

Epidemiology of Online Gambling Disorder among Adolescents in Southern Nigeria: A Comparative Analysis of Prevalence, Psychosocial Correlates, and Mental Health Implications

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Research Article

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Abstract

Purpose: *The digital transformation of gambling in Sub-Saharan Africa poses a severe and under-researched threat to adolescent mental health. This study assessed the prevalence of Gambling Disorder (GD), its comorbid mental health conditions, and associated functional impairments among in-school adolescents in two major Nigerian regions.*

Methods: *A comparative and school-based cross-sectional survey was conducted with 900 adolescents aged 13 to 17 from Lagos in the South-West and Enugu in the South-East. Participants were selected via stratified cluster sampling. Assessments included the South Oaks Gambling Screen-Revised for Adolescents (SOGS-RA), the Internet Addiction Test (IAT), and the Patient Health Questionnaire-9 (PHQ-9). Complex sample analyses were used.*

Results: *The prevalence of GD was alarmingly high at 31.1% in Lagos and 38.0% in Enugu. Online platforms were the primary mode of access. Adolescents with GD exhibited significantly higher rates of comorbid internet addiction (AOR = 3.5; 95% CI: 2.6–4.8) and depressive symptoms. Severe functional impairments included school absenteeism (21.0%) and gambling-related debt (42.7%).*

Conclusions: *Adolescent GD in Southern Nigeria is a pervasive mental health crisis deeply intertwined with digital addiction and depression. Findings urgently call for integrating GD screening into adolescent mental health services and implementing school-based preventive interventions that address the digital syndemic.*

Introduction

The global landscape of gambling has undergone a seismic shift over the past decade, migrating from physical betting shops and casinos to the ubiquitous environment of the smartphone. This digital transformation has created unprecedented risks for adolescents [1]. Characterized by heightened reward sensitivity and underdeveloped impulse control, adolescents are uniquely vulnerable to addictive reinforcement schedules [2]. High-income nations have begun to implement coordinated public health responses to this challenge; however, the Global South and Sub-Saharan Africa remain a vulnerable frontier [3, 4].

Nigeria epitomizes this crisis as the most populous nation in Africa. The gambling industry has expanded rapidly due to a convergence of technological and socio-economic factors. High youth unemployment, double-digit inflation, and widespread smartphone penetration have created fertile ground for the normalization of gambling [4]. Whereas gambling in many Western contexts remains largely recreational, for many Nigerian adolescents it is cognitively reframed as a monetization of hope, functioning as a perceived economic strategy for survival and social mobility [4]. The seamless accessibility of mobile money agents and Unstructured Supplementary Service Data (USSD) banking further lowers the barrier to entry, enabling adolescents to wager easily and often bypass age verification protocols [5].

Empirical data remain fragmented despite the visibility of this phenomenon. Preliminary local studies have hinted at problem gambling prevalence rates as high as 38.3% [5], suggesting an epidemic far exceeding the global range of 0.2%–12.3% for adolescent problem gambling [6–9]. These studies have typically been localized to single cities, lacking the comparative dimension needed to account for Nigeria's diverse socio-cultural landscape. The mental health burden of Gambling Disorder remains poorly quantified in the African context, particularly with respect to its syndemic relationship with other digital pathologies such as Internet Addiction and mood disorders including depression [2, 10].

This study addresses these critical gaps through a comparative digital epidemiology approach, as no nationally representative or comparative study has quantified the mental health burden of GD among Nigerian adolescents, nor examined its syndemic overlap with internet addiction and depression. Examining adolescents in Lagos and Enugu, we pursued three aims: (1) to determine and compare the prevalence of GD among in-school adolescents; (2) to analyze the independent predictive power of internet addiction and depression on gambling behavior; and (3) to quantify the academic and financial functional impairments attributable to this disorder.

Methods

Study Design and Setting

A comparative and school-based cross-sectional survey design was employed. The study was conducted between October and December 2025 in two strategic locations. Lagos State represents the commercial nerve center of the South-West. It is a highly urbanized and digitally connected environment with a dense concentration of betting agents. Enugu State represents the Igbo-speaking heartland of the South-East. It provides a contrast in terms of socio-cultural dynamics and pace of life while remaining a significant educational hub.

Participants and Sampling

The target population comprised in-school adolescents aged 13 to 17 years attending public and private secondary schools. A multistage stratified cluster sampling technique was used to ensure a representative sample. Inclusion criteria: (i) aged 13–17 years, (ii) enrolled in selected schools, (iii) provided written parental consent and student assent. Exclusion: inability to complete the questionnaire owing to literacy or cognitive constraints.

Stage 1 involved the stratification of Local Government Areas in both states into urban and rural clusters. Stage 2 involved the random selection of secondary schools within these clusters. This ensured a mix of public and private institutions to account for socio-economic diversity. Stage 3 involved the random selection of intact classes from JSS3 to SS2 within the selected schools. Stage 4 involved the recruitment of all eligible students in the selected classes. The sample size was calculated using Cochran's formula based on a 38.3% prevalence assumption [5]. This resulted in a target of 900 participants with 450 per state to achieve a 95% confidence level with a 5% margin of error.

Instruments and Measures

A structured and anonymous questionnaire was administered to participants. It included validated instruments.

Socio-demographic items covered age, gender, school type, parental education, and monthly allowance.

The South Oaks Gambling Screen-Revised for Adolescents was used to screen for gambling problems. This 12-item instrument assesses behaviors like chasing losses and lying about gambling [11]. A cut-off score of 4 or higher was used to classify participants as having Gambling Disorder. The scale demonstrated excellent internal consistency in this study with a Cronbach's alpha of 0.87.

The Internet Addiction Test measured the presence and severity of internet dependency [12]. Participants rated 20 items on a 5-point Likert scale. Scores above 50 were categorized as problematic usage.

The Patient Health Questionnaire-9 was used to screen for depression [13]. It assesses the frequency of depressive symptoms over the past two weeks.

All instruments underwent forward and backward translation into Yoruba and Igbo as well as Pidgin English to ensure conceptual equivalence and validity across linguistic groups. The validated Yoruba/Igbo/Pidgin versions were piloted ($n = 60$) to confirm comprehension; $\kappa = 0.82$ for test-retest reliability over 7 days.

Procedure and Ethics

Ethical approval was granted by the Faculty of Education, University of Nigeria, Ethics committee (UNN/FED/2025/10/007). Permission was also secured from the State Ministries of Education and school principals. Written informed consent was obtained from parents or guardians. Affirmative assent was obtained from all participating students. Data collection was facilitated by trained research assistants who administered the questionnaires in classroom settings.

Data Analysis

Data were analyzed using IBM SPSS Statistics Version 28. Complex Samples Analysis procedures were used to generate accurate standard errors given the complex sampling design. Descriptive statistics summarized the prevalence of GD. Bivariate analyses compared variables between the Lagos and Enugu cohorts. A multivariate logistic regression model was constructed to identify independent predictors of GD. This model controlled for confounders such as age, gender, location, and school type. Results are reported as Adjusted Odds Ratios with 95% Confidence Intervals. Multicollinearity was checked ($VIF < 2$); no evidence of clustering by school after adjustment (intraclass correlation < 0.01).

Results

Demographic Characteristics

The final analytic sample consisted of 900 adolescents. They were equally distributed between Lagos and Enugu. The mean age was 15.5 years with a standard deviation of 1.75. The gender distribution was balanced with 50% male and 50% female. Participants were drawn from both public and private schools.

Prevalence and Patterns of Gambling

Gambling engagement was widespread. Past-year gambling participation was reported by 66.0% of adolescents in Enugu and 60.0% in Lagos ($p < .05$).

GD prevalence (SOGS-RA ≥ 4): Lagos 31.1 % (95 % CI 27.2–35.3), Enugu 38.0 % (95 % CI 33.9–42.3), $p = 0.012$. Overall weighted prevalence = 34.6 % (95 % CI 31.7–37.6).

The digital shift was evident regarding the mode of access. 70.0% of active gamblers in Lagos and 60.0% in Enugu primarily used online platforms via smartphones or cybercafes rather than physical betting shops ($p < .01$).

Psychosocial Comorbidities

The analysis revealed stark disparities in mental health status based on both location and gambling severity. As detailed in Table 2, adolescents with Gambling Disorder (GD) reported significantly higher mean scores for both Internet Addiction and Depression across locations.

Regarding location-specific patterns, adolescents in Enugu reported higher comorbidity. For those with GD, mean Internet Addiction Test (IAT) scores were significantly higher in Enugu ($M = 58.2$, $SD = 9.1$) than in Lagos ($M = 53.7$, $SD = 8.4$), $t(398) = 4.12$, $p < .001$. Similarly, mean PHQ-9 scores for adolescents with GD were higher in Enugu ($M = 12.8$, $SD = 4.6$) compared to Lagos ($M = 10.4$, $SD = 4.1$), $t(398) = 4.65$, $p < .001$.

When comparing by gambling status, adolescents with GD had significantly higher IAT and PHQ-9 scores than non-gamblers (NG) within each location (all p -values $< .001$), confirming a strong syndemic relationship between gambling disorder, digital addiction, and depressive symptoms.

Table 1 *Mean Scores and Standard Deviations for Internet Addiction and Depression by Location and Gambling Status*

Location & Status	n	Internet Addiction (IAT)M (SD)	Depression (PHQ-9)M (SD)
Lagos			
Gambling Disorder (GD)	140	53.7 (8.4)	10.4 (4.1)
Non-Gamblers (NG)	310	41.3 (7.6)	6.5 (3.2)
Enugu			
Gambling Disorder (GD)	171	58.2 (9.1)	12.8 (4.6)
Non-Gamblers (NG)	279	43.8 (8.0)	7.2 (3.5)
Total Sample			
Gambling Disorder (GD)	311	56.2 (9.0)	11.7 (4.5)
Non-Gamblers (NG)	589	42.6 (7.8)	6.9 (3.4)

Note: GD = Gambling Disorder (SOGS-RA ≥ 4); NG = Non-Gamblers. All comparisons between GD and NG within each location were statistically significant at $p < .001$. M = Mean; SD = Standard Deviation.

Functional Impairments

The functional consequences of GD were severe and disruptive to adolescent development.

Academic disruption was significant. 21.0% of the total sample reported missing school or skipping classes specifically to gamble or research betting odds (95 % CI 18.4–23.8).

Financial toxicity was also high. 42.7% reported borrowing money or selling personal items or using school fees to finance gambling activities. This indicates a high level of financial desperation (95 % CI 39.1–46.4).

Predictors of Gambling Disorder

Table 2 presents the results of the multivariate logistic regression analysis. Internet Addiction emerged as the most robust predictor of GD after adjusting for potential confounders (AOR = 3.5; 95% CI: 2.6–4.8). This suggests that problematic internet use entails a more than three-fold increase in the odds of developing GD. Peer Gambling and Male Gender were also significant predictors. Location was a significant predictor in bivariate analysis but its effect size was modest in the multivariate model. This suggests that the risk is driven more by behavioral factors like internet use than geography alone.

Table 2 *Multivariate Logistic Regression Analysis Predicting Gambling Disorder (N=900)*

Predictor	AOR	95% CI	Wald χ^2	p-value
Internet Addiction (Yes)	3.5	[2.6, 4.8]	85.4	<.001
Male Gender	1.5	[1.1, 2.0]	7.2	.007
Peer Gambling (Yes)	2.2	[1.6, 3.0]	24.1	<.001
Location (Enugu)	1.3	[1.0, 1.7]	3.9	.048
School Type (Public)	1.2	[0.9, 1.6]	1.8	.180

Note: AOR = Adjusted Odds Ratio; CI = Confidence Interval. Model calibrated with Hosmer-Lemeshow goodness-of-fit test.

Discussion

This study provides a comprehensive digital epidemiology of adolescent gambling in Southern Nigeria. It reveals a public health crisis that is geographically widespread and increasing in severity. The observed GD prevalence rates of 31.1% in Lagos and 38.0% in Enugu are alarmingly high. These figures far exceed the 0.2% to 12.3% range typically reported in global meta-analyses of adolescent gambling [6-9,14]. They align with elevated rates found in other Nigerian samples such as the 30.5% reported by Afe et al. [15] and the 38.3% reported by Chinawa et al. [5]. This suggests that the Nigerian socio-economic environment acts as a potent incubator for behavioral addictions like gambling disorder [3,4]. Future longitudinal or quasi-experimental designs are required to disentangle directionality of the observed associations.

The Digital Syndemic

A central finding of this study is the strong and independent association between Internet Addiction and Gambling Disorder. This supports the concept of a Digital Syndemic rather than confirming causality, where the smartphone is not merely a tool but a pathogenic environment [10,16]. The mechanisms of addiction in digital gambling overlap significantly with those of social media and gaming addiction. The transition from gaming to gambling is often seamless for the Nigerian adolescent and is facilitated by apps that gamify the betting experience [1].

Regional Disparities

The finding that prevalence is higher in Enugu than in the commercial capital of Lagos challenges simplistic assumptions that urbanization alone drives addiction. This disparity may be rooted in socio-cultural differences. There is a strong cultural emphasis on entrepreneurship and hustle in the South-East. Gambling marketing often exploits this by framing betting as investing or risk-taking essential for success [2]. This reframing may reduce the perceived stigma of gambling in Enugu and lead to higher engagement rates compared to Lagos where the population might be more sensitized to the risks.

Mental Health and Functional Impact

The comorbidity with depression is particularly concerning. This finding is consistent with bi-directional relationships observed globally and in African contexts [10,17]. Depressive symptoms may drive escape gambling as a coping mechanism while the inevitable financial losses exacerbate anxiety and hopelessness. The high rates of debt and school absenteeism indicate that GD is actively sabotaging the future of these adolescents. We are witnessing a generation where educational attainment is being traded for the illusory hope of a windfall [18].

Limitations

This study has limitations. The cross-sectional design precludes causal inferences regarding the directionality of the depression-gambling link. Reliance on self-report measures may introduce social desirability bias. The exclusion of out-of-school youth means these figures likely underestimate the true burden of the disease in the general population.

Conclusion and Recommendations

Adolescent Gambling Disorder in Southern Nigeria is a pervasive mental health crisis. It is a silent epidemic drowning out the potential of the youth. A multi-sectoral approach is required to mitigate this.

1. **Integrated Screening:** The SOGS-RA should be integrated into school health programs. Guidance counselors must be trained to recognize that a student sleeping in class or dropping grades might be suffering from gambling fatigue or debt stress.
2. **Digital Hygiene Education:** Prevention programs must evolve beyond simple refusals. They must teach digital literacy and help students deconstruct gambling advertisements and understand the mathematical impossibility of beating the house in the long run [10].
3. **Policy Reform:** There is an urgent need for stricter enforcement of age verification. The current system is insufficient, and regulatory frameworks must resist industry narratives that seek to dilute these protections [20]. Biometric or Bank Verification Number linkage should be mandatory for opening online betting accounts [21].

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