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Prevalence and factors associated with gambling disorders among in-school adolescents in a rural community in South-Western Nigeria

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Abstract
Background: Gambling rates are increasing among adolescents in rural communities. Our study aimed to determine the prevalence, patterns, and factors associated with gambling disorders, among in-school adolescents in a rural community in South-western Nigeria.
Materials and methods: The study was cross-sectional in design involving 427 adolescents selected by a two-stage sampling method across secondary schools in Igbo-Ora. A questionnaire developed from literature and "The South Oaks Gambling Screen-Revised Adolescent Questionnaire" was used to obtain information on sociodemographic and behavioural characteristics and gambling practices.
Results: The mean age of the respondents was 14.0 ± 2.2 years with a little over half (51.3%) in the mid to older adolescent age group (14-17 years). The most common forms of gambling reported were playing dice games (46.0%), throwing rubber bands (42.5%), and card games (41.6%) for money. The odds of males ever gambling were two times more than females gambling (OR=2.43, 95%CI: 1.54-3.83).
Conclusion: Gambling and problem gambling among adolescents in rural areas is high. Males and adolescents who use alcohol tend to gamble more. Multi-pronged interventions through education, youth-friendly programmes which will complement cultural values are recommended. There's also a need to inculcate rehabilitation services at primary health care facilities in rural areas to manage adolescents who are problem gamblers.

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Introduction

Gambling is the act of placing valuable things, such as money, jewels, mobile, or fixed items, at risk to gain more than was initially staked [1]. To win more than was wagered includes betting or risking something valuable on an event that may not turn out as expected. The fact that gaming is not generally considered unlawful or problematic makes it simpler for people to defend themselves against risky gambling activities. Numerous countries use it to generate government revenue without changing

individual tax rates [2]. A variety of programs, such as Big Brother Africa/Nigeria, have been launched to use gaming revenue [3, 4].

However, the consequences of developing a gambling habit might be severe, according to gaming trends [5]. The internet has increased gambling accessibility through online betting sites and games of chance. The number of lives negatively affected by gambling has grown, as it is more widely accessible to more individuals. Adolescent and young adult gambling is on the rise. This conduct extends from seemingly innocent activities, such as flipping cards and dice, to harmful activities, such as casino gambling [6, 7]. This is because their age is characterized by risk-taking and experimentation. However, because the current adolescent gambling population are involved in taking risks, this will lead to the doubling in size of adult population gamblers in coming years [5].

Gambling is seen to have a bad side, one associated with delinquency, arrest, jail, and substance and drug misuse, all of which damage and corrupt communities [8, 9]. Many social, psychological, and health difficulties have been connected to gambling [10, 11]. People with gambling problems are more likely to have more health problems especially when they come from lower socioeconomic backgrounds [12]. Consequently, this exacerbates gambling-related difficulties. In rural locations, socioeconomic and health inequities related to a lack of opportunity worsen gambling issues [13], especially when there is less enforcement of gambling regulations hence, severely affecting the community more than urban areas [14].

However, regardless of the relative protective influence of cultural norms associated with rural life on perceived anti-social activities like gambling, stealing, and substance use, anecdotal evidence suggests an increase in these activities largely because of increased access to the internet. Thus, gambling in rural areas should be considered a serious public health problem, particularly among adolescents and young adults. Given the vulnerability of individuals especially adolescents, living in rural communities to health risks and their low levels of access to proper treatment, problem gambling and its associated factors have not been adequately researched among adolescents in rural communities in Nigeria. This study was conducted to determine the prevalence, patterns, and factors associated with gambling disorders, among in-school adolescents in a rural community in South-western Nigeria.

Methodology

The study was conducted in Igbo-Ora, the headquarters of Ibarapa Central Local Government in Oyo state, South-West Nigeria. The locality formed the economic base for food trade as the major occupation is agriculture. The town has several health facilities (both government and privately owned), 12 (five private and seven public) secondary schools, and a tertiary institution, and from anecdotal evidence, several onsite betting kiosks (within the town; market areas, motor parks, and around residential areas) exist.

Participants of the study were in-school adolescents who attended selected private/ government secondary schools in Igbo-Ora town. Adolescents who gave assent or consent were recruited for the study, while those who were ill at the time of the study were excluded. The study was cross-sectional in design, consisting of a total of 427 adolescents; using a gambling prevalence of 50%, 5% precision at a standard normal deviation of 95%, and 10% non-response.

A two-stage sampling method was utilized for the study. One public and one private secondary school were selected by balloting from the 11 public and 5 private secondary schools in Igbo-Ora. Systematic sampling of every third student was then used to select eligible adolescents.

An interviewer-assisted semi-structured questionnaire was used to obtain information on socio-demographics and behavioural characteristics, the practice of gambling, and problem gambling. The questionnaire was pre-tested among in-school adolescents similar to the study population but located in a different LGA. A research assistant was present in each school to respond to questions and make clarifications.

The practice of gambling

This was assessed using respondents' response of "Yes" or "No" responses to the question "Have you ever gambled?"

Regarding the frequency of gambling: 'sometimes', 'often', and 'very often' were merged. The last time of gambling was also recorded as '6 months and below and above 6 months.

Types of gambling: was inquired from respondents who indicated 'yes' to ever gambling. Nine types of gambling activities were listed, and respondents were to indicate if they had participated in it or not with yes or no responses.

Problem gambling

This was assessed using The South Oaks Gambling Screen-Revised Adolescent questionnaire [15] containing twelve questions with yes or no responses. Each item was scored either 1 (affirmative) or 0 (non-

affirmative). Responses to the twelve questions were then used to categorize gamblers into: "Non-problem Gamblers: 0-1", "At-risk Gamblers:" (score of 2-3), and "Problem Gamblers" (score 4 and above.

The variable; age was recoded into 3 categories [16, 17]: early adolescents (<14) years, middle adolescents (14 to 17 years), and late adolescents (≤18 years) .

***Class*:** Respondents that reported being in JSS 1 - JSS 3 (grade 7-9) was recorded as "junior class" and those in SS1-SS3 (High school) as "senior class".

Other variables: Sex, Alcohol use, and cigarette smoking

Data were analyzed using SPSS version 23. The summary was made using proportions, frequency tables, and charts. Associations between variables were obtained using the chi-square test and logistic regression at a 5% level of significance.

Ethical consideration

Ethical approval was obtained from the UI/UCH Ethical Review Committee. Permission was obtained from school authorities and serial numbers were used for anonymity. The respondents were informed that participation was voluntary and that there were no consequences for refusing to participate. Informed consent was obtained from adolescents ≥18 years while for those < 18 years; assent was obtained from the adolescents and consent from their parents.

Table1: Socio-demographic and individual characteristics of adolescents in Igbo Ora

Variable (n=427)	Frequency	Percentage
Age		
<14 years	182	42.6
14-17 years	219	51.3
18 years and above	26	6.1
Sex		
Male	210	49.2
Female	217	50.8
Class		
Junior School	269	63.0
Senior School	158	37.0
Religion		
Christian	183	42.9
Islam	244	57.1
Currently drinking alcohol		
Yes	32	7.5
No	395	92.5
Currently smoking cigarettes		
Yes	16	3.7
No	411	96.3

Results

The mean age of the respondents was 14.0 ± 2.2 years with a little over half (51.3%) in the mid to older adolescent age group (14-17 years). About half (50.8%) were female while almost two-thirds (63.0%) were in junior secondary classes (Table 1).

A little above a quarter (26.5%) reported ever gambling while about 33.9% reported that the last time they gambled was less than a week before the survey. More than half (60.2%) have friends who gamble (Table 2).

Table 2: Gambling practices of the Adolescents in Igbo Ora

Variables (n=427)	Frequency	Percentage
Ever gambled		
Yes	113	26.5
No	314	73.5
Frequency of gambling (n=109)†		
Rarely	50	45.9
Sometimes	47	43.1
Often	5	4.6
Very Often	7	6.4
A most recent episode of gambling (n=109)†		
<1week	37	33.9
1-4 weeks	18	16.5
1-6 months	17	15.6
7-12 months	9	8.3
>1 year	28	25.7
Have friends that gamble (n=113)		
Yes	68	60.2
No	45	39.8
Gambling category (n=113)		
Non-problem gamblers	30	26.5
At-risk gamblers	24	21.2
Problem gamblers	59	52.2

Overall, 26.5% (113) of respondents had ever gambled. Among those who gambled, 52.2% (59) were problem gamblers (see Table 2). Playing dice games (46.0%), throwing rubber bands (42.5%), and card games (41.6%) for money were the most common forms of gambling reported. Thirty-one percent reported online betting also (Figure 1).

Half (50.4%) of the respondents felt like stopping gambling but didn't think they could and some (30.1%, 23.9%) skipped school to go gamble or borrowed money to gamble without repaying. (Figure 2)

A high proportion of males, older adolescents, and those in senior classes with reports

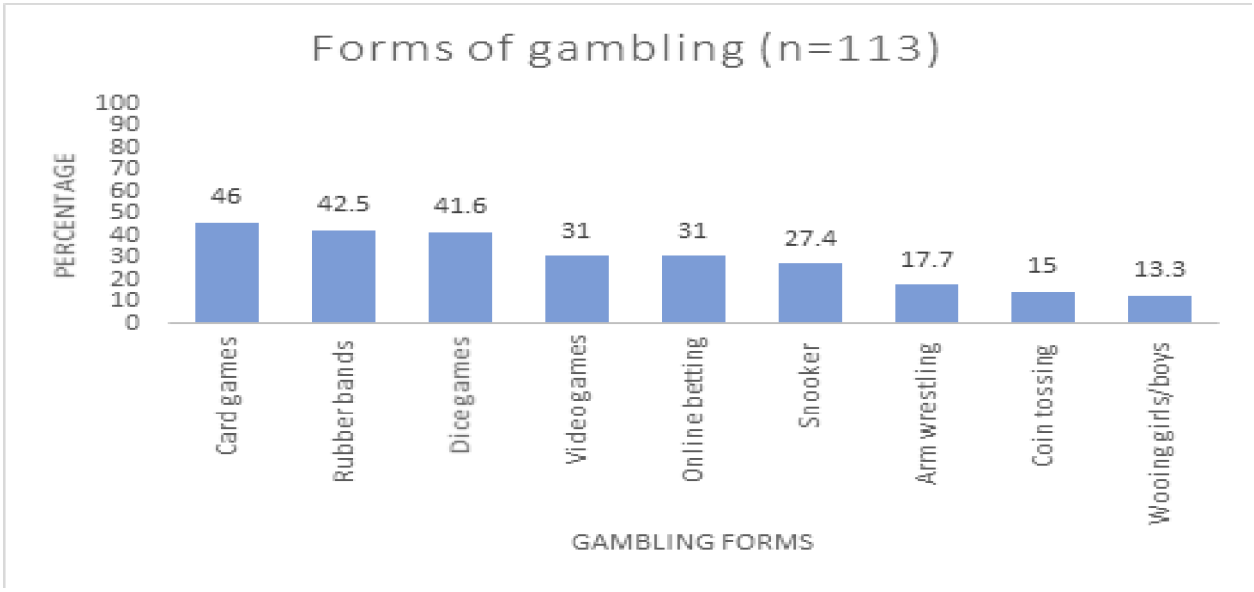

Fig. 1: Forms of gambling practiced by adolescents in Igbo-Ora

Fig. 2: Signs of problems reported among adolescents who gamble in Igbo-Ora

of having ever gambled had signs of gambling problems, drinking alcohol, and smoking cigarettes. Respondents' sex and their use of alcohol were significantly associated with ever gambling. The

Odds of males ever gambling were two times more than females gambling (OR=2.43, 95%CI: 1.54-3.83). The Odds of ever gambling were also three times more among respondents who drink alcohol than those who don't drink alcohol (OR-3.43, 2.12-4.73). (Table 3)

Discussion

Our study assessed the prevalence of gambling disorders among adolescents in a rural community in South-western Nigeria. The study also determined factors associated with gambling. Several studies have been conducted among young persons (10 - 24 years) and youths (15 - 35 years) in various countries. However, few studies have been conducted among in-school adolescents in rural areas.

Over one-quarter, (26.5%) of adolescents in our study had engaged in one form of gambling in their lifetime. This was lower than the prevalence

Table 3: Factors associated with gambling and problem gambling

Variable	Ever gambled (n=427)			Problem gambling (n=113)		
	Yes to ever gambled (%)	Unadjusted OR (95%CI)	Adjusted OR (95%CI)	Yes to Problem gambling (%)	Unadjusted OR (95%CI)	Adjusted OR (95%CI)
Age						
<14 years	41 (22.5)	1	1	19 (46.3)	1	1
14-17 years	64 (29.2)	1.42 (0.547-2.108)	1.08 (0.593-1.985)	33 (51.6)	1.23 (0.562-2.704)	0.82 (0.270-2.469)
≥ 18 years	8 (30.8)	1.53 (0.665-2.613)	1.13 (0.388-3.342)	7 (87.5)	8.11 (0.913-71.942)	3.78 (0.356-40.080)
Sex						
Female	39 (18.0)	1	1	19 (48.7)	1	
Male	74 (35.2)	2.48 (1.587-3.885)*	2.43 (1.537- 3.834)*	40 (54.1)	1.24 (0.871-1.756)	1.46 (0.299-1.562)
Class						
Senior School	51 (32.3)	1	1	30 (58.8)	1	
Junior School	62 (23.0)	0.63 (0.406-0.974)*	0.61 (0.333-1.102)	29 (46.8)	0.62 (0.369-3.435)	0.68 (0.299-1.562)
Drink alcohol						
No	97 (24.6)	1	1	47 (46.5)	1	1
Yes	16 (50.0)	3.12 (2.157-4.675)*	3.43(2.117-4.729)*	12 (75.0)	3.19 (0.962-10.592)	2.20 (0.602-8.240)
Smoke cigarettes						
No	108(26.3)	1	1	54(50.0)	Na	Na
Yes	5 (31.3)	1.27 (0.362-4.308)	2.32(0.566 -9.138)	5(100.0)		
Gambling frequency†						
Rarely	Na	Na		25 (50.0)	1	1
Sometimes-often	Na	Na		31(52.5)	1.11 (0.521-2.353)	1.20 (0.042-1.305)
Last time of gambling†						
≤ 6 months	Na	Na		45 (62.5)	1	1
>6 months	Na	Na		11 (29.7)	0.254 (0.108-0.595)*	0.137 (0.047-0.400)*

**-significant association, †-missing variable*

reported in Nigeria (57.2%) and Kenya (32.3%) but higher than the prevalence reported in Malawi (15.6%) [17–19]. The lower prevalence in our study compared to studies from Nigeria and Kenya is because their study population comprised urban dwellers. Easy access to gambling sites, reduced influence of cultures, and less supervision by parents or community members on the activities of adolescents are possible reasons for this. The Malawi study [19] like our own study was conducted in a rural setting further lending credence to how culture and communal living influences adolescents' involvement in culturally perceived anti-social activities. The higher prevalence from our study compared to the Malawi study could be attributed to the age range of their study population which included adolescents and young adults aged (15 – 29 years).

Factors that were significantly associated with adolescents who had ever gambled were gender, class, and current alcohol use. Several studies have also reported a higher prevalence of gambling among male adolescents [18–24]. Reasons attributed to more males gambling include a higher propensity to risk-taking, being less monitored by parents, and being more disinhibited [19, 25–27]. In most communities in Sub-Saharan Africa, there is less supervision of male adolescents by parents and community members. This, therefore, makes it easier for them to engage in gambling and other risky behaviour [27]. Furthermore, some communities condone some of this behaviour in male adolescents but consider them abhorrent when committed by female adolescents.

Our study highlighted fewer odds (unadjusted) of gambling among male adolescents in lower classes. Similar findings have been demonstrated in the literature [17, 18]. It is possible that an increased feeling of independence, access to income and risk-taking, increasing peer pressure, and the need to be accepted by peers are responsible for males in senior classes gambling more. This finding highlights the need for interventions on gambling reduction among adolescents should commence early while in junior grades. It also identifies to need for continuous interventions aimed at promoting the self-esteem of adolescents in secondary schools.

Unlike most studies [27–32] which reported current alcohol use, smoking, or substance use as predictors of gambling, our study only revealed that alcohol use was a predictor for gambling among adolescents. Alcohol and substances tend to cause disinhibition in adolescents making them get involved in gambling and other risky health behaviour [19]. Although our study highlighted that gambling prevalence was higher among adolescents who use substances, this was not a significant finding. A possible explanation for this is that, in rural areas and most communities, gambling will not receive as much condemnation as substance use. It implies that both activities are mutually exclusive events except in cases where gambling is used as a source of income to satisfy substance use cravings. This implies that interventions to reduce risky behaviours should be holistic since one behaviour ultimately leads to others even in conservative settings like rural areas.

Among those who had gambled in our study, problem gambling (52.2%) prevalence was higher than the prevalence from other studies[33–35] but lower than the study conducted in Uganda [23]. A major reason we ascribe to this is the use of different instruments for assessing problem gambling by the different authors. The review by Bitanihirwe et.al. [36] encapsulated the differences in rates of both lifetime gambling ("ever gambled") and problem gambling from several authors who used different instruments. It is also possible that the differences in the study populations across most studies may also be responsible for the differences observed. For instance, the Ugandan study [23] which reported a higher prevalence, used a similar instrument to our study. However, their study population was youths aged 15 – 24 years, unlike our study which was focused on adolescents. Our review of the literature showed a disparity in the age of study participants based on the use of nomenclatures like youths and young persons or young adults. Some studies were conducted among a wide spectrum of participants from adolescents to the elderly. The implication for this is that it makes it more difficult to develop appropriate interventions for select groups like adolescents when they are grouped with young adults.

Bivariate and logistic regression analysis for problem gambling from our study showed associations that were consistent with other studies but they were largely not statistically significant associations [21, 27, 28, 31]. However, the only predictor for problem gambling from our analysis was the period they last gambled. Our study indicated that adolescents who gambled more than six months before the study were less likely to be problem gamblers. Literature on addiction prevention and recovery while declaring there is no set time since it is individually determined, better outcomes have been postulated to occur within three months [37].

Adolescents in school are usually engaged when school is in session, however, they still have

time on their hands after school and more time during the holidays. It is therefore pertinent to identify means of usefully engaging them in activities that build self-esteem and capacity so that they are not drawn to the fallacy that gambling is a quick and easy means of income generation or a means of entertainment.

A significant observation however is that almost half (46.8%) of problem gamblers were females. This is a disturbing observation in a setting where females are shielded from risk factors for risky behaviour by cultural norms more than males. However, access to the internet, exposure to Western media and lifestyles, and depreciating parental supervision have overridden the effect of cultural norms. Also, the increasing economic hardship makes it necessary for female adolescents to engage in work that exposes them to risky behaviours.

Significance

Our study underscores the burden of gambling and problem gambling among adolescents in a rural community. It identifies a vulnerable group (adolescents) in a location (rural setting) with health and social disparity. Although adolescent health, has largely focused on their reproductive health and risky sexual behaviour, the contribution of gambling as a risky behaviour that can impact their health has not been adequately studied. The false notion that the rural area is devoid of what used to be considered anti-social activities or taboos such as gambling, substance use, and pornography to mention is prevalent in our study. This study can be leveraged to address interventions targeted specifically at in-school adolescents.

Limitation

However, it is also not devoid of some limitations. The adolescents studied are in-school adolescents so may not be a true representation of gambling activities among all adolescents in the community. It is expected that out-of-school adolescents may gamble more. Gambling prevalence was based on self-assessment by the adolescents and may have inherent bias which we tried to minimize by assuring them of the confidentiality of their responses. Reported alcohol and substance use may have been under reported contributing to non-significant associations seen in logistic regression analysis. Other factors such as parental factors may have been associated with adolescent gambling but the scope of this study was to determine individual factors alone associated with gambling. Studies on health outcomes can be conducted to identify the impact of gambling on children.

Conclusion

Adolescent problem gambling is high among secondary schools in the Igbo-Ora community. It is commoner among males although almost half of the problem gamblers were females. Adolescents who take alcohol and smoke cigarettes gambled and were problem gamblers. The understanding of these individual risk factors in this marginalized group can facilitate multi-pronged interventions that involve the individuals, family, educational sector, and government.

Adolescent-centered education programs on the potential impact and deteriorating effects of gambling can be deployed in schools. This can also leverage existing peer-led programs in the schools. The intervention will introduce gambling as an addiction comparable to that of alcohol, tobacco, and substances. It could also be incorporated into school curricula, in the existing family life expanded education. Community-targeted interventions can focus on youth empowerment programs provided by both government and non-government organizations to utilize the free time of adolescents. These interventions can be remunerated to encourage involvement and enhance motivation.

Adolescent health services provision in rural areas where they can have access to early diagnosis and prompt treatment will help reduce the burden of problem gambling. These services can be deployed by governmental and non-governmental organizations and community members sustainably. The Nigerian Government and policymakers should look into regulating gambling activities among young people by endorsing bills that place sanctions or taxes on online gambling providers who allow gambling activity on their mobile sites by underage groups. They should also ensure enforcement and compliance with the regulations, especially in rural areas where there is minimal monitoring to ensure compliance.

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