

Relationship between Gambling Addiction and Violent Behaviour among University Students in Lang'ata Constituency

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Abstract: Gambling addiction is unhealthy betting that could result in problematic behaviour and experience of serious multiple problems. Historically, betting is inherently an acceptable recreational activity across human societies. Betting has become a way of life and especially among university students in Kenya. The study examined the relationship between gambling addiction and violent behaviour among university students in Lang'ata Constituency, Nairobi County. The target population was 20,700 university students. The sample size was 393 students. Skinner's Theory of Learning was used in understanding the relationship between types of gambling, prevalence of gambling, risk factors of gambling, coping strategies, and violent behaviour among university students. Correlational research design was used. Stratified random sampling was used in identifying the sample size. Descriptive statistics was used in analysing descriptive data. Pearson's Correlation Coefficients, ANOVA and Regression Analysis were used in inferring results of the study. The response rate was 99.4%. Explanatory variables explained 73.7% of variation in violent behaviour among university students while 26.3% of variation in violence could be attributed to other factors outside the scope of this study. All independent variables have statistically significant relationship with the dependent variable hence they were retained in the final model. The resulting hypothesis affirms the relationship between gambling addiction and violent behaviour among university students. To investigate causality of betting addiction and violent behaviour among students, experimental design may be appropriate in future studies. Future studies may consider triangulating numerical and non-numerical data in investigating the relationship between betting addiction and violent behaviour among university students. Insufficient betting infrastructure was abetting betting in learning institutions in Kenya hence the need to enact policies that promote healthy betting practices.

Keywords: types of gambling, prevalence of gambling, risk factors of gambling, coping strategies of gambling, violent behaviour

I. INTRODUCTION

A. Background to the Study

Historically, gambling has always been at the centre of human existence (Schwartz, 2007). According to Schwartz, the epic story of gambling is traced back from Pre-historic times, progresses through casting of lots depicted in religious writings to Greek and Roman civilizations, through the Middle Ages, and later the Chinese, the British Empire

and the American colonies spread betting to the rest of the world. When growing up, gambling amongst the village young men was an acceptable way of recreation and leisure. For example, when young men went herding, they often involved themselves in playing some games and whoever won, pocketed all the coins that had been placed as the bet. Even though the coins won by these young men in such betting games were, in most times, a few Kenya shilling coins, many of the boys were so obsessed with the games that they preferred to trick their parents into permitting them to join the rest of the boys in such gambling games. Fascination with the phenomenon of betting has been at the core of the human experience. For example, when parents purchase charity sweepstake cards, lottery tickets, and sports betting cards for themselves and their children, they are inadvertently initiating them into the charm of betting. The excitement and addiction in gambling could therefore be as old as human society.

James, O'Malley and Tunney (2017) described gambling as the act of playing a game or taking a risky action for money or a desired outcome like a prize. An earlier study by Whelan, Steenbergh and Meyers (2007) defines gambling as the act of placing a valuable item or money on an event hoping to gain more value, where winning is mostly based on chance. These authors underscore the importance of money, property, and taking of risk to win. When gambling is done in excess, its consequences might be far out-reaching.

Studies have shown that young people are predisposed to involvement in gambling and problems emanating from excessive, compulsive, or addictive gambling. According to Kam, Wong, Tong, Cheong and Chan (2017), university students are amongst the most susceptible group to problems associated with excessive gambling. In general, most of the recent studies have found that 6-8% of young people worldwide have serious gambling problems (Volberg, Gupta, Griffiths, Olason & Delfabbro, 2010; Moore et al., 2013; Kam et al., 2017). However, in a study by Koross (2016), it was found that the number of university students in Kenya participating in gambling was higher than 78%. The results indicated that the estimated number of young people participating in gambling in Kenya was far much higher than the international rating of 6-8% hence the need to focus on gambling addiction among university students in Lang'ata constituency, Nairobi, Kenya.

In a study of 8,500 Secondary School students in New Zealand, approximately one quarter (24.2%) of the students had gambled in the previous year, and 4.8% were found to have had two or more indicators of unhealthy gambling - poor mental health, depression, suicides, crime, delinquency, truancy, poor academic performance and so forth (Rossen et al. 2015). Furthermore, unhealthy or problem gambling was also found to be associated with four major factors: more accepting attitudes towards gambling, gambling via machines or casinos, being worried about or trying to reduce or cease gambling, and having attempted suicide. Rasanen, Lintonen, Raisamo, Rimpela and Konu (2015) reiterate that severe general violence, severe dating violence and carrying a weapon were significant correlates of gambling frequency among adolescents in New Zealand. Moreover, Slavin et al. (2013) noted that risk and problem gambling were associated with physical fights and carrying of weapons amongst school students. Although such studies deal with Secondary School students or adolescents, this current study drew its sample size from university students in four selected institutions of higher education in Lang'ata constituency, Nairobi County, Kenya.

In a different study of 999 students in Macau College and University in China, six hundred and twenty-nine (629) women and three hundred and seventy (370) men aged between 17-25 years, the respondents indicated that they gamble for entertainment (37.5%), peer influence (22.3%), affordability due to acceptance of small stakes (17.6%), perceiving gambling activities as a challenge (17.0%) and killing time recorded 5.1% (Kam et al., 2017). Besides, the forms of gambling preferred included: mah-jong (38.1%), soccer betting (25.4%), Mark Six lottery (22.9%), card games (17.3%), stocks (9.0%), land-based casino gambling (8.0%), slots (5.0%) and online casino games (1.2%). Moreover, on the question of gambling frequency, 42.7% gambled once a month, 20.8% gambled 2-3 times a month, 18.8% gambled between 1-2 times a week, 12.5% gambled once a day, 4.2% gambled 3-4 times a week, and 1% gambled 5-6 times a week. The study had recorded a gambling participation rate of 32.3%, which is way far below the rates of 40-50% found in the previous studies (Kam et al., 2017). The study was carried out amongst university-college students, this current study focused on university students in Lang'ata constituency in Nairobi, Kenya.

In a survey of three thousand and eight hundred and seventy-nine (3,879) on problem gambling among young people in Sub-Saharan Africa, Kenya reported the highest number of youth (76%) who had previously gambled, Uganda followed with 57% while Ghana had the lowest number at 42% (Ssewanyana & Bitanihirwe, 2018). In another study on gambling in South Africa, those who lived in townships were found to participate in gambling activities perceived to be fairer as opposed to lotteries and casinos which were perceived to be rigged and unfair (Sewanyana & Bitanihirwe, 2018). The study observed that young people who indulged themselves in gambling often performed poorly in studies, lost school fees in gambling-related activities, and often engaged

in risky behaviour. These findings were also reiterated in Koross (2016) who noted that a student at Kabianga University in Kenya committed suicide after losing a bet and many other students had dropped out of college after losing their school fee money on bets. Although the study focused on the problem of gambling among young people in Sub-Saharan, the current study focused on university students in Lang'ata constituency in Nairobi, Kenya.

In a study of one hundred (100) students from Kisii University, Eldoret Campus on the effects of betting on Kenyan University Students, the number of students participating in gambling was found to be more than 78% (Koross, 2016). Barnes, Welte, Hoffman and Tidwell (2010) found that gambling had become a popular activity among college students, with an estimated 75 % of college students reported to be involved in gambling. The finding by Koross was the highest number of students in colleges and universities participating in gambling in Kenya that has ever been recorded. No wonder Koross was stewarded to observe that Kenya had become a betting nation.

Furthermore, the findings by Koross indicated that university students were spread across the gamblers' spectrum. The study also found that money was the biggest motivator of gambling (70%), followed by enjoyment (15%), boredom (10%), and those who indicated all these factors combined were 5%. It was also established that 26% of the respondents had, at one point or another, contemplated suicide as a result of indulgence in the game or activity of gambling. The findings are reiterated in a study by Abbott (2017) which found that people with repeated gambling behaviour struggle to control their impulse to gamble because often could have had gotten huge debts due to excessive gambling hence finding themselves in situations where they could only lie and commit crimes to get money to settle their debts. Despite these studies exploring the problem of gambling amongst university students, this current study cast the net further afield to focus on the relationship between gambling addiction and violent behaviour among students from four selected universities in Lang'ata constituency in Nairobi, Kenya.

As seen in the background, university students are studying at a time when betting has become a widespread phenomenon in the world. Despite the existence of such studies, their focus has only been on school children, adolescents, and young people. There is a knowledge gap in such studies as they do not address the problem of gambling and violent behaviour among university students, specifically in Lang'ata constituency in Nairobi County, Kenya. This is the gap addressed by the present study.

B. Objectives of the Study

- i. To investigate the different types of gambling which university students in Lang'ata constituency are involved in.
- ii. To investigate the prevalence of gambling among university students who gamble in Lang'ata Constituency.

- iii. To determine the coping strategies used in reducing gambling addiction among university students in Lang'ata Constituency.
- iv. To explore the risk factors of gambling among university students in Lang'ata Constituency.
- v. To investigate the prevalence of violent behaviour among university students who gamble in Lang'ata Constituency.

C. Hypothesis

H0: There is no relationship between gambling addiction and violent behaviour among university students in Lang'ata Constituency.

II. METHODOLOGY

The study used a correlational research design whereby data was collected from students in four universities - Multimedia University (MMU), Jomo Kenyatta University of Agriculture and Technology, Karen Campus (JKUAT), Catholic University of Eastern Africa (CUEA), and Co-operative University of Kenya (CUK) - in Lang'ata Constituency, which had approximately 20,700 students. The units of observation constituted 393 students from the four universities. The study used a revised questionnaire by Bosworth and Espelage (as cited in Dahlberg et al., 2005) to measure perceived violence among university students. The questions were in 5-Item-Likert scale: 1 = Strongly Agree, 2 = Agree, 3 = Neither Agree nor Disagree, 4 = Disagree; and 5 = Strongly Agree). The American Psychiatric Association (2013), a Diagnostic and Statistical Manual of Mental Disorders' pathological gambling diagnostic scale, was used. The responses were categorized in a Five - Item Likert scale: 1 = Never; 2 = Sometimes; 3 = Most of the Times; 4 = Almost Always; and 5 = I Do Not Know. Descriptive analysis, Karl Pearson's correlation coefficients (r) and analysis of variance were used in examining relationships between the variables of the study, while regression analysis was used in establishing the general model on the relationship between gambling addiction and violent behaviour among university students in Lang'ata constituency, in Nairobi, Kenya. All ethical requirements were strictly adhered to during and after the data collection process.

III. RESULTS

The study attained a response rate of 99.4% equivalent to 389 questionnaires out of the targeted sample size of 393 university students. The response rate surpasses the threshold of 70% which is recommended as the rule of thumb (Mugenda and Mugenda, 2003, p. 83). Out of 389 respondents, 254 (65.3%) were male while 135 (34.7%) were female. Respondents within the age bracket of 18-21 years were the majority (74.3% or 289), while those aged 34 years and above were the minority (3 or .8%). MMU had the highest number (128 or 32.8%) of students who gambled, followed by students in CUEA (117 or 30.1%), CUK was third (89 or 22.9%) and JKUAT had the least number (55 or 14.1%) of students who involved themselves in betting. From those who

participated in gambling, 161 (41.4%) were taking certificate courses, 119 (30.6%) were taking diploma courses while 109 (28%) were taking bachelor's degree courses.

A. Types of Gambling

Objective one sought to find out the types of gambling that university students were involved in. Data were analyzed on the gambling activities which university students were involved in. The outcomes are shown in Table I.

Type of Betting	Frequency		Total
	Yes	No	Numbers and Percentage
Online Football	370(95.1%)	19(4.9%)	389(100%)
Lottery	277(71.2%)	112(28.8%)	389(100%)
Home Gambling	276(71%)	113(29%)	389(100%)
Casinos	180(46.3%)	209(53.7%)	389(100%)
Other Sports	351(90.2%)	38(9.8%)	389(100%)

As shown in Table I, online football betting recorded the highest number of participants with 370 or 95.1% of university students who engaged in various types of online football betting like Sports Pesa, Betway, Betin et cetera. Other sports betting recorded the second-highest number with 351 or 90.2% of university students who participated in various other sports betting activities. The lottery was in the third position with 277 or 71.2% of the surveyed university students. Home gambling was in the fourth position with 276 or 71% of the surveyed respondents while Casinos recorded the least number of involvement with 180 or 46.3% of the surveyed university students. These results show that online football betting recorded the highest number of university students who participated in the study while Casino betting recorded the least number of university students who participated in this study.

In further addressing objective one, data was collected on the amounts of monies spent and frequency of betting among the sampled university students. The outcomes are shown in Table II.

Type of Gambling	250 and below	251-500	501- 750	751- 1000	Above 1000
Online Football	245(63%)	65(16.7%)	32(8.2%)	17(4.4%)	11(2.8%)
Other Sports	239(61.4%)	55(14.1%)	28(7.2%)	19(4.9%)	10(2.6%)
Lotery	203(52.2%)	39(10%)	21(5.4%)	10(2.6%)	4(1%)
Home Betting	215(55.3%)	27(7%)	16(4.1%)	12(3.1%)	6(1.5%)
Casinos	134(34.4%)	22(5.7%)	15(3.9%)	6(1.5%)	3(0.8%)
Type of Gambling	250 and below	251-500	501- 750	751- 1000	Above 1000
Online Football	245(63%)	65(16.7%)	32(8.2%)	17(4.4%)	11(2.8%)

As shown in Table II, among those who spent not more than 250 Kenya Shillings in betting, online football recorded the highest number (245 or 63%), followed by other sports (239 or 61.4%), next was home betting (215 or 55.3%) and the lottery was last (203 or 52.2%). Among those who spent between 251 and 500 Kenya Shillings in betting, again football recorded the highest number (65 or 16.7%) of respondents, followed by other sports (55 or 14.1%). The lottery was next (39 or 10%), followed by home betting (27 or 7%) and Casinos were the last (22 or 5.7%). Among those who spent between 501- 750 Kenya Shillings in betting, online betting had the highest number (32 or 8.2%), followed by other sports (28 or 7.2%). The lottery was next (21 or 5.4%), followed by home betting (16 or 4.1%) and Casinos were the last (15 or 3.9%). Among those who spent between 751 - 1000 Kenya Shillings, other sports recorded the highest number (19 or 4.9%) followed by online sports betting (17 or 4.4%). Next was home betting (12 or 3.1%), followed by lottery (10 or 2.6%) and Casinos were the last (6 or 1.5%). Among those who spent above 1000 Kenya Shillings in betting, online football had the highest number (11 or 2.8%), followed by other sports (10 or 2.6%). Next was home betting (6 or 1.5%), followed by lottery (4 or 1%) and Casinos were the last (3 or 0.8%). These varying results show that different university students spent varying amounts of money on different types of betting activities. Moreover, it was evident that as the amounts of monies required for betting activities increased so did the number of people to be involved in the activity decrease.

B. Prevalence of Gambling Among University Students

Objective two sought to establish the prevalence of gambling among university students in Lang'ata constituency, Nairobi County, Kenya. Data were analysed on the frequency of betting or gambling among the sampled university students. The results of the study show that online football recorded the highest numbers (370 or 95.1%), followed by other sports (351 or 90.2%), next was lottery (277 or 71.2%), followed by home betting (276 or 71%) and the least was casinos (180 or 46.3%). Amongst those placed bets daily, online football had the highest number (117 or 30.1%) while casinos had the least number (15 or 3.9%) of participants. Again, amongst those who placed bets 'once a week', online football betting recorded the highest number (95 or 24.4%) while Casinos had the least number (20 or 5.1%) of participants. Amongst those who engaged in betting 'once a month', home betting had the highest number (67 or 17.2%) while online football had the least number (11 or 2.8%) of participants. Lastly, amongst those who engaged in betting 'less often', the lottery recorded the highest number (143 or 36.8%) while online football had the least number (4 or 1%), participants. These findings show that different university students involved themselves in different betting activities. Additionally, different university students had varying preferences on the number of times they involved themselves in various betting activities.

C. Coping Strategies in Gambling

Objective three sought to establish the coping strategies of gambling among university students in Lang'ata constituency, Nairobi County, Kenya. Data were analysed on the frequency and percentages of betting among the respondents. The results indicate that a majority (272 or 69.9%) of respondents indicated that they would not leave betting and go home when a conflict arose during betting. Again, a majority (272 or 69.9%) of respondents, when they faced a conflict while betting they left for a bar or club and danced the whole night. Moreover, a majority (233 or 59.9%) indicated that they would defend themselves by fighting back when a conflict arose while betting. Furthermore, when a conflict arose while betting, a majority of the respondents drew weapons for various reasons like defending themselves (272 or 69.9%), scaring away others (234 or 60.2%), and feeling secure (272 or 69.9%) among other opinions. Also, a majority (311 or 79.9%) of respondents got angry when they realized they were losing a bet. Despite continuing to bet or thumbing the table (350 or 90%) when realized they were losing a bet, some (311 or 79.9%) got angry and others even became destructive (272 or 69.9%). Also, a majority (273 or 70.2%) continued betting until they had no money. A similar number (273 or 70.2%) borrowed money from fellow gamblers even when they realized that they were losing, while others (272 or 69.9%) were even ready to sell their belongings or family assets as betting securities to fellow gamblers when they realized that they were losing a bet. These responses are a clear indication that a majority of respondents did whatever they could to continue betting; a prerequisite for gambling addiction in most societies with a culture of betting problems (Abott, 2017; Roberts et al., 2016).

D. Risk Factors of Gambling Among University Students

Objective four explored the risk factors of betting associated with violent behaviour among university students in Lang'ata Constituency, Nairobi County, Kenya. Table III provides One Way ANOVA for the risk factors of gambling addiction.

Risk Factors	Pearson Correlation (r)	P-value	Risk Factors	Pearson Correlation (r)
Gender	.204**	.000	Gender	.204**
Age	-.297**	.000	Age	-.297**
University of study	.481**	.000	University of study	.481**
Level of Academic Pursuance	-.233**	.000	Level of Academic Pursuance	-.233**
Existence of Betting Policies	.144**	.004	Existence of Betting Policies	.144**
**. Correlation is significant at the 0.01 level (2-tailed).				
*. Correlation is significant at the 0.05 level (2-tailed).				

As shown in Table III, gender was a statistically significant construct of risk factors of gambling ($r = .204^{**}$; $p = .000$), at 0.01 level of significance. Similarly, age was a statistically significant construct of risk factors of gambling ($r = -.297^{**}$; $p = .000$), at 0.01 level of significance. Moreover, the university of the study was a statistically significant construct of risk factors of gambling ($r = .481^{**}$; $p = .000$), at 0.01 level of significance. Also, the level of academic pursuance was a statistically significant construct of risk factors of gambling ($r = -.233^{**}$; $p = .000$), at 0.01 level of significance. Lastly, betting policies or services was a statistically significant construct of risk factors of gambling ($r = .144^{**}$; $p = .004$), at 0.01 level of significance. All the identified five constructs of risk factors of gambling were statistically significant factors related to the relationship between gambling addiction and violent behaviour among university students in Lang'ata constituency, Nairobi County.

E. Prevalence of Violent Behaviour Among University Students

The objective sought to determine the prevalence of violent behaviour among university students in Lang'ata Constituency, Nairobi County, Kenya. The results indicate that a majority (224 or 57.6%) of participants strongly agreed that when betting they walked away from a fight to avoid violent behaviour while a minority (72 or 18.5%) strongly disagreed with the proposition. On whether while betting the university students were constantly aware that they could violently respond to provocations, most respondents were

indifferent to this proposition. Moreover, a majority (257 or 66.1%) of respondents disagreed with the proposition that when betting and they experienced violent behaviour, they returned it with violence. On whether when betting and someone teased the gamblers, the students did get violent to stop them, a majority (244 or 62.7%) of the respondents disagreed with the statement. Moreover, the participants were indifferent to the statement that when betting they could easily control themselves and others not to indulge in violent behaviour. Again, the participants were indifferent to the assertion that when betting they refused to fight and they were not afraid of their friends tagging them as cowards. Finally, a majority (259 or 66.6%) of the respondents were in disagreement that they always carried a knife, a whip, or a club when betting. Looking at the responses provided, it is evident that descriptive statistics could not provide sufficient explanation for violent behaviour among university students who engage in betting. It is for this reason that a correlational analysis could provide correlation coefficients which are more informative on the topic of the study.

F. Correlation Analysis

Data was collected to establish whether there was multicollinearity among the explanatory variables that explained correlations between gambling addiction and violent behaviour among university students in Lang'ata constituency, Nairobi County. Karl Pearson's Coefficient of Correlations (r) was computed and the outcomes are illustrated in Table IV.

		Table IV: Correlation Analysis				
		VB	ToG	PoG	RFG	CoS
VB	Pearson Correlation	1				
	N	389				
ToG	Pearson Correlation	.589**	1			
	Sig. (2-tailed)	.040				
	N	389	389			
PoG	Pearson Correlation	-.265*	.505	1		
	Sig. (2-tailed)	.046	.867			
	N	389	389	389		
RFG	Pearson Correlation	.214*	.046	-.124	1	
	Sig. (2-tailed)	.025	.363	.142		
	N	389	389	389	389	
CoS	Pearson Correlation	.705**	.005	-.028	.008	1
	Sig. (2-tailed)	.037	.918	.586	.874	
	N	389	389	389	389	389

** .Correlation is significant at the 0.01 level (2-tailed).

*.Correlation is significant at the 0.05 level (2-tailed).

VB= Violent Behaviour; ToG= Types of Gambling; PoG= Prevalence of Gambling; RFG= Risk Factors of Gambling; CoS= Coping Strategies

As shown in Table IV, there was a statistically significant relationship between Types of Gambling (ToG) and Violent Behaviour (VB) among university students ($r = 0.589$; $p = .040$) since the p-value of .040 is less than 0.05 level of significance. There was also a statistically significant relationship between Prevalence of Gambling (PoG) and Violent Behaviour (VB) among university students ($r = .265$; $p = .046$) since the p-value of .046 is less than 0.05 level of significance. Moreover, there was a statistically significant relationship between Risk Factors of Gambling (RFG) and Violent Behaviour (VB) among university students ($r = .214$; $p = .025$) since the p-value of .025 is less than 0.05 level of significance. There was also a statistically significant relationship between Coping Strategies (CoS) and Violent Behaviour (VB) among university students ($r = .705$; $p = .037$) since the p-value of .037 is less than 0.05 level of significance. Therefore, all independent variables (Types of Gambling; Prevalence of gambling; Risk factors of gambling; and Coping Strategies) had a statistically significant relationship with the dependent variable (Violent Behaviour) of the study.

G. Analysis of Variance (ANOVA)

The Coefficient of determination (R^2) was used in determining the proportion of violent behaviour among university students that was explained by the independent variables of the study. The results show that there was a positive general correlation ($R = .858$) between all the independent variables and the dependent variable of the study. The coefficient of determination ($R\text{-Square} = .737$) shows that the explanatory variables of the study managed to explain 73.7% variation in violent behaviour, as a result of gambling, among the university students. The remaining (26.3%) variation in violent behaviour could be attributed to other factors outside the scope of this study. The study further examined the significance of the following regression model. Analysis of variance (ANOVA) was used to test the significance of the regression model and the results to this effect were as shown in Table V. $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \mu_i$

Model	Sum of Squares	Df	Mean Square	F	Sig.	
1	Regression	84.262	4	21.0655	480.847	.000 ^b
	Residual	16.837	384	.0438		
	Total	101.099	388			

a. Dependent Variable: Violent Behaviour (VB)
 b. Predictors: (Constant) Types of Gambling (ToG), Prevalence of Gambling (PoG), Coping Strategies (CoS), Risk Factors of Gambling (RFG)

As shown in Table V, the model linking the studied explanatory variables to the dependent variable was statistically significant ($F = 480.847$; $p = 0.000$), at 0.05 level of significance.

H. Regression Analysis

The results in Table VI outlines the regression coefficients (β_n) that illustrate the extent to which the analysed explanatory variables translated to variation in violent behaviour among university students in Lang'ata constituency, Kenya.

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	
	B	Std. Error	Beta			
1	(Constant)	2.754	.205		13.434	.000
	Types of Gambling	-.266	.124	-.127	-2.151	.039
	Prevalence of Gambling	.124	.117	.063	1.063	.028
	Risk Factors of Gambling	.174	.070	.128	2.491	.013
	Coping Strategies	-.153	.294	-.009	-.180	.027

a. Dependent Variable: Prevalence of Violent Behaviour

The regression model is interpreted using the results indicated in Table VI.

The (β_n) substituted with numerical values:

$$Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \mu_i$$

The substituted model therefore becomes:

$$VB = 2.754 + 0.266ToG + 0.124PoG + 0.174RFG + 0.153CoS$$

The resulting regression model indicated that for every unit change in violent behaviour among university students as a result of betting to be effected, there ought to be 0.266 unit change in types of gambling, 0.124 unit change in prevalence of gambling, 0.174 unit change in risk factors of gambling and 0.153 unit change in coping strategies in gambling while holding other factors, not addressed by this study, constant ($\beta_0 = 2.754$). The optimal model of the study therefore remained as: $VB = 2.754 + 0.266ToG + 0.124PoG + 0.174RFG + 0.153CoS$.

I. Hypothesis Testing

Hypothesis testing yielded a t-statistic score of 0.546 and a p-value of 0.585, at 0.05 level of significance. Since a p-value of $0.585 > 0.05$ level of significance, the null hypothesis, 'there is no relationship between gambling addiction and violent behaviour among university students in Lang'ata Constituency' was rejected. The study concluded that there is a relationship between gambling addiction and violent behaviour among university students in Lang'ata Constituency, at 95% level of significance.

IV. DISCUSSION

This study has shown that online football betting has overtaken the highly overrated traditional gambling activities like casinos, lotteries et cetera. These findings, however, contradict a study by Petry et al. (2014) which found that traditional gambling activities like lotteries, casinos, cards, and sporting were the most common types of betting. The high number of university students who participated in online football gambling could also be attributed to perceptions that it was fairer than all other types of gambling activities. The assertion is supported in a study by Ssewanyana and Bitanirwe (2018) which established that young people in townships in South Africa participated in gambling activities perceived to be fairer as opposed to lotteries and casinos which were perceived to be rigged and unfair.

Despite different respondents having a varying number of times in which they got involved in betting, it was evident that they involved themselves in several betting activities at multiple times. The finding is confirmed by earlier studies by Koross (2016) and Ssewanyana and Bitanirwe (2018) which established that there was a high prevalence of betting among young people in Kenya. Similarly, the observation resonates with the finding by Petry et al. (2014) which established that the prevalence of gambling among university students in the developing world was increasing at a higher rate while that in the developed world appeared to have reached the ceiling point.

There was a statistically significant relationship between risk factors of gambling and violent behaviour among university students ($r = .214$; $p = .025$), at 0.05 level of significance. These findings were also confirmed by earlier studies (Koross, 2016; Rossen et al., 2015; Blinn-Pike et al., 2007) which found that gender, age, and level of education were significant factors affecting gambling behaviour. Again, these results are consistent with earlier studies (Abbott, 2017; Ssewanyana & Bitanirwe, 2018) which highlighted the risk factors of gambling and precursory indicators of violent behaviour.

It was clear that the majority of respondents were not able to cope or manage their gambling habits. This observation is a clear indication that a majority of the studied university students did whatever was at their disposal to continue betting; a prerequisite for gambling addiction in most societies with the culture betting problems (Abott, 2017; Roberts et al., 2016). This study established that there was a statistically significant relationship between coping strategies and violent behaviour among university students ($r = .705$; $p = .037$), at 0.05 level of significance. These results are supported by a study by Abbott (2017) which found that cognitive strategies aimed at counteracting the underlying irrational beliefs and attitudes about gambling that initiate and nurture undesirable behaviour may be used by problem gamblers. The failure to choose to stop gambling, even when one anticipates unfavourable outcomes, is what Kenny Rogers, in his track, *The Gambler*, advises as to the central characteristic of a

professional gambler, 'son I have made a life out of reading people faces... you should know when to walk and when to runaway' (Schlitz, 1976). The findings of this study are also consistent with a study by Ssewanyana and Bitanirwe (2018) which underscored that only a few gamblers would admit that gambling is addictive behaviour. Surely, how else would one explain why someone would continue betting even when one certainly knows that he or she is going to lose the bet?

The study established that there was a probability of those interviewed to have been involved in some kind of violent behaviour in the course of their betting lives. This assertion is consistent with the observation by Koross (2016) who established that 26% of the respondents had, at one point or another, contemplated suicide as a result of indulgence in the game or activity of gambling. For example, when one student from Kabianga University committed suicide after losing a bet (Koross, 2016), such an incident of violence may be incomparable to other forms of violence like carrying knives, whips, or guns because they do not necessarily culminate to loss of life.

The initial hypothesis that there is no relationship between gambling addiction and violent behaviour among university students in Lang'ata Constituency was rejected. This study, therefore, adopted the alternative hypothesis that 'there is a relationship between gambling addiction and violent behaviour among university students'. The resulting hypothesis resonates with earlier studies (Abbott, 2017; Ssewanyana & Bitanirwe, 2018) which found that gambling behaviour significantly affected the level of engagement in violent behaviour.

V. CONCLUSIONS AND RECOMMENDATIONS

The perception of online football gambling as fairer than other traditional gambling activities made more university students participate in it than the other betting activities. The gamblers involved themselves in several betting activities, multiple times, as well as the amounts of monies required for betting activities increased so did the number of people involved in the betting activity decrease.

The results of the study confirm that most participants could be classified as 'serious social gamblers' because they could control their betting habits. However, the surveyed university students were also less likely to engage in any form of violent behaviour because they refrained from carrying objects which may be used as weapons after unfavourable betting outcomes. On the contrary, most respondents would draw weapons when conflicts arose during betting hence they most likely did whatever they could to continue betting.

It was also established that the studied risk factors of gambling were significant precursory indicators of violent behaviour. It was also found that the explanatory variables of the study considerably explained variation in violent behaviour among university students. The study found that there was a statistically significant relationship between gambling

addiction and violent behaviour among university students in Lang'ata constituency, Nairobi.

It was recommended that the government should regulate the betting industry by bringing policies that favour very high-stake gambling activities as opposed to the low-stake betting to limit the low-income earners like the university students. All betting stakeholders must devise feasible programmes for assisting young people to earn some income to economically sustain themselves, instead of letting them drift to the whim of gambling chances.

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REFERENCES

- [1]. Abbott, M. (2017). *The epidemiology and impact of gambling disorder and other gambling-related harm. Discussion paper*. Geneva: World Health Organization.
- [2]. Barnes, G. M., Welte, J. W., Hoffman, J. H., & Tidwell, M. C. O. (2010). Comparisons of gambling and alcohol use among college students and non-college young people in the United States. *Journal of American College Health, 58*(5), 443-452.
- [3]. Blinn-Pike, L., Worthy, S., & Jonkman, J. (2007). Disordered Gambling among college students: A meta-analytic synthesis. *Journal of Gambling Studies, 23*(2), 175-183. doi:10.1007/s10899-006-9036-2
- [4]. Dahlberg, L. L., Toal, S. B., Swann, M. H., & Behrens, C. B. (2005). *Measuring Violence-Related Attitudes, Behaviours and Influences Among Youths: A Compendium Assessment Tools* (2nd ed). Atlanta: National Centre For Injury Prevention and Control.
- [5]. James, R., J. E. J., O'Malley, C., & Tunney, R. J. T. (2017). Understanding the psychology of mobile gambling: A behavioural synthesis. *British Journal of Psychology, 108*, 608-62. doi:10.1111/bjop.1222
- [6]. Kam, S. M., Wong, I. L. K. W., Tong, S. E. M., Cheong, U. D. K., & Chan, C. H. W. (2017). Gambling Behaviour Among Macau College and University Students. *Asian Journal of Gambling Issues and Public Health, 7*(2), 1-12. doi:10.1186/s40405-017-0022-7
- [7]. Koross, R. (2016). University Students Gambling: Examining the Effects of Betting on Kenyan University Students' Behaviour. *International Journal of Liberal Arts and Social Sciences, 4*(8), 57-66. Retrieved from www.ijlass.org.
- [8]. Moore, S. M., Thomas, A. C., Kale, S., Spence, M., Zlatevska, N., & Staiger, P. K. (2013). Problem gambling among international and domestic university students in Australia: Who is at risk? *Journal of Gambling Studies, 29*(2), 217-230.
- [9]. Mugenda, O. M., & Mugenda, A. G. (2003). *Research Methods: Quantitative and Qualitative Approaches*. Nairobi: Acts Press.
- [10]. Rasanen, T., Lintonen, T., Raisamo, S., Rimpela, A., & Konu, A. (2015). Gambling, Violent Behaviour and attitudes towards violence among adolescent gamblers in Finland. *Nordic Studies on Alcohol and Drugs, 32*(5), 465-477.
- [11]. Roberts, A., Coid, J., King, R., Murphy, R., Turner, J., Bowden-Jones, H., Landon, J. (2016). Gambling and violence in a nationally representative sample of UK men. *Society for the study of addiction research report, 111*, 2196-2207. doi: 10.1111/add.13522
- [12]. Rossen, F. V., Clark, T., Denny, S. J., Fleming, T. M., Preirish-John, R., Robinson, E., & Lucassen, M. F. G. (2015). Unhealthy Gambling Among New Zealand Secondary School Students: An Exploration of Risk and Protective Factors. *International Journal of Mental Health Addiction, 14*, 95-110. doi: 10.1007/s11469-015-9562-1
- [13]. Petry N. M., Blanco, C., Auriacombe, M., Borges, G., Bucholz, K., Crowley, T. J. & O'Brien, C. (2014). An overview of and rationale for changes proposed for pathological gambling in DSM-5. *Journal of Gambling Studies, 30*(2), 493-502. <https://doi.org/10.1007/s10899-013-9370-0>
- [14]. Schlitz, D. (1976). *The Gambler*. [Recorded by Kenny Rogers]. The Gambler [Record]. USA: United Artists Record. (December 1978).
- [15]. Schwartz, D. G. (2007). *Roll The Bones: The History of Gambling* (2nd ed.). New York, NY: Gotham Books.
- [16]. Slavin, M., Pilver, C. E., Hoff, R. A., Krishnan-Sarin, S., Steinberg, M. A., Rugle, L., & Petenza, M. N. (2013). Serious physical fighting and gambling-related attitudes and behaviours in adolescents. *Journal of Behavioural Addiction, 2*(3), 167-178.
- [17]. Ssewanyana, D., & Bitanirwe, B. (2018). Problem Gambling among Young People in Sub-Saharan Africa. *Perspective, 6*(3), 1-6. doi: 10.3389/fpubh.2018.00023
- [18]. The American Psychiatry Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.). London: American Psychiatry Association.
- [19]. Volberg, R., Gupta, R., Griffiths, M., Olason, D., & Delfabbro, P. (2010). An international perspective on youth gambling prevalence studies. *International Journal of Adolescent Medicine and Health, 22*(1), 3 -38.
- [20]. Whelan, J. & Steenbergh, T., & Meyers, A. (2007). *Problem and pathological gambling. Advances in psychotherapy. Evidence-based practice*. Cambridge: Hogrefe Publisher.