# THE ROLES OF NICOTINE DEPENDENCE AND DEMOGRAPHIC VARIABLES ON INTERNET GAMBLING ADDICTION AMONG YOUTHS IN A NIGERIAN CITY

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## **ABSTRACT**

This study investigated the relationship among nicotine dependence, demographic variables and Internet gambling addiction. It was a survey, utilizing ex-post facto design. A total of 291 youths (156 males and 135 females) were purposively selected from major joints and sit-outs in the Metropolis of the ancient city of Ikot Ekpene. Simple Screening Instrument for Internet Gambling Test Adopted from South Oaks Gambling Screen (Gainsbury & Blaszczynski, 2014) and The Nicotine Dependence Syndrome Scale (Shiffman, Waters & Hickcox, 2004) were used to collect data. Pearson r results [r= .71; df = 289; p<.05] showed that the higher the nicotine dependence the higher the Internet gambling addiction among youths selected. The results further showed that demographic factors jointly predicted Internet gambling addiction among youths [R=0.356; R²=.031; F(5, 189)=.34, p<.05] accounting for 31% of the variance observed. It was concluded that a good understanding of the relationship between nicotine intake and Internet gambling is important for developing regulatory initiatives, awareness, and prevention programmes for responsible Internet use.

**Keywords**: Nicotine dependence, demographic variables, Internet gambling addiction

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## INTRODUCTION

A number of problematic issues have been associated with the Internet use. Some issues include underage accesses, increased addiction, and escalating fraudulent activities. The Internet has remained a major universal tool of exploration that is commonly used among people of all ages, especially the youths. The influence of technology in the field of gambling innovation continues to grow at a rapid pace (Schwartz, 2006). Public and commercial use of the Internet began in early 1990s and soon became apparent that it could also be a medium used for gambling (Palmer, 2014) and necessitated coaching (Stewart, Palmer, Wilkin, & Kerrin, 2008). Internet gambling refers to the range of wagering and gaming activities offered through Internet-enabled devices, including computers, mobile and smart phones, tablets, and digital television sets. The ability for large wagers, continuous gambling, rapid feedback, and instant, easy access to a vast number of betting options have resulted in concerns that Internet gambling could contribute to excessive gambling (Petry & Weinstock, 2007).

New forms of gambling and new sites are added each year. Moreover, the number of peripheral or supporting sites is also growing, including gambling website portals, information pages containing odds and payout figures, and pages for sports handicappers (Petry, 2003).

Experts have given the criteria for Internet addiction to include: excessive mental effort on the internet, spending longer time than originally intended, continuously waiting for the next connection time, feeling more comfortable contacting people over the internet than talking

face to face, feeling a continuous desire for checking emails and social networking sites for something new, staying connected, trying to give or spread the mail address, chat room names, chat sites and social networking sites to everybody, continuously feeling speechless and tired because of staying awake and connected to the internet until late, inability to stop or reduce amount of time spent online, telling lies to family members, therapist or others to be able to stay connected to the internet, and having affection changes in the duration of internet connection (Öztürk, Eraslan, Genç & Kalyoncu, 2007; Young, 1999). Possible reinforcements leading to Internet gambling have been listed to include: convenience, accessibility, greater value for money including payout rates and bonuses, the speed and ease of online gambling, greater number of betting products and options, and the physical comfort of being able to gamble from home (Ellery, Stewart, & Loba, 2005).

The prevalence of internet gambling in the general population tends to be increasing by the day (Derevensky, Gupta, & McBride, 2006; Gambling Commission, 2006; Sproston, Erens, & Orford, 2000). Experts believe that there is still insufficient knowledge about Internet gambling, including the characteristics of gamblers, the social and psychological dynamics of Internet gambling behaviour, the potential link between Internet gambling and problem gambling, and the most appropriate regulatory and legislative stance to take with respect to Internet gambling (Romney, 1995 cited in Wood & Williams, 2009). Literature on disordered computer use has focused on excessive use of the Internet (Griffiths, 1995). Internet gambling represents a fundamental shift in

how consumers engage in gambling, and concerns have been expressed by various stakeholders about these changes. These concerns have led to recommendations for Internet gambling to be prohibited, or conversely regulated, in an attempt to institute policies to minimize harms (Griffiths, Wood, & Parke, 2006). Others have considered legalization in the belief that such legalization will result in increased security by enforcing personal identification and legal conduct (Schwartz, 2006).

Gambling has been considered a socially deviant or immoral behaviour in some cultures and throughout history. Internet Gambling Addiction has been listed in Section 3 of the DSM-V but as a condition warranting more clinical research and experience before it might be considered for inclusion in the main book as a formal disorder (American Psychiatric Association, 2013; Korn & Shaffer, 1999). Clinical psychologists and other experts in related fields have been researching for the real characteristics of this phenomenon and to establish a uniform definition which may be used in the DSM (Block, 2008). The DSM-V includes a new category of Non-Substance Behavioural Addiction within the substance addictions category. Meanwhile, treatment or intervention packages have been developed for persons whose conditions meet the criteria for Internet addiction (Shaffer, 1996).

Internet gambling and problem gambling have been associated with some psychological factors such as personality traits (Zuckerman, 2007). Ineme, Ineme, Akpabio & Osinowo (2017) found a significant positive relationship between depression and Internet addiction among students of a Nigerian university. Pathological and recreational gambling are

associated with elevated proportions of nicotine dependence, and in clinical samples, pathological tobacco smoking has been associated with increased gambling and more frequent psychiatric problems (Fong, Campos, Brecht, Davis, Marco, Pecanha, & Rosenthal, 2011). Previous study tends to suggest that multiple disorders are linked (Grant, Desai, & Potenza, 2009). Gambling problems often co-occur with substance abuse and nicotine dependence (Lorains, Cowlishaw, & Thomas, 2011). Regular use of nicotinecontaining products has been implicated in impulsivity (Higgins & Conner, 2003). It has been reported that adults who gamble are more likely to report smoking than adults who do not gamble (Black, 2013). While fewer studies have explored the relationship between youthful gambling and smoking, there is evidence for similar patterns in adolescents and adults, with adolescents who gamble reporting higher smoking rates (Jacobs, 2000; Kong, Tsai, Pilver, Tan, Hoff, Cavallo, & Potenza, 2013).

Studies in treatment samples of pathological gamblers also have shown comorbid substance use disorders (Maccallum & Blaszczynski, 2002). A review found that youths who reported serious gambling-related problems used tobacco at twice the rate of their non-problem gambling counterparts (Jacobs, 2000). Petry and Oncken (2002) reported a strong co-occurrence of gambling and substance use in a sample of young people. However, what is not very clear is the direct of the relationship, that is, whether it is smoking that leads to gambling or vice versa.

Demographic factors have also been implicated in Internet gambling behaviour. Wiber & Potenza (2006) established significant influence of gender and peer

group on gambling behaviour but suggested more research be carried out for more reliable results. Ineme, et al (2017) reported that demographic factors (age, sex, employment status, family type, marital status, and year of study) jointly predicted Internet addiction among student samples. The consistent relationship found between problematic Internet gambling and young age suggests that this population is particularly vulnerable to harms related to this problem, and use of Internet gambling among young males is an area that warrants further attention in terms of research as well as harm minimization (Lesieur & Blume, 1987). Consistently, it has been found that males are more likely to be involved in gambling than females (Chiu & Storm, 2010; Clark & Walker, 2009; Ellenbogen, Derevensky & Gupta, 2007; Gambling Commission, 2010; Olason & Gretarsson, 2009; Splevins, 2010). In different parts of the world, age has also been implicated in problem gambling with adolescents and young adults being more involved (Delfabbro, Lambos, King, & Puglis. 2009; Delfabbro, Lahn & Grabosky, 2005; Derevensky, Dickson, & Gupta, 2008; Molde, Pallesen, Bartone, Hystad, & Johnsen, 2009; Wickwire, Whelan, Meyers, McCausland, Luellen, & Studaway, 2008). It is reported that gambling increased considerably between the ages of 15 and 16 years and then remains relatively stable (Olason & Gretarsson, 2009). Reviews have consistently concluded that young males (18-30 years) are overrepresented amongst problem gamblers, while unemployment, divorced and single marital status, reliance on social welfare, low income, low education, and ethnic minority status have also been correlated (Delfabbro, King, & Griffiths 2012; Williams, Volberg, & Stevens,

2012). McCormack (2014) suggested that gambling online may be a potential risk factor in females due to enhanced feelings of safety over land-based venues. Some studies have linked higher rates of problem gambling to lower levels of educational attainment (Sproston, Hing & Palankay, 2012; Wardle & Griffiths, 2011; Young, Abu-Duhou. Barnes, Creed, Morris, Stevens, & Tyler, 2006). Kellie (2014) found that 16.6 per cent of people seeking treatment for gambling problems were unemployed and looking for work, compared with 3.7 per cent of the general population. Wickwire, Whelan, Meyers, McCausland, Luellen, & Studaway 2008) found that students over 21 years of age were more likely to gamble than younger students. Wood & Williams (2009) found that the most common marital status of Canadian Internet gamblers was being single and this marital category was statistically predictive of Internet gambling. Pierce, Wentzel, and Loughnan (1997) reported different sexes engaged in gambling for different reasons; women engaged in problem gambling to fight off stress and while men engage in gambling to make extra money.

However, there appears to be contrasting findings concerning the relationship between demographic factors and Internet gambling addiction with specific reference to age, educational level, and socioeconomic status (Gainsbury, Russell, Wood, Hing, & Blaszczynski, 2011; Gainsbury, Russell, Hing, Wood, Lubman, & Blaszczynski, 2015 versus Jiménez-Murcia, Stinchfield. Fernández-Aranda, Santamaría, Penelo, Granero, et al, 2011) thus warranting this study.

This study was guided by the Cognitive-Behavioural Theory (CBT) which holds that behaviour is initiated, maintained (or discontinued) based on principles of learning (such as imitation, observation, schedules of reinforcement), and cognition (how the individual attends to interpret and draw conclusions about events that go on around him or her) (Sharpe & Tarrier, 1993). It further explains that gambling behaviour is acquired through operant and classical conditionings and can be reinforced on a partial and variable reinforcement schedule, through a combination of financial rewards and increased physiological arousal levels. Using operant conditioning (which involved interaction with the environment), the availability of the substance and the gambling centres in the environment may have led to the onset of the substance use/abuse and the gambling behaviour. But with the principles of classical conditioning, gambling behaviour would become maintained by pairing the gambling behaviour with real or perceived financial rewards obtained (which served as reinforcement to the gambling behaviour). The reward would further get the brain (pleasure centre) involved each there is real or perceived win, thus making the individual to repeat the gambling behaviour. Repeating the behaviour would leads to addiction.

The problem warranting this study is the fact that there are conflicting findings in the relationship between nicotine intake and Internet gambling. Secondly, a vast majority of the studies have shown conflicting results concerning the relationship between demographic factors and Internet gambling addiction. Also, most of the studies are foreign leading paucity of indigenous literature in this area. This study therefore examines the relationship among nicotine dependence, demographic variables, and Internet gambling among youths in Ikot Ekpene

Metropolis-an ancient city in South South Nigeria.

Consequently, it was hypothesized that:

- Nicotine dependence will have a significant positive relationship with Internet gambling addiction among youths in Ikot Ekpene Metropolis.
- 2. Demographic variables (age, gender, marital status, employment status and academic qualification) will independently and jointly predict internet gambling addiction among youths in Ikot Ekpene Metropolis.

## **METHOD**

**Design:** The study was a survey utilizing an ex-post facto design.

Setting: The study was conducted in Metropolis of the ancient city of Ikot Ekpene also known as The Raffia City. Ikot Ekpene Local Government Area of Akwa Ibom State is a historic ancient town in South-South Nigeria. It is the political and cultural capital of the Annang ethnic group in Nigeria. Ikot Ekpene is located between latitudes 5° 10` and 5° 30` North and Iongitudes 7° 30' and 7° 45' East. It lies on the North-Western flank of Akwa Ibom State. Its position makes it one of the economic gateways to Akwa Ibom State. It became a premier model local government administration in 1951. Ikot Ekpene is the headquarters of Ikot Ekpene Senatorial District that has altogether 10 Local Government Areas. The population of Ikot Ekepene had a population of 143, 077 (Males = 75,548, Females = 67,529) (National Population Commission, 2006).

**Sampling Technique:** Purposive sampling technique was used to select participants

for the study; only young people (aged between 14 and 30) who confessed to using nicotine participated in the study. Those below 14 years and those above 30 were not allowed to participate in the study.

Participants: Two hundred and ninety one (291) youths (156 males and 135 females) participated in the study. They were purposively selected from major joints and sitouts in Ikot Ekpene Metropolis. The ages of the participants ranged between 14 and 30 years old and their mean age was 23.77 years. The educational qualifications ranged from First School Leaving Certificate (FSLC) to Doctorate Degree (Ph.D).

**Instrument:** The study made use of a structured questionnaire with three sections

**Section A:** This section contained demographic variables, namely, age, gender, marital status, employment status, and academic qualification.

Section B: The Index of Internet Gambling Test adopted from South Oaks Gambling Screen by Gainsbury & Blaszczynski (2014). It is a 15-item scale designed to measure Internet gambling perpetuation among the youths. The items on the scale are rated on a 5-point Likert-type format of 1-5. All items are indirectly scored. The lowest possible score is 0 while the highest possible score is 75. For the purpose of this study, a pilot study was conducted to revalidate this instrument using 30 participants. Item by Item analysis revealed that all items in the scale loaded up to .30. They were all retained and used for the main study. A Cronbach's Alpha Coefficient of 0.80 was also obtained. The norm of the instrument was 37.5, established at two standard deviations above the mean. Scores of 37.5 and above indicated high Internet gambling addiction. Scores below the norm indicated low Internet gambling addiction. Therefore, the higher the score, the higher the Internet gambling addiction.

Section C: Nicotine Dependence Syndrome Scale by Shiffman, Waters & Hickcox (2004). It is 19-item scale rated on a 5-point Likert-type format of 1-5. It was used to measure nicotine among participants. All items were directly scored. The least possible score is 0 while the highest possible score is 95. For the purpose of this study a pilot study was conducted to revalidate the instrument and a Cronbach's Alpha Coefficient of 0.76 was obtained. The norm of the instrument is 47.5 established at two standard deviations above the mean. Scores of 47.5 and above indicated nicotine dependence behaviour. Scores below 47.5 indicated nonnicotine dependent behaviour.

**Procedure:** The Department of Psychology, University of Uyo, Nigeria provided the reference. The study was conducted in two phases-the pilot study and the main study. During the pilot study, the initial instruments were presented to two clinical psychologists for face/content validity. Forty (40) copies were then administered to youths at a viewing centre and a betting centre at Ikot Ekpene town but 30 were correctly filled and retrieved. Their responses were analyzed using SPSS Version 20. All the items were found reliable and used for the second phase. For the second phase (main study), a total of 315 copies of the valid and reliable instruments were issued to respondents at 4 places but 291 were correctly completed and used for the study. They were: 83 respondents at Ikot Ekpene plaza, 76 at Raffia City Lounge-Umuahia Road,

81 at Ikot Ekpene New Stadium, and 51 at Ikot Ekpene Cultural Centre. A total of 4 got missing while 12 were not correctly filled. In both phases, permissions of the managers of the centres were sought and obtained, the participants were contacted individually, the purpose of the study was explained to them, and the instruments were administered to volunteers. They were informed of their freedom to withdraw from the study at any point. Administration of the instruments lasted for eleven days during the main study.

**Statistics:** Pearson r correlation was used to test for the first hypothesis while multiple regression was used to test for the second hypothesis.

## **RESULTS**

Results presented in Table 1 reveal that younger youths [aged 14-22 years]

constituted a higher number of participants (Internet gamblers) [N = 201] than older youths (aged 23-30 years) [N = 90]. Also, the young participants reported a higher mean score of Internet gambling addiction than the older ones  $[\overline{X} = 60.20]$ vs  $\overline{X}$  = 57.54]. Male participants had a higher mean score of Internet gambling addiction than their female counterparts  $[\overline{X} = 54.58 \text{ vs } \overline{X} = 52.61 \text{ respectively}]$ . This implies that male participants reported higher level of Internet gambling addiction than their female counterparts. Furthermore, Table 1 reveal that single participants had a higher mean score of Internet gambling addiction than married participants  $[\overline{X} = 54.22 \text{ vs } \overline{X} = 49.88]$ respectively]. This implies that single participants reported higher level of Internet gambling addiction than married participants. Table 1 further reveal that unemployed participants had a higher mean score of Internet gambling addiction than employed participants  $[\overline{X} = 53.37 \text{ vs}]$ 

**Table 1.** The predictive roles of nicotine dependence and demographic variables on Internet gambling behaviour

Variables	N	$\overline{X}$	SD
Age	201	60.20	19.20
Young	90	57.54	18.41
Old			
Gender	188	54.58	18.95
Male	103	52.61	8.51
Female			
Marital status	230	54.22	14.16
Single	61	49.88	12.88
Married			
Employment status	163	53.26	11.31
Employed	128	53.37	15.28
Unemployed			
Acad. Qualification	214	57.00	11.07
OND and below	77	52.66	12.48
B. Sc and above			
Nicotine dependent	163	55.04	15.89
Dependent	128	51.11	08.13
Non-dependent			

 $\overline{X}$  = 53.26 respectively]. This implies that unemployed youths reported higher Internet gambling addiction level than employed youths. In addition, participants with OND and below had a higher mean score than participants with B.Sc and below  $[\overline{X} = 57.00 \text{ and } \overline{X} = 52.66 \text{ respec-}$ tively]. This means that participants with lower academic qualifications (OND and below) reported a higher level of Internet gambling addiction than participants with higher academic qualifications (B.Sc and above). Table 1 also reveal that participants who were nicotine dependents had a higher mean score of Internet addiction than those were non-dependents  $[\overline{X} = 55.04 \text{ vs } 51.10 \text{ respectively}]$ . This implies that participants who were nicotine dependents reported higher levels of Internet gambling addiction than participants who were non-dependents.

The hypothesis which stated that nicotine dependence will have a significant

positive relationship with Internet gambling addiction among youths in Ikot Ekpene Metropolis was tested using Pearson Product Moment Correlation and summary of results is presented on Table 2.

Results presented in Table 2 reveal a significant positive relationship between nicotine dependence and Internet gambling addiction among youths in Ikot Ekpene metropolis [r = .71; df = 289; p < .05]. This implies that nicotine dependence predicted Internet gambling behaviour among youths in Ikot Ekpene metropolis; that is, the higher the nicotine dependence the higher the internet addiction. Therefore the hypothesis which stated that nicotine dependence will have a significant positive relationship with Internet gambling addiction among youths in Ikot Ekpene metropolis was accepted.

The second hypothesis stated that demographic variables (age, gender, marital status, employment status, and

**Table 2.** Pearson Product Moment Correlation Summary table showing the relationship nicotine dependence and Internet gambling addiction among youths in Ikot Ekpene metropolis.

	Nico. Depend.	N		Std	r-cal	Р	Remark
	Dependent	163	55.04	15.89			
Inter. Gam.					.71	<.05	Sig.
	Non-dependent	128	51.11	08.13			

Note: Nico. Depend. = Nicotine dependence; Inter. Gam. = Internet gambling

**Table 3.** Summary of Multiple Regression Analysis showing the predictive role of demographic variables on Internet gambling addiction among youths in Ikot Ekpene metropolis

Predictors	β	t	Р	R	R <sup>2</sup>	F	Р
Age	373	-2.961	<.05				
Gender	078	082	>.05				
Marital status	2.66	2.384	<.05	0.356	0.031	.34	<.05
Emply. Status	.326	.356	>.05				
Acad. qual.	488	.556	<.05				

**Coding:** age = old (1) and young (2), gender = male (1) and female (2), marital status = singles (1) and married (2) employment status = employed (1) and unemployed (2), academic qualification = high (1) and low (2)

academic qualification) will independently and jointly predict Internet gambling addiction among youths in Ikot Ekpene Metropolis. This was tested using multiple regression and summary of results is presented in Table 3.

Results presented in Table 3 reveal that demographic variables (age, gender, marital status, employment status, and academic qualification) yielded a coefficient of multiple regression (R) of 0.356 and a multiple correlation square (R<sup>2</sup>) of .031. This shows that demographic variables (age, gender, marital status, employment status, and academic qualification) jointly predicted Internet gambling addiction among youths, accounting for 31% of the variance observed  $[R = 0.356, R^2 = .031, (F = (5,294) = 0.34)]$ p < .05]. Table 3 further indicates that age showed a significant negative prediction of Internet gambling addiction among the youths studied [ $\beta = -.37$ ; t = -2.96; p < .05]. The result indicates that participants who were younger reported higher level of Internet gambling addiction than those were older. Furthermore, it is shown that gender did not show a significant prediction on Internet gambling addiction among youths sampled [ $\beta = -.78$ ; t = -.82; p > .05]. Marital status showed a significant positive prediction of Internet gambling addiction among youths studied [ $\beta$  = 2.665; t = 2.384; p < .05]; implying that the singles reported higher Internet gambling addiction than those who were married. Employment status [ $\beta$  = .326; t = .356; p > .05] did not show significant prediction of Internet gambling addiction among the youths sampled but academic qualification [ $\beta$  = -.49; t = -.56; p < .05] indicated that the youths with lower academic qualifications (FLSC to OND) reported higher Internet gambling addiction than those higher academic qualifications (HND/BSc and above).

## DISCUSSION

The result of analysis of hypothesis one showed that there was a significant positive relationship between nicotine dependence and internet gambling addiction. This finding was consistent with the findings of Petry and Oncken (2002) who reported that there was a strong cooccurrence of gambling and substance use in a sample of young people. Correlations between gambling and substance misuse showed that times gambled and gambling problems were each significantly related to the frequency of heavy alcohol use, tobacco and marijuana use, and with problems/symptoms associated with each of the three substances. It also supported the findings of Lorains (2004) who discovered that 60.1% of nicotine dependence was implicated in pathological and problem gambling. It is also in line with Maccallum and Blaszczynski's (2002) finding that pathological gamblers had rates of substance-use problems which were higher than those in the general population and Jacobs' (2000) review which found that youths who reported serious gambling-related problems used tobacco at twice the rate of their non-problem gambling counterparts, with gambling in both adults and adolescents being associated with high rates of smoking.

Supporting the position of Cognitive-Behavioural Theory (Sharpe & Tarrier, 1993), it is suggestible that the continued Internet gambling addiction may have been reinforced by financial rewards obtained as well as physiological arousal of the reward and pleasure centres in the brain each time the participants won. The brain centres may already have been influenced by the active ingredient in nicotine making them and the entire brain

to malfunction, resulting in poor social judgment as well as dependence and tolerance. Operantly, the participants may have taken advantage of the availability of the substance and the gambling centres in their environments to start the gambling behaviour. But these became maintained classically by pairing the gambling behaviour with real or perceived financial rewards so obtained (which served as reinforcement to the gambling behaviour). Still, the brain gets involved by repeated exposure to the "reward" making the individual to be physiological and physically arousal and involved. Under such conditioning, the behaviour is likely to be repeated.

The second hypothesis which stated that demographic variables (age, gender, marital status, employment status, and academic qualification) will independently and jointly predict Internet gambling addiction among youths in Ikot Ekpene Metropolis was not fully confirmed. However, the finding that younger participants reported higher level of Internet gambling addiction than their older counterparts contradicted the findings of Wickwire, et al. (2008) that students over 21 years of age were more likely to gamble than younger students.

The finding that the singles reported higher internet addiction than the married could be attributed to the fact that the married have more responsibilities that pre-occupy them or are socially more responsible. This may be in line with the assertion that gambling is viewed as a socially deviant or immoral behaviour in some cultures and throughout history (Korn &Shaffer, 1999). This result also supported an earlier finding that the most common marital status of Canadian Internet gamblers was being single

and this marital category was statistically predictive of Internet gambling (Wood & Williams, 2007). The results that gender was not a significant predictor of Internet gambling supported the some earlier findings that both sexes equally engaged in gambling; women engaged in problem gambling to fight off stress and while men engage in gambling to make extra money (Loughan, 1996). The results that employment status was not a significant predictor of Internet gambling addiction contradicted that the findings that some high percentage of people seeking treatment for gambling problems were unemployed and looking for work (Kellie, 2014). These differences could be attributed to differences in population and time. However, the result that educational qualification significantly predicted Internet gambling addiction with those with lower academic qualifications reporting higher Internet gambling addiction supported some earlier studies which linked higher rates of problem gambling to lower levels of educational attainment (Wardle, et al., 2010; Sproston, et al., 2012).

In conclusion, a total of 291 youths purposively selected to participate in this study which examined the relationship among nicotine dependence, demographic variables, and Internet gambling addiction among youths in the ancient city of Ikot Ekpene Metropolis. Results revealed that nicotine dependence positively related to Internet gambling addiction among the youths sampled; the results showed that the higher nicotine dependence the higher the Internet gambling addiction. Also, demographic variables (age, gender, marital status, employment status, and educational qualification) jointly predicted Internet gambling addiction among the participants, accounting for 31% of the variance observed. However, it was found that the younger and unmarried participants reported higher Internet gambling addiction than the older and married participants (youths). Other demographic variables (gender, employment status, and educational qualification) did not independently predict Internet gambling addiction among the participants. Therefore, it is suggestible that reducing nicotine intake could lead to a reduction in Internet gambling addiction. The younger population and the unmarried should be given therapeutic attention to reduce their proneness to Internet gambling addiction.

## REFERENCES

- American Psychiatric Association (2013). Diagnostic and Statistical Manual of Mental Disorders (5th ed.). Available at http://www.dsm.psychiatryonline. org. Retrieved on July 26, 2018.
- Black, D. W., Shaw, M., McCormick, B., & Allen, J. (2013). Pathological gambling: Relationship to obesity, self-reported chronic medical conditions, poor lifestyle choices, and impaired quality of life. *Comprehensive Psychiatry*, *54*, 97-104. Available at doi: 10.1016/j.comppsych.2012.07.001. Retrieved on July 26, 2018.
- Block, J. J. (2008). Issues for DSM-V: Internet Addiction. *American Journal of Psychiatry*, 165 (3), 306-307.
- Chiu, J. & Storm, L. (2010). Personality, perceived luck and gambling attitude as predictors of gambling involvement. *Journal of Gambling Studies*, 26, 205-227. Available at doi:10.1007/s10899-009-9160-x. Retrieved on July 26, 2018.

- Clark, C., & Walker, D. M. (2009). Are gamblers more likely to commit crimes? An empirical analysis of a nationally representative survey of US young adults. *International Gambling Studies*, *9* (2), 119-134.
- Delfabbro, P. H., Lahn, J., & Grabosky, P. N. (2005). Adolescent gambling in the ACT. Australian National University Centre for Gambling Research. Available at http://www.problemgambling.act.gov.au/AdoGamReport.pdf. Retrieved on January 30, 2019.
- Delfabbro, P., Lambos, C., King, D. L., & Puglis, S. (2009). Knowledge and Beliefs About Gambling in Australian Secondary School Students and their Implications for Education Strategies. *Journal of Gambling Behaviour, 25* (4), 523-539. Available at doi:10.1007/s10899-009-9141-0. Retrieved on August 26, 2019.
- Delfabbro, P., King, D. L., & Griffiths, M. (2012). Behavioural profiling of problem gamblers: a summary and review. *International Gambling Studies*, *12* (3), 349-366.
- Derevensky, J. L., Dickson, L., & Gupta, R. (2008). Adolescent attitude towards gambling. *Revista Brasileira De Terapias Cognitivas 4* (1), 17-28.
- Derevensky, J., Gupta, R., & McBride, J. (2006) Internet gambling among youth: A cause for concern. *Presentation at the Global Remote and E-Gambling Research Institute Conference*. August 31 September 1, 2006. Amsterdam, Netherlands.
- Ellenbogen, S., Derevensky, J., & Gupta, R. (2007). Gender Differences among Adolescents with Gambling-Related Problems. *Journal of Gambling Studies*, 23, 133-143. Available at

- doi: 10.1(107/510899-510899-~W. Retrieved on January 26, 2019.
- Ellery, M., Stewart, S. H., & Loba, P. (2005). Alcohol's effects on video lottery terminal (VLT) play among probable pathological and non-pathological gamblers. *Journal of Gambling Studies*, *21*, 299-324. Available at doi:10.1007/s10899-005-3101-0. Retrieved on January 07, 2018.
- Fong, T. W., Campos, M. D., Brecht, M., Davis, A., Marco, A., Pecanha, V., & Rosenthal, R. J. (2011). Problem and pathological gambling in a sample of Casino patrons. *Journal of Gambling Studies*, *27* (1), 35-47. Available at doi: 10.1007/s10899-010-9200-6. Retrieved on January 26, 2018.
- Gainsbury, S., Russell, A., Wood, R., Hing, N., & Blaszczynski, A. (2012). A digital revolution: Comparison of demographic profiles, attitudes and gambling behaviour of Internet and non-Internet gamblers. *Computers in Human Behaviour, 28,* 1388-1398. Available at doi:10.1016/j. chb.2012.02.024. Retrieved on January 26, 2019.
- Gainsbury, S., Russell, A., Hing, N., Wood, R., Lubman, D. & Blaszczynski, A. (2015). How the Internet is changing gambling: Findings from an Australian prevalence survey. *Journal of Gambling Studies, 31* (1), 1-15. DOI:10.1007/s10899-013-9404-7. Available at http://link.springer.com/article/10.1007%2 Fs10899-013-9404-7. Retrieved on July 26, 2018.
- Gainsbury, S. & Blaszczynski, A. (2014). Exploring Internet Gambling: Policy, Prevention and Treatment. Routledge. Available at http://www.book. google/. Retrieved on June 02, 2019.

- Gambling Commission, (2010). Survey data on gambling participation-January 2010. Available at http://www.gamblingcommission.gov.uk/research\_consultations/research/survey\_data\_on\_remote\_gam/survey\_data\_on\_remote\_gambling.aspx. Retrieved on January 16, 2019. Retrieved on January 26, 2018.
- Gambling Commission (2006). Report of the Gambling Commission 2005 to 2006. Available at http://www.gov.uk/government/uploads/system/uploads/attachment\_data//file/231725/1226.pdf. Retrieved on July 26, 2018.
- Grant, J. E., Desai, R. A., Potenza, M. N. (2009). Relationship of nicotine dependence, subsyndromal and pathological gambling, and other psychiatric disorders: data from the national epidemiologic survey on alcohol and related conditions. *Journal of Clinical Psychiatry*, 70 (3), 334-343.
- Griffiths, M. (1995). Towards a risk factor model of fruit machine addiction: A brief note. *Journal of Gambling Studies*, 11 (3), 343-346.
- Griffiths, M. D., Parke, A., Wood, R., & Parke, J. (2006). Internet Gambling: An Overview of Psychosocial Impacts. *UNLV Gaming Research & Review Journal, 10* (1). Available at https://digitalscholarship.unlv.edu/grrj/vol10/iss1/4. Retrieved on February 06, 2019.
- Higgins, A. & Conner, M. (2003). Understanding adolescent smoking: The role of the Theory of Planned Behaviour and implementation intentions. *Psychology, Health & Medicine, 8,* 173-186.
- Ineme, M. E., Ineme, K. M. Akpabio, G. A. & Osinowo, H. O. (2017). Predictive

- Roles of Depression and Demographic Factors in Internet Addiction: A Cross-Sectional Study of Students in a Nigerian University. *International Journal of Cyber Criminology, 11* (1), 10-23, January-June, 2017. Available at doi: 10.5281/zenodo.495776. ISSN: 0973-5089. Retrieved on July 26, 2018.
- Jacobs, D. F. (2000) Juvenile gambling in North America: an analysis of long term trends and future prospects. *Journal of Gambling Studies*, *16*, 119-152.
- Jiménez-Murcia, S., Stinchfield. R., Fernández-Aranda, F., Santamaría, J. J., Penelo, E., Granero, R., et al (2011). Are online pathological gamblers different from non-online pathological gamblers on demographics, gambling problem severity, psychopathology and personality characteristics? *International Gambling Studies*, 11 (3), 325-337.
- Kellie, N. (2014). *Demographic profile report: Statewide profile.* Melbourne: Victorian Responsible Gambling Foundation:.
- Kong, G., Tsai, J., Pilver, C. E., Tan, H. S., Hoff, R. A., Cavallo, D. A., & Potenza, M. N. (2013). Differences in gambling problem severity and gambling and health/functioning characteristics among Asian-American and Caucasian high-school students. *Psychiatry Research, 210*, 1071-1078. Available at doi: 10.1016/j.psychres.2013.10.005. Retrieved on January 26, 2018.
- Korn, D. A. &Shaffer, H. J. (1999). Gambling and the health of the public: Adopting a public health perspective. *Journal of Gambling Studies, 15,* 289-365. Available at doi: 10.1023/A:102300511595932. Retrieved on January 26, 2019.

- Lesieur, H. R. & Blume, S. B. (1987). The South Oaks Gambling Screen (SOGS): A new instrument for the identification of pathological gamblers. *The American Journal of Psychiatry, 144,* 1184-1188.
- Lorains F, Cowlishaw S, Thomas S. (2011). Prevalence of comorbid disorders in problem and pathological gambling: systematic review and meta-analysis of population surveys. *Addiction*, *106* (3), 490-498.
- Pierce, M., Wentzel, J. & Loughnan, T. (1997). Male Gamblers/Female Gamblers: Mapping the Differences. In G. Coman, B. Evans & R. Wootton (Eds). Responsible Gambling: A Future Winner: Proceedings of the Eighth National Conference of the National Association for Gambling Studies, Melbourne, 293-309.
- Maccallum, F. & Blaszczynski, A. (2002). Pathological gambling and comorbid substance use. *Australian and New Zealand Journal Psychiatry*, 36 (3), 411-415.
- McCormack, A., Shorter, G. W., & Griffiths, M. D. (2014). An empirical study of gender differences in online gambling. *Journal of Gambling Studies, 30* (1), 71-88. Available at doi: 10.1007/s10899-012-9341-x. Retrieved on July 26, 2018.
- Molde, H., Pallesen, S., Bartone. P., Hystad. S., & Johnsen, B. H. (2009). Prevalence and correlates of gambling among 16 to 19-year-old adolescents in Norway. *Scandinavian Journal of Psychology*. 50, 55–64.
- National Population Commission (2006). Nigerian Census Report 2006. Available at http://www.nationalpopulationcommision.gov.ng/publication. Retrieved on January 26, 2018.

- Olason, D. T., Gretarsson, S. J. (2009). Iceland. In G. Meyer, T. Hayer, & M. Griffiths (Eds.). *Problem gambling in Europe: Challenges, prevention, and intervention.* New York: Springer, 137-151.
- Öztürk, Ö., Odabaşıoğlu, G., Eraslan, D., Genç, Y. & Kalyoncu, Ö. A. (2007). İnternet bağımlılığı: Kliniği ve tedavisi. *Journal of Dependence, 8* (1), 36-41.
- Palmer, A. A. (2014). A critique of the counter economic crime regime in the united kingdom, with reference to the United States of America and Australia. A Ph. D. Thesis submitted to University of the West of England, Bristol.
- Petry, N. M. (2003). A comparison of treatment-seeking pathological gamblers based on preferred gambling activity. *Addiction*, *98*, 645–655. Available at doi:10.1046/j.1360-0443.2003.00336.x. Retrieved on July 26, 2018.
- Petry, N. M. & Weinstock, J. (2007). Internet gambling is common in college students and associated with poor mental health. *The American Journal on Addictions, 16* (5), 325-330.
- Petry, N. M., & Oncken, C. (2002). Cigarette smoking is associated with increased severity of gambling problems in treatment-seeking gamblers. *Addiction, 97,* 745-753. Available at doi:10.1046/j.1360-0443.2002.00163.x. Retrieved on July 26, 2018.
- Schwartz, D.G. (2006). *Roll the Bones: The History of Gambling*. New York: Gotham Books.
- Shaffer, H. J. (1996). Understanding the means and objects of addiction: Technology, the Internet, and gambling. *Journal of Gambling Studies, 12,* 461-469.

- Sharpe, L. & Tarrier, N. (1993). Towards a cognitive-behavioural theory of problem gambling. *British Journal of Psychiatry*, *162*, 407-412.
- Shiffman, S., Waters, A. J., & Hickcox, M. (2004). The Nicotine Dependence Syndrome Scale: A multidimensional measure of nicotine dependence. *Nicotine & Tobacco Research*, 6 (2), 327-348. Available at https://doi.org/10.1080/1462220042000202481. Retrieved on June 02, 2020.
- Splevins, K., Mireskandari, S., Clayton, K., & Blaszczynski, A. (2010). Prevalence of adolescent problem gambling, related harms and help-seeking behaviours among an Australian population. *Journal of Gambling Studies, 26,* 189-204. Available at doi: 10.1007/s10899-009-9169-1. Retrieved on July 26, 2018.
- Sproston, K., Erens, R., & Orford, J. (2000). Gambling behaviour in Britain. Results from the British Gambling Prevalence Survey. London: National Centre for Social Research.
- Sproston, K., Hing, N., & Palankay, C. (2012). Prevalence of Gambling and Problem Gambling in New South Wales. New South Wales: Illumination Strategic Communication Research.
- Stewart, L. J., Palmer, S., Wilkin, H., & Kerrin, M. (2008). Towards a model of coaching transfer: Operationalising coaching success and the facilitators and barriers to transfer. *International Coaching Psychology Review, 3* (2), 7-29.
- Wardle, H. & Griffiths, M. D. (2011). Defining the "online gambling": The British Perspective. World Online Gambling Law Report, 10, 12-13.
- Wilber, M. K., & Potenza, M. N. (2006). Adolescent gambling: Research and

- clinical implications. *Psychiatry (Edgmont), 3* (10), 40-48.
- Wickwire, E, M., McCausland, C., Whelan, J. P., Luellen, J., Meyers, A. W., & Studaway, A. (2008). Environmental Correlates of Gambling Behavior among College Students: A Partial Application of Problem Behavior Theory to Gambling. *Journal of College Student Development, 49,* (5), 459-475. Available at https://www.doi.org/10.1353/csd.0.0030. Retrieved on February 16, 2019.
- Williams, R. J., Volberg, R. A. & Stevens, R. M. G. (2012). The Population Prevalence of Problem Gambling: Methodological Influences, Standardized Rates, Jurisdictional Differences, and Worldwide Trends. Report prepared for the Ontario Problem Gambling Research Centre and the Ontario Ministry of Health and Long Term Care. Available at http://www./hdl.handle.

- net/10133/3068. Retrieved on July 26, 2018.
- Wood, R. T. & Williams, R. J. (2009). Internet Gambling: Prevalence, Patterns, Problems, and Policy Options. Final Report prepared for the Ontario Problem Gambling Research Centre; Guelph, Ontario. Available at https://www.abc.net.au/mediawatch/transcripts/0909\_originalreport.pdf. Retrieved on February 12, 2019.
- Young, M., Abu-Duhou., I., Barnes, T., Creed, E., Morris, M., Stevens., M., & Tyler, B. (2006). *Northern Territory Gambling Prevalence Survey 2005*. Darwin: Charles Darwin University.
- Young, K. S. (1999) Internet addiction: Symptoms, evaluation and treatment. *Innovations in Clinical Practice*, 17, 19-31.
- Zuckerman, M. (2007). Sensation seeking and risky behavior. Washington, DC: American Psychological Association.