Predicting Psychological Distress from Gambling Behaviour among Undergraduates

Bede Chinonye Akpunne
akpunneb@run.edu.ng
Department of Psychology, Redeemer's University, Ede, Osun State, Nigeria.

Abstract
Psychological distress (PD), especially among university undergraduates, is a global concern judging that they report higher rates of PD compared to the general population. However, the role of gambling involvement, age and gender on psychological distress among Nigerian undergraduates has not been given adequate research attention. This study aims to contribute to filling this gap in knowledge. A total of 1,338 respondents (19.84 ± 3.22 years) including 512 male and 826 female students were selected from four universities in Osun state using a multistage sampling technique. The General Health Questionnaire (GHQ-12) and Attitude Towards Gambling Scale (ATGS-8) were used to measure the variables. Reported prevalence of gambling involvement was 28.6%, 38.2% and 7.5% for mild, moderate and severe levels, respectively. Also 34.0%, 40.3% and 11.3% reported mild, moderate and severe levels of PD respectively. Patterns of gambling involvement among the undergraduates included playing card or dice games for money 26%, betting on animals 12%, sports betting 24%, physical and online lottery and betting 14%, visit to casinos for betting 12%. Also, 21.6% reported having no intentions to abstain from gambling, 28.5% plan to limit to once daily and 74.3% have been involved in gambling in the last one month. Gambling involvement was found to significantly predict PD. Age was equally observed to strongly predict PD. Male and female participants reported similarly levels of PD. It is concluded that a high prevalence of PD exist among Nigerian undergraduates and that gambling is a significant contributor to PD. Further studies on the interaction between gambling and PD is recommended.

Keywords: Gambling, psychological distress, university undergraduates, Nigeria

INTRODUCTION

Psychological Distress (PD) has been defined as non-specific symptoms of stress, depression and anxiety (Viertiö et al., 2021), which include a set of painful physical and mental signs. PD may be linked with normal oscillation in mood in most individuals, or a pointer to the onset of anxiety, a major depressive disorder, somatization disorder schizophrenia or a variety of other clinical conditions (APA Dictionary of Psychology, 2023). PD refers to the general concept of "maladaptive psychological functioning in the face of stressful life events" (Abeloff, 2000). Horwitz, (2002) defined PD as a state of emotional suffering characterized by symptoms of depression (such as loss of interest; unhappiness; desperateness) and anxiety (such as restlessness; feeling tense). PD is also characterized by somatic symptoms such as headaches, insomnia, and lack of energy that are likely to vary across different areas.

The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) defined PD as a "range of symptoms and experiences of a person's internal life that are commonly held to be troubling, confusing, or out of the ordinary." (APA, 2013). Manifestation of PD could also include functional impairments, behavioral problems and confusing or troubling personality traits (APA, 2013). PD is also seen as a momentary phenomenon associated with specific stressors and characterized by sleep disturbances, fluctuating eating patterns, diarrhea, constipation chronic pain, provoked to anger frequently, forgetfulness, excessive tiredness and memory problems, and anhedonia (no longer finding pleasure in activities that were previously pleasurable e.g. sex). PD typically reduces or disappears when the individual either adapts to the stressor, or the stressor is removed (Horwitz, 2007).

The period of undergraduate studies often coincides with the developmental phase referred to as emerging adulthood (Arnett, 2000; Arnett et al., 2014). This phase which is between adolescence and adulthood is characterized by many transitions and challenging tasks such as preparatory for adult live, career choice, intimate relationships, financial self-sufficiency and so on (Miller, 2017; Schechter et al., 2018). For emerging adults, the years in tertiary institutions implies more tasks including handling academic matters (Schulenberg & Schoon, 2012), and several other school related stressors that could elevate PD (Padrón et al., 2021). University education seems to make up a vital transition for mental health (Pedrelli et al., 2015; Auerbach et al., 2016; Harris, 2019) as students regularly report higher levels of psychological distress compared to the general population (James et al., 2017; Tariku et al., 2017; Mboya et al., 2020). In particular, high levels of depression, anxiety and suicide risk are reported among university students (Rotenstein et al., 2016; Poorolajal et al., 2017; Tang et al., 2018; Akpunne & Uzonwanne, 2020; Akpunne et al., 2022).

Psychological problems have been linked in literature to problematic gambling. For instance, Rash et al., (2016) stated that gambling is addictive and highly co-morbid with many other mental health disorders. According to Abbott (2017), problem gamblers manifest significantly higher anxiety, mood, and personality disorders. Gambling has been defined as a willingness to risk something of value to get even greater value (APA, 2013; Mayo clinic, 2022). Gambling is a complicated phenomenon (Blaszczynski & Nower, 2002), influenced by genetic disposition (Xuan et al., 2017), family history of gambling or substance-use disorder (Blanco et al. 2012), personality traits (MacLaren et al., 2011), socio-demographic and exposure variables (Volberg et al., 2008) and

hostile childhood events (Petry et al., 2005). Participation in gambling varies significantly according to age and gender. Men are more likely than women to gamble in racing, sports, and casino card games. In contrast, few gender differences in gambling participation are observed concerning gaming machines and lotteries (Productivity Commission, 2009).

Demographic, psychological, and biological factors have been identified as predictive risk markers and processes associated with the development of gambling disorder (Ferrara, et al., 2016; WHO 2017). Some demographic risk factors associated with gambling include young age (adolescents), male sex, low socioeconomic status, non-white ethnic origin and divorced or separated parents (Toneatto & Nguyen, 2007; Ferrara, et al., 2016). Gambling disorder is highly comorbid with other psychiatric disorders (APA, 2013; Weinstock & Patten, 2016; WHO 2017), such as an increased risk of substance use disorder (Rahman et al., 2014), major depression (MDD), dysthymia, anxiety disorder, panic disorder, and specific phobias (Chamberlain & Sahakian, 2007; Rahman et al., 2014; Ferrara et al., 2014). Some of the characteristic behaviours of gambling such as chasing losses, preoccupation with gambling, inability to stop, are impulsive, often premature, poorly thought out, risky, and result in harmful long-term outcomes. Deficits in inhibition, working memory, planning, cognitive flexibility, and time management or estimation are more common in individuals with pathological gambling (Chamberlain & Sahakian, 2007; Ferrara et al., 2014).

Several environmental factors such as accessibility to gambling, location and type of gambling establishment, size and number of prizes, and near-miss opportunities also contribute to the developmental pathways of gambling (Lobo & Kennedy 2009). Also, rates of early negative childhood experiences like abuse and trauma, are reported as higher in people with gambling disorder than in social gamblers. According to Dowling (2014), gambling problems affect the functioning of the family and intimate relationships and other family members. Impaired family relationships, emotional issues and financial difficulties are some of the most common impacts on family members of people with gambling problems.

The family environments of people with gambling problems are also characterized by high levels of anger and conflict as well as low levels of clear and effective communication, less independence, less engagement in intellectual and cultural activities, a lack of commitment and support, little direct expression of feelings, and less participation in social and recreational activities (Ferrara et al., 2014). The children of people with gambling problems are exposed to a range of family stressors, such as financial and emotional deprivation, physical isolation, inconsistent discipline, parental neglect/abuse and rejection, poor role modelling, family conflict, and reduced security and stability (Sousa et al., 2018).

High rates of gambling involvement have been reported among the university student population (Etel et al., 2013; Mubaraka & Blanksbya, 2013; Tozzi et al., 2013). According to Oyetunji et al., (2021) among Nigerian undergraduates, gambling activities are engaged in to survive. This situation may predispose them to being pathological/compulsive gamblers (Oyebisi et al., 2012). Compulsive gamblers exhibit an overwhelming drive to keep gambling despite its toll on their lives (APA, 2013; Mayo clinic, 2022). Research reports by NOIPolls (2019) and Ifeduba et al., (2020) showed that gambling and betting are becoming extremely popular in Nigeria, particularly amongst the youth population and sports fans. Also, Aguocha et al., (2019) stated that more than half (57%) of sampled Nigeria secondary school students had previously participated in gambling.

Research questions

What is the prevalence of gambling involvement and psychological distress among the participants?

What are the patterns of gambling involvement among the undergraduates?

To what extent will gambling involvement predict psychological distress among the participants?

To what degree will age predict psychological distress among the undergraduates?

What is the influence of gender on psychological distress among the participants?

MATERIALS AND METHOD

Participants: A multi-stage sampling approach was used to select participants from university undergraduates in Osun state, southwest Nigeria. Using simple random sampling (ballot method), four universities (Osun State University (UNIOSUN), Redeemer's University (RUN), Fountain University Osogbo (FUO) and Oduduwa University Ipetumodu (OUI) were chosen in the first stage. In the second stage, the clustered sampling approach was used to guarantee representativeness in the selection of respondents from various pre-existing clusters. Several subgroups that the participants already belonged to in the selected institutions were used to achieve this goal. Gender, faculty, and study levels were the groupings that were used as clusters. The purposive sampling strategy was employed in the last stage of selecting 1338 respondents (mean $\pm$ SD age of 19.84 $\pm$ 3.22 years) for the study to guarantee that the identified clusters were sufficiently sampled.

Measures: The GHQ-12 (General Health Questionnaire) was created to measure psychological distress (Goldberg & Williams, 1991). The GHQ-12 includes the following items: being able to concentrate; losing sleep over worry; playing a useful role in society; being capable of making decisions; constantly under stress; being unable to overcome difficulties; enjoying normal activities; facing problems; being unhappy and depressed; losing confidence in yourself; believing yourself to be worthless; feeling reasonably happy. The GHQ is frequently regarded as the gold standard for measuring psychological distress because of its broad use and recognized a measure of psychological distress (Furukawa et al., 2003). The GHQ-12 has been proven to be measurement invariant (i.e., to measure the same construct) across gender and between adults and adolescents (Shevlin & Adamson 2005). The GHQ-12's items are rated on a four-point severity and frequency scale (0-3). The overall psychological distress score is calculated by adding the scores of the GHQ-12 components. The GHQ-12 has a.90 reliability coefficient (Hankins 2008) and has been used among Nigerian samples with an acceptable reliability value of .73 (Akpunne & Akinnawo, 2019). GHQ-12 was used to validate suicidality scale among Nigerian young people (Akpunne et al., 2023) yielding a congruence validity coefficient of r= .605, *p*<.001.

Gambling involvement was measured with the Attitude Towards Gambling Scale (ATGS-8) by Orford et al. (2007). ATGS- 8 is the 8-item version of the original 14-item version instrument developed for the British Gambling Prevalence Survey in 2007 (Orford et al., 2007). ATGS-8 items were scored using a Likert scale: 1 = "strongly agree", 2= "agree", 3= "neither agree nor

disagree", 4="disagree," and 5 = "strongly disagree". Four items (1, 4, 6, 7) were reversely scored.

The sum of eight items forms a total ATGS-8 score (range 8–40). A score of 24 is a midpoint and represents the overall neutral attitude towards gambling. In contrast, scores above 24 indicate an average attitude favourable to gambling and those below 24 unfavourable attitudes towards gambling. Derived Cronbach's alpha value on the British sample was 0.76, and item-total correlations varied from 0.39 to 0.58 (Orford et al., 2007; Wardle et al., 2011; Wardle et al., 2007).

RESULTS

Socio-Demographic characteristics of participants: The distribution of participants by sex shows that 512 (38.3%) of the participants were male while 826 (61.7%) were female. Distribution by age shows that the participants' mean ± standard deviation age was 19.86±2.95, with their ages ranging between 15 and 30 years. This indicates that majority of the participants were in their late adolescence. Distribution by institutions of learning shows that 505(37.7%) were students of Osun State University (UNIOSUN), 374 (28%) were students of Redeemers' University Ede, Osun State (RUN), 189 (14.1%) were students of Fountain University Oshogbo, Osun State, and 270 (20.2%) were students of Oduduwa University Ipetumodu Osun State (OUI). Distribution of participants by level of study shows that 409 (30.6%) were 100 level students, 241 (18.0%) were 200 level students, 363 (27.1%) were 300 level students, 276 (20.6%) were 400 level students, 49 (3.7), while 500 level students. Also 1,302 (97.3%) were single, 33(2.5%) were married while 3(.2%) were engaged. Details are presented in Table 1:

Table 1: Socio-Demographic distributions of participants

Variables		Frequency	Percentage
Sex	Male	512	38.3
	Female	826	61.7
	Total	1338	100.0
Age	Mean ± Standard Deviation	19.84 ±3.22 years	
Universities	UNIOSUN	505	37.7
	RUN	374	28.0
	FUO	189	14.1
	OUI	270	20.2
	Total	1338	100.0
Level of education	100 level	409	30.6
	200 level	241	18.0
	300 level	363	27.1
	400 level	276	20.6
	500 level	49	3.7
	Total	1338	100
Marital status	Single	1302	97.3
	Married	33	2.5
	Engaged	3	.2
	Total	1338	100.0

Prevalence of gambling and psychological distress among university undergraduates

Table 2: Prevalence of gambling and psychological distress among university undergraduates.

Variables	None %	Mild %	Moderate %	Severe %
Gambling	25.7	28.6	38.2	7.5
Psychological distress	14.4	34.0	40.3	11.3

Table 2 summarizes the prevalence of gambling and psychological distress (PD) among the participants. Prevalence of gambling behaviour revealed that 25.7% of the participants reported as nil gambling behaviour, while 28.6%, 38.2% and 7.5% reported mild, moderate and severe gambling patterns, respectively. Also 14.4% have nil report of PD, 34.0% reported mild PD, while 40.3% and 11.3% reported moderate and severe levels of PD respectively.

Patterns and Nature of Gambling Involvement among the Participants over a Lifetime Period
Further findings showed that 26% of the undergraduates have been involved with playing card, dice or any indoor game for money, 12% have been involved with placing monetary bet on animals, and 24% reported having participated in online sport betting. Also, 11% have visited lotto kiosks to play lottery, 14% have played online betting or lottery, and 12% have been to casinos for betting or lottery. Finally, among those involved in gambling, 21.6% have no desire to abstain or stop gambling, 28.5% plan to limit to once daily and 74.3% reported to have gambled in the past one month.

Test of Hypotheses
Hypothesis 1: Gambling behaviour will significantly predict psychological distress among undergraduates in selected university in Osun state Nigeria.

Table 3: *Regression Analysis of the Predictive Influence of gambling involvement on psychological distress among university undergraduates.*

	B	β	T	sig	R	R^2	F	P
(Constant)	24.14		22.57	.000	.162	.026	31.26	.000
Gambling	.28	.16	5.59	.000				

A regression analysis was conducted to determine the predictive influence of gambling involvement on psychological distress among university undergraduates in Osun state, Nigeria. The result shown in Table 3 reveals that gambling involvement significantly predicted psychological distress among the participants (β= .16, t= 5.59, p < .05). The beta contribution of .16 is an indication of a positive relationship between gambling involvement and psychological

distress. This shows that psychological distress increases with an increase in gambling involvement. The analysis in Table 3 further shows an R^2 of .026, which suggests that 2.6% variance of psychological distress among the participants is explained by gambling involvement [$F (1, 1338) = 31.26, p < .05$]. Based on this result it is concluded that gambling involvement is a significant predictor of psychological distress among university undergraduates.

Hypothesis 2: Age will significantly predict psychological distress among undergraduates in selected university in Osun state Nigeria.

Table 4: ***Regression Analysis of the Predictive Influence of age on psychological distress among university undergraduates.***

	B	β	T	sig	R	R^2	F	P
(Constant)	25.90		15.16	.000	.07	.01	6.00	.014
Age	.21	.07	2.45	.014				

A regression analysis was conducted to determine the predictive influence of age on psychological distress among university undergraduates Osun state, Nigeria. The result shown in Table 4 reveals that age significantly predicted psychological distress among the participants (β= .07, t= 2.45, p < .05). The beta contribution of .07 is an indication of a positive relationship between age behaviour and psychological distress. This shows that psychological distress increases with an increase in age of participants. The analysis in Table 4 further shows an R^2 of .01, which suggests that .01% variance of psychological distress among the participants is explained by age [$F (1, 1338) = 6.00, p < .05$]. Based on this result it is concluded that age is a significant predictor of psychological distress among university undergraduates.

Hypothesis 3: There will be significant gender influence on psychological distress among undergraduates in selected universities in Osun state Nigeria

The study employed an independent sample t-test to analyze the data and test the hypothesis; the level of significance is set at 0.05%. The analysis procedure involve comparing the mean score of male and female participants on their level of psychological distress, the analysis result is presented in Table 5.

Table 5: ***Independent sample t-test of psychological distress by sex.***

Variables		N	$\bar{x}$	SD	t	p
Psychological distress	Male	465	30.01	8.911	-.19	.89
	Female	752	30.07	8.557		

The t-test scores showed that there were 465 male and 752 female participants. Table 4 revealed that sex had significant no significant influence on psychological distress (t = -.19, p = .89).

Hence the mean scores show that both male and female undergraduates had similar psychological distress score.

Discussion of Findings
The participants in this study reported a 28.6% mild, a 38.2% moderate and a 7.5% severe prevalence of gambling involvement. This findings show a high rate of gambling involvements among Nigerian university undergraduates. This is in support of previous local (Ifeduba et al.,

2020; Oyetunji et al., 2021) and international studies. For instance, some empirical surveys exposed that in several nations, individuals who have a positive attitude toward a gambling activity at some point in their lives are more than those who have never gambled (Shaffer & Hall, 2001; Calado & Griffiths, 2016). Related studies show that about 86% of the general population across the socio-demographic spectrum globally reported some form of gambling and that about 4-8% of these populations were young adults who reported severe gambling (Salaam & Brown, 2012; Kristiansen & Jensen, 2014; Oyeleke et al., 2017). Akwagyiram and Akinyelure, (2018) reported that about 60 million Nigerians between the ages of 18 and 40 years were reported to spend about 1.8 billion Naira daily on gambling activities, with an average investment of 3,000 Naira per day. A positive attitude towards gambling has been found among many young people, with the majority reporting a previous gambling activity (Calado & Griffiths, 2016; Gambling Commission, 2017; Ayandele & Aramide, 2020). For instance, about half of British adults (48%) indicated previous participation in a gambling activity (Gambling Commission, 2017). According to McCarthy et al. (2018), 45% of women aged 16–34 years in Australia gambled more than once a week. About 40.5% of participants in a Ugandan study gambled at least once a week (Ahaibwe et al., 2016).

A survey study of 3,879 African youths by GeoPoll, (2017) showed that 54% of participants had indulged in gambling. A similar Nigerian youth study reported that 41% of randomly selected participants had engaged in some form of betting (NOIPolls, 2019). Also, Aguocha et al., (2019) reported that more than half (57%) of sampled secondary school students in Nigeria had previously participated in gambling. Gender differences in gambling were also reported, showing that young male participants gambled more frequently than young females (e.g., Ahaibwe et al., 2016; Gambling Commission, 2017; Ayandele & Aramide, 2020). Also, a high prevalence of psychological distress was found among the participants. As a result of several extraneous factors including issues relating to academic activities (Auerbach et al., 2016; Harris, 2019; Akpunne et al., 2022), studies show that university undergraduates are prone to high levels of psychological distress (Poorolajal et al., 2017; Tang et al., 2018; Akpunne & Akinnawo 2019; Akpunne et al., 2020) compared to the general population (Mboya et al., 2020).

Furthermore, this study found that gambling involvement is a significant predictor of psychological distress among the Nigerian undergraduates. This research supports previous Nigerian studies (Akpunne et al., 2022; Daniel et al., 2023; Chinawa et al., 2023). Also in a British study the Mental Health Foundation (2021) reported that people with mental health problems were more at risk problematic gambling. Similarly, Ciccarelli et al., (2016) and Grant et al., 2019 found positive link between increased gambling and psychological distresses among undergraduates. Problematic gambling is marked by a loss of control over gambling behaviour (Raylu, 2002) and is associated with numerous sequelae, including psychiatric problems

(Ledgerwood et al., 2004). Problem gambling has been associated with mental health concerns in several researches (Lorains et al., 2011; Haydock et al., 2015). For instance, Afifi et al., (2016) reported that at-risk and problem gambling predicted future occurrences of major depressive disorder, alcoholism, and drug use. In a New Zealand study, 46 percent of problem gamblers have psychological problems (Abbott et al., 2015). Lorains et al., (2011) reported that nearly 38 percent of problem gamblers had mood problems, and 37 per cent had anxiety disorders. In a similar study Abbott (2017), reported that problem gamblers manifest significantly higher anxiety, mood, and personality disorders.

In this study, age of the students is found to be a strong predictor of psychological distress. This finding support previous literature that reported age as a useful risk marker for PD (Best et al., 2023; Drapeau et al., 2014). This study found that older students reported higher PD than younger counterparts. This finding support previous literature that showed that most undergraduates are at the adolescence stage of development, (Zarrett & Eccles, 2006; Rega et al., 2022) which impacts greatly on their emotions and behaviours. Thus older adolescent students tend to report significantly larger increases in psychological and behavioral problems (Tang et al., 2021). Previous research has equally shown that the prevalence of internalizing disorders such as anxiety and depression increases from early to mid-late adolescence (Oldehinkel et al., 2011). Thus, the higher PD found in older students may be in part due to developmental factors.

Finally, this study found similar levels of psychological distress across gender, though females reported higher mean score than male students. Literature show overall evidence of gender difference in the forms of mental illness (Adewuya et al., 2018). For instance study have shown that women are more predisposed to silent internalized symptoms, while men are more susceptible to act out mental suffering (Van Droogenbroeck et al., 2018). It has been found that depression, anxiety (American College Health Association (ACHA), 2018), and psychological distress (Idowu et al., 2022; Nogueira & Sequeira, 2018) are higher in female than in males students. On the other hand, male students show higher rates of vulnerability coping strategies (use sleeping pills, alcohol abuse, ignoring the symptoms), as well as negative attitudes (refusal or reluctance) regarding professional help-seeking or mental health counselling (DeBate et al., 2018). This study did not strongly show that females have higher level of psychological distress than male students. The reason for this difference could be due to prevailing extraneous variables including difference in social cultural settings.

CONCLUSIONS AND RECOMMENDATIONS
Based on the findings of this study there is a high prevalence of gambling involvement and PD among Nigerian undergraduates in Osun state. Strong links between gambling involvement and PD is also established as gambling involvement was found to strongly predict PD among the participants. Also, age is a strong risk marker for PD with older students being more predisposed to PD than the younger undergraduates. Lastly, gender influence returned similar PD experience among the participants. There is therefore the need to establish properly equipped psychological services in Nigerian tertiary institutions to manage psychological distresses presented by students. Again, psychologist should embark on regular public enlightenment campaigns on the negative effects of gambling involvement on the mental health undergraduates in particular as well as that of the general public should be through various mediums. Finally, further studies on

the role of other extraneous (psychosocial cultural) factors on the relationship between gambling and PD is recommended.

Redeemer's University Journal of Management and Social Sciences, Vol. 7 (1) 2024

References
Abeloff, M. D., Armtage J. O., Lichter, A.S., & Niederhuber, J. E. (2000). Clinical Oncology. 2nd ed. Churchill Livingstone; New York, NY, USA. p. 556.

Adewuya, A., O., Coker, O. A., Atilola, O., Ola B. A, Zachariah, M. P., Adewumi, T., et al. (2018). Gender difference in the point prevalence, symptoms, comorbidity, and correlates of depression: findings from the Lagos State Mental Health Survey (LSMHS), Nigeria. *Arch Women's Ment Health.* Dec;21(6):591–599. doi: 10.1007/s00737-018-0839-9. Epub 2018 Mar 28.

Afifi, T. O., Nicholson, R., Martins, S.S., & Sareen J. A. (2016). A longitudinal study of the temporal relation between problem gambling and mental and substance use disorders among young adults. *Can J Psychiatry, 61*(2), 102–11. https://doi.org/10.1177/0706743715625950

Aguocha, C. M., Duru, C. B., Nwefoh, E. C., Ndukuba, A. C., Amadi, K. U., Olose, E. O., & Igwe, M. N. (2019). Attitudes towards and perception of gambling among secondary school students in a developing country. *International Gambling Studies, 19*(1), 532–544. https://doi.org/10.1080/14459795.2019.1635630

Ahaibwe, G., Lakuma, C. P., Katunze, M., & Mawejje, J. (2016). *Socio economic effects of gambling: Evidence from Kampala City, Uganda (Research Series No. 126).* Economic Policy Research Centre (EPRC). https://doi.org/10.22004/ag.econ.234554

Akpunne, B. C., Mopa-Egbunu, A., Egwele, C. D., & Akpunne, E. N. (2024). Sexting Behavior and Social Media Addiction as Predictors of Depression Anxiety and Stress among University Undergraduates. *Advances in Social Sciences and Management*, *2*(1), 01-10. https://hspublishing.org/ASSM/article/view/332

Akpunne B.C & Uzonwanne, F.C (2020). Problematic smartphone uses as a predictor of depression, anxiety and psychological distress among undergraduate students in four selected Nigerian universities. *Journal of Communication and Media Research*, 12(2), pp. 92-103

Akpunne B. C, Kumuyi D.O, Ogunsemi J.O, & Ojo S. (2020). Peer Victimization, Social Maladjustment and Psychological Distress among Nigerian Adolescents. *European Science Review* № 3–4 2020 March–April https://doi.org/10.29013/ESR-20-3.4-31-39

Akpunne B.C., Akinnawo, E.O., Olusa, A.O., Kumuyi, D.O. (2023). Development and validation of the Redeemer's University Suicidality Scale. S Afr J Psychiat. 29(0), a1799. https://doi.org/10.4102/sajpsychiatry.v29i0.1799

Akpunne, B. C., & Akinnawo, O. E. (2019). Internet addiction, problematic smartphone use and psychological health of Nigerian university undergraduates. *International Neuropsychiatric Disease Journal*, *12*(3), 1–13. https://doi.org/10.9734/indj/2018/v12i330093

Redeemer's University Journal of Management and Social Sciences, Vol. 7 (1) 2024

Akpunne, B. C., Akinnawo, E. O., Akpunne, S. I., & Kumuyi, D. O. (2022). Suicidal behaviour among Nigerian undergraduates: Associations with gambling disorder and emotional dysregulation. *Health Scope*, *11*(2). https://doi.org/10.5812/jhealthscope-121797

Akwagyiram, A., & Akinyelure, D. (2018, June 25). *Online betting firms gamble on soccer-mad Nigeria*. Reuters. https://www.reuters.com/article/us-soccer-worldcup-nigeria-gambling/online-betting-firms-gamble-on-soccer-mad-nigeria-idUSKBN1JL18Z

American College Health Association. (2018). Spring 2018, group executive summary. Author. Reteived from https:// www.acha.org/documents/ncha/NCHA-II_Spring_2018_Reference_Group_Executive_Summary.pdf

Arnett, J. J. (2000). Emerging adulthood: a theory of development from the late teens through the twenties. *Am. Psychol.* 55, 469–480. doi: 10.1037/0003-066X.55.5.469

Arnett, J. J., Žukauskiene, R., & Sugimura, K. (2014). The new life stage of emerging adulthood at ages 18–29 years: implications for mental health. *Lancet Psychiatry* 1, 569–576. doi: 10.1016/S2215-0366(14)00080-7

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (5th ed.)*. https://doi.org/10.1176/appi.books.9780890425596

American Psychological Association. (2023). *APA Dictionary of Psychology*. APA Dictionary of Psychology. https://dictionary.apa.org/

Auerbach, R. P., Alonso, J., Axinn, W. G., Cuijpers, P., Ebert, D. D., Green, J. G., et al. (2016). Mental disorders among college students in the World Health Organization World Mental Health Surveys. *Psychol. Med*. 46, 2955–2970. doi: 10.1017/S0033291716001665

Auerbach, R. P., Stewart, J.G., & Johnson, S. L. (2017). Impulsivity and Suicidality in Adolescent Inpatients. *Journal of abnormal child psychology, 45*(1), 91–103. https://doi.org/10.1007/s10802-016-0146-8

Ayandele, O, & Aramide, O. K. (2020). Personality traits predicting attitudes toward sports betting among youths in Ibadan, Nigeria. *Academic Psychiatry and Psychology Journal (APPJ), 36*(1), 64–76. https://he01.tci-thaijo.org/index.php/APPJ/article/view/217471

Best, R., Strough, J., & Bruine de Bruin, W. (2023). Age differences in psychological distress during the COVID-19 pandemic: March 2020 - June 2021. *Frontiers in psychology*, *14*, 1101353. https://doi.org/10.3389/fpsyg.2023.1101353

Blaszczynski, A., & Nower, L. (2002). A pathways model of problem and pathological gambling. *Addiction (Abingdon, England)*, *97*(5), 487–499. https://doi.org/10.1046/j.1360-0443.2002.00015.x

Calado, F., & Griffiths, M. D. (2016). Problem gambling worldwide: An update and systematic review of empirical research (2000–2015). *Journal of Behavioral Addictions, 5*(4), 592–613. https://doi.org/10.1556/2006.5.2016.073

Chinawa, A. T., Ossai, E. N., Odinka, P. C., Nduaguba, O. C., Odinka, J. I., Aronu, A. E., & Chinawa, J. M. (2023). Problem gambling among secondary school adolescents in Enugu, Nigeria. *African health sciences*, *23*(3), 748–757. https://doi.org/10.4314/ahs.v23i3.86

Ciccarelli M., Griffiths M. D., Nigro G., & Cosenza M. (2016). Decision making, cognitive distortions and emotional distress: A comparison between pathological gamblers and healthy controls. *J. Behav. Ther. Exp. Psychiatry.* 54:204–210. doi: 10.1016/j.jbtep.2016.08.012.

Daniel, F. M., Gbuchie, M. A., Aniebiet, C. M., Emeruwa, V. E., & Ike, W. I. (2023). Exploring Sports Betting Prevalence, Patterns, Effects, And Associated Factors Among Undergraduate Students in a Nigerian University — A Cross-Sectional Study. *International Journal of Medical Students*, *11*, S113. https://doi.org/10.5195/ijms.2023.2371

DeBate, R. D. G., Gatto, A., & Rafal, G. (2018). The effects of stigma on determinants of mental health help-seeking behaviors among male college students: An application of the information-motivation-behavioral skills model. American Journal of Men's Health, 12(5), 1286–1296

Drapeau, A., Marchand, A. & Forest, C. (2014). Gender differences in the age-cohort distribution of psychological distress in Canadian adults: findings from a national longitudinal survey. *BMC Psychol* **2**, 25. https://doi.org/10.1186/s40359-014-0025-4

Grant, J. E., Lust, K., Christenson, G. A., Redden, S. A., & Chamberlain, S. R. (2019). Gambling and its clinical correlates in university students. *International journal of psychiatry in clinical practice*, *23*(1), 33–39. https://doi.org/10.1080/13651501.2018.1436715

Harris, A. (2019). *Mental Health and Moving from School to Further and Higher Education*. London: Center for Mental Health.

Horwitz, A.V., (2007). Distinguishing distress from disorder as psychological outcomes of stressful social arrangements. *Health.* 11(3):273–289.

Horwitz, A.V. (2002). Selecting outcomes for the sociology of mental health: Issues of measurement and dimensionality. *Journal of health and social behavior.* 2002;43(2)

Redeemer's University Journal of Management and Social Sciences, Vol. 7 (1) 2024

Idowu, O. M., Adaramola, O. G., Aderounmu, B. S., Olugbamigbe, I. D., Dada, O. E., Osifeso, A. C., Ogunnubi, O. P., & Odukoya, O. O. (2022). A gender comparison of psychological distress among medical students in Nigeria during the Coronavirus pandemic: a cross-sectional survey. *African health sciences*, *22*(1), 541–550. https://doi.org/10.4314/ahs.v22i1.63

Ifeduba, E., Enwefah, C., Atunrase, O. & Ogbuehi, C. (2020). Games and Gambles: How viewership of football games influences gambling behaviour in Nigeria. JORIND, 18 (1), 1-10.

James, B. O., Thomas, I. F., Omoaregba, J. O., Okogbenin, E. O., Okonoda, K. M., Ibrahim, A. W., et al. (2017). Psychosocial correlates of perceived stress among undergraduate medical students in Nigeria. *Int. J. Med. Educ.* 8, 382–388. doi: 10.5116/ijme.59c6.3075

Ledgerwood, D. M., & Petry, N. M. (2004). Gambling and suicidality in treatment-seeking pathological gamblers. *Journal of Nervous and Mental Disease, 192*(10), 711–714. https://doi.org/10.1097/01.nmd.0000142021.71880.ce

Lorains, F. K, Cowlishaw, S., & Thomas, S. A. (2011). Prevalence of comorbid disorders in problem and pathological gambling: systematic review and meta-analysis of population surveys. *Addiction, 106*(3), 490–498. https://doi.org/10.1111/j.1360-0443.2010.03300.x

MacLaren, V.V., Fugelsang, J. A., Harrigan, K. A., & Dixon, M. J. (2011). The personality of pathological gamblers: A meta-analysis. *Clinical Psychology Review, 31*(6),1057–1067. https://doi.org/10.1016/j.cpr.2011.02.002

Mayo Clinic. (2022, June 18). *Compulsive Gambling - Symptoms and Causes*. Mayo Clinic; Mayo Clinic. https://www.mayoclinic.org/diseases-conditions/compulsive-gambling/symptoms-causes/syc-20355178

Mboya, I. B., John, B., Kibopile, E. S., Mhando, L., George, J., & Ngocho, J. S. (2020). Factors associated with mental distress among undergraduate students in northern Tanzania. *BMC Psychiatry* 20:28. doi: 10.1186/s12888-020-2448-1

McCarthy, S., Thomas, S. L., Randle, M., Bestman, A., Pitt, H., Cowlishaw, S., & Daube, M. (2018). Women's gambling behaviour, product preferences, and perceptions of product harm: Differences by age and gambling risk status. *Harm Reduction Journal, 15*(22), 1–12. https://doi.org/10.1186/s12954-018-0227-9

Mental Health Foundation (2021) "Gambling and Mental Health." *Www.mentalhealth.org.uk*, www.mentalhealth.org.uk/explore-mental-health/a-z-topics/gambling-and-mental-health#:~:text=If%20you%20have%20a%20mental

Miller, J. M. (2017). Young or emerging adulthood: a psychoanalytic view. *Psychoanal. Study Child* 70, 8–21. doi: 10.1080/00797308.2017.1280286

Redeemer's University Journal of Management and Social Sciences, Vol. 7 (1) 2024

Mobile Gambling among Youth in Sub-Saharan Africa. (2017, March 31). GeoPoll. https://www.geopoll.com/blog/mobile-gambling-among-youth-in-sub-saharan-africa/

Nogueira, M. J., & Sequeira, C. (2018). A Satisfação com a Vida Académica. Relação com Bem-Estar e Distress Psicológico. Revista Portuguesa De Enfermagem De Saúde Mental, Especial, 6, 71–76. https://doi.org/10.19131/rpesm.0216

NOIPolls. (2019, September 18). *Betting and gambling in Nigeria*. https://noi-polls.com/betting-and-gambling-in-nigeria/

Oldehinkel A.J., Verhulst F.C., Ormel J. (2011). Mental health problems during puberty: Tanner stage-related differences in specific symptoms. The TRAILS study. *J. Adolesc.* 2011; 34:73–85. doi: 10.1016/j.adolescence.2010.01.010.

Padrón I., Fraga I., Vieitez L., Montes C., Romero E. (2021). A Study on the Psychological Wound of COVID-19 in University Students. *Front. Psychol.* 2021; 12:589927. doi: 10.3389/fpsyg.2021.589927.

Pedrelli, P., Nyer, M., Yeung, A., Zulauf, C., & Wilens, T. (2015). College students: mental health problems and treatment considerations. *Acad. Psychiatry* 39, 503–511. doi: 10.1007/s40596-014-0205-9

Petry, N. M., Steinberg, K. L., & Women's Problem Gambling Research Center (2005). Childhood maltreatment in male and female treatment-seeking pathological gamblers. *Psychology of addictive behaviors : journal of the Society of Psychologists in Addictive Behaviors*, *19*(2), 226–229. https://doi.org/10.1037/0893-164X.19.2.226

Poorolajal, J., Ghaleiha, A., Darvish, N., Daryaei, S., & Panahi, S. (2017). The prevalence of psychiatric distress and associated risk factors among college students using GHQ-28 questionnaire. *Iran. J. Public Health* 46, 957–963.

Rash, C. J., Weinstock, J., & Van Patten, R. (2016). A review of gambling disorder and substance use disorders. *Substance abuse and rehabilitation*, *7*, 3–13. https://doi.org/10.2147/SAR.S83460

Raylu, N., & Oei, T. P. S. (2002). Pathological gambling: A comprehensive review. *Clinical Psychology Review, 22,* 1009-1061. https://doi.org/10.1016/S0272-7358(02)00101-0

Rega, A., Nappo, R., Simeoli, R., & Cerasuolo, M. (2022). Age-Related Differences in Psychological Distress during the COVID-19 Pandemic. *International journal of environmental research and public health*, *19*(9), 5532. https://doi.org/10.3390/ijerph19095532

Rotenstein, L. S., Ramos, M. A., Torre, M., Segal, J. B., Peluso, M. J., Guille, C., et al. (2016). Prevalence of depression, depressive symptoms, and suicidal ideation among medical students: a systematic review and meta-analysis. *JAMA* 316, 2214–2236. doi: 10.1001/jama.2016.17324

Salaam, A. O., & Brown, J. (2013). Ethical Dilemmas in Psychological Research with Vulnerable Groups in Africa. *Ethics & Behavior*, *23*(3), 167–178. https://doi.org/10.1080/10508422.2012.728478

Schechter, M., Herbstman, B., Ronningstam, E., & Goldblatt, M. J. (2018). Emerging adults, identity development, and suicidality: implications for psychoanalytic psychotherapy. *Psychoanalytic Study Child* 71, 20–39. doi: 10.1080/00797308.2017.1415596
Schulenberg, J., & Schoon, I. (2012). The transition to adulthood across time and space: overview of special section. *Longit. Life Course Stud*. 3, 164–172. doi: 10.14301/llcs.v3i2.194

Tang S., Xiang M., Cheung T., & Xiang Y.-T. (2021). Mental health and its correlates among children and adolescents during COVID-19 school closure: The importance of parent-child discussion. *J. Affect. Disord.* 2021; 279:353–360. doi: 10.1016/j.jad.2020.10.016.

Tang, F., Byrne, M., & Qin, P. (2018). Psychological distress and risk for suicidal behavior among university students in contemporary China. *J. Affect. Disord*. 228, 101–108. doi: 10.1016/j.jad.2017.12.005

Tariku, G. H., Zerihun, A. A., Bisrat, Z. S., Adissu, G. G., & Jini, D. (2017). Mental distress and its associated factors among students of Mizan Aman Health Science College, Ethiopia. *J. Med. Sci.* 17, 61–67. doi: 10.3923/jms.2017.61.67

Van Droogenbroeck, F., Spruyt, B., & Keppens, G. (2018). Gender differences in mental health problems among adolescents and the role of social support: Results from the Belgian health interview surveys 2008 and 2013. BMC Psychiatry, 18(1). doi:10.1186/s12888-018-1591-4

Viertiö S., Kiviruusu O., Piirtola M., Kaprio J., Korhonen T., Marttunen M., & Suvisaari J., (2021). Factors contributing to psychological distress in the working population, with a special reference to gender difference. *BMC Public Health.* 21:611. doi: 10.1186/s12889-021-10560-y.

Volberg, R. A., Abbott, M. W., Rönnberg, S., & Munck, I. M. E. (2008). Prevalence and risks of pathological gambling in Sweden. *Acta Psychiatrica Scandinavica,104*(4),250–256. https://doi.org/10.1111/j.1600-0447.2001.00336.x

World Health Organization. (2017). *The epidemiology and impact of gambling disorder and other gambling-related harm.* https://www.who.int/docs/default-source/substance-use/the-epidemiology-and-impact-of-gambling-disorder-and-other-gambling-relate-harm.pdf?sfvrsn=5901c849_2

Redeemer's University Journal of Management and Social Sciences, Vol. 7 (1) 2024

Xuan, Y. H., Li, S., Tao, R., Chen, J., Rao, L. L., Wang, X. T., & Zheng, R. (2017). Genetic and environmental influences on gambling: A meta-analysis of twin studies. *Frontiers in Psychology, 8,* 2121. http://dx.doi.org/10.3389/fpsyg.2017.02121

Zarrett N., Eccles J. (2006). The passage to adulthood: Challenges of late adolescence. *New Dir. Youth Dev.* 2006; 13–28. doi: 10.1002/yd.179.