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Predictive Roles of Depression and Demographic Factors in Internet Addiction: A Cross-Sectional Study of Students in a Nigerian University

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Abstract

Internet addiction has become a behavioural problem globally, especially among the youths. Not much is done about it in developing countries like Nigeria. This study therefore investigated the predictive roles of depression and demographic factors in Internet addiction among Nigerian university students. It was a survey, utilizing ex-post facto design. Using purposive sampling technique, undergraduate students (age 21-45) were selected for the study (N=492). Revalidated versions of Beck's Depression Inventory (Beck's, et. al., 1961) and Young's (1998) Internet Addiction Scale were used to collect data. The result indicated that increase in depression significantly related with increase in internet addiction. The results underscore the need for psychological services within the Nigeria university system to provide intervention for students who are prone to Internet addiction and help in policy formulation.

Keywords: Depression, Demographic Factors, Internet Addiction, University Students.

Introduction

Addiction is an age-old global problem; people get addicted to different things for different reasons. With the advent of the internet, a new form of addiction, the Internet addiction, emerged. Many people are getting increasingly attached to the internet through laptops, mobile phones, mini-tablets, or desktops at home, schools or offices; this alarming attachment was what gave rise to the term Internet Addiction (Young, 1996). Internet addiction is a pathological compulsive use of the internet (Federwisch, 1997) and is reported as a phenomenon worthy of note and research (Young, 1996). For Sato (2006),

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addiction to the internet is a new phenomenon that many practitioners are not aware of and consequently unprepared to treat. In scientific literature, pathological internet use has been described with different terms such as computer addiction, cyber space addiction, internet addiction disorder, pathological internet use, high internet despondency, problematic internet use, etc (Byun, Ruffini, Mills, Douglas, Niang, Stepchenkova, Lee, Loutfi, Lee, Atallah & Blanton, 2009; Widyanto & Griffiths, 2006). Brand, Young, Laier (2014) observed that many people use the Internet as a functional tool to perform their personal goals in everyday life but some individuals suffer from a loss of control over their Internet use resulting in personal distress, symptoms of psychological dependence, and diverse negative consequences. There is no generally accepted term used to describe this phenomenon, making it very tasking to give a clear picture of the phenomenon.

Internet Gaming Addiction is now 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). Clinical psychologists and other experts in related fields are still researching discover to the real characteristics of this phenomenon and to establish a uniform definition which may be used in the DSM (Block, 2008).

Experts have given the criteria for Internet addition 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, 1996, 1999).

Students, like other internet users have reportedly met the criteria for Internet addiction (Young, 1996), with attendant physical, social, economic, academic, and psychological effects. With the increasing level of civilization, students of tertiary institutions are bound to use the Internet for academic and other purposes. Apparently, the Internet has become an integral part of the students' lives in Nigeria, as it is in other parts of the world. At present, the ability to use the internet has become a necessary skill to function effectively as a student, but with high proneness to addiction due to repeated exposure. Such addition is evident in dependence and tolerance, with neurobiological implications (National Institute of Drug Abuse, 2007). This makes it imperative to use and difficult to stop using despite the knowledge and experiences of side effects. Some people have been found to browse the internet without any specific reason (Pew Research Centre, 2010). Another problem is that, many researchers in recent past have concentrated on the impact of heavy internet use, especially among young adults globally (Akhter, 2013; Alam, et. al., 2014; Brand, et. al., 2014; Morahan-Martin, 2005; Kwiatkowska, Ziolkó & Krysta, 2007; Zainudin, Din & Othman, 2013) and in Nigeria (Okelola, Abulganiyu, Abimbola & Longe, 2011). Researchers tend to pay little attention to the etiology of the addiction itself. Scientific studies on internet addiction especially in South-South Nigeria appear insufficient. By implication, academic reference materials, scientific knowledge, and intervention bases are insufficient. So far, the few empirical investigations

that are internet-related in South Nigeria concentrate on prevalence of Internet use, the length of time spent and consequent effects (Ogbomo & Iwighrehweta, 2016). Information on etiology, especially as it concerns psychological factors, seems to be grossly lacking. It therefore becomes necessary to investigate the psychosocial factors that could predispose to Internet addiction since addition is primarily a psychological and social problem. The purpose of the study was therefore to examine the predictive roles of depression and demographic factors in Internet addiction among students of a Nigerian University.

Review of Related Literature

1. Depression and Internet Addiction

Empirical evidences have established some relationships between depression (and other emotional states) and Internet addiction with the disruption of the normal lives of an individual and the people around him as the resultant effects (Cho & Lee, 2004; Horzum, Ayas & Balta, 2008; Jang, Hwang, Choi, 2008; Kim, Ryu, Chon, Choi, Seo & Nam, 2006; Kraut, Kiesler, Boneva, Cummings, Helgeson, & Crawford, 2002; Kraut, Lundmark, Patterson, Kiesler, Mukhopadhyay, & Scherlis, 1998; Morgan & Cotten, 2003; Nie, Hillygus, & Erbring, 2002; Whang, Lee & Chang, 2003). Alam, Hashim, Ahmad, Wel, Nor and Omar's (2014) finding implicated physical, social and psychological problems in Internet addiction. Studies have also found positive correlation between Internet addiction and depression, anxiety, and stress; with Internet addiction causing depression and other psychological problems (Akin & Iskender, 2011). For Griffiths (2000) and McKenna and Bargh (2000), the effects of depression-driven internet addition included neglect of academic, work, and domestic responsibilities, disruption of relationships, social isolation, and financial problems.

A study of Nigerian university students revealed positive relationship between Internet addiction and depression (Okwaraji, Aguwa, Onyebueke & Shiweobi-Eze, 2015). In their study, Bahrainian and Khazae (2014) found that depression and self-esteem were two main causes and amplifiers of Internet addiction among students while Terwase and Ibaishwa (2014) found resilience, shyness, and loneliness as significant predictors of Internet addiction among students of a Nigeria university. Zaffar, Mahmood, Saleem, & Zakaria (2015) reported a linear interaction among Facebook addiction, anxiety, and depression. However, findings of Sanders, Field, Diego and Caplan (2000) and Niemz, Griffiths and Banyard (2005) indicated that there was no relationship between depression and Internet addiction.

2. Demographic Factors and Internet Addiction

Empirical evidences have also implicated demographic factors in internet addition. Frangos, Frangos and Kiohos (2010), in a study of university students found that the males were more likely to be addicted than the females, that divorced students were more addicted to the internet than the married, that students with poor academic grades were more addicted to the internet than those with good academic grades, and that students who accessed the internet outside the home (from the cyber café) were more addicted to the internet than those who accessed the internet from the home. It has further been found that male undergraduate students reported higher internet addiction than their

female counterparts (Akhter, 2013; Okwaraji, et. al., 2015; Young, 1998 & 2004). Weiser (2000) reported gender differences in the use of the internet; males were found to use the Internet more for entertainment and leisure whereas the females used the internet more for interpersonal communications and educational assistance. Studies also found that the young people between the ages of 12 and 24 years were more vulnerable to Internet addiction than the older ones (Mafe & Blass, 2006; Soule, Shell & Kleen, 2003; Thatcher & Gooloman, 2005; Uneri & Tanidir, 2011). Yang and Tung (2007) reported that most university students living away from their parents with fewer classes had high propensity of having developing Internet addiction. Final year undergraduate students reported more severe Internet addiction than those at other levels (Okwaraji, et. al, 2015). Omoyemiju and Fatoki (2015) found that students reared by permissive parenting style exhibited more Internet addictive behaviour than those whose parents were authoritarian.

The findings of the fore-going studies tend to show that there has been established some relationship among depression, demographic factors and Internet addiction in some parts of the world, including Nigeria (Frangos, Frangos & Kiohos, 2010; Okwaraji, Aguwa, Onyebueke & Shiweobi-Eze, 2015; Whang, Lee & Chang, 2003), but with varying, inconsistent results. Those inconsistent results further necessitate scientific investigations among university students in Nigeria, whose businesses and leisure, to a large extent, depend on the internet and whose use of the internet is now peculiarly characterized by posting of nude pictures and real sexual activities of former lovers and others they choose to blackmail (as opposed to the willing pornography of the Western culture). Many young Nigerians spend time and resources surfing the net for such viral data for obvious reasons. In addition, most of the earlier studies in this area were conducted among students of tertiary institutions in foreign countries, mainly in Western countries (Fitzpatrick, 2008), but such studies are grossly insufficient in Nigeria (and almost totally lacking in South-South Nigeria). There is therefore paucity of indigenous scientific literature and a need to empirically ascertain the realities in South-South Nigeria in particular.

It was therefore hypothesized that:

1. High depressive symptoms will positively relate with high Internet addition among Nigerian university students.
2. Demographic variables (age, sex, employment status, family type, marital status, and year of study) will independently and jointly predict Internet addiction among University of Uyo students.

Method

Study Design

An ex-post facto design was adopted for the study which was it was cross-sectional survey; the variables had pre-existed and were not manipulated. The study was conducted in University of Uyo, Uyo, Akwa Ibom State, Nigeria.

Sample

Multi-stage sampling method was used to select participants for this study. Convenience sampling method was used to select the setting (University of Uyo), the faculties formed the clusters, simple random sampling method (balloting) was used to select the faculties from where the participants were drawn, while purposive sampling

method was used to select the actual participants for the study – only volunteer regular (full-time) undergraduate students participated in the study.

A total of 492 students of the University of Uyo students participated in this phase of the study. They were 243 males and 249 females with a mean age of 21.89 years, ranging from 17 to 38 years. The participants were drawn from 5 faculties, namely, Faculty of Arts (n=121), Faculty of Social Sciences (n=111), Faculty of Science (n=74), Faculty of Education (n=97), and Faculty of Environmental Studies (n=89). All of them were undergraduates from 100 to 500 levels from various departments of the selected Faculties.

All undergraduate students of the selected faculties were included in the study. Postgraduate students, undergraduates who objected to participation, undergraduates from faculties not selected, staff of the university, and visitors were not accommodated in the study.

Measures

Variables in the study were measured using a structured questionnaire with 4 sections:

Section A was a brief informed consent form designed for participants to read and indicate consent to voluntarily participate in the study by appending their signatures.

Section B comprised the demographic variables (independent variables) of the participants; of interest to this study were age, sex, employment status, year of study, and marital status.

Section C was a revalidated *Beck's Depression Inventory (BDI)* (Beck, Ward, Mendelson, Mock & Erbaugh, 1961). This was used to measure depression (an independent variable) among participants. Originally, BDI has 21 items. For the purpose this study, it was revalidated using 113 Nigerian undergraduates and 20 items were found reliable with a general Cronbach's coefficient of .70. One item was dropped for not meeting a minimum reliability cut-off point of .3. A norm of 40 was established at 2 standard deviations above the mean. Scores below the norm indicated low depressive symptoms while scores from the norm and above indicated high depressive symptoms for both sexes. Basically, BDI is designed in a 4-point Likert-type format. Each item on the BDI consists of 4 statements that range from mild/neutral (mild = 0) to severe (severe = 3). Examples of statements making an item on BDI are: I do not feel sad (0), I feel sad (1), I feel sad all the time and can't snap out of it (2), I feel so sad and unhappy that I can't stand it (3).

Section D was a revalidated *Internet Addiction Scale (IAS)* (Young, 1998). This was used to measure Internet addiction (dependent variable) among participants; originally, it has 20 items. For the purpose of this study, it was revalidated using 113 Nigerian undergraduates and 18 items were found reliable with a general Cronbach's coefficient of .87. A norm of 45 was established at 2 standard deviations above the mean. Scores below the norm indicated low Internet addiction while scores from the norm and above indicated high internet addiction. Two items were dropped for not meeting a minimum reliability cut-off point of .3. Basically, IAS is a 5-point Likert-type instrument; its response formats are: "rarely" (1), "occasionally" (2), "frequently" (3), "often" (4), and "always" (5). An example of item on IAS is: How often do you neglect household chores to spend more time on-line?

Procedure

A letter of identification/introduction was obtained from the Department of Psychology, University of Uyo. With this, approval was obtained to access the intended participants. The study was conducted in two phases – the pilot phase and the main study.

At the pilot phase, the initial versions of the instruments were presented to two clinical psychologists who scrutinized the wording to ensure its face/content validity. The word “snap” in item 1 on BDI was generally changed to “get”. The participants (students from the Faculty of Law) were contacted at the end of their lectures (having informed and obtained the permission of the lecturers) and in their halls of residence. The purpose of the study (validation of the instruments) was explained to them and the instruments were administered to volunteers. All relevant and required instructions and explanations were given to the participants. A total of 120 copies of the instruments were issued but 113 were correctly filled, retrieved, and used for the analysis; 3 were not correctly filled while 4 were not returned. The actual participants were 66 males and 47 females. Their ages ranged from 21 years to 45 years with a mean age of 31.4 years. On the average, they used 48 hours to complete the instruments which were retrieved and their responses were subjected reliability analysis using SPSS Version 20.0. At the end of the pilot study, BDI had 20 reliable items while IAS had 18 reliable items which were used for the main study.

During the main study, the participants (students from the Faculties of Arts, Social Sciences, Science, Education, and Environmental Studies) were contacted at the end of their lectures (having informed and obtained the permission of the lecturers) and in their halls of residence. The revalidated instruments were administered to volunteers who used an average of 48 hours to complete them. All relevant and required instructions and explanations were given to the participants. In all, 500 instruments were issued out but only 492 were correctly filled and returned. The completed instruments were retrieved and their responses subjected to statistical analysis using SPSS version 20. The administration and retrieval of the instruments lasted for 20 days.

Data Analysis

Descriptive and inferential statistics were used to analyze the data collected. Mean, standard deviation, and percentage were used as descriptive statistics. Pearson Product Moment Correlation was used to test for hypothesis one while multiple regression analysis was used to test for hypothesis two.

Results

Results presented on Table 1 show that the on Internet addiction scale, male participants (n=243) had a higher mean score of 43.49 while the females (n=249) had a lower mean score of 39.22, the younger participants aged between 16 and 35 years (n=299) had a higher mean of 45.19 while the old aged 36 years and above (n=193) had a lower mean score of 39.01, and the employed i.e. who were working and schooling (n=189) had a lower mean score of 32.46 while those who were not in any employment i.e. full-time students (n=303) had a higher mean score of 37.48. Also, participants from monogamous families (n=286) reported a higher mean score of 27.01 while those from polygamous families (n=206) reported a lower mean of score of 23.30, the married participants (n=172) reported a lower mean score of 22.30 while the singles (n=320) reported a higher mean score of 28.66. Participants who were in their final years of study (n=191) reported a mean score of 28.71 slightly lower than the non-final year participants (n=301) who had a mean score of 29.19.

**Table 1: Summary of Means and Standard Deviations
Results based on Demographic Variables**

	Gender		Age		Empl. Status		Fam. Type		Mar. status		Yr. of std	
	Male	Fem.	Yng	Old	Empd	N.Empd	Mono	Poly	Mrd	N.Mrd	Fnl	N.Fnl
N	243	249	299	193	189	303	286	206	172	320	191	301
\bar{X}	43.49	39.22	45.19	39.01	32.46	37.48	27.01	23.30	22.30	28.66	28.71	29.19
SD	10.35	11.22	8.45	10.12	10.18	13.49	9.10	11.45	12.02	15.11	12.64	11.72
Min.	66	45	37	55	45	78	62	51	67	79	78	76
Max.	87	78	88	90	89	81	88	79	87	89	85	87

Fem.=female, Yng=young, Empd=employed, N.Empd=not employed, Mrd=married, N.Mrd=not married, Fnl=final, N.Fnl=Non-final, Min.=minimum score, Max.=maximum score

**Table 2. Zero Order Correlation Showing the Relationship between
Demographic Variables and Internet Addiction**

Variables	Mean	SD	1	2	3	4	5	6	7	8
Internet Addiction	29.12	9.85								
Age	11.14	.44	.77**	-						
Sex	22.43	10.42	.48**	.60**	-					
Employment status	6.69	.60	-.42**	.25*	.38**	-				
Family type	13.56	3.58	.56**	.17*	.11	.04	-			
Marital status	8.35	.69	-.30**	-.20	.03	-.05	-.27**	-		
Year of study	17.19	8.13	.61**	.29**	.42**	-.09	.18	-.18	-	
Depression	40.51	11.8	.26*	.42**	.26*	.10	.29**	.23**	.32**	-

*Correlation is significant at the 0.05 level (2-tailed) **Correlation is significant at the 0.01 level (2-tailed)

Zero order correlation was applied to show how the independent variables (demographic variables and depression) correlated with the dependent variable (Internet addiction). The results as presented in Table 2 reveal that there were significant positive relationships between Internet addiction and age ($r = .77, p < .01$), sex ($r = .48, p < .01$), family type ($r = .56, p < .01$), year of study ($r = .61, p < .01$), and depression ($r = .26$). The result implies that being older, female, from monogamous family, single (not married), being in final year, and being depressed significantly related to increase in Internet addiction. The result also shows that there was significant inverse relationship between Internet addiction and employment status ($r = -.42, p < .01$) and marital status ($r = -.30, p < .01$), indicating that not employed and not being married related with increase in Internet addiction.

Hypothesis one stated that high depressive symptoms will positively relate with high Internet addition among Nigerian university students. This hypothesis was tested Pearson Product Moment Correlation and summary of results is presented on Table 3.

Table 3. Pearson Product Moment Correlation Summary Table showing the relationship between Depression and Internet Addiction among University of Uyo Students

	Depression	N	\bar{X}	Std	r-cal	P	Remark
Internet Addiction	High	132	47.26	9.95	5.81	<.05	Sig.
	Low	358	34.20	12.50			

As shown on Table 3, the result of Pearson Product Moment Correlation analysis $\{r=5.81, df = 490, p<.05\}$ indicates that there was significant positive relationship between depression and Internet addiction among the university students sampled. High depressive symptoms positively related with high Internet addition among Nigerian university students sampled. Put differently, increase in depression significantly related with increase in Internet addiction among the students studied. With this result, the hypothesis was accepted.

Hypothesis two stated that demographic variables (age, sex, employment status, family type, marital status, and year of study) will independently and jointly predict Internet addiction among University of Uyo students. This hypothesis was tested using multiple regression analysis and summary of result is presented on Table 4.

Table 4. Summary of Multiple Regression Analysis - Independent and Joint Prediction of Demographic Factors on Internet Addiction among Students

Predictors	β	T	P	R	R ²	F	p
Age	-.15	3.60	<.05				
Sex	.52	8.40	<.05				
Employment Status	.25	2.91	<.05	0.72	0.54	49.80	<.05
Family type	.13	-2.43	<.01				
Marital status	-.10	2.23	<.05				
Year of study	.21	0.98	>.05				

β =beta values (unstandardized regression coefficients); t=calculated value of each of the IVs; p=level of significance; R=a positive linear relationship; F=calculated value of the IVs; R²=variability in the DV as accounted for by the joint influence of the IVs

The results as presented on Table 4 reveal that the students' demographic factors (age, sex, employment status, family type, marital status, and year of study) jointly predicted Internet addiction among the students studied $\{R^2 = 0.54, F (7,492) = 49.80, p < .05\}$. When combined, the students' age, sex, employment status, family type, marital status, and year of study accounted for 54% of the change observed in the Internet addiction level reported by the students. This implies that the collective presence of demographic factors played significant predictive role in the Internet addiction level among the students studied. The result further showed that age ($\beta = .15, t= 3.60, p<.05$), sex ($\beta = .52, t=$

8.40, $p < .05$), employment status ($\beta = .55$, $t = 2.91$, $p < .05$), family type ($\beta = .13$, $t = -2.43$, $p < .05$), and marital status ($\beta = -.10$, $t = 2.23$, $p < .05$) were significant independent predictors of Internet addiction among the students studied. While year of study ($\beta = .21$, $t = 0.98$, $p > .05$) was not a significant independent predictor of Internet addiction among the students. The results implies that students who were younger, females, unemployed, from polygamous families, and singles reported higher level of Internet addiction than their counterparts. With these results, the hypothesis was accepted.

Further more, the results indicate that, among the demographic variables, sex (maleness) was the strongest predictor of Internet addiction while marital status was the weakest predictor of Internet addiction among the students studied.

Discussion and Conclusion

The results of this study indicated that there was a significant positive relationship between depression and Internet addiction; increase in depression related with increase in Internet addiction. This supported the findings of some earlier findings (Bahrainian & Khazae, 2014; Shapira, Goldsmith & Keck, 2000; Petrie & Gunn, 1998; Kraut, et. al., 1998 & 2002; McKenna & Bargh, 2000; Nie, et. al., 2002; Young & Rodgers, 1998) who found increased levels of depressive symptoms in individuals who were addicted to the Internet and those who were most likely to get addicted to the internet. Also, this finding supported the finding that depressed individuals who were more likely to engage in internet use (Caplan, 2008; Kubey, Lavin & Barrows, 2001; Young & Rogers, 1998). A plausible reason for this is that those who are depressed are more likely to stay alone since symptomatically, they lack pleasure in social activities. Under such solitary conditions, they are likely to cling to any available object; the cell phone, laptop, or any other medium through which the web could be surfed could be the most available object that can provide companionship. It is likely that low self-esteem, poor motivation, fear of rejection, and the need for approval associated with depressed individuals contribute to increased internet use. Depressed individuals are drawn to electronic communication because of its anonymous nature, which allows them to talk with others through fictitious names and personalities. However, withdrawal from significant real-life relationships is a consequence of internet addiction. Therefore, the possibility exists that increased levels of social isolation sequel to long time spent in front of a computer or with other web-surfing gadgets, may result in increased depression. This result however, did not support the findings of Sanders, Field, Diego & Caplan (2000) and Niemz, Griffiths & Banyard (2005) whose studies concluded that there was no relationship between depression and Internet addiction. These differences may be due to differences in study population.

The findings of this study further showed that the younger participants reported higher Internet addiction than the older ones, supporting earlier findings that younger people were more addicted to the internet than the older ones (Uneri & Tanidir, 2011; Mafe & Blass, 2006). This could be attributed to the fact that older people are naturally and culturally saddled with more responsibilities which may leave little or no time to surf the net unnecessarily, thus reducing the tendency to get addicted to it. The results further showed that male students reported higher level of internet addiction and supported earlier findings that males reported higher level of Internet addiction than their female counterparts (Kraut, et. al., 2002; Tsai, et. al., 2009; Ybarra & Mitchell, 2005; Young, 1998 & 2004). Again, this may have cultural explanations; in most parts of Nigeria, the

females are trained and expected to be occupied with home/domestic chores while the males are often left to explore the environment, and are likely to be engaged in the increasingly popular online gambling and betting on football games which is common everywhere now.

Moreover, the result of this study showed that students from monogamous families were higher on Internet addiction than those from polygamous families. This could be attributed to the fact that most monogamous homes consist of parents who work almost round the clock and so are not always on ground to supervise their children. This parental deprivation may account for the increasing incidence of online surfing by such children. Most monogamous families are also known for pampering of their children which may lead to excessive provision of electronic gadgets. Conversely, most polygamous families are poor and uncivilized, and so may not be able to provide the facilities with which to access the net; and so even in school students from such homes may not be deeply attached to such gadgets. The result further showed that the singles were more addicted to the internet than the married, pointing to the fact those who are married are more likely to be busy with family responsibilities than those who are not married. Again, such family responsibilities may leave them with little or no time for internet surfing, which they may consider frivolities. The married may use the internet only when it is necessary.

In addition, the unemployed reported higher level of Internet addiction than the employed; this is indicative of the fact that those who were schooling and working were more occupied and busier, and so had little time to surf the net; they may only go there when there is a need. The result also showed that the year of study was not a significant predictor of Internet addiction, implying that among Nigerian students, surfing the net was not a function of the year of study. The final year and the non-final year students were not significantly different in their levels of Internet addiction; therefore any difference found in the level of Internet addiction could not be attributed to the year of study. However, this result contradicted the findings of Okwaraji, et al. (2015) which showed that final year undergraduate students reported more severe Internet addiction than those at other levels.

In conclusion, Internet addiction is becoming a serious behavioural problem. Addiction include gambling, trafficking of pornographic materials, cybersex and cyber bullying. There is also an increased risk of young people who are most vulnerable to this addiction losing sight of the core moral tenets of the society due to repeated exposure to the immoral internet materials. This study investigated the predictive roles of depression and demographic factors in Internet addiction among students of a federal university in Nigeria. A total of 492 undergraduates of the University of Uyo participated in the study. The results showed that participants who were high on depression, males, younger, unemployed, from monogamous families, and unmarried were more addicted to the internet. These results underscore the need for psychological services in Nigerian university system to provide psychological intervention for students who are at the risk of Internet addiction. There is also the need for Nigerian psychologists to create on public awareness (among students, parents, teachers, and education policy makers) on the proper use of the internet to avoid the possible addiction and its effects. Further studies among Nigerians in this area may have to consider other possible psychological variables and extend participants to include students in lower levels of education.

The findings of this study have implication for management and administration of Nigerian universities and by extension, management of universities globally. The services

of psychologists and other mental health experts should be employed to help provide psychological counseling services, detect those who are prone to or experiencing depressive symptoms, and provide intervention. The need and reliance on internet services for academic purposes among university students may have to be revisited as it has a tendency to lead to addiction. Further studies in the area may have to accommodate other possible psychological variable that are capable of predicting or correlating with Internet addiction but were not accommodated in this study. Also, experimental design and reports from significant others may be employed.

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