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Depressive Symptoms Among University Undergraduates In Southeast Nigeria: The Predictive Effects Of Pathological Gambling And Social Media Addiction

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Abstract

The study explored pathological gambling and social media addiction as predictors of depressive symptoms among university undergraduates in southeast Nigeria. Four hundred and sixty (460) participants, comprising 280 (60.9%) males and 180 (39.1%) females who were selected through purposive sampling technique participated in the study. Their ages ranged from 18 to 24 years, with a mean age of 20.5 years and standard deviation of 4.5 years. The instruments used for data collection were South Oaks Gambling Screen, Internet Addiction Test and Beck Depression Inventory. The design adopted in the study was a predictive design while multiple linear regression was adopted for data analysis. Three hypotheses were tested, and the result revealed that the first hypothesis which stated that pathological gambling would significantly predict depressive symptoms among university undergraduates was accepted at F = 216.706, β=.572: *t* =15.062, P<.01. Also, the second hypothesis which stated that social media addiction would significantly predict depressive symptoms among university undergraduates was accepted at F= 216.706, β=.221; *t* =5.818, P<.01. Furthermore, the third hypothesis which stated that Pathological gambling and social media addiction would jointly and significantly predict depressive symptoms among undergraduates was accepted at F = 216.706, R = .702, R^2 = .492, p< .01. Based on the findings, the researchers recommended among others that that Students should be given proper orientation about the psychological and economic negative implications of gambling.

Key words: Pathological Gambling, Social Media Addiction, Depressive Symptoms.

Introduction

Depression contributes substantially to the global burden of disease (Heuschkel & Kuypers, 2020; APA, 2021). Depression is the second highest cause of disability (Kessler & Bromet, 2013). Indeed, depressive disorders are among the most prevalent form of mental illness in young people (Merikangas et al., 2011). Globally, depression-induced suicide is ranked among the major cause of death in young people (Capron et al., 2014). The high prevalence of depression-induced suicides could be found in young people in both developed and developing countries of the world, notably among undergraduate students (Ibrahim et al., 2013; Onu & Okoye, 2020).

A cross-sectional investigation among medical students in a Nigerian university reported the prevalence of depressive symptoms to be 23.3%. In the study, numerous factors that may cause depression in students were also reported to include higher study year and older age (Ibrahim et al., 2013), female gender (Eisenberg, 2011) lower socioeconomic status (Ibrahim et al., 2013), stressful and traumatic life events (Adewuya et al., 2006), witnessing parental violence (Hindi et al., 2006), chronic illness, addictive behaviour, (Hindin et al., 2006), and poor academic performance (Muhamad, 2013). Furthermore, another study in Nigeria with student participants found that 58.2% scored above the threshold for mild depression Dabana and Gobir (2018).

Pathological gambling is another variable of interest to the researcher. This can also be referred to as gambling disorder. It is a behavioural addiction with similar aetiology and symptoms to those of substance use disorders (Grant et al., 2010). Pathological gambling refers to repeated problem gambling behaviour that becomes increasingly destructive over time and is associated with long-lasting consequences (Grant et al; 2015). Essentially, pathological gambling have been found to be positively associated with depression (Barrault et al., 2019; Bilevicius et al., 2018; Churchill & Farrell, 2018; Cowlishaw et al., 2016; Ledgerwood & Petry, 2010). Consequently, pathological gamblers have also been found to have higher rates of suicidality, greater cognitive impairments and increased

levels of distress (Grant et al., 2015; Yakovenko & Hodgins, 2018). Furthermore, pathological gamblers' severity of problems has been shown to be positively associated with depression scores (Thomsen et al., 2009). Additionally, pathological gamblers with comorbid depressive symptoms were found to take longer to achieve stable abstinence from gambling than those without depression, with negative afect identifed as a possible predictor of relapse (Hodgins & Peden, 2005).

As pathological gamblers have more depression symptoms than non-problem gamblers, the question arises whether a chronic state of depression leads to problem gambling or if gambling-related problems, including personal and financial difculties, lead to depression (Clarke, 2006). That is, chronic depression could reasonably be an emotional reaction to the adverse outcomes associated with excessive gambling, or conversely, it is plausible that given the right environment a person with depression may be induced into gambling as a way to relieve negative afect (Clarke, 2006).

Accordingly, Dussault et al. (2011) conducted a longitudinal study to explore the links between depression, impulsivity and gambling problems. The authors found that impulsivity was the common risk factor for gambling problems and depressive symptoms. However, once the depressive symptoms and gambling problems emerged, they appeared to infuence each other over time. The authors suggested that these findings reconciled two contrasting theoretical perspectives. The first is that gambling problems precede depressive symptoms suggesting that frequent gambling leads to social isolation and money problems, which, in turn, leads to depressive symptoms (Langhinrichsen-Rohling, 2004). The second perspective is that depressive symptoms precede gambling problems where gambling is used as a distraction strategy from personal problems and to overcome a state of apathy (Blaszczynski & Nower, 2002).

Social media addiction is also another variable of interest to the researchers. Social media defined as 'websites which allow profile creation and visibility of relationships between users' (Sims et al., 2017) has become one of the most common leisure activities among numerous users. Almost half of the world population (49%; 3.80 billion) actively use social media and these numbers are rapidly growing on daily basis (Kemp, 2020). People use social media for a variety of purposes such as maintaining relationships, access to

information and entertainment (Boyd & Ellison, 2007; Lin & Lu, 2011); this made social media to be an intimate part of many individuals' everyday life.

Although social media provides a wide range of benefits and opportunities for users, numerous concerns have been raised about its excessive usage globally (Baccarella et al., 2018). The excessive or addictive use of social media defined as 'a behavioural addiction that is characterized as being overly concerned about social media, driven by an uncontrollable urge to log in to or use social media, and dedicating so much time and effort to social media in such a way that it impairs other important areas of life'(Hilliard, 2019). Though previous studies mainly focused on opportunities and privileges provided by internet-social media but presently, scholars' attention have turned to the adverse effects of the internet and social media among its users (Baccarella et al., 2018).

Considering the foregoing, it is pertinent to argue that social media sites such as Twitter could be a consistent and reliable source for determining the level of depression of individuals. It was also reported that detecting any sign of depression at early stages of life would enable experts to prevent and intervene on depressive symptoms before they escalate.

Some theories were reviewed to explain depression/depressive symptoms. The diatheses-stress theory of depression was developed by Monroe and Simons (1991) to explain the cause of depression. The theorists posited that negative life event is a factor that can cause depression. These events include the loss of a valuable source of love, security, identity, or self-worth. The deaths of a loved one, the breakup of an important romantic relationship, or a significant personal failure are major examples (Arieti & Bemporad, 1978). Similarly, Brown and Harris (1978) in their study with women found that depression is often preceded by a negative life event. At the same time, the data additionally showed that only a minority of women who experienced a negative life event became depressed. On the basis of these it is plausible to conclude that negative life events can lead to depression in some, but not in others.

Also, cognitive theory by Beck (1967) was considered in this study. This theory assumes that depression is caused by the way in which people think about themselves and process

personal information. Beck later added causal elements to his descriptive account of depression and further described three ways through which depression can be developed and maintained. These include: the negative cognitive triad in the maintenance of depression, negative Self-Schemas in the maintenance of depression and dysfunctional beliefs as vulnerability factor in depression. He concluded that these absolutistic beliefs make a person susceptible to depression when a negative life event occurs (Beck, 1967).

Hopelessness theory of depression by Abramson et al. (1989) was also Part of the theories foundation for the study. Hopelessness theory is a vulnerability-stress model of depression that describes the etiology of a subtype of depression known as 'hopelessness depression' in terms of the occurrence of cognitive vulnerabilities and the occurrence of negative life events (Abramson et al., 1989). Particularly, a style or tendency to suppose negative characteristics about oneself, negative view about the future, and stable, global causes for negative life events is hypothesized to increase a likelihood that negative inferences about causes, consequences, and the self will be made when a negative life event occurs, thereby increasing the chances that hopelessness and the symptoms of hopelessness depression will build up in an individual. Hopelessness is considered the chief cause of the development of hopelessness depression, a type of depression that shares defining characteristics of traditional depressive disorders but involves a different subset of symptoms.

Subsequently, several studies were reviewed in order to give empirical support to this study. With respect to pathological gambling and depressive symptoms, Huțul and Karner-Huțuleac (2022) conducted a study to ascertain the Level of Gambling Prediction using depression and anxiety in the Romanian population, comprising a sample of 920 persons. The results showed that depression predicts gambling in proportion of 26.3 percent, while anxiety predicts 31.5 percent of gambling variance.

Also, Vaughan and Flack (2022) studied Depression symptoms, problem gambling and the role of escape and excitement gambling outcome expectancies. 282 adults who gambled at least once a month were recruited to complete an online survey that measured depression severity, the gambling outcomes expectancies of escape and excitement and problem gambling. The study did not find evidence for a mediation effect for either escape or

excitement, although escape moderated the relationship between depression and problem gambling. In particular, there was no relationship between depression and problem gambling when there was low endorsement of the escape gambling outcomes expectancies. However, the relationship between depression and problem gambling strengthened when endorsement of gambling as an escape increased. This suggests that individuals with elevated levels of depression symptoms, and who view gambling as a way to moderate mood states, may be at higher risk for problem gambling than those who hold less favourable views towards gambling as a mood modifier.

Furthermore, Metcalf et al. (2023) investigated the associations between gambling problems and suicidality in Australian veterans. 3,511 Australian Défense Force veterans who had recently transitioned to civilian life were selected for the study. Gambling problems were assessed using the Problem Gambling Severity Index (PGSI) and suicidal ideation and behaviour were assessed using items adapted from the National Survey of Mental Health and Wellbeing. Result showed that at-risk gambling and problem gambling were associated with increased odds of suicidal ideation and suicide planning or attempts.

With respect to social media addiction and depressive symptoms, Nesi et al. (2022) examined prospective associations between adolescents' emotional responses to social media experiences and depressive symptoms. A school-based sample of 687 adolescents completed measures of positive and negative emotional responses to social media experiences and depressive symptoms at two time points, one year apart. Higher levels of depressive symptoms were associated with more frequent negative emotional responses to social media experiences one year later, whereas greater positive emotional responses to social media were associated with later depressive symptoms.

Tandoc and Goh (2022) investigated the link between Facebook use and depression. 355 participants were selected for the study. The result revealed that increased Facebook use leads to increased depression which further leads to greater Facebook use. This relationship is further enhanced when the role of envy is accounted for. Specifically, more Facebook use to greater users' envy which leads to more depression.

Furthermore, Liu et al (2022) conducted a dose-response meta-analysis of the association between time spent on social media and depression. Twenty-one cross-sectional studies and five longitudinal studies including a total of 55,340 participants were used in the study. Results showed that time spent on social media was significantly associated with a higher risk of depressive symptoms. Time spent on social media was associated with depression in a linear dose-response and gender-specific manner, which suggests the need for better monitoring of adolescent social media use.

Hypotheses

1. Pathological gambling would significantly predict depressive symptoms among university undergraduates in southeast Nigeria.

2. Social media addiction would significantly predict depressive symptoms among university undergraduates in southeast Nigeria.

Method

Participants

Four hundred and sixty (460) participants were selected throughthe use of simple ramdom sampling and purposive sampling technique from four public universities in Southeast Nigeria. They were made up of 280 (60%) malee and 180 (39.1%) females, whose qges ranged from 18-24 years, with a mean age of 20.5 years and standard deviation of 4.5 years. Tge distribution of the participants showed that 130 (28.3%) were sampled from Nnamdi Azikiwe University, Awka, 105 (22.8%) from University of Nigeria, Nsukka; 225 (27.2%) from Ebonyi State University, Abakaliki; and 100 (21.7%) from Alex Ekwueme Federal University, Ndufu-Alike Ikwo. All participants were active undergraduates as at the time of the study.

Instruments

Three instruments were used in this study. The three instruments used in this study were South Oaks Gambling screen that was developed by Lesieur and Blume (1987), Young

Internet Addiction Scale developed by Young et al. (1996) and Beck Depression Inventory developed by Beck (1961). The South Oaks Gambling Screen (SOGS) was used to measure pathological gambling. It is a 20-item questionnaire used to measure severity of gambling behavior. It may be self-administered or administered by nonprofessional or professional interviewers. An index based on a modification of the DSM-V diagnostic criteria for pathological gambling was designed. The index has seven components: (1) family disruption, (2) job disruption, (3) lying about gambling wins and losses, (4) default on debts, (5) going to someone to relieve a desperate financial situation produced by gambling, (6) borrowing from illegal sources, and (7) committing an illegal act to finance gambling. Some of the items on the scale are: "when you gamble, how often do you go back another day to win back money you have lost?", "Have you ever claimed to be winning money gambling, but weren't really?" "Do you feel you have ever had a problem with betting or money gambling?" The score for each of the 20 items is obtained by scoring one point in each of the items and adding the total points. Score of 0 indicates no problem with gambling, score of 1-4 indicates some problems with gambling while score of 5 or more indicates probable pathological gambler. The researcher conducted a reliability analysis (Cronbach's alpha) with 40 participants. A reliability estimates of .90 was found for the pathological gambling scale. The reliability estimates were largely above the literature requirement i.e., the value is greater than .70.

Internet Addiction Test (IAT) developed by Young et al. (1996) consists of 20 items that measures mild, moderate and severe level of Internet Addiction. The internet addiction scale was chosen because social media is a subtype of the internet (Turel & Serenko, 2010) and the items it has for measuring addiction covers all social media sites unlike the other scales that have been modelled specifically for sites like the Facebook Addiction Symptoms Scale (FASS) and Facebook Addiction test (FAT) for Facebook. Each of the 20 items was responded to using a likert scoring pattern where 0 = Not Applicable, 1 = Rarely, 2 = Occasionally, 3 = Frequently, and 4 = Often. Some of the items on the scale are: "how often do you find that you stay online than longer than intended?", "How often do you prefer excitement of the social media to intimacy with your partner?", "How often do you form new relationships with fellow online users?", "How often do your grades or work suffer

because of the time you spend online"?. To identify the level of addiction to social media among students, individual scores for each item on the Internet Addiction Test (IAT), which was administered to each participant as part of the questionnaire, were summed up and the total score for each participant was grouped according to the range of points in which they fall. Scores were ranged between 0 – 14 points: None, 15 – 29 points: Mild, 30 – 59 points: Moderate, and 60– 80 points: Severe. A reliability estimates of .86 was found for the internet addiction inventory. The reliability estimates were largely above the literature requirement i.e., the value is greater than .70.

Beck Depression Inventory is a 21 item self-report inventory that reflects cognitive, affective, and somatic components of depression, utilized in adolescents and adults. It assesses 21 symptoms and attitudes which include Mood, Pessimism, Sense of Failure, Lack of Satisfaction, Guilt Feelings, Sense of Punishment, Self-dislike, Self-accusation, Suicidal Wishes, Crying, Irritability, Social Withdrawal, Indecisiveness, Distortion of Body Image, Work Inhibition, Sleep Disturbance, Fatigability, Loss of Appetite, Weight Loss, Somatic Preoccupation, and Loss of Libido. Some samples of the items on the scale are 'I feel sad', 'I feel discouraged about the future', I feel guilty a good part of the time'. The BDI-II is scored by summing the highest ratings for each of the 21 symptoms. Items are organized according to the severity of the content of alternative statements and each symptom is rated on a 4-point scale ranging from 0 (not) to 3 (severe) which covers cognitive, emotional/affective and somatic/vegetative symptoms with no sub scale and total scores can range from 0 to 63. Use the highest response when an item has greater than 1 severity rating. The scoring is criterion-referenced and performed by hand with scores 0-13 indicates minimal range, 14-19 mild depression, 20-28 moderate depression and 29-63 severe depression. The researcher conducted a reliability analysis (Cronbach's alpha) with 40 participants. A reliability estimates of .86 was found for the internet addiction inventory. The reliability estimates were largely above the literature requirement i.e., the value is greater than .70.

Procedure

The researchers established rapport with the participants and obtained their informed consents before responding to the instruments. The researcher further made sure that only those who met the inclusion criteria participated in the study. The instruments were distributed to the participants in a questionnaire format. However, out of the 500 copies of questionnaires distributed to participants, 40 were not properly filled, wile 470 copies were adequately filled and therefore, were employed for final data analysis.

Design and Statistics

The design for the study was predictive design while multiple linear regression statistics was used for data analysis.

Result

Table 1.: Summary table of Mean, Standard Deviation, and Correlation Coefficient of Study variables.

	N	M	SD	1	2	3
Social Media Addiction	460	2.513	0.994	1		
Pathological Gambling	460	0.351	0.342	0.468**	1	
Situational Depression	460	0.929	0.813	0.484**	0.675**	1

Note: **correlation is significant at 0.01 level

The mean, standard deviation, and correlation results are shown in Table 1. The table indicates that the mean and standard deviation values were modest for all the variables. The descriptive statistics revealed a moderate degree of descriptive statistical values for all the study's variables. From the correlation table, it can be seen that all the variables exhibited bivariate relationship with each other at .01 level of significance respectively. Pathological gambling ($r = .675$, $p < .01$), and social media addiction ($r = .484$, $p < .01$) were

all positively correlated with depressive symptoms among university students. This indicates that increase in social media addition and pathological gambling will lead to an increase in depressive symptoms. The table also showed that a significant positive relationship exists between pathological gambling and social media addiction (r = .468, p < .01). Hence, the data were considered appropriate for further statistical analysis. It is also important to know that the observed correlation values were below .80 indicating that multicollinearity and common method variance had little impact on the statistical analysis.

Table 2.: Summary table of multiple regression analysis of from pathological gambling, social media addiction and depressive symptoms.

	B	β	t	Part correlation	95% CI
Pathological Gambling	.367	.572**	15.062	.508	[.189, .545]
Social Media Addiction	.182	.221**	5.818	.196	[.120, .243]

F = 216.706, R = .702*, R^2 = .492, Adj. R^2 = .490

Note: **p < .01

The results indicated that pathological gambling, B(458) = .572, p< .01; and social media addiction, B(458) = .221, p< .01 had a significant positive individual effect on depressive symptoms as revealed by the B-values, depression increases by 36% and 18% for every unit increase in pathological gambling and social media addiction. Therefore, hypotheses 1 and 2 were supported and accepted. The result also offered support for the third hypothesis: pathological gambling and social media addiction had a combined effect on depressive symptoms.

Discussion

The study examined if pathological gambling and social media addiction will positively and significantly predict depressive symptoms among university undergraduates in southeast Nigeria.

Hence hypothesis 1, which stated that pathological gambling would significantly predict depressive symptoms was accepted. The finding aligned with Huțul and Karner-Huțuleac (2022) who conducted a study to ascertain the Level of Gambling Prediction using depression and anxiety in the Romanian Population. The results showed that depression predicts gambling in proportion of 26.3 percent, while anxiety predicts 31.5 percent of gambling variance. It also agrees with the study conducted by Vaughan and Flack (2022) who studied Depression symptoms, problem gambling and the role of escape and excitement gambling outcome expectancies. The study did not find evidence for a mediation effect for either escape or excitement, although escape moderated the relationship between depression and problem gambling. In particular, there was not a relationship between depression and problem gambling when there was low endorsement of the escape gambling outcomes expectancies. However, the relationship between depression and problem gambling strengthened when endorsement of gambling as an escape increased.

Also, hypothesis 2 which stated that social media addiction would significantly predict depressive symptoms among university undergraduate in southeast Nigeria was equally accepted. The result is in line with the study of Nesi et al. (2022) who examined prospective associations between adolescents' emotional responses to social media experiences and depressive symptoms. They found that higher levels of depressive symptoms were associated with more frequent negative emotional responses to social media experiences one year later, whereas greater positive emotional responses to social media were associated with later depressive symptoms. It also agrees with Tandoc and Goh (2022) who investigated the link between Facebook use and depression and found that increased Facebook use leads to increased depression which further leads to greater Facebook use. They also found that this relationship is further enhanced when the role of envy is accounted for. Specifically, more Facebook use leads to greater users' envy which leads to more depression.

Generally scholars at different times have shown that gambling and addictions are harmful to mental health (Metcalf et al., 2023; Liu et al, 2022) .

Implication of the Study

This study has both theoretical and practical implications. Firstly, it confirms the assumption of Beck's cognitive theory of depression which states that depression is caused by the way in which people think about themselves and process personal information. In the same way, individuals who are addicted to gambling and perceive gambling as their only means of livelihood, and eventually lost a huge amount of money to gambling may begin to think that life is no more worth living and may go into depression. Again, individuals who are addicted to the social media may begin to see others as better than themselves due to their social media posts, and may feel that he or she isn't as successful as others, and may eventually become depressed. Therefore, the result of the present study can be applied in the field to reduce the incidence of depression due to pathological gambling and being addicted to the social media.

This study will help university undergraduates understand the economic, social and psychological implications of gambling and decide to venture into other profitable and legal businesses, instead of engaging in gambling which is not a sustainable means of income. It will also help university undergraduates limit the time they spend on social media and learn not to believe every success story they see on social media in order not to go into depression.

Consequently, from the finding of this study, the following recommendations were made:

1. Students should be given proper orientation about the psychological and economic negative implications of gambling and be encouraged to venture into other productive ventures in order not to depend on gambling as means of livelihood.

2. University undergraduates should be given adequate orientation about the dangers of believing everything they see on the social media. This is because social media posts and contents can actually lead one into depression when one begins to see such contents as true and begin to compare themselves to others they interact with on social media.

3. There should be a close relationship between the parents/guardians of the students and the school management, so that issues concerning students' mental health can always be discussed and tackled.

4. Guidance and counseling departments in the universities should be made to function effectively, so that students' mental health and social issues would be properly dealt with.

5. Every university student should be compelled to learn one skill or the other in order to be busy, thereby taking their minds away from gambling and being too active on the social media.

Conclusion

The study examined pathological gambling and social media addiction as predictors of depressive symptoms, testing three hypotheses. The first hypothesis which stated that Pathological gambling would significantly predict depressive symptoms among university undergraduates in southeastern Nigeria was accepted. Also, the second hypothesis which stated that Social media addiction would significantly predict depressive symptoms among university undergraduates in southeastern Nigeria was accepted. There was also a joint predictive effect of the two independent variables as indicated by hypothesis three. Therefore, the researchers concluded that pathological gambling and social media addiction are strong predictors of depressive symptoms.

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