Innovations

Loneliness, Internet Addiction and Substance Use among Young Adults in Private Universities in Ogun State, Nigeria

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Abstract: *The study investigates the relationships between loneliness, internet addiction, and substance use among young adults in private universities in Ogun State, Nigeria. Utilizing a cross-sectional research design, data were collected from 300 respondents using standardized instruments: the UCLA Loneliness Scale, the Internet Addiction Test (IAT), and the Drug Abuse Screening Test (DAST-10). Findings revealed a significant positive correlation between loneliness and internet addiction ($r = 0.439$, $p < 0.001$), loneliness and substance use ($r = 0.217$, $p < 0.001$), and internet addiction and substance use ($r = 0.317$, $p < 0.001$). Regression analysis further showed that internet addiction significantly predicted substance use ($B= 0.275$, $p < 0.001$), whereas loneliness did not ($B= 0.096$, $p = 0.159$). The study also showed that loneliness and internet addiction together account for a sizable amount of the variation in drug use ($R^2 = .108$, $p < 0.001$. Focusing on the effects of regulated academic settings, the study highlights the interplay between behavioral and psychological factors on youth well-being. This research highlights the necessity for thorough measures to tackle the intertwined challenges of loneliness, internet addiction, and substance use among youth.*

Keywords: *Loneliness, Internet addiction, Substance use, Young Adults, University students, Nigeria*

Introduction

Substance abuse is a mental health problem that commonly coexists with internet addiction and loneliness. One of the most surprising discoveries is that young individuals who are isolated and start engaging in online addiction behaviors are more likely to take substances. A substantial link was shown between drug usage and the likelihood of developing an internet addiction (Diotaiuti et al., 2022). Drug usage is seen in 1.9 percent of the population. Drug consumption exhibited a 2.59

odds ratio for predicting a high risk of internet addiction, compared to 1.51 for smokers and 1.04 for drinkers(Lee et al., 2013). The risk of having a drug use problem rises as internet addiction intensifies. When internet addiction and drug misuse coexist, both have negative consequences.

All through the past half-century, the World Health Organization's Expert Committee on Addiction-Producing Drugs has made a distinction between addiction-producing illicit drugs and habit-forming drugs like alcohol and cigarettes, all of which have a detrimental influence on both the person and society. As it has been established that the influence of substance is both short- and long-term. Short-term effects can cause intoxication or even death from an overdose, while long-term heavy usage causes brain alterations that are typical of what is presently referred to as dependence, addiction, and substance use disorders(López et al., 2019; Staudt et al., 2021).

Telecommunications, education, business, and entertainment have all become more dependent on the internet. Financial transactions, information retrieval, and online communication are popular uses for this system (Kuss & Lopez-Fernandez, 2016). Internet users in Nigeria have risen from 39.57 million in 2006 to 101.72 million and are predicted to grow to 142.73 million in 2026 (Statista Research Department). According to the International Telecommunication Union, over two billion people utilize the internet(Najafi, 2018).

As a consequence of the prevalence of compulsive Internet usage, a new psychosomatic disorder called "Internet addiction" has emerged, with symptoms that resemble those of drug addiction. (Najafi, 2018). As stated by Young (1998), an individual who is addicted to the internet is someone unable to control the amount of time they spend online, has a psychological withdrawal, and is unable to stop using the internet even though it has negative consequences for their behavior.

Some researchers investigating Internet addiction have focused on high-risk individuals, especially university students. According to a recent study, Internet addiction is a common problem among undergraduate students, impacting around 8% (2.156 million) of college students (Najafi, 2018). The factors leading to Internet addiction among students include specific features of the internet, internal needs and motivation, sense of disability, and compulsion to use the internet, as well as environmental factors, such as lack of support by the administrative system and organizations, inefficient social system, and culture change (Dong et al., 2023; Nwufo & Ike, 2024). Several studies have shown that students who are addicted to the internet have physical health concerns, poor academic achievement, aggressive attitudes, and issues with family and social interactions (Koyuncu et al., 2014).

Internet addiction is a complicated psychological problem impacted by a variety of variables that may be classified into the following groups: external circumstances, family environments, and peer relationships (Zhou et al., 2017); Psychological

variables such as loneliness, sadness, negative affect and dissociation, and self-esteem, as well as physiological components such as hormones and arousal levels (Wang, 2006). As a result, it is critical to look at the connections between some of these characteristics and Internet addiction. Since college students have much free time with constant Internet access via various wireless gadgets, modern college students typically spend a significant amount of time on the Internet, making them more susceptible to Internet addiction.

Loneliness is a subjective psychological sensation or experience that occurs when a person sees a lack of meaningful interpersonal relationships and communication barriers between their expected and actual levels of communication (Holt-Lunstad et al., 2010). According to Peplau and Perlman (1979), loneliness is an unpleasant sensation caused by a person's absence of social networks. Some studies suggest that interpersonal skills and coping mechanisms for adverse feelings occurrences, as well as social support, particularly from core family members, have a more significant impact on loneliness than demographic factors like sex, age, marriage, occupation, educational level, family, economic conditions, and socioeconomic status (Wu et al., 2016).

Although loneliness is not in and of itself a mental health concern, the two are intricately linked. People are more prone to feel lonely if they have a mental health issue. Loneliness may harm one's mental health, especially if they have been feeling lonely for a long time. Loneliness has been related to an increased risk of mental health concerns such as sleep difficulties, stress, sadness, anxiety, and poor self-esteem, according to various research (Buecker et al., 2021).

When it comes to substance use disorder, studies believe loneliness and internet addiction are critical components (Song et al., 2010). People who hold the first point of view believe that widespread Internet usage isolates people from their environment (Ghassemzadeh et al., 2008). As a result, loneliness is an unintended consequence of excessive Internet use. Such users create a hypocritical and fragile network of relationships at the expense of in-person encounters. Kraut et al. (2002) agreed with this viewpoint, stating that excessive Internet use leads to loneliness and despair and reduced social relationships and psychological well-being.

This point of view is consistent with a study by Shapira et al. (2000), which demonstrated that lonely people spend more time online. Other theories have been validated by scholars such as Koyuncu et al. (2014) and Tian, Bian, Han, Gao, and Wang (2014). They contend that a bidirectional association exists between drug use disorder, loneliness, and Internet addiction: a drug abuse issue, Internet addiction, and loneliness have a positive correlation over time.

A study byEroland Cirak(2019)was carried out to establish the extent of loneliness and Internet addiction among college students. For this study, college students

enrolled at a public institution in Turkey's Mediterranean area were sent an online survey, and 489 college students willingly participated. Data was collected using the UCLA Loneliness Scale Version 3 and the Internet Addiction Test (IAT).The data suggests that younger people were much lonelier than older people, and students at lower educational levels were significantly lonelier than those at higher levels. Also, according to the findings, there is a link between loneliness, Internet addiction, age, and cumulative grade point average (CGPA). Loneliness and CGPA are also important predictors of Internet addiction.

Drug addiction is a worldwide problem that is currently on the rise in Nigeria at an alarming rate. Drug trafficking and usage were rare in Nigeria around two decades ago, but now, drugs have ruined and murdered many individuals in the country. The majority of the students in colleges are involved in this conduct. It has been noted throughout the years that adolescents from various parts of Nigeria are addicted to the internet in one form or another and are involved in drug abuse (Fareo, 2012; Ogunsola et al., 2020).

There has been a correlation established between internet addiction and psychological and interpersonal concerns such as failure to relate to others, loss of control over one's behavior, withdrawal from social activities, difficulty following a regular schedule, and sleep disruption.Addiction to the internet can lead to a variety of problems. Following two years, the development of anxiety, social phobias, and depressive symptoms. Similarly, after two years, sadness, social anxiety, anger, attention deficit, or hyperactivity may be considered signs of Internet addiction (Ko et al., 2009).

One of the most challenging aspects of understanding psychopathological internet use is that it now encompasses a wide variety of behaviors. Technological advancement has significantly impacted our daily lives (Starcevic, 2013). Since Young (1996) began to diagnose internet addiction illness, social interactions have altered drastically. He also contrasted drug and internet addictions, comparing them to impulse control disorder. The main point was that both disorders had one feature: an inability to control one's use of anything, whether it was the internet or a substance. Most importantly, the handicap interferes with the individual's regular functional connections, intended to substitute real-life friends and family.

As a consequence, the goal of this research is to investigate the association between loneliness, drug abuse, and internet addiction among Nigerian young people.

Research Objectives

1. To examine the connection between loneliness and Internet addiction.
2. To investigate the relationship between loneliness and substance abuse
3. To discover the interaction between internet addiction and substance use disorder.

4. To determine the rate at which loneliness and internet addiction predict substance abuse.

Research Hypotheses

1. There is no significant relationship between loneliness and internet addiction.
2. There is no significant relationship between loneliness and substance abuse.
3. There is no significant relationship between internet addiction and substance abuse.
4. Loneliness and Internet addiction are not significant predictors of Substance Abuse.

Methods

Participants

The research used a cross-sectional survey, randomly selecting 300 young people from private universities in Ogun State. Respondents were chosen using stratified random sampling to account for demographic characteristics such as gender, age, and religion. Participants must be at least 15 years old and at most 30 years old to be eligible. Out of 300 participants, 240 completed their questionnaire without omission, resulting in an 80% response rate. The response rate was positive and can be ascribed to participants' eagerness to take part in the study, the questionnaire's pertinence to their experiences, and the efficacy of communication tactics employed during the study. Time restrictions, disinterest, or other external influences could account for 20% of the non-response rate.

Instruments

The UCLA Loneliness Scale (version 3) was used to quantify loneliness (Russell et al., 1980). Subjective feelings of loneliness and social isolation are assessed using a self-report questionnaire with 20 items. Participants rated things from 1 (never) to 4 (always) on a Likert scale of 1 to 4. (often). The ratings ranged from 20 to 80, with higher numbers suggesting more loneliness.

Tests for drug abuse were administered using the Drug Abuse Screening Test-10 (DAST-10). It is a self-report screening tool that measures the severity of drug abuse results numerically (Skinner, 1982). A point was awarded each time a participant replied yes or no to a question. All elements were combined to produce a score between 0 and 10. It is possible to have low-level drug issues, moderate-level drug problems, substantial-level drug problems, and severe-level drug problems, each with a score of 1–10.

Measures of online addiction were taken by a questionnaire called the Internet Addictions Test (IAT) (Young, 1998). The IAT is designed for Internet users with much technology experience who often log in. Compulsive Internet usage has been connected to 20 different personality traits and behaviors, including compulsiveness, escapism, and dependency. There are questions on addiction-related difficulties in one's personal, professional, and social lives. A Likert scale from 0 to 5 assigns a numerical weight to each statement, where 0 represents the least severe behavior, and 5 represents the most extreme.

Results

Demographic Data

There are six (6) demographic questions, namely Gender, Age, Level of Education, Religion, Income, and Ethnicity.Based on the results, 240 out of 300 were used to analyze the study, with more male respondents (53.8%) and 46.2% female.The study categorized the respondents into three different age groups. Results show that 40% were between ages 20-24, 31.7% were between ages 25-30, and 28.3% were between ages 15-19. The descriptive analysis of the respondent's Level of Education showed that more than 50% of the respondents were pursuing or had a B.Sc/HND(58.3%). 30% of the respondents were pursuing or had a Post-Graduate Degree, and only 11.7% of the respondents had WAEC or Below. More than 90% of the respondents were Christians(92.9%), followed by Islam(3.8%), and 3.3% had other religions.The study classified respondents into four different groups based on their income. Results showed that 32.1% of the respondents earned ₦31000 to ₦60000, 28.3% of the respondents made an income of ₦61000 and Above, 20.0% of the respondents had incomes of ₦11000 to ₦30000 and 19.6% had an income of ₦10000 and below.The majority of the respondents are Yoruba(52.9%), 23.3% of the respondents are Ibo, 21.3% of the respondents are indigenes of Other Tribes, and only 2.5% of the respondents were Hausa.

Correlation Analysis

		Loneliness	Substance Use	Internet-A
Loneliness	Pearson Correlation	1	.217**	.439**
	Sig. (2-tailed)		.001	.000
	N	240	240	240
Substance Use	Pearson Correlation	.217**	1	.317**

	Sig. (2-tailed)	.001		.000
	N	240	240	240

Table 1: Correlation between each variable

Research Hypotheses 1: There is no Significant Relationship Between Loneliness and Internet Addiction.

Table 1 shows a correlation coefficient of.439 between loneliness and internet addiction. This suggests that loneliness and internet addiction are inextricably linked. The number lies between 0.31 and 0.7, which is considered a moderate Strength of Correlation Coefficient by Pearson's Rules of Thumb. Thus, loneliness and internet addiction have a relatively close association.

The p-value of 0.000 is smaller than the alpha value of 0.01, indicating a significant connection between internet addiction and loneliness. These results led to rejecting the null hypothesis and accepting the alternative hypothesis (H1), which shows a moderately significant link between loneliness and internet addiction.

Research Hypotheses 2: There is no Significant Relationship between Loneliness and Substance Use.

Table 1 shows an association coefficient of 0.217 between loneliness and substance abuse, indicating a positive link between the two. As the coefficient falls between 0.1 and 0.3, Pearson's Rules of Thumb classify it as a weak strength of correlation. With a p-value of 0.001 lower than the alpha value of 0.01, the results demonstrate a strong link between substance abuse and loneliness. Therefore, the conclusion is that **there is a significant weak relationship between loneliness and substance abuse, leading to the rejection of the null hypothesis (H0).**

Research Hypotheses 3: There is no Significant Relationship between Internet Addiction and Substance Use.

Table 1 shows a correlation of 0.317 between internet addiction and substance abuse, indicating a favorable link between the two. This value falls within the range of 0.31 to 0.7, which Pearson's Rules of Thumb classify as a moderate correlation strength. The results suggest a somewhat close association between internet addiction and substance abuse. With a p-value less than the alpha of 0.01, the results confirm a significant moderate relationship between internet addiction and substance use, leading to the

rejection of the null hypothesis (H_0) and the acceptance of the alternative hypothesis (H_1)**.**

Regression Analysis

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
	(Constant)	.084	.030		2.785	.006
	Loneliness	.033	.023	.096	1.412	.159
	Internet_A	.062	.015	.275	4.031	.000
a. Dependent Variable: Substance Use						

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	1.564	2	.782	14.391	.000[b]
	Residual	12.880	237	.054		
	Total	14.444	239			
a. Dependent Variable: SubstanceU						
b. Predictors: (Constant), Internet_A, Loneliness						

Model	R	R Square	F Change	df1	df2	Sig. F Change
	.329	.108	14.391	2	237	.000

Table 2: Regression Analysis

Research Hypotheses 4: Loneliness and Internet Addiction will not Significantly Predict Substance Use.

According to the regression study, substance use is predicted by both loneliness and online addiction, with internet addiction having a statistically significant impact. The standardized coefficient for online addiction is 0.062, which means that when all other factors are held constant, drug usage should rise by 0.062 units for every unit increase in internet addiction. Internet addiction has a p-value of 0.000, which is statistically significant. However, the p-value of 0.159 shows that loneliness is not a significant predictor in this model despite the unstandardized coefficient for

loneliness being 0.033, which suggests a minor increase in drug use with increasing loneliness. With an F-statistic of 14.391 and a p-value of 0.000, the regression model as a whole is statistically significant, indicating that loneliness and internet addiction together account for a sizable amount of the variation in drug use. The model only accounts for 10.8% of the variation, according to the R-squared value of 0.108.

Discussion

Based on the statistical analysis in Table 1, the results show that lonely young adults are also prone to using the internet excessively and uncontrollably; as we observe a rise in Internet usage, the rate of loneliness increases. The rationale behind this result could be that some participants are students of private university, who may have less social interaction because of more strict campus policies, academic load, and less off-campus interactions. Hence, it can become one more mode of socialization and entertainment and an escape from loneliness for them via the internet.

These findings are consistent with prior research emphasizing that loneliness plays a part in exacerbating internet addiction. Loneliness has been found to significantly influence adolescent internet use in a negative manner by increasing dissociative tendencies (Mohan & Ravindran, 2024), where loneliness is. Similarly, Zhou et al. (2021) demonstrated that loneliness is a significant predictor of internet addiction, with isolated individuals more likely to use the internet excessively as a coping mechanism for emotional distress.

Participants with uncontrollable urges to use the internet are also inclined to be involved in the inappropriate use of psychoactive substances. The results are anticipated, as young adults who are often glued to the internet may do so due to a lack of friends and no communication with others, which could predispose them to the abusive use of substances as a means to cope with their isolation. However, the young adults who stated that they felt lonely did not engage in the misuse of psychoactive substances to a great or very great extent. This may be due to the fact that people may stay away from drugs because they are students, and most of them are in religious universities where the use of drugs is strictly prohibited, and anyone found using illicit substances will be apprehended and made an example of by punishment, suspension, and in most cases expulsion. In addition, cultural and family factors can be important; many students feel that they have to adhere to specific family values and standards and, thus, do not engage in substance use. Also, the norms that prevail in such environments are that everyone should follow the set

rules and regulations of the university and other norms that do not allow for deviant behavior, such as the use of psychoactive substances. Finally, there are a number of reasons why drug abuse might be less prevalent among students in conservative or religious settings, including the stigma associated with drug abuse. This is because social students' consequences are aware of such actions and the possible detrimental effects that they may have on their future

. In addition, cultural and family norms in conservative universities play a role in reducing the likelihood of substance use. According to Madu and Peltzer (2018), students' close relationship with their families and culture makes them avoid drug use, especially in religious or strict universities. Other factors that cannot be ruled out include peer group pressure, where students will avoid substance use due to group norms, as found by Cato (1992).

Based on the analysis presented in Table 2, the results clearly show that the participants' state of being in isolation and the uncontrollable need for the use of the internet predicts their involvement in the use of psychoactive substances. Those reported as lonely and dependent on the internet will engage in substance consumption too. Perhaps this is because teenagers who are cut off from the rest of their group and who cannot regulate their use of the internet may be psychologically distant and looking for other ways to cope. Psychoactive drugs can give them a false sense of relief or identification, a release from loneliness, fear, or inadequacy, for the briefest time. Moreover, online addiction too often sends them into uncontrolled territories, such as drug promotion or normalization through social media, forums, or internet groups. Such exposures can twitchy up and down attitudes to drugs and make use seem an option for coping.

Also, without adequate social networks, there might be less room for good guidance or intervention, leaving them open to drugs. In addition, sleep disruptions and irregular schedules that accompany the overuse of the internet can contribute to stress, emotional dysregulation, or exhaustion, which are all known risk factors for drug use. Loneliness itself is a significant predictor of substance use, as it often heightens vulnerability to peer pressure or unhealthy coping strategies when opportunities to connect meaningfully with others are absent.

This corresponds with Kuss and Griffiths (2015), who showed that psychological withdrawal and impulsive internet use can encourage substance use as people seek relief from unpleasant emotions like loneliness and anxiety. Additionally, online drug content also normalizes drug use as ascertained by Montag et al. (2016), pointing to digital spaces as being influential on how people think and act towards drug use.Sleep disturbances caused by excessive internet use may further contribute to stress and emotional instability, increasing susceptibility to substance abuse, as outlined by Van Rooij et al. (2014).

There were, however, some caveats in the study. Some of the adolescents who took part in the study probably underdiagnosed their involvement with the abuse of psychoactive substances. That may be due to how stigmatizing drugs are here in the country. Moreover, respondents from private religious universities may be reluctant to expose these activities out of fear of consequences, such as a visit to the Student Disciplinary Committee.In addition, how a loneliness perception might have affected reactions. Participants might have shied away from stating they were lonely if they were branded socially inferior or stigmatized by others. This avoidance of vulnerability might mean that participants did not disclose behaviors or emotions corresponding to loneliness in sufficient numbers for the research to reflect what happened.

This study examined the intricate relationships among loneliness, internet addiction, and substance use among young adults in private universities in Ogun State, Nigeria. The results show a positive relationship between loneliness and internet addiction, loneliness and substance use, and internet addiction and substance use. Internet dependence was one of the major predictors of substance use, implying that the use of digital technology can be used as a way of coping with emotional trauma and, eventually, substance abuse. Although loneliness was positively related to both internet addiction and substance use, it wasn't significantly a predictor of substance use here. These findings were likely the product of distinctive sociocultural and institutional conditions – rigid university rules and religious influences. This is why we must be more sensitive about how individual and social variables contribute to these behaviors. This research helps lay a valuable foundation for interventions that address these interrelated issues to improve young adults in similar settings.

University administrations should have more holistic policies for students' mental health, including measures that address loneliness and naughty internet use. They are mental health services that provide peer support, group therapy, and educational sessions on healthy coping skills and online citizenship. In addition, institutions should integrate digital literacy education into their curriculum, emphasizing the dangers of excessive internet use and its connection to substance abuse while encouraging a healthy balance between online and offline activities.

Social connections require social spaces. Universities can encourage community-building activities like mentorship, clubs, and lively events that allow students to engage with others and break the cycle of loneliness. Simultaneously, substance abuse prevention strategies should be strengthened through educational campaigns, counseling services, and mechanisms for anonymous reporting, addressing the risks associated with internet addiction.

Future research should employ longitudinal designs to establish better causal relationships among loneliness, internet addiction, and substance use. More extensive studies with more diverse groups, like public university students or non-student young adults, would also be more generalizable. It is also possible that studying other psychological issues (anxiety, depression) might help us understand these subtle changes better.

Finally, parental and community involvement is essential in addressing loneliness and internet addiction. Education programs within families and local communities and affordable family counseling can provide the social services needed to guard young adults against the detrimental effects of such behaviors. Using these interventions, stakeholders can establish a whole-system approach to addressing loneliness and internet addiction, which will support healthier lifestyles and lower substance use among the young adult population.

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