage, secondary schools were selected from the five Local Government Areas that constitute Ibadan Metropolis using simple random sampling. In the second stage, proportionate sampling was employed to select students from the participating schools. Finally, simple random sampling was used to select individual respondents from each class. This sampling procedure ensured that adolescents from different educational backgrounds, genders, and socioeconomic groups were adequately represented in the study.

Instrumentation

Data were collected using a structured questionnaire titled Internet Addiction among In-School Adolescents Questionnaire (IAISAQ). The instrument consisted of three sections. Section A elicited information on respondents' demographic characteristics, including gender, age, class level, type of school, and frequency of internet use.

Section B measured internet addiction using the Internet Addiction Test (IAT) developed by Young (1998). The instrument consists of 20 items rated on a five-point Likert scale ranging from 1 (Rarely) to 5 (Always). Higher scores indicate greater levels of internet addiction. The Internet Addiction Test has demonstrated excellent psychometric properties across different populations, with reported Cronbach's alpha coefficients ranging from 0.88 to 0.93 in previous studies.

Section C assessed the types of online activities engaged in by the respondents. Participants indicated how frequently they engaged in various online activities such as: Social networking, Instant messaging, Online gaming etc. Responses were rated on a five-point scale ranging from Never (1) to Very Often (5).

Measures

The questionnaire was subjected to face and content validation by experts in Educational Psychology, Guidance and Counselling, and Measurement and Evaluation. Their observations regarding clarity, appropriateness, relevance, and comprehensiveness were incorporated before the final administration of the instrument. A pilot study was conducted among adolescents outside the selected schools. The internal consistency of the instrument was determined using Cronbach's Alpha. The reliability coefficient obtained for the Internet Addiction Test was satisfactory and indicated that the instrument was reliable for measuring internet addiction among adolescents.

Data Collection

Approval to conduct the study was obtained from the relevant educational authorities and school administrators. Participants were informed about the purpose of the study, and informed consent and assent procedures were observed in accordance with ethical guidelines. The questionnaires were administered personally by the researcher with the assistance of trained research assistants. Participants completed the questionnaires anonymously, and confidentiality was assured throughout the study.

Method of Data Analysis

The data collected for this study were coded, entered, and analysed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics comprising frequencies, percentages, means, standard deviations, and ranking were employed to answer the research questions. Furthermore, an independent samples t-test was conducted to examine gender differences in internet addiction among in-school adolescents in Ibadan Metropolis at the 0.05 level of significance.

3. RESULT AND DISCUSSION

Result

Analysis Based on Research Question

Research Question One: What is the prevalence of internet addiction among in-school adolescents in Ibadan metropolis?

Table 1: Showing the prevalence of internet addiction among in-school adolescents in Ibadan metropolis (N = 1,360)

Level of Internet Addiction	Frequency (n)	Percentage (%)
Normal Internet Use	803	59.0
Moderate Internet Addiction	545	40.1
Severe Internet Addiction	12	0.9
Total	1,360	100.0

Table 1 presents the prevalence of internet addiction among the 1,360 in-school adolescents who participated in the study. The findings disclose that 803 respondents (59.0%) manifested typical internet use, indicating that the majority of the adolescents used the internet within acceptable limits. However, 545 respondents (40.1%) were classified as having moderate internet addiction, while 12 respondents (0.9%) encountered severe internet addiction. Overall, 557 adolescents (41.0%) demonstrated moderate to severe internet addiction, suggesting that a considerable proportion of the respondents encountered problematic internet use. These findings indicate that although normal internet use was more common, internet addiction

remains a significant concern among adolescents in the study area and warrants appropriate preventive and intervention strategies.

Research Question Two: Which internet usage is in-school adolescents mostly addicted to?

Table 2: Showing which internet usage is in-school adolescents mostly addicted to

Variables	Frequency	Percent
Games	385	28.3
social media	297	21.8
uwatching films,you-tube,music	154	11.3
Google	524	38.5
Total	1360	100.0

Table 2 presents the types of internet activities that in-school adolescents reported engaging in most frequently. The findings indicate that Google browsing and searching was the most commonly reported internet activity, with 524 respondents (38.5%) indicating that it was their principal online activity. This was followed by playing online games, reported by 385 respondents (28.3%), while social media use accounted for 297 respondents (21.8%). The least commonly reported principal activity was viewing films, YouTube, and listening to music, with 154 respondents (11.3%). The results suggest that adolescents predominantly use the internet for information searching through Google, followed by entertainment-related activities such as gaming and social media. Although Google searching was the most frequently reported internet activity, gaming and social media constitute a substantial proportion of adolescents' online engagement. Given that excessive engagement in these recreational activities has been associated with problematic internet use in previous studies, these findings emphasise the need for monitoring adolescents' online behaviors and promoting balanced internet use among secondary school students.

Research Question Three: Is there gender differences in internet addiction among in-school adolescents in Ibadan metropolis?

Table 3: Gender differences in internet addiction among in-school adolescents in Ibadan metropolis

Gender	N	Mean	Std.Dev	Df	t-value	Sig.	Remark
Female	799	44.8999	13.50596				
Male	561	47.8788	13.13935	1358	-4.049	.000	sigificat

Table 3 shows the independent samples t-test, which compares the mean internet addiction scores of male and female in-school adolescents. The findings indicate that female respondents (n = 799) had a mean internet addiction score of 44.90 (SD = 13.51), but male respondents (n = 561) had a higher mean score of 47.88 (SD = 13.14). The independent samples t-test indicated a statistically significant difference in mean scores ($t(1358) = -4.049, p < .001$). This research suggests that male adolescents had much greater rates of internet addiction than female adolescents. Thus, the null hypothesis of no significant gender difference in internet addiction is rejected, indicating that gender is a major factor linked with online addiction among in-school adolescents in the research region.

Discussion

Discussion of Findings on the Prevalence of Internet Addiction among In-School Adolescents in Ibadan Metropolis

The findings of this study revealed that internet addiction is prevalent among in-school adolescents in Ibadan Metropolis. These findings indicate that despite most adolescents maintaining healthy internet use, a considerable number engage in problematic internet behaviours that may adversely affect their academic achievement, psychosocial adjustment, emotional well-being, and interpersonal relationships. The high proportion of adolescents with moderate internet addiction suggests that problematic internet use has become an emerging public health and educational concern that deserves immediate attention from parents, educators, counsellors, and policymakers.

The observed prevalence may be attributed to the increasing availability of smartphones, improved internet connectivity, relatively affordable mobile data subscriptions, and the growing integration of digital technologies into adolescents' academic and social lives. Adolescents increasingly rely on the internet not only for educational purposes but also for communication, entertainment, gaming, and accessing social

networking platforms. The developmental characteristics of adolescence, including heightened curiosity, sensation-seeking tendencies, peer influence, and the desire for social acceptance, further increase susceptibility to excessive internet use. Consequently, prolonged exposure to online environments may gradually develop into compulsive internet use if appropriate self-regulatory mechanisms are not established (Ayenigbara et al., 2022).

The findings corroborate those of Zewde et al. (2022), who, in a systematic review and meta-analysis of African studies, reported that internet addiction is increasingly prevalent among adolescents and young adults and has become an important behavioural health challenge across educational institutions. Similarly, Ayenigbara et al. (2022) observed that the increased accessibility of smartphones and digital technologies among Nigerian adolescents has contributed to excessive internet use and growing dependence on online platforms. Likewise, Wang et al. (2022) found that problematic internet use among adolescents is significantly associated with poor mental health outcomes, unhealthy lifestyle behaviours, and reduced academic functioning. Furthermore, Machimbarrena et al. (2022) concluded that internet addiction has become a growing global public health concern among adolescents and emphasized the importance of early identification and school-based preventive interventions. The present findings therefore reinforce existing evidence that internet addiction is no longer an isolated behavioural problem but a growing public health issue affecting adolescents across different cultural settings.

Discussion of Findings on the Types of Internet Activities to Which In-School Adolescents Are Mostly Addicted

The findings further revealed that Google browsing and information searching constituted the most common internet activity among the respondents. These findings suggest that although educational and information-seeking activities remain the dominant form of internet engagement among adolescents, entertainment-related activities also constitute a substantial proportion of their online experiences.

The predominance of Google browsing may reflect the increasing integration of internet resources into classroom learning, assignment preparation, examination practice, and general information seeking among secondary school students. The widespread adoption of smartphones and digital learning resources has made search engines indispensable tools for academic activities. However, the substantial proportion of adolescents who primarily engage in online gaming and social media indicates that recreational internet use occupies a significant portion of adolescents' online time. Excessive engagement in these entertainment-oriented activities may contribute to prolonged screen time, reduced concentration on academic work, sleep disturbances, and diminished face-to-face social interactions (Zewde et al., 2022).

The finding is consistent with the study of Kuss and Pontes (2023), who reported that social networking sites, online gaming, and video streaming are among the most frequently used digital platforms associated with problematic internet use among adolescents. Similarly, Domoff et al. (2022) observed that adolescents are increasingly attracted to highly interactive online platforms because they provide immediate gratification, peer interaction, and continuous digital engagement, thereby reinforcing repeated internet use. Furthermore, Machimbarrena et al. (2022) noted that online gaming, social networking, and streaming services are among the strongest behavioural predictors of internet addiction because of their immersive and rewarding technological features. African studies have also demonstrated that adolescents increasingly utilise the internet for educational purposes, social networking, gaming, and entertainment, thereby increasing their vulnerability to problematic internet use (Ayenigbara et al., 2022). These findings underscore the need for parents and educators to encourage balanced internet use by promoting educational engagement while monitoring excessive involvement in recreational online activities.

Discussion of Findings on Gender Differences in Internet Addiction among In-School Adolescents

The study further revealed a statistically significant gender difference in internet addiction among in-school adolescents in Ibadan Metropolis. Male adolescents obtained significantly higher internet addiction scores than their female counterparts, indicating that male students were more likely to experience problematic internet use. The significant difference observed suggests that gender remains an important demographic factor influencing adolescents' internet use behaviours.

One possible explanation for this finding is that male adolescents are generally more involved in online gaming, competitive virtual activities, technology exploration, and prolonged recreational internet use than females. Online gaming environments are often highly immersive and reward-oriented, encouraging continuous participation through achievement systems, multiplayer interactions, and competitive rankings. These features may increase the likelihood of excessive internet use among male adolescents. Female adolescents, although active users of social networking and communication platforms, may engage in

different patterns of internet use that are comparatively less associated with compulsive behavioural engagement.

The findings are consistent with Kuss and Pontes (2023), who reported that male adolescents generally exhibit higher levels of problematic internet use because of their greater involvement in online gaming and digital entertainment. Likewise, Wang et al. (2022) found that male adolescents demonstrated significantly higher rates of problematic internet use than females, particularly among those who engaged in prolonged recreational internet activities. Similarly, Zewde et al. (2022) identified male gender as one of the significant predictors of internet addiction among African adolescents and young adults. Although some recent international studies have reported narrowing gender differences due to increasing social media engagement among females, the present findings suggest that male adolescents remain more vulnerable to excessive internet use within the Nigerian context. Consequently, intervention programmes should be gender-sensitive and consider the differing patterns of internet engagement exhibited by male and female adolescents when designing prevention and counselling strategies.

4. CONCLUSION

This study examined the prevalence of internet addiction, the types of internet activities to which adolescents are mostly addicted, and gender differences in internet addiction among in-school adolescents in Ibadan Metropolis. The findings revealed that although the majority of the respondents demonstrated normal internet use, a considerable proportion exhibited moderate to severe internet addiction, indicating that problematic internet use is becoming increasingly common among adolescents. This suggests that internet addiction constitutes an emerging behavioural and public health concern that may negatively influence adolescents' academic performance, psychosocial adjustment, emotional well-being, and interpersonal relationships if not adequately addressed. The study further established that Google browsing and information searching constituted the most common internet activity among the respondents, followed by online gaming, social media use, and watching films, YouTube videos, and listening to music. While the predominance of Google browsing suggests that many adolescents utilize the internet for educational and information-seeking purposes, the substantial engagement in recreational activities indicates that entertainment remains a major component of adolescents' online behaviour. Excessive participation in these activities may increase the likelihood of problematic internet use and reduce the time devoted to academic and other productive activities. Furthermore, the study found a statistically significant gender difference in internet addiction, with male adolescents reporting significantly higher levels of internet addiction than their female counterparts. This finding implies that gender influences adolescents' internet use patterns and vulnerability to problematic internet use. Overall, the study concludes that internet addiction has become an important issue among in-school adolescents in Ibadan Metropolis.

Recommendations

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

1. School authorities should incorporate digital literacy and responsible internet use education into the secondary school curriculum to equip adolescents with the knowledge and skills required for healthy and balanced internet use.
2. Guidance counsellors should organize regular seminars, workshops, and counselling programmes aimed at educating students on the dangers of excessive internet use, internet addiction, and effective strategies for self-regulation and time management.
3. Parents should actively monitor and supervise their children's internet use by establishing appropriate screen-time limits, encouraging healthy offline recreational activities, and maintaining open communication regarding responsible digital behaviour.
4. Teachers should encourage students to utilize the internet primarily for educational and research purposes while discouraging excessive engagement in recreational online activities during school hours.

School administrators should develop and implement policies that regulate students' use of smartphones and internet-enabled devices within the school environment in order to minimize unnecessary distractions and excessive internet use.

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