INTERNET ADDICTION AMONG UNDERGRADUATES IN UNIVERSITY OF IBADAN: IMPERATIVE FOR COUNSELLING INTERVENTION

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ABSTRACT

The extent to which psychological and contextual factors (locus of control, self-concept and parenting styles) correlate with internet addiction among undergraduates in University of Ibadan was examined in this study. Survey design of correlational type was adopted to execute the study. Simple random sampling technique was utilized to draw four hundred and forty-two (Male: 247=female=195) undergraduates with age range of 16 to 26 year ($\bar{x}$ =1.44; SD=.49) from University of Ibadan. The Data source was four self-report questionnaire namely; Young (1996) internet Addition Test; Darling and Toyokawa (1997) Parenting Style Inventory; Levenson (1974) Locus of Control scale and Robinson (1989) self concept questionnaire. Pearson's Product Moment Correlation and multiple regression were used to analyze data at 0.05 level of significance. Result show that the hypothesized variables have significant correlation with internet addition. The composite contribution of the independent variables to the prediction of internet addition was significant. It jointly contributed for about 20% of the variance in the prediction of internet addition of the respondents. Locus of control was the most potent (β=0.128; t =2.554; P<0.05) while self concept had the least contribution to the prediction of internet addition. The outcome has implications for parents, psychologists, educators and policy makers.

Keywords: *Locus of control, parenting style, self-concept and internet addiction*

INTRODUCTION

The internet is wired or wireless mode of communication through which one can receive and transmit information that can be used for single or multiple purposes. Mueller (2010) opined that the internet consists millions of private, public, academic, business, and government networks linked by a broad array of electronic, wireless, and optical networking technologies. It carries an extensive range of educational material at all levels from pre-school to post-doctoral. It is well documented that the students especially undergraduates make use of the internet for researches (Rena, Pavlina, & Paul, 2007; Adomi, 2008). In addition to the usage of internet for academic purposes, the internet has also been shown to accelerate new forms of human interactions among people especially youths through instant messaging, internet forums, and social networking. Studies show that some students get addicted to internet due to usage of social networking websites such as Facebook, Twitter, and Badoo, Instagram and 2go.There are also evidence that the students over use internet for gaming; blogging; email, internet pornography or internet shopping (Turel & Serenko, 2010; Masters, 2015).

In the past, addiction is used to refer to psychoactive substances that cross the blood-brain barrier, temporarily altering the chemical balance of the brain, this would include alcohol, tobacco and some drugs. Recently, a considerable number of psychologists, social scientists and health care professionals now argue that psychological dependency, as may be the case with gambling, sex, internet, work, exercise, etc. should also be counted as addictions, because they can also lead to feelings of guilt, shame, hopelessness, despair, failure, rejection, anxiety and humiliation. Several terms have been proposed to describe excessive computer use such as internet addiction, cyberspace addiction, internet addiction disorder, online addiction, net addiction, internet addicted disorder, pathological internet use, high internet dependency, problematic internet use and others (Meerkerk, 2009; Moreno, Jelenchick & Christakis, 2013; Rosen, 2012). Young (2009) categorized internet addition into five specific subtypes including; cyber-sexual addiction, cyber-relationship, net compulsions: obsessive online gambling, and computer addiction.

Dependency is the core of internet addiction, which is defined with the presence of factors such as withdrawal syndrome, tolerance, impulsive usage and inability to control the usage (Shapira, as cited in Bastani, 2008). Frangos, Frangos and Sotiropoulos (2011) were of the opinion that for activities to be considered internet addiction it must meet the following criteria: spending an increasing amount of time online; failure to reduce use with concomitant feelings of restlessness and depression; staying online longer than originally intended; running the risk of losing a relationship or other opportunities due to internet use; lying to conceal the extent of internet use, and using the internet in order to escape negative feelings (Artemis, Elena, Amalia, Mari, Aliki, Evgenia, Georgios & Dimitrios, 2011).

A study by Niemz, Griffiths and Banyard (2005) show that the prevalence of internet addition is higher among university students when compared to other groups in the society. Possible reasons for this have been adduced by Young (2004) and its includes; students have blocks of unstructured time; schools and universities provide free and unlimited access to the internet; students from the ages of 18 – 22 years are for the first time away from parental control without anyone monitoring or censoring what they say or do online; young students experience new problems of adapting to university life and finding new friends, and often end up seeking a companionship by using different applications of the internet; students receive full encouragement from faculty and administrators in using the different internet applications; youths are more trained to use the different applications of technological inventions and especially the internet; students desire to escape university sources of stress resulting from their obligations to pass exams, compose essays and complete their degrees in the prescribed time with reasonable marks, and finally students feel that university life is alienated from social activities.

The delirious effects of internet addition on young people are well reported. It includes negative impact on identity formation; change in the structure of the developing brain by impairing gray and white matter integrity in the orbitofrontal cortex of the prefrontal regions of the brain (Weng, 2013). This culminates to poor cognitive functioning; poor academic performance, engagement in risky activities; poor dietary habits; low quality of interpersonal relations, and self-injurious behaviours (Kuss & Griffiths 2012; King, Delfabbro & Griffiths, 2012). In a recent *meta-analysis of 31 nations across seven world regions* conducted by Cheng *and Yee-lam (2014) the researchers concluded that* internet addiction is inversely related to quality of life.

Internet addition among undergraduates has attracted the attention of previous researchers for example, Ojo and Omoyemiju (2014) examined the relationship between internet addiction and academic locus of control of students in selected universities in Nigeria. Similarly, Alam, Hashim, Ahmad, Wel, Nor and Omar (2014) investigated the negative and positive impact of internet addiction on young adults in Malaysia. Bahrainian, Alizadeh, Raeisoon, Gorji and Khazaee (2014) also examined the relationship of internet addiction with self-esteem and depression among Birjand Islamic Azad university students. Unlike these previous researches (Ojo et al. 2014; Alam et al. 2014; Bahrainian et al., 2014) which utilized internet addition as a predictor variable, the present study is markedly different because it is in interested on how personal and contextual factors is associated with internet addition as a dependent variable. It is expected therefore, that the outcome of this study will expand the frontiers of knowledge regarding internet usage among undergraduates which hitherto has limited literature especially in the Nigerian context. Moreover, in order to institute effective intervention to curb internet addictive behaviours among undergraduates, there is needed to understand the magnitude and direction of relationship between some psychological and contextual factors and internet addiction.

Locus of control is one psychological factor that could affect internet addition. Judge, Locke and Durham (1997) describe locus of control as one of the four dimensions of core self-evaluations – one's fundamental appraisal of oneself – along with neuroticism, self-efficacy, and self-esteem. Zimbardo (1985) define locus of control as the orientation about whether the

outcomes of our actions are contingent on what we do (internal control orientation) or on events outside our personal control (external control orientation). According to Rotter's (1966) people with internal locus of control usually have a strong sense of <u>self-efficacy</u>, more likely to take responsibility for their actions and tend to be less influenced by the opinions of other people. On the contrary, individuals with external locus control believe and behave as if forces beyond their control such as chance, luck, fate, or others with greater power represent the important factors in determining their behaviours (Carlson, 2007). Empirical data on how locus of control and internet addition is related produced mixed results. Some studies found that internal locus of control is linked with increased addictive behaviours (Norman & Bennett, 1995; Ojo, & Omoyemiju, 2014). Chak and Leung (2004) reported a contrary result concerning the contribution of locus of control to internet addiction.

Another psychological variable that may influence internet addiction is self-concept. Self-concept is a construct that refers to how someone thinks about, evaluates or perceives himself (Baumeister, 1999; McLeon, 2008). One's self-concept (also called self-construction, self-identity, self-perspective or self-structure) is a collection of beliefs about oneself. It is made up of one's self-schemas, and interacts with self-esteem, self-knowledge, and the social self to form the self as whole. It includes the past, present, and future selves, where future selves (or possible selves) represent individuals' ideas of what they might become, what they would like to become, or what they are afraid of becoming, possible selves may function as incentives for certain behaviour (Myers, 2009). Self-concept has attracted a great deal of research due to the fact that it is the basis for all motivated behaviour. However, there appears to be dearth of researches on the relationship between self concept and internet addiction. Armstrong, Phillips and Saling (2013) considered the extent to which *sensation seeking* or *poor self-concept* predicts heavier internet use. They discovered that while poorer self-concept predicted greater scores on the Internet Related Problem Scale, impulsivity did not. Similarly, it has been found that problematic internet use is related with lower self-concept and less satisfaction with life (Spraggins, 2009). Bahrainian and Khazaee (2014) also reported that low self-concept correlated with internet addiction.

Literature has pointed to parents as having a strong influence on how children behave including their additive behaviours. Parenting style encompasses both contextual and individual aspects of a parent's child rearing. Baumrind, (1997) proposed that parenting styles vary along two separate dimensions: demandingness (control) and responsiveness (acceptance), and that crossing these dimensions yields separate categories of parenting styles. Baumrind (1966) proposed three parenting styles; permissive parents, authoritarian and authoritative parents. The permissive parent attempts to behave in a non-punitive, acceptant and affirmative manner towards the children's impulses, desires, and actions. The authoritarian parent on the other hand, attempts to shape, control, and evaluate the behaviour and attitudes of their children in accordance with a set standard of conduct, usually an absolute standard, theologically motivated and formulated by a higher authority. The authoritative parent attempts to direct the child's activities Some researchers have examined the extent to which extent parenting styles relates with internet behaviours (Xian, Li & Newman 2013; Chang et al 2013; Leung & Lee 2015; Jianjun Zhu, Wei Zhang, Chengfu & Bao 2015; Kalmus & Ólafsson, 2015). However, a consensus is yet to be reached on how much parenting styles contribute to prediction of internet addition.

Purpose of the Study

The broad objective of this study is to investigate if there is a significant relationship between the independent variables (locus of control, self concept, parenting style) and internet addiction among undergraduate. Specifically the study proffered answers to the following research questions;

Research Questions
1. Is there a significant relationship between the independent variables (locus of control, self-concept and parenting styles) and internet addition of University of Ibadan undergraduates?
2. To what extent will the independent variables jointly predict internet addition of University of Ibadan undergraduates?
3. What is the relative contribution of each of the independent variables (locus of control, self-concept) to the prediction of internet addition of University of Ibadan undergraduates?

MATERIALS AND METHODS

Study Site
The study site is University of Ibadan, Nigeria. University of Ibadan is the oldest and one of the most prestigious Nigerian universities and is located five miles (8kilometres) from the centre of the major city of Ibadan in Western Nigeria. The University of Ibadan started off as the University College, Ibadan (UCI) which was founded in 1948. At present the university has ten faculties in addition to the college of Medicine. The University was purposively selected for the study due to the availability of internet facilities in all the halls and faculties which enable students to have free access. The University is reputed to have a high quality high speed internet access, efficient and effective local area networks integrated into a campus wide network through optical fibre network and Wi-Fi access covering all halls of residence and the academic areas. The University internet connectivity has grown from a dial up connectivity, a microwave link to an Internet service provider and now the installation and utilization of a Very Small Aperture Terminal (VSAT) connections at both the main campus and the college of medicine. The bandwidth has increased from 64/256 kbps to 1536/7352 and 256/1024 to 740/3072 over 8 and 5 years respectively for the University's main campus and College of Medicine respectively. This translates to a bandwidth of about 12 M bps which is one of the highest in institutions of higher learning in Nigeria and the Sub region (www.ui.edu.ng, 2015).

Design: In order to execute this research, descriptive survey design of correlational type was adopted. It was considered to be the most appropriate design that would provide insight into the pattern and direction of relationship among these variables without any form of manipulation.

Sample and Sampling technique: Simple random sampling technique was adopted to select a representative sample size of 442 respondents from undergraduates in the various departments situated in 10 Faculties and College of Medicine. This enables the inclusion of all undergraduates who expressed desire to be part of the study irrespective of their gender, age, religion, parental socio-economic status and course of study. Two hundred and forty-seven consisting 56% of the respondents were male while the female were 195 (44%). With respect to age, majority of the respondents were between ages 16 to 20 years (49%). This is followed by those between ages 21 to 25 years 195(45%) while those from 26 and above were only 38(8%). This provides evidence that age at which young people enter and graduate from university in Nigeria is on the decline. Information regarding the respondents' parental educational and family status as well as religious inclination is presented on table 1.

Table 1: Sample Characteristics

Parental Educational Level	Frequency	Percentage
NCE/HND	68	16
Degree	255	9
MSC/PHD	68	16
Others	41	59
Family Status	Frequency	Percentage
Monogamous	403	91
Polygamous	39	9
Parent's Status	Frequency	Percentage
Together	379	86
Separated	21	5
Divorced	8	2
Single Parent	34	7
Religion	Frequency	Percentage
Christianity	303	69
Islam	139	31

Measures
Internet Addition
Internet Addiction Test (IAT) by Young (1996) was adopted to assess the respondents' addiction to the internet (criterion variable). The author claimed to have developed this test on the basis of the DSM-IV criteria (Diagnostic and Statistical Manual of Mental Disorders, 4th Edition) for screening pathological gambling. The instrument thus becomes one of the most utilized diagnostic instruments for Internet addiction. IAT is a 20 items self-report questionnaire that measures mild, moderate and severe level of internet addiction. It is anchored on a six point Likert scale of does not apply=0; Rarely=1, occasionally=2, frequently=3, often=4, always=5 . It covers the degree to which internet use affect daily routine, social life, productivity, sleeping pattern, and feeling. Sample items on the instrument include*: How often do others in your life complain to you about the amount of time you spend online? How often do you lose sleep due to late-night log-ins? How often do you find yourself saying "just a few more minutes" when online?* On the basis of the total score obtained on the test, the individual is placed into one of three categories: average online user (from 20 to 39) who has a full control of his or her usage; experiences frequent problems because of excessive Internet use (from 40 to 69); or has significant problems because of Internet use (from 70 to 100). Widyanto and McMurran (2004) reported good internal consistency and concurrent validity for IAT. Similarly, Faraci, Craparo, Messina and Severino (2013) using 521 Italian adults found IAT valid and reliable for assessing internet addiction. For the purpose of this study, test-rest reliability index of r=0.89 was obtained during pilot study.

Parenting Style Inventory
Parenting Style Inventory (PSI-11) by Darling and Toyokawa (1997) was used to measure parenting style. The Parenting Style Inventory (PSI-I1) is a 32 self-report questionnaire designed to assess the construct of parenting style independently of parenting practice. The instrument allows comparisons of the association of parenting style with child outcomes across diverse population and a relatively large age range, the measure was designed to be short, easy to understand, and reliable. It is anchored on five point scale of Strongly Agree=1; Agree=2; Undecided=3; Disagree=4, and Strongly Disagree=5. It has three subscales, of five-items each

designed to assess the three dimensions of parenting styles namely: demandingness, emotional responsivenss, and psychological autonomy-granting. Typical items on the scale include; *my parents really expect me to follow family rules; my parents are strict about how I behave when I'm in stores, the library, or some place where there are mostly adults.* Unlike the older version, the reversed PSI-II appears to have adequate internal consistency, variability, and predictive validity. For all subscales the alphas reached acceptable levels ie.   demandingness, "=.72; responsiveness, "=.74; autonomy-granting, "=.75.The items are simple tenses, easy to understand and culturally fair to Nigerian respondents. However, it was revalidated to obtain a reliability index of r=0.76 after a week interval test retest.

Locus of Control
The respondents' locus of control was measured with Multidimensional Locus of Control instrument (MLC). This is a 24-item scale developed by Levenson (1974). On a Likert scale of 1-6, ranging from strongly disagree to strongly agree. the scale differentiates between internal locus of control, powerful others locus of control, or chance locus of control. Typical items on MLC include; *Often there is no chance of protecting my personal interests from bad luck; When I get what I want, it's usually because I'm lucky; My life is chiefly controlled by powerful others..*The scoring of MLC is simple and easy. It requires totaling the responses for items and adding 24.as indicated as follows; Powerful Others: Total the responses for items 3, 8, 11, 13, 15, 17, 20, and 22; then add +24. Chance: Total the responses for items 2, 6, 7, 10, 12, 14, 16, and 24; then add +24. A high rating on the Internal Locus of Control scale indicates a strong internal locus of control. High ratings on either the Powerful Others scale or the Chance scale indicate a strong external locus of control which means that the individual typically believe that his/her fate is controlled by other people; if ones rating is high on the Chance scale, the person believes that his/her fate is controlled by chance. According to the author, MLCS has a good reliability and validity evidence. The test-retest reliability for MLC is .64 for the internal scale, .77 for the powerful other scale, and .78 for the chance scale. In order to obtain the reliability estimates test-retest within a week interval was done using MLCS and it shows a reliability index of α=0.74.

Self-Concept Measure
 Self-concept Questionnaire (SCQ) developed by Robson (1989) was used to assess the respondents self concept. Robinson (1989) SCQ scale is a widely used self-report instrument for measuring self construct. It consists 30 items (e.g., "*I have control over my life," "I feel emotionally mature," "I can like myself even if others don't"*). The items are based on seven components of self-esteem, according to theoretical and empirical information reviewed by Robson (1988). The SCQ has been proven to have good reliability (Cronbach's α of .89) Ata (2005) report that SCQ has very high internal consistency, ranging from .94 to .97. The researchers reported that SCQ correlated highly with Rosenberg scale of self-esteem in the patient group, and the Ineffectiveness subscale of the Eating Disorders Inventory in the student sample.

Procedures
Balloting method was used to select the College of Medicine in addition to three Faculties, namely; Faculty of Pharmacy; Faculty of Agriculture and Forestry and Faculty of the Social Sciences. Thereafter, two departments each were selected from the participating Faculties using simple random sampling technique. The questionnaires were coded for the purpose of anonymity of responses. Only 200 to 500 level undergraduates were included. The freshmen was excluded because the researchers were of the opinion that being newly admitted the 100 students were still grappling with registration of their admission as at the time of the study. The undergraduates (200 –500 levels based on course of study) were approached in their respective large lecture hall

during a general course (GES). With the support of two research assistants the questionnaires were distributed to students who volunteered to respond. Of the seven hundred and fifteen questionnaires distributed four hundred and forty-two were properly filled and returned. This thereby made the return rate to be 62 % which was considered satisfactory for the study.

Statistical Analyses
Descriptive statistics were utilized to find the average age as well as the degree of dispersion of data (standard deviation). In order to assess the reliability of the instruments, the students' responses at the two time points were compared using Pearson's Product Moment Correlation (PPMC) and Cronbach's alpha. PPMC was also utilized to measure the strength of a linear association between the variables of study. Multiple regression was adopted to measure the extent to which the exploratory variables (locus of control, parenting style and self-concept) could predict internet addition. It was tested at 0.05 level of significance.

RESULTS

Research Question one: Pearson's Product Moment Correlation was adopted to examine the strength and direction of relationship between the independent variables (locus of control, self-concept and parenting styles) and   the respondents internet addition as stated on research question one. The result is presented on table 2.

Table 2: Mean, Standard Deviation and Correlation Matrix Correlations of the Independent
                    Variables and Internet Addition

Variables	1	2	3	4
1.Internet Addiction	1.000			
2.Locus of Control	.149**	1.000		
3.Parenting Style	-.007	-.100*	1.000	
4.Self-Concept	.108*	.342**	.207**	1.000
Mean	49.48	68.11	82.45	90.18
SD	13.48	15.28	14.16	15.38

Note: ** Sig. at .01 level, * Sig. at .05 level

The result as shown on table 2 indicates a linear relationship between the exploratory variables (Locus of control, self-concept and parenting styles) and internet addition. It further reveals that the r values for locus of control and self control is within + 1.00 which is evidence of a positive relationship. The values obtained for the relationship between locus of control (r=.149, p <.05), self-concept (r=.108, p<.05) shows that the strength of the relationship is perfect. This implies that the locus of control (internal and external) correlates with whether or not undergraduates will be addicted to the internet. On the contrary, the result reveal that parenting styles has inverse relationship with internet addition (r=-.007, p >.05).

Research Question two: Multiple Regression analyses was utilized to establish the extent to which the independent variables jointly predict internet addition of the respondents.

Table 2: Summary of Regression Analysis of the combined prediction of each of the Independent variables on the dependent variable

ANOVA					
Multiple R =.164[a]					
Multiple R^2 = .027					
Adjusted R^2 = .020					
Std. Error of Estimate = 13.340					
Sources of Variation	Sum of Squares	Df	Mean Square	F	Sig
Regression	2164.955	3	721.652	4.055	.007[b]
Residual	77947.434	438	177.962		
Total	80112.389	441			

Significant at 0.05 level

It was found that the joint contributions of the independent variables (locus of control, parenting styles and self-concept) to the prediction of internet addition was significant (F $_{(3, 438)}$ = 3.784; R = .164, R^2 = .027, Adj. R^2 = .020, p < 0.05). It further reveals that the independent variables when taken together contribute 2.0% of the variance in the prediction of the respondents' internet addition while the remaining 98% might be due to other variables not within the scope of the present study.

Research Question 3: Research question was raised to find the relative contributions of each of the independent variables (locus of control, parenting styles and self-concept) to the prediction of internet addiction is presented on table 3

Table 3: Relative contributions of each of the independent variables to the predictions of internet addiction of the respondents

Variables	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta (β) contributions		
(Constant)	38.862	5.068		7.67	.000
Locus of control	.113	.044	.128	2.55	.011
Parenting style	-.033	.046	-.035	-.717	.474
Self-concept	.062	.045	.071	1.39	.163

As could be seen on table 3 locus of control was most potent in the prediction of internet addition (β = .128, t=2.55, p < 0.05) in predicting internet addiction followed by self-concept (β = .071, t=1.39, p < 0.05) while parenting style was not a significant factor in predicting internet addition (β = -.035, t=-717, p > 0.05).

DISCUSSION

The result obtained from research question one has provided unequivocal evidence to suggest that people's mental attitude shape their tendency to become addicted to internet. This outcome is not surprising giving that locus of control places a personal responsibility on the individual to see themselves as the actor, or the director of their own lives. Individuals with internal attribution believe that they are in charge of their internet usage and may likely feel motivated to take positive action to change. Such individuals as studies have shown will realize that blaming other people for their addiction is an ineffective strategy for remediation (Ersche, Turton, Croudace & Štochl,

2012). This is unlike their counterpart with external attribution who blame things like family, friends, work, society, politics, bad luck, or even the weather for their problems of internet addiction This individual will often appear oblivious to the idea that they have some control over their downward spiral into addiction. Their addition will tend to increase in intensity until finally the person is forced to take control. This outcome is in agreement with previous findings on the contributory effect of locus control on internet addiction (Chak & Leung, 2004; Yinghua, Ye & Linlin, 2015; Ojo & Omoyemiju, 2014).

Parenting style has inverse relationship with internet addiction. The implication of this is that parental role in transmitting societal approved behaviours to their children are still sacrosanct. The parents do this by the particular parenting styles they adapt to control their children's behaviour. Parenting style has been found to predict children well being in the domains of social competence, motivation, academic performance, psychosocial development, and problem behaviour (Williams, Ciarrochi, & Heaven 2012).The outcome of this study thus collaborates several previous findings (Xian, Li & Newman, 2013; Kalmos & Olafsson, 2015) who argue that authoritative parents set clear rules against internet usage, help their children to find appropriate outlets to solve problems and encourage children to be independent but still place limits on their actions (Santrock, 2007). This is unlike their counterpart who adopts authoritarian parenting style which is highly restrictive and punishment oriented and culminates in making their children follow their directions with little or no explanation or feedback and focus on the child's and family's perception and status (Barnhart, Raval, Jansari & Raval, 2013). Neglectful parents variously called uninvolved, detached, dismissive or hands-off *(Rosenthal, 2014)* are low in warmth and control, are generally not involved in their child's life, are disengaged, undemanding, low in responsiveness, and do not set limits regarding any behaviour including internet usage. Neglectful parenting can stem from a variety of reasons, including the parents prioritizing themselves, lack of encouragement on the parents' parts, financial stresses, lack of support and addiction to harmful substance.

The finding revealed that self-concept significantly predicted internet addiction of undergraduates. Griffiths (2000) cited in Bahrainian and Khazaee (2014) has provided the framework to explain the relationship between the two variables. Based on the Griffith's view, excessive use of Internet is greatly related to the users' perception as a way for dealing with and for compensating some of the shortcomings such as low self-concept. Griffith further argue that the Internet allows them to feel better, have a desire to create and develop the social identity, and have different character and more self-satisfaction. This view is also supported by Ko CH, Yen and Chen (2008) who opined that people, who evaluate themselves by negative methods, may consider the internet as a way for compensating this lack and increase their use. MacDonald and Leary (2005) have also provided evidence that the internet addicts showed the depression symptoms due to the reduction of self concept, and fear of rejection; and whenever the internet is able to meet these demands, they will increase its usage.

The findings of the second research question show that the relationship between an individual behaviour and his or her micro environment (parents, siblings) is dynamic and reciprocal in nature. Bronfenbrenner (1979) ecological theory which identifies five environmental systems with which an individual interacts provides the framework from which the outcome of this study will be understood. Out of the five systems (microsystem, mesosystem, exosystem, macrosystem and chronosystem) the micro system consisting the individual, family, school, religious institutions, neighborhood, and peers will likely shape psychological development immediately and directly impact the child's behaviour, ie internet addiction.

The plausible explanation for the supremacy of locus of control over the other variables in predicting internet addiction could be due to the fact that locus of control gives an insight into an individuals' ability to make decisions and reflect on it. People with an internal locus of control take

responsibility for their actions and regard themselves as being in control of their life and destiny. As such, they are able to make their own decisions, rather than letting others do it for them. This is unlike their counterpart with external locus of control who -attributes luck, fate or other people to be responsible for their internet addiction. Another related reason could be due to the fact that people may have the two types of locus of control often referred to as Bi-locals. People that have Bi-local characteristics are known to handle any situation more efficiently by having the mixture of internal and external locus of control. This finding corroborates Jacobs-Lawson, Waddell and Webb (2012) who posited that people who have this mix of loci of control can take personal responsibility for their actions and the consequences thereof while remaining capable of relying upon and having faith in outside resources

Implication for counselling intervention
The outcome of this study behooves counselling psychologists to adopt cognitive behaviour therapies to help the students who are already addicted identify and change irrational externally oriented thoughts and beliefs which made them to think that factors beyond their control made them to be addicted to the internet. The client should be made to take personal responsibility for their action. Moreover, behavioural scientist can organize seminars, workshop and conferences to sensitize the youths of the need to have realistic and objective self assessment and self-concept. Family therapy would also benefit students who are addicted to the internet since it can provide them with supportive environment. Similarly, the counsellor could link up the students with Self-help groups - these may help the client meet other people with the same problem, which often boosts motivation. Self-help groups can be a useful source of education and information
        The magnitude of influence that parenting styles and behaviours exert on youths indicates a clear need for family-centered interventions to remediate youth's internet addiction generally. Along with this, a clearly specified conceptual framework to guide family intervention development, implementation, evaluation would be developed by social workers, educators. The counsellor should also organize awareness campaigns should to educate the youth about the debilitating effects of excessive internet usage

Conclusion
This study has provided evidence to suggest that psychological and contextual factors are significantly related to internet addiction. Locus of control and self-concept have positive relationship with internet addiction. Moreover, the study reveals that the type of style adopted by parents to rear their youths will determine whether or not they will become addicted to the internet.
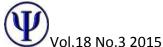
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