




Online sports betting in universities: Does online sports betting addictions impact the academic achievements and social relations of students?

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ABSTRACT

The debate on the effects of online sports betting addictions on the academic achievements and social relations of many students in higher educational institutions has dominated most public discourse in recent years in Ghana. Ghana and many other African countries have declared online sports betting addictions among students as a national security emergency. Therefore, the researchers grounded this study on gaming theory, to explore the relationship between online sports betting addictions, academic achievements, and social relations among university students (n=245 & aged 18-25). The study adopted stratified random sampling to select 245 level 100 and 200 students, while five universities were purposively sampled. The universities include Ghana Telecommunication University, University of Professional Studies, Accra, University of Ghana, Ghana Communication University, and Ghana Institute of Management and Public Administration. Regression analysis and structural modeling were adopted to test three hypotheses and validate the study model. The testing of H₁ and H₂ established a significant negative relationship between online sports betting addictions, academic achievement, and the social relationships of students. H₃, however, reported some differences between male and female students' online sports betting addictions and their social relations, as well as academic achievements. Based on the findings, this study concludes that online sports betting addictions among university students have negative academic and social relationship implications.

Keywords: online, sports, betting, addictions, social relationships, students, educational achievements, Ghana

INTRODUCTION

The global community has witnessed the growth of online betting companies. Many developing countries in the global south have been identified as the new markets for multi-national betting companies to operate (Bitanihirwe et al., 2022). The betting industry has grown progressively in Ghana. The main effect of the operations of these betting companies is on the education outcomes of students. A recent survey by Statista (2021) on gambling among the youth in Africa, reported that about 70.68% of Ghanaian youth engage in gambling, including online sports betting. This survey ranked Ghana fourth in Africa, only after countries like Kenya, Nigeria, and South Africa. The study further concluded that about 80% of these youth spend approximately six to eight hours during school hours playing online sports betting (Statista, 2021). The youth, especially those in school constitute about 57.00% of the population of Ghana according to the 2021 population census (Ghana Statistical Service,

2021). Out of the percentage, experts have estimated that two-thirds engage in online sports betting from senior high schools to other higher educational institutions (Acheampong et al., 2022). Although the actual percentages of university students who are addicted to online sports betting are not readily available, experts in the field strongly believed the number of university students who are addicted to online sports betting is endemic. Previous studies by Noble et al. (2022) suggest that the alarming rate of students engaging in online sports betting could be attributed to the daily advertisements on all media platforms. Millions of billboard adverts are dotted around major cities in Ghana. The addictions of the youth, especially those in higher educational institutions are a great source of worry for stakeholders, as these unfortunate habits greatly have negative effects on the academic performance and social relations of these students (Odame et al., 2021). Thus, objective of this study is to critically assess the impact of online sports addictions on the academic achievements and social relations of university students in Ghana.

LITERATURE REVIEW

American Physiological Association's 2023 report has suggested that gambling affects the brains of those vulnerable to addictions (Spicer et al., 2022). The continued addictions lead to gambling problems, especially among young people, boys and men. In terms of demographics, young people in their 20s, mostly students are involved in both online sports betting and video-related gambling (Brooks & Clark, 2023). Lopez-Fernandez et al. (2019) have proposed that the issue of gender is critical on online sports betting addiction among university students. According to a recent study by Bakker et al. (2020), male students prefer to engage in gambling that is profitable and can give them quick money, while young females prefer to stick to online games that are more communicative and socially oriented. Other studies proposed that due to strict observation from parents and caregivers, female students hardly become addicted to sports betting. Glozah et al. (2021), and Håkansson and Widinghoff (2020) have suggested that gender differences are significant. Other studies by Lopez-Fernandez et al. (2019) and Wittek et al. (2016) have suggested that female students easily get addicted to mobile phone games than their male counterparts.

The rate of online gambling among students, especially those in tertiary institutions has seen astronomical growth in recent years in Ghana (Amoah-Nuamah et al., 2022). Addiction is branded by many stakeholders as a public health emergency (Demuyakor, 2021). The dangers of sports betting are manifested in the declining academic performance of students across all levels. A good number of students are engulfed in menace, which is a disincentive to their academic progress. A 2019 study by Baraka Policy Institute, a think tank concluded that online gambling addiction has great negative consequences on the academic performance and the general development of many students. The increases in betting centers, coupled with advances on the Internet and penetration of mobile telephony contribute to the surge in online sport betting addictions. As of the second quarter of 2023, the Gaming Commission of Ghana had registered over 36 betting companies. According to a report by DataReportal, Ghana currently has over 23.05 million internet users representing 68.20% of the entire population as of January 2023 (Digital 2023: Ghana, 2023).

Scholars such as Aragay et al. (2021), Montiel et al. (2021), and Petry and Gonzalez-Ibanez (2015) have also reported that children who are less than the legal betting age of 18 are keenly involved in this social canker. Recent research on sports betting addictions suggests that the effects of betting addictions on the educational gains of students have negative implications for the socio-economic development of nations, especially those from the developing world (Odame et al., 2021). The negative consequences include and not limited to anxiety, depression, as well as exposing students to drug abuse (Kyei-Gyamfi et al., 2022). Kyei-Gyamfi et al. (2022) have however noted that the lack of pragmatic enforcement on the part of state institutions and parents is responsible for the surge in online sports betting in Ghana. Therefore, to eliminate the online sports betting addictions among the young generation, especially among students, the Ghanaian government has put in place a national policy, the Gaming Act,

2006 to check the time that students across all levels of education ladder spend on all sorts of gaming, which includes online sports betting (Odame et al., 2021).

Borgonovi (2016) has alluded to the fact these proactive steps in reducing online sports betting among students by the governments is laudable. China's gaming policy stipulated time for students at all levels of school-going ages to engage in gaming to during the weekends or between 8 PM and 9 PM (Demuyakor, 2021). China's well-monitored national policy to control online games among the younger population is what has inspired the government of Ghana to take active steps in reducing online sports betting among students. These measures taken by the Chinese government have received applause from across the world and are described as one of the most proactive policy decisions of the 21st century (Digital Watch, 2021). Based on previous studies, and the gaps identified in this current literature, the following research Hypotheses were considered:

- H₁.** There is a positive relationship between online sports betting addictions and students' academic achievements and vice versa;
- H₂.** There is a significant relationship between online sports betting addictions and social relationships among students;
- H₃.** Online sports betting addictions, academic achievements, and social relations will differ between male and female students.

METHODOLOGY

Study Population & Sampling

The sampled population for the study is level 100 and 200 students in five public universities in Accra, the capital of Ghana. The study used stratified random sampling through the and multiphase approach to select 245 students, comprised of n=130 level 100 and n=115 level 200 students. The researchers opted level 100, and 200 students to help predict the impact of online sports betting on their academic outcomes. After getting approval from the management of the sample universities, and informed consent from the participating students, a pen-and-paper anonymous survey questionnaire was self-administered. The students were all in levels 100 and 200, hence approval from the schools was an acceptable way of getting informed consent from the Ghanaian Universities Ethics Committee, and the Quality Assurance Committee in the universities since the questions were not sensitive. Students had the option to leave a questionnaire blank. Even though the response rate was not formally documented by the researchers' observation during the data collection showed that just an insignificant number of students did not fill out the questionnaire. The researchers used Cochran's (1963) formulae in calculating the sample population for the quantitative data of this study. For large undefined populations, Cochran's (1963) equation is normally recommended (Groves, 2009), because the samples are representative and proportional enough for the target population for the study. Cochran's (1963) equation is given, as follows:

$$n_0 = \frac{z^2 pq}{e^2},$$

where n is sample size, z is the standard normal deviate or normal score, the value is found in statistical tables that contain the area under the normal curve, e is the level of precision, p is estimated proportion of attributes present in the population, and $q=1-p$.

To get a more representative sample, the formulae adopted held the assumption that the maximum variability is 0.5, due to the fact the researchers are unaware of the target population's variability in the ratio of online sport betting among the population, and a 5% precision level is assigned, and a confidence level of 95%. Thus, the study sample size can be calculated, as follows:

$$n_0 = \frac{z^2 pq}{e^2} = \frac{(1.96)^2 (.5)(.5)}{(.05)^2} = 245.$$

The universities were purposively sampled. In this technique, sampling units are selected according to the purpose (Creswell, 2014). The universities include *Ghana Telecommunication University*, *University of Professional Studies, Accra*, *University of Ghana*, *Ghana Communication University*, and *Ghana Institute of Management and Public Administration*. The universities were purposefully sampled based on their urban location as well as the concentration for so many sports betting companies in Accra. Also, the decision for the researchers to sample public university for this study is based on the fact that public universities are all-inclusive and encompassing, which admit students from all walks of life and segments of society, thus rich, middle-class, and poor families. For flexibility to extensively examine and unearth fundamental issues as well as the true responses under investigations from the university students, the researchers designed the hypotheses in the form of a questionnaire. The sex characteristics of the sample population comprise 47.20% females and 52.80% males, with an average age of 24 years.

Data Collection & Analysis

A survey was used in collecting, analyzing, and interpreting data from the students while the questionnaire was a set of questions designed for the students to respond to (Creswell, 2014). The quantitative data was analyzed using Stata 12. For electronic coding and readability, besides the demographic information, students were requested to provide details of the course grades they got for 2020/2021 and 2021/2022 academic years. For data validity and reliability of

the information provided by the students, the services of the faculty examination officers were sought. For the authentication of students' responses, the researchers also requested students to provide a screenshot of their grades via a WhatsApp group created to enable the measurement of the discrepancies if any (Aspers & Corte, 2019; Bakker et al., 2020). After the final analysis of the responses (data) obtained from the survey questionnaire on online sports betting addictions in higher educational institutions in five universities in Ghana, the researchers tested three main hypotheses using regression analysis, and structural modeling to relate dependent variables to independent variables, and the study model.

Measures

The main measurement variables of this study, include online sports betting addictions, academic achievements, and social relationships of students in higher educational institutions. Besides collecting data on the demographic characteristics of the students in five universities, the study made use of the academic transcripts and course grades of the students, for 2020/2021 and 2021/2022 academic years to enable the researchers to measure the academic outcome of the students. The survey questionnaire adopted the computer game scale proposed by Lemmens et al. (2009), to assess the addiction levels of students. Game scale indices include information relating to (*mood, salience, modification, tolerance, conflict, relapse, problems, and withdrawal*). For this study, (**positive**) social relations or skills are defined to include variables such as *interactive, active, sociable, cooperation, inclusiveness, involvement, friendly, and assertiveness, in a nutshell, any behavior that enables very sociable, participation, community involvement and socialize with others (course mates, family, and Friends)*. The (**negatives**) of social relations, also listed variables such as *low self-esteem, insolence, social anxiety, anti-social, and aggressiveness*. The questionnaire for this section was designed based on a scale proposed by (Kheradmand et al., 2012). A five-point Likert scale questionnaire ranges from (1=very low) to (5=very high). To ensure the internal consistency of the study items, Cronbach's alpha was run through SPSS. The coefficients of Cronbach's alpha of the sample people were; .90, .91, .73, .94, .89, .85, as well as .97 accordingly. In all, the measurement for the validity of the questionnaire was .90. **Figure 1** illustrates the study model.

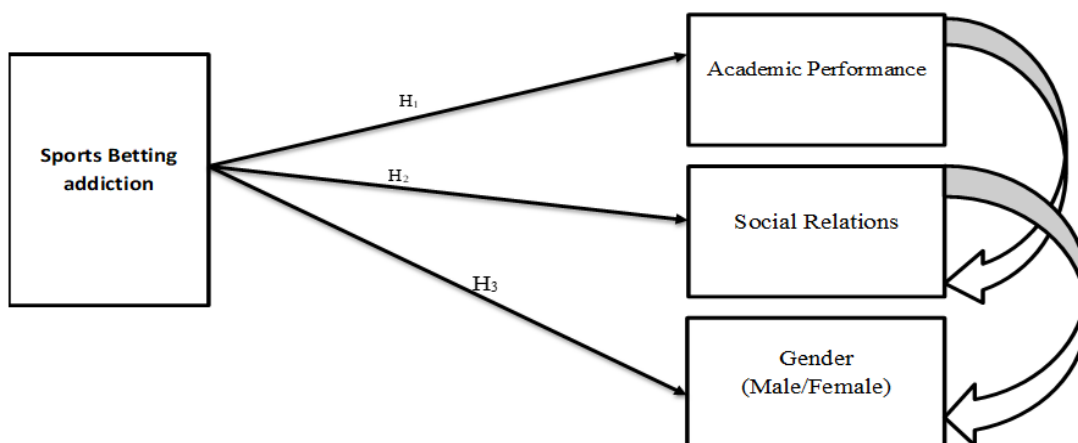


Figure 1. Research model (Source: Authors, generated using AMOS statistical software)

Table 1. Coefficients for measurement of model variables

Model	B	SE	b	t	p	DR ²	p
Online sports betting addiction	0.032	.005	0.122	3.2	<.001	.05	.005
Academic achievement	-0.021	.006	-0.151	-2.3	<.001	.06	.003
Social relationships	0.043	0.59	0.342	4.1	<.001	.08	.004

Note. **p<0.05 & ***p<0.01

Table 2. Multiple regression analysis (hierarchical method) relationships for male & female addictions to online sports betting addictions & educational achievements

Model	B	SE	b	t	p	DR ²	p
Male	.011	0.006	0.020	2.300	<.005	.041	.002
Online sports betting addiction	.032	.0340	.023	2.100	<.005	.023	
Academic achievement	.042	.0020	-0.213	-3.100	<.001	.011	.001
Female	-1.320	-1.110	.340	-.432	<.002	.033	.004
Online sports betting addiction	.051	-2.410	.410	.345	<.004	.045	.002
Academic achievement	.045	-3.340	.330	.543	>.003	.065	.005

Note. **p<0.05 & ***p<0.01

RESULTS

The study used regression analysis to test H_1 and H_2 to establish if there is any significant relationship between the online sports betting addictions of students and their academic achievements. H_1 shows there was a significant relationship ($p<0.005$) between the two key variables, thus sports betting addictions and academic achievements. The variable online sports betting addictions (0.50) (50.00%), of variance, significantly relates to academic achievement ($R^2=.06$). H_2 on the other hand shows the significant relationships between sports betting addictions and building a student's social relations. Sports betting addictions recorded a variance of (0.59) (59.00%), which positively related to students' social relations ($R^2=.08$). **Table 1** gives further details.

For H_3 , the analysis was done through multiple regression (hierarchical method). This method helped the researchers to establish the relationships between gender differences, addiction to online sports betting, and academic achievements. The analysis from **Table 2** shows the Beta value was small and hence was not statistically significant, thus when gender was included in the model ($R^2=.065$), results decreased to .041 (41.00%) and .033 (33.00%) for males and female, respectively. See **Table 2** for details.

Structural Modeling: Relationship Between Betting Addiction, Academic Performance, Social Relations, & Gender of Students

To establish the relationship between online sports betting addictions, academic achievements, and social relationships, the researchers carried out a structural equation applying Amos 22.5 to validate the study model. To make sure that structural modeling takes care of the many statistical assumptions made during the analysis, the study used multiple regression analysis. For assumptions relating to homoscedasticity, Levene's equality of the variance test was used (Gastwirth et al., 2009). To make sure there were no significant differences relating to the variance of the dependent variables thus; academic achievements, social relations, and gender, the study conceptualized online sports betting addictions (for all related cases, $p>.05$). For all

variables, the values for the skewness are .27 to .90. The values relating to kurtosis are .21 to .25, and within -1 to +1 the range accepted for normality and to ensure violation normality assumptions are not of the data sample for the study (Knief & Forstmeier, 2021).

For independence assumptions of the residuals, the Durbin-Watson formula was adopted to estimate the academic achievements (=1.25), social relations (=1.54), and gender (=1.89) of the dependent variables and were all within the range accepted for the independence thus, from 1.5 to 2.5.

After subjecting the data sampled for this study to the required statistical processes and all data collected meeting the accepted criterion outlined above, the analysis was finally carried out. For evaluating the model fit, the study adopted the multiple criteria (Chi-square=df<5) for the mean root square error and approximation (RMSEA<0.6), the comparative fit indices (CFI) as well as the Tucker-Lewis indices (TLI>.80) proposed by Kelley and Lai (2011). After concluding the criteria suggested by Kelley and Lai (2011), the model fit for the study was regarded as acceptable due to the following outcome of the data analysis (2=df=2.343, RMSEA=.066, 80.00%, CI=.05, .08, CLI=.823, TLI=.734). For further details on online sports betting addiction, the variance is; academic achievement at 8.00%, 7.00% for social relations, and 3.00% for gender. The coefficient for the standardized beta is reported in **Figure 2**. Sports betting addictions were significantly related to academic achievements, and social relations ($b=.35$, $p<.001$, & $b=.30$, $p<.001$). However, the relationship between sports betting addictions and gender difference was not statistically significant to support the H_3 ($b=.10$, $p>.001$). See **Figure 2** for details.

Summary of Statistical Analyses

The adoption of regression analysis helped the researchers to estimate the relationships between the dependent variable; (betting addictions) and the independent variable (academic achievements and social relations). The testing of H_1 and H_2 reported negative relationships. In terms of the strengths of the relationships between the variables proved to be very significant with a score $p<0.005$, 0.50, and 50.00%, respectively. The findings suggest sports betting addictions have greatly had negative impacts on students' academic

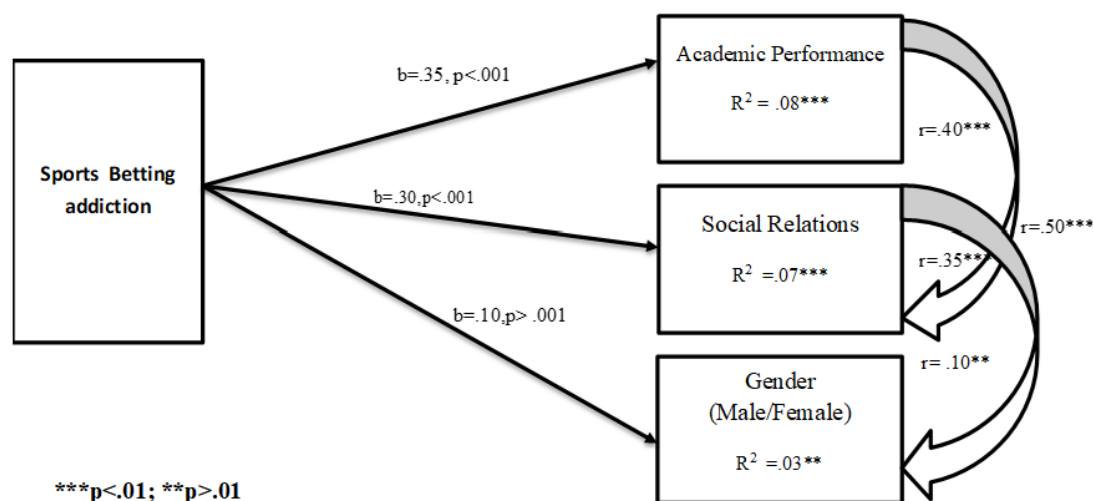


Figure 2. Structural modeling of relationship between online sports betting addictions, academic performance, social relations, & gender (Source: Authors)

achievements and their social relations (0.59) (59.00%), respectively. The findings further show that students addicted to online sports betting have recorded low scores and grades within the academic year. Their social relations have also been impacted negatively. The results show that students addicted to betting tend to isolate themselves from others, which in effect has negative consequences on their interpersonal relations. For H_5 , the analysis seeks to establish how online sports addictions influence the academic achievements of two sexes (male and female), the results were not statistically significant, 41.00% & 33.00%, respectively. Hence, the regression analysis, and structural modeling for modeling predicts the future relationship between online sports addiction and students' academic achievements and social relations.

DISCUSSION

To establish the relationship between online sports betting addictions and the academic performance or achievements of university students, the research formulated H_1 . The findings suggest that online sports betting has very negative consequences on the achievements of the sample students from the universities. H_1 testing recorded a statistically significant score, which means that sports betting addictions have a significant relationship with university students' academic outcomes. In the context of Ghana, the analysis of the sampled data suggests that, due to addictions to sports betting, university students have very limited time allocated for their revising for daily academic activities, like research, reading, attending classes, and undertaking assignments. Some students even end up not participating in instructional activities due to tiredness and lack of adequate sleeping time. Deprivation of sleep due to online sports betting addictions has great consequences on the examination scores of university students and leads to poor academic performance. The findings from this study are supported by Borgonovi (2016), Lieberoth and Fiskaali (2021), Malek et al. (2019), and Ward (2020) who also investigated how gaming or gambling through the Internet technology negatively impacts student's academic performance. Again, the findings from this show

that, besides the academic consequences of online sports betting addictions, limited social relations and health complications are experienced by students. Turel et al. (2016) conducted a study and concluded that gaming addictions resulting in deprivation of sleep could trigger obesity and cardiovascular conditions among young adults.

The analysis and testing of H_2 for the relationship between sports betting addiction and social relations of university students in the sampled schools were also reported, thus statistically significant. For this study, the researchers identified a surge in isolation and less social interactions among students due to addictions to sports betting. Excessive use of technology has taken the place of traditional one-on-one communication and interactions, which is believed to promote togetherness and a sense of belongingness among students. As proposed by, Sundberg (2018) for the holistic development of university students, it is recommended that students keep in touch with their social relations. The findings from this current article align with previous on the social influence of gambling by Russell et al. (2018). Russell et al. (2018) again opined that the disconnection created due to excessive sports betting addictions has great negative consequences on the overall development on people who are addicted. The limited parental supervision and the extravagant lifestyles adopted by university students also account for the high addiction to sports betting. UNICEF (2017) has emphasized and recommended interventions from both the government and parents to initiate pragmatic solutions for greater social relations among students. Furthermore, scholars such as Przybylski and Weinstein (2017) have also recommended that stakeholders at both homes and in higher educational institutions adopt proactive measures for social reconnection among students.

For the relationships between excessive online betting addictions and students' social relations, the testing of H_2 shows that there is a generally negative relationship between sports betting addiction and social interactions with their associates or peers as well as family members. The socialization process is impeded by the amount of time spent on online betting. Findings allude to the fact that university students prioritized online betting over building social bonds,

which tends to cause frustrations and low self-esteem among associates. To limit the excessive addictions to online sports betting, it will be recommended that school management and stakeholders take pragmatic steps to encourage and enhance the social relations of students engaging in online betting. These findings are in line with previous studies by Benson et al. (2021) and Sirola et al. (2021) on the effects of online betting and social relations.

The issue of gender roles and differences is also critical in studies relating to game addictions. The analysis from this study illustrates that sports betting addictions differ in terms of students' gender. H_3 was analyzed through multiple regression and the result was not statistically significant, due to the decrease in the beta value 41.00% and 33.00% for males and females, respectively. This study reported that sports betting addictions have no significant effect on academic achievements and social relations among university students.

Practical Implications

The study has the following practical implications. The polarity in the findings of the negative effects of online sports betting on social relations and academic performance among university students may help the political authorities, and university management to understand and fashioned out pragmatic policy decisions to tackle the addictions among students. On the social front, the findings from this study are a template for parents, stakeholders in higher education, and social activists to put pressure to change policies to restrict students from online sports betting.

Limitations & Recommendations for Future Studies

This study is not without limitations. The limited number of universities were sampled for this study, serves as a limitation. Future researchers could employ a large sample size in future to have a full understanding of the effects of online sports betting addictions and the academic performance of students. The responses given by the participants are their perceptions of the impact of online sports betting on the academic performance and social relations of students and might reflect, that this study only sampled five out of over sixty public and private universities in Ghana. Hence the responses from the students might not be representative of the actual national outlook on the subject under investigation. Also, the researchers wish to state that the methodology applied and findings of this could not be generalized as a result of the sample size of this study. Therefore, to fill this research gap, the researchers propose that studies in the future relating to the above subject could be done from the national perspective and incorporate of large sample size.

CONCLUSIONS

This research article examined the impacts of online sports betting and the academic performance of the university in five sampled universities in Ghana. The result of testing the hypothesis indicated a direct relation between online sports betting and the academic performance of students. The findings from this study also reported declining and

deteriorating health conditions such as deprivation of sleep, depression, and low social relations among students in the university due to addictions to online sports betting. The study also identified a lack of student concentration during teaching and learning, lateness to lectures, and the late submission of take-home assignments as some of the negative effects of excessive time spent on online betting. Other findings of this study also identified the negative impact of online addictions to sports betting as aggressiveness and low self-esteem.

To find lasting solutions to these divesting national public health emergency of addictions to online sports betting addictions and attendant effects like low academic achievements and reduced social relations, this study recommends multi-faceted collaboration among both academic institutions and policymakers. From the national context, the government has the first responsibility in eliminating online sports betting addictions. Ghana can learn from some exemplary and results-oriented regulatory measures taken by Kenya and Uganda. Uganda for instance, has adopted a strategy of protecting students by not renewing the licenses of existing sports betting companies that allow underage children and students that bet from their platforms. Kenya on the other hand has strengthened its regulations by implementing tax disincentive policies for betting companies.

Besides a broad national policy in regulating, online sports betting, some of this study suggests that management of educational institutions, especially those at the tertiary can take pragmatic steps in enacting policies on online gambling, just like those existing policies on stealing, alcoholism, and other academic malpractices in student handbooks being implemented by the Universities already. The enactment of anti-gambling policies at tertiary institutions could be effective in supporting holistic improvements in the academic performance of students. University authorities should also embark on awareness about the dangers of addictions and labeling it as a mental health issue might also be feasible for reducing online sports betting actions. Educational institutions also have a responsibility to resource and build the capacities of the counseling departments on various university campuses to provide the required support systems for students with addiction challenges. Finally, parents, and the government, should enforce and improve their watchdog roles by constantly supervising their wards when they are on school vacations to limit the activities of students who are addicted to sports betting.

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Declaration of interest: The authors declare that they have no competing interests.

Availability of data and materials: All data generated or analyzed during this study are available for sharing when appropriate request is directed to corresponding author.

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