Relationship between Nomophobia and Facebook Addiction among Students in Health Training Institutions in Kaduna State, Nigeria

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Abstract
The main purpose of this research was to determine the relationship between Nomophobia and Facebook Addiction among students in health training institutions in Kaduna State, Nigeria. Seven null hypotheses were formulated to guide the study. Two structured self-reporting tools that are internationally validated were adopted and used as instruments for data collection. They are Nomophobia Questionnaire (NMP-Q) developed by Yildirim and Correia (2015) and Bergen Facebook Addiction Scale (BFAS) developed by Andreassen, et al., (2012). The former consist of 20-items while the latter had 18-items with composite internal consistency reliability of .857 and .901 determined by Cronbach alpha method. Data was collected from 348 health students from Kaduna State College of Midwifery and Shehu Idris College of Health Sciences and Technology, Makarfi, Zaria. The findings revealed that out of the seven hypotheses, four produced statistical significance, while three were not significant. Nomophobia was significantly high, while Facebook Addiction was significantly low. Independent variables contributed towards the prediction of both
Nomophobia and Facebook Addiction, while there was no significant difference between gender, and Nomophobia and Facebook Addiction as well as there was no relationship between the dependent variables. Finally recommendations were offered towards controlling Nomophobia and Facebook Addiction among the health-related students.

Keywords: Relationship, Nomophobia, Facebook Addiction, students, health institutions.

Introduction

Technological development and innovations is greatly influencing the core of lives. Mobile communication has taken a prominent place in users’ daily communicative practices through telephony, web access and applications (Kang, et al., 2014). In the markets today, there are various forms of devices for the purpose of communication. This ease to use such devices nowadays offer advanced computing capabilities and holds an important place in the day-to-day life (Mittal, et al., 2013). King, et al., (2010) stated in their analysis of individuals communication that people acquired certain habits by using modern electronic devices. While these habits include good aspects such as convenience, comfort and availability, some have negative aspects such as pathological dependency, fear and anxiety as a result of not being able to use those modern devices. It is evident that people are becoming increasingly reliant on technology with its positive and negative aspects.

According to the report of the International Telecommunication Union (2014), Smartphone ownership is more popular among young people in the world, undergraduate and postgraduate students inclusive. What makes Smartphone so popular among young adults and under the three main concepts which are (1) psychological needs and motives, (2) content-specific motivations and (3) social communications (Aoki & Downes, 2003; Ho & Syu, 2010). It is an axiomatic fact that Smartphones provide noticeable benefits and advantages and help people satisfy their needs, but on the other hand, some recent empirical studies found that people exhibit physical, mental, socio-emotional and other symptoms
when they are denied their mobile phones. Compulsive checking, over dependency and excessive usage of a mobile or Smartphone addiction can be shown as examples related to these problems (Qulasavirta, et al., 2012; Hong, et al., 2012). Another problem that tends to attract the attention of researchers and scholars presently in relation to the mobile phone use behaviour is “Nomophobia”. Nomophobia, which means – no mobile phone phobia implies the fear of being out of mobile phone contact (SecurEnvoy, 2012). Nomophobia is presently considered the phobia of the 21st century (Biven, et al., 2013) and had been described in clinical psychology as the irrational fear of not being able to reach to a mobile phone or not being able to communicate through a mobile device (King, et al., 2013; Yildirim & Correia, 2015). People who have such symptoms mean afflicted are called “nomophobe” and characteristics of describing nomophobia are called “nomophobic”.

Individuals who exhibit nomophobia behaviours become anxious when they forget to take their mobile phones with them when the battery charger runs out, or when they have no network coverage. The state of anxiety, adversely affect the individual’s concentration to perform their daily activities (Dixit, et al., 2012). Although nomophobia is not included in the field of clinical psychology, series of studies about nomophobia are being conducted and its worldwide prevalence, symptoms and health effects among individuals.

Prevalence and symptoms of Nomophobia
Nomophobia has been increasing parallel to increment of Smartphone prevalence (Adnan & Gezgin, 2016; Broughton, 2013). Prevalence of nomophobia is generally observed among young generation (Kaur & Sharma, 2015; Pavithra & Madhukumur, 2015). Nomophobia affects individual’s daily lives in a negative way, both physically and psychologically.

In terms of symptoms and effects, Nomophobia causes some problems and signs and symptoms of these problems include:

- Feeling insufficient or emptiness without mobile phones
- Checking his/her mobile phone like an obsessive even having it with themselves.
- Feeling desperate when the Battery ran out.
- Fear of forgetting the mobile phone somewhere, breaking down it or not able to use it.
➢ Some anxiety symptoms when they do not have it such as dizziness, heartthrob, lack of breathability, stomach cramps (Algul, 2014).

During adolescence, young individuals can experience several psychological and sociological symptoms such as social withdrawal, dullness, conflicts in the family, having problems with friends, the fear for not being popular among friends and feeling of anxious and pessimistic about their own lives and the world’s future (Saygili, 2002).

Thomme, et al., (2011) expressed that people who use or check their Smartphone excessively during the day can experience sleeping disorder, stress, anxiety and a decrease academic performance, as well as not feeling well and a reduction in their physical activities. Samaha and Hawi (2016) also revealed a positive relationship between Smartphone addiction and stress levels. Related to health hazards, according to Muhammad, et al., (2018) the usage of mobile phones had been associated with several health hazards (Al-khlaiwii, et al., 2004). It has been reported that 44% of the medical students attributed their headaches, decreased concentration, memory loss, (Khann, 2008). There has been a four-fold increase in the risk of property damage – only crashes and injury crashes was associated with phone usage. It has been suggested that pathological use of technology may exist in the form of techno-dependence (Brod, 1982).

Demographics and Nomophobia
Empirical findings from variety of cultures and countries showed that nomophobia is a prevalence issue in the world and up-to-date topic (Choliz, 2010; King, et al., 2013; Oksman, et al., 2004; Sharma, et al., 2015; Tavolacci, et al., 2015, Adeolu, et al., 2015). While investigating studies carried out in Turkey, in a study conducted by Yildirm, et al., (2015) with 537 higher education students, it was found that 206 (43%) of the students perform nomophobic behaviours. In addition, Adnan and Gezgin (2016) in assessing the prevalence of Nomophobia among 433 higher education students discovered that Nomophobia levels of these students are higher than average and students tends to perform nomophobic behaviours. Another study conducted among 475 adolescents by Gezgin and Cakir (2016) indicated that prevalence of Nomophobia is very risky and especially increase in the use of mobile internet increases the possibility of Nomophobia among them.
Gender wise, there are abundant literatures worldwide. When the results of researches were analyzed in terms of gender, findings on Nomophobia levels of high school students indicate that female students showed more nomophobic behaviours compared to their male students (Gezgin, et al., 2017). In the literature, it is also shown several times that females have a higher tendency to exhibit Nomophobia and are affected by it much more than males (Gezgin & Cakir, 2016; Hwang, et al., 2012; SecurEnvoy, 2012; Tavollaci, 2015). In a similar study conducted by Dixit, et al., (2010) in India, found no difference in terms of gender between the nomophobia levels of students.

However, to present a contrary work, Dongre, et al., (2017) in their study in India found that Nomophobia was higher among males 392(83%) respondents than female respondents 55(31%). Thus, the prevalence of nomophobia was significantly associated with gender. Having contrary conclusions in the field can be a motivating factor for future researchers to investigate more possibly.

In terms of duration of ownership of phone and daily mobile internet usage, the duration was found to have an effect on nomophobia levels among high school students. In a study conducted by Gezgin, et al., (2017), students who have Smartphones for more than four years exhibited more nomophobic behaviour than the students who have Smartphones for less than one year or between one and fours. In another study investigated by Kalasker (2015) where 90% of the students who participated, stated that they had been using Smartphone for more than two years and those who spend five and six hours on their Smartphones per day are more prone to psychological problems such as anxiety, sleepiness, stress, loss of motivation and interest towards classes, etc, which might therefore be related to nomophobia.

Another similar research conducted by Birin, et al., (2013) with 547 students as respondents revealed a significant relationship between the styles of Smartphone usage such as duration of Smartphone use, frequency of daily Smartphone use, mobile internet use on a Smartphone and the prevalence of nomophobia. Nikhita, et al., (2015) demonstrated that a significant relationship was found between dependence syndrome and the frequency and the duration of smart phone usage. On the contrary, there are numerous other studies which found no significance between the duration of mobile phone usage and nomophobia (Adan, et al., 2016; Gezgin, et al., 2016, Yildirim, et al., 2015). It should be suggested that having inclusive conclusion in the field could be a stimulating factor for future investigators and scholars to beam their future
search light into other constructs like socio-economic status of the students and school, the area where the student live, social facilities, social lives, peer groups, etc.

In terms of reasons for visiting social networking sites, Dongre, et al., (2017) found that 74% respondents reported spending most of the time on WhatsApp application, 57% on Facebook, 44% in YouTube, 37% on various online shopping applications and 10% on taking selfies. In a similar study, Gezgin, et al., (2016) found that students purposes of using Smartphones with social networks accounted for 84%, listening to musics as (76%), communication as (73%), sharing and viewing photographs as (61%), playing online games as (59%), education and research (56%), watching videos (56%), news (39%), shopping as (26%), navigation as (22%) and e-books as (17%) respectively. It could be seen that students have more tendencies to use thir Smartphones for communications and social purposes (Karaeslam & Budak, 2012; Scanaro, et al., 2007).

**Concept of Facebook Addiction**

The increase in usage of social network sites (SNSs) during the last decade is the biggest indicator of how fast information technologies development and growth. There are different SNSs such as Twitter, LinkedIn, MySpace, etc. But of all these network sites, Facebook tend to attract the largest users, because it is the most popular social network. Historically, Facebook was founded in 2004, with the mission to give people the power to share and make the world more open and connected (Facebook Newsroom, 2014). Facebook is accessible to individual on various devices such as computer, laptop, iPod, tablet and mobile phones and Smartphones which helps people to stay connected at all times.

Although Facebook is used to connect and stay in touch with friends and to maintain relationships, there may be situations where the individuals uses the site too much and few studies in other countries have shown that overuse of Facebook leads to addiction. Just like we have internet addiction we also have Facebook addiction. It should be noted that there is a strong relationships between SNSs and Facebook activities. It is in this regards that Social networking addiction was defined by Andreassen and Pallesen (2014: p.4054) as:

"being overly concerned about SNSs, to be driven by a strong motivation to log on to or use SNSs, and to devote so much time
and effort to SNSs, that it impairs other social activities, studies, job, interpersonal relationships and or psychological health and well-being”.

In addition, Andreessen, et al., (2013) had earlier on proposed an understanding of Facebook addiction as a specific form of internet addiction. Previous studies accumulated knowledge not only about internet addiction or in general but also about addiction to specific online behavior such as cybersex, cyber gambling, chatting or e-shopping (Andreassen, et al., 2012; Koc, et al., 2012).

With increase number of Facebook users, the problem associated with the excessive use and addiction have become more and more frequent and attract the attention of scholars and researchers alike. It is in this regards that Griffiths, et al., (2014) pointed out the urgent need for further examination and research on Facebook addiction, which often is related to internet addiction. Facebook addiction (also Facebook intrusion) is defined as excessive involvement in Facebook activities and is a frequent cause of problems in every day social functioning (Elphimston & Noller, 2014). This definition captures some common addiction symptoms present in more traditional and formally recognized chemical and non-chemical addiction such as salience, tolerance, mood modification, withdrawal, problem and relapse, classified under 6 dimensions. These dimensions can be explained as follows:

1. **Salience:** This dimension means that using Facebook becomes the most important activity in a person’s life and dominates his/her thinking (reoccupation) feelings (craving) and behavior (excessive use).

2. **Tolerance:** It refers to the process whereby someone starts using Facebook more often, thereby gradually building up the amount of time spent in using Facebook.

3. **Mood Modification:** This dimension refers to the subjective experiences that people report as a result of engagement in using Facebook. This dimension has been labeled as “euphoria” (Griffiths, 1995, 1997). It may include tranquillizing and/or relaxing feelings related to escapism.

4. **Withdrawal:** This dimension refers to unpleasant emotions and/or physical efforts that occur when using Facebook is suddenly reduced or discontinued. Withdrawal consists of moodiness and irritability, but may also include physiological symptoms, such as shaking.
5. **Relapse:** It refers to the tendency to repeatedly revert to earlier patterns of Facebook addiction. Excessive use of Facebook is resorted after periods of abstinence or control.

6. **Conflict:** This dimension refers to all interpersonal conflicts resulting from excessive Facebook use. Conflicts exist between the Facebook user and people around him/her. These conflicts may include arguments, neglect, lies and even deception.

Facebook addiction which can be regarded as troubled internet use becomes more crucial when teenagers and adults are involved. They have to be protected from Facebook addiction in order to maintain health personality development and to have healthy face-to-face relationships in their daily lives. The main fact that these addictions are more common among youngsters and adults brings about the need to conduct more researches in the area. Therefore, the cardinal purpose of this study is to examine the prevalence of Nomophobia and Facebook addiction as well as their relationships among students in health training institutions and put forward recommendations in accordance with the findings.

**Postulation of Hypotheses**

The following null hypotheses were formulated to guide this research.

1. The prevalence levels of Nomophobia among students in health training institutions in Kaduna State would not be significantly high.
2. Level of Facebook addiction among students in health training institutions in Kaduna State would not be significantly high.
3. The relationship between Nomophobia and Facebook Addiction among the students in Health training institutions in Kaduna State would not be statistically significant?
4. There is no significant difference between male and female students as it relates to their Nomophobia levels
5. There is no significant difference between male and female students as it relates to their Facebook Addiction
6. The independent variables would not significantly exert relative contributions towards the predication of Nomophobia among the students in Health training institutions in Kaduna state.
7. Research independent variables would not significantly exert relative contributions towards the predication of Facebook addiction among the students in Health training institutions in Kaduna state.

METHODOLOGY

Research Design: This quantitative research employed a descriptive survey research design. Survey research involves developmental study that not only reveals or unveils the current or prevailing state of affairs, but also discovers changes that occur in certain features, characteristics and variables about a specific population by closely examining the nature, direction and rate of the changes, the how, which, what, who, where, when and partial why of the changes over a period of time (Kpoloive, 2010). Related to the current investigation; assessing relationship between nomophobia prevalence levels and Facebook addiction among students in Health Training Institutions in Kaduna State.

Population and Sample of the Study: The target population comprised of all students in health training institutions of learning in Kaduna State. These include students in Schools/Colleges of Nursing, Midwifery and Health Technology offering different academic programmes.

The sample size was determined using the formula of Cochran: \( n = \frac{Z^2PQ}{d^2} \) (Cochran, 1977). Thus, taking the prevalence ratio of one of the parameter involve is 42.6% (.43) in similar study bearing in mind population in Nigeria, the sample size was determined. The estimate of the sample in this study was desired to be precise at confidence level of 95% and the margin of error of 5% (d). From these schools many departments were selected to provide wide representativeness. The population in each department was obtained from the HODs. Thereafter, proportionate stratified random sampling was used to select the required number of samples for the study. Inclusion criteria were current students who gave their consent to participate in the study while exclusion criteria were students who did not consent to participate voluntarily and those who were not in the classrooms as at the time of data collection.

Research Instrument: A structured questionnaire was designed as instrument for data collection. The questionnaire comprised of three sections. Section A elicited the demographic data of the respondents which covers institutions, programmes, gender, age, duration of cell phone ownership, etc. Section B is the main research tool called Nomophobia Questionnaire (NMP-Q) developed
by Yildirin and Correia (2015), to measure the nomophobic behavior of college students. The questionnaire consist of 20-items, classified into four factors of nomophobia namely (1) Not being able to access information (items 1-4), (2) giving up convenience (items 5-9), (3) not being able to communicate (items 10-15) and (4) losing connectedness (items 16-20).

The items were structured using a Likert scale from 1 to 7 with “1” being totally disagree” and 7 being “ totally agree. The total score found by adding up the responses in each item, which allows for a range of scores from 20 to 140 points. Higher scores correspond to a higher degrees of nomophobia. The reliability coefficient of the instruments was determined to be .945 using Cronbach alpha technique, which measures the internal consistency. In addition, the reliability coefficient of the sub-scales are = .94, .87, .83 and .81 respectively, which is high and acceptable for it is above the recommended levels by scholars .70 (Field, 2009; Kline, 1999). For the current research the composite reliability computed using similar technique produced .857, while the sub-scales yielded .643, .636, .833 and .729 respectively.

The tool developers provided the following classification scores: participants having scores less than 20 were categorized as “no nomophobia”, 21 – 60 mild nomophobia, 61 – 100 moderate nomophobia and 101 – 140 severe nomophobia.

Section C of the tool is the Bergen Facebook Addiction Scale (BFAS) developed by Andreassen et al., (2012). The scale has 18-items with three items each designed to assess six core symptoms’ of addiction (Brown, 1993; Griffiths, 2005) as: (1) Salience, (2) mood modification, (3) tolerance, (4) withdrawal, (5) conflict and (6) relapse. All items are scored on a five-point Likert scale ranging from (1) very rarely to (5) Very often – asking how often during the last year the symptom occurred. The sum scores ranges from 18 to 90. The scale interpretation as used by Salem, Almanaye and Andreassen (2016) are as follows: Normal (0-19), Slight (20-39), Moderate (40-69), Severe (70-90). A higher score indicate a more severe level of Facebook Addiction. The Cronbach Coefficient of the original version of the scale was .83. The composite reliability for this research produced a coefficient of .901 using the Cronbach alpha technique (See Table 1).

**Procedures for Data Collection:** All students were approached personally in their respective class. The objective and purposes of the study was clearly communicated to the participants. Participation was voluntary after the
participants were informed on how to respond to the questionnaire items by reading the instruction properly. Any query regarding the questionnaire was clarified by research assistant. The filled up copies of questionnaire were collected after ensuring its completeness. All these are to ensure valid and reliable data collection and guarantee high return.

**Method of Data Analysis:** The data gathered were cleaned and analyzed using descriptive statistics (frequency, percentage, mean and standard deviations) to answer the research questions while inferential statistics were used in testing the null hypotheses. The analyses were facilitated with the help of computer software package called IBM SPSS version 23.

**Results presentation**

<table>
<thead>
<tr>
<th>Table 1: Results of Reliability Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construct</td>
</tr>
<tr>
<td>-------------------------------------------</td>
</tr>
<tr>
<td>Overall Nomophobia</td>
</tr>
<tr>
<td><strong>Subscale 1: Not being able to access information</strong></td>
</tr>
<tr>
<td><strong>Subscale 2: Giving up convenience</strong></td>
</tr>
<tr>
<td><strong>Subscale 3: Not being able to communicate</strong></td>
</tr>
<tr>
<td><strong>Subscale 4: Losing connectedness</strong></td>
</tr>
<tr>
<td>Overall Facebook Addiction</td>
</tr>
<tr>
<td><strong>Subscale 1: Salience</strong></td>
</tr>
<tr>
<td><strong>Subscale 2: Tolerance</strong></td>
</tr>
<tr>
<td><strong>Subscale 3: Mood modification</strong></td>
</tr>
<tr>
<td><strong>Subscale 4: Relapse</strong></td>
</tr>
<tr>
<td><strong>Subscale 5: Withdrawal</strong></td>
</tr>
<tr>
<td><strong>Subscale 6: Conflicts</strong></td>
</tr>
</tbody>
</table>

Table 1 contained the two constructs for this study indicating high internal consistency based on the alpha reliability of all the items. According to De Vellis (2003), the data has been analyzed in terms of internal consistency and correlations. The high values computed via Cronbach technique produced high reliability and internal consistency of all the items being investigated.
Additionally, Table reports the results of reliability analysis for the main constructs of Nomophobia and Facebook Addiction and their sub-scales. The overall Cronbach coefficient exceeded the threshold value of .70 as recommended by Nunnaly, (1978), Pallant, (2010), Field, (2005) and Gliem & Gliem, (2003). The two instruments were therefore found to be reliable and consistent as measured used to gather data for this research.

Descriptive statistics
Out of the 348 respondents, 111(32%) are student-nurses from Kaduna State College of Nursing and Midwifery, 57(16%) are Community Health Care Students, 66(19%) are offering Social Development, 69(20%) offering Environmental Health and 45(13%) offering Dental Therapy. Gender wise distribution reveals that 108(31%) are males while 240(69%) are females. Age bracket distribution indicates that 93(27%) are between 16-20 years old, 162(47%) between 21-25 years, 72(21%) are between 26-30 years, while 21(6%) between 31-3 years old. Marital status gathered reveals that 207(60%) are singles, 123(35%) are married while 18(5%) are separated. Duration of cell phone ownership indicates that 60(17%) respondents are between 0-1 year, 144(41%) between 1-4 years while 144(42%) from 5 years and above. Duration of Smartphones ownership shows that 72(21%) are between 0-1 year, 105(30%) between 1-4 years, while 171(49%) from 5 years and above. Daily smart phone checking times reveals that 102(29%) checked between 5-10 mins, 114(33%) checked between 20-30 mins, 93(27%) checked between 1-2 hours while 39(11%) did checked between 3-4 hours. Monthly mobile internet GSM MB shows that 135(39%) had less than 1 GB, 123(35%) had between 1-2 GB, 60(17%) between -3 GB, while 30(9%) between 3-4 GB.

Hypothesis by hypothesis presentation

HO 1: The prevalence levels of Nomophobia among students in health training institutions in Kaduna State would not be significantly high

Table 2: One sample t-test analysis of nomophobia prevalence levels among students in Health Training Institutions

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sample Mean</th>
<th>Sample SD</th>
<th>Reference t-value</th>
<th>T</th>
<th>Sig</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nomophobia Scale</td>
<td>103.52</td>
<td>22.49</td>
<td>80</td>
<td>19.51</td>
<td>&lt;.001</td>
<td></td>
</tr>
</tbody>
</table>
In testing the first null hypothesis, the respondents scores on Nomophobia scale measured by 20 items were summed up based on the items under scale. The researcher reasoned that for Nomophobia level to be considered significantly high, the scores made on scale should be significantly higher than 80 (which is the midpoint between strongly disagree and strongly agree which implies 4 X 20 the number of items measuring the construct The null hypothesis is that the mean score representing students Nomophobia level is not significantly higher than 80 (HO: \( \mu = 80 \), H1: \( \mu > 80 \)). The hypothesis was tested with a t-test of one sample (otherwise called population t-test).

The results are presented in Table 2. A critical look reveals that when the overall Nomophobia was computed, the results indicates a statistically significant high level of Nomophobia among the students in Health Training Institutions in Kaduna State (\( M=103.52 \), SD= 22.49), \( t(347) = 19.51, p < .001 \). With these results, the first hypothesis is hereby not supported and hence rejected for alternative. This implies that the Nomophobia prevalence level among students in Health Training Institutions is significantly high.

**HO 2: Level of Facebook addiction among students in health training institutions in Kaduna State would not be significantly high**

**Table 3: One sample t-test analysis of Facebook Addiction among students in Health Institutions**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Sample Mean</th>
<th>Sample SD</th>
<th>Reference</th>
<th>T</th>
<th>Sig</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facebook Addiction</td>
<td>49.08</td>
<td>14.69</td>
<td>54</td>
<td>-</td>
<td>&lt;.001</td>
<td>S</td>
</tr>
</tbody>
</table>

In testing the second null hypothesis, the respondents scores on Facebook Addiction scale measured by 18 items were summed up based on the items the scale. The researcher reasoned that for Facebook Addiction level to be considered significantly high, the scores made on scale should be significantly higher than 54 (which is the midpoint between Very rarely to and Very Often which implies 3 X 18 the number of items measuring the construct The null hypothesis is that the mean score representing students Facebook Addiction level is not significantly higher than 54 (HO: \( \mu = 54 \), H1: \( \mu > 54 \)). The hypothesis was tested with a t-test of one sample (otherwise called population t-test).
The results are presented in Table 3. A critical look reveals that when the overall Facebook Addiction was computed, the results indicates a statistically significant low level of Facebook among the students (M=49.08, SD=14.69), t(347) = -6.25, p < .001. With these results, the second hypothesis is hereby not supported and hence rejected for alternative. This implies that the Facebook Addiction Level level among students in Health Training Institutions was significantly low. The negative t-value of (-6.25) indicates that the reference value is below the sample mean of the students.

**HO 3: The relationship between Nomophobia and Facebook Addiction among the students in Health training institutions in Kaduna State would not be statistically significant**

**Table 4: Correlation between Nomophobia and Facebook addiction among the students**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Facebook Addiction</th>
<th>Sig</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nomophobia Prevalence</td>
<td>-.066</td>
<td>.22*</td>
<td>NS</td>
</tr>
</tbody>
</table>

*P > .05

Pearson product moment correlation technique was utilized to determine the relationship between Nomophobia prevalence and Facebook Addiction among the students in Health training Institutions. The results contained in Table 4 reveals that there is a negative weak non-significant relationship between the two variables r(346) = -.066, P=.22. With these results the third null hypothesis is hereby supported and thus sustained. It implies that that as Nomophobia increases, there is a decrease in Facebook Addiction levels among the students.

**HO 4: There is no significant difference between male and female students as it relates to their Nomophobia levels**

**Table 5: An Independent t-test analysis between male and female students On Nomophobia**

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>t-value</th>
<th>P-value</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>108</td>
<td>100.92</td>
<td>19.32</td>
<td>-1.45</td>
<td>.148</td>
<td>NS</td>
</tr>
<tr>
<td>Female</td>
<td>240</td>
<td>104.69</td>
<td>23.72</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
An independent sample t-test was conducted to compare the Nomophobia prevalence levels between male students and their female counterparts in Health Training Institutions. The results indicated in Table 5 shows that there was no statistically significant differences in the prevalence levels of male students ($M=100.92$, $SD = 19.32$) compared to the female students ($M=104.69$, $SD = 23.72$), $t(346) = -1.45$, $P =.1458$. The magnitude of the difference in the means $=-13.75$, was very small ($eta squared = .006$).

With the results of this analysis, the fourth null hypothesis was therefore supported and hence sustained. This implies that there is no significant difference in the Nomophobia prevalence levels between male students and female students in Health Training Institutions in Kaduna State.

**HO 5: There is no significant difference between male and female students as it relates to their Facebook Addiction**

Table 6: An Independent t-test analysis between male and female students On Facebook Addiction

<table>
<thead>
<tr>
<th>Gender</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>t-value</th>
<th>P-value</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>108</td>
<td>49.89</td>
<td>12.55</td>
<td>.690</td>
<td>.490</td>
<td>NS</td>
</tr>
<tr>
<td>Female</td>
<td>240</td>
<td>48.71</td>
<td>15.57</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

An independent sample t-test was conducted to compare the Facebook Addiction levels between male students and their female counterparts in Health Training Institutions. The results indicated in Table 6 shows that there was no statistically significant differences in the prevalence levels of male students ($M=49.89$, $SD = 12.55$) compared to the female students ($M=48.71$, $SD = 15.57$), $t(346) = .690$, $P =.490$. The magnitude of the difference in the means $=1.17$, 95% CI: -2.17 to 4.52, was very small ($eta squared = .001$).

With the results of this analysis, the fifth null hypothesis was therefore supported and hence sustained. This implies that there is no significant difference in the Facebook Addiction levels between male students and female students in Health Training Institutions in Kaduna State.

**HO 6: The independent variables would not significantly exert relative contributions towards the predication of Nomophobia among the students in Health training institutions in Kaduna state.**
R=.471
R square =.222
Adjusted R square =.204
Standard Error = 20.07

Table 7: Relative contributions of Independent variables to the prediction of Nomophobia

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficient</th>
<th>Standardized Coefficient</th>
<th>T</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>104.305</td>
<td>7.235</td>
<td>14.42</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Academic Programme</td>
<td>-6.600</td>
<td>-.419</td>
<td>-7.410</td>
<td>&lt;.001*</td>
</tr>
<tr>
<td>Gender</td>
<td>.906</td>
<td>.019</td>
<td>.363</td>
<td>.717</td>
</tr>
<tr>
<td>Age Bracket</td>
<td>-.131</td>
<td>-.005</td>
<td>-.088</td>
<td>.930</td>
</tr>
<tr>
<td>Marital Status</td>
<td>-2.364</td>
<td>-.062</td>
<td>-1.211</td>
<td>.227</td>
</tr>
<tr>
<td>Duration of cell phone ownership</td>
<td>2.097</td>
<td>.068</td>
<td>1.444</td>
<td>.253</td>
</tr>
<tr>
<td>Duration of smartphone ownership</td>
<td>1.571</td>
<td>.055</td>
<td>.888</td>
<td>.375</td>
</tr>
<tr>
<td>Daily smartphone checking time</td>
<td>2.724</td>
<td>.119</td>
<td>2.371</td>
<td>.018*</td>
</tr>
<tr>
<td>Monthly Mobile internet GSM GB</td>
<td>2.373</td>
<td>.100</td>
<td>2.011</td>
<td>.045*</td>
</tr>
</tbody>
</table>

*P <.05

Multiple regression analysis was utilized to explore the relative contribution of the independent variables towards the prediction of Nomophobia among students in Health training institutions in Kaduna State. Table 7 shows the relative contribution of the independent variables. The results reveal an R of .471, R square of .222. It then implies that the independent variables made 22% prediction of Nomophobia. The ANOVA for the multiple regression was also statistically significant F(8,339) = 12.10, P=.001. It could be clearly seen that academic programme, daily smartphone checking time and monthly mobile internet GSM GB had significant contribution to the prediction of Nomophobia. Academic programme had the greatest contribution (Beta = -.419, t= -7.41, P<.001), followed by daily smartphone checking time (Beta = .119, t= 2.371), P=.018), and monthly mobile internet GSM GB (beta =.100, t=2.04, P=.045). The other five independent variables did not significantly predicted Nomophobia.
HO 7: Research independent variables would not significantly exert relative contributions towards the prediction of Facebook addiction among the students in Health training institutions in Kaduna state.

R = .404
R square = .163
Adjusted R square = .143
Standard Error = 13.59

Table 8: Relative contributions of Independent variables to the prediction of Facebook Addiction

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficient</th>
<th>Standardized Coefficient</th>
<th>T</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>48.613</td>
<td>4.903</td>
<td>9.916</td>
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</tr>
<tr>
<td>Academic Programme</td>
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<td>.604</td>
<td>-0.052</td>
<td>.379</td>
</tr>
<tr>
<td>Gender</td>
<td>-920</td>
<td>1.690</td>
<td>-0.029</td>
<td>.568</td>
</tr>
<tr>
<td>Age Bracket</td>
<td>-2.815</td>
<td>1.012</td>
<td>-0.150</td>
<td>.052</td>
</tr>
<tr>
<td>Marital Status</td>
<td>-566</td>
<td>1.323</td>
<td>-0.023</td>
<td>.628</td>
</tr>
<tr>
<td>Duration of cell phone ownership</td>
<td>8.386</td>
<td>1.242</td>
<td>.316</td>
<td>&lt;.001*</td>
</tr>
<tr>
<td>Duration of smartphone ownership</td>
<td>-5.236</td>
<td>1.199</td>
<td>-.280</td>
<td>.368</td>
</tr>
<tr>
<td>Daily smartphone checking time</td>
<td>-594</td>
<td>.779</td>
<td>-.040</td>
<td>.445</td>
</tr>
<tr>
<td>Monthly Mobile internet GSM GB</td>
<td>4.393</td>
<td>.800</td>
<td>.285</td>
<td>&lt;.001*</td>
</tr>
</tbody>
</table>

*P < .05

Multiple regression analysis was employed to determine the relative contribution of the independent variables towards the prediction of Facebook Addiction among students in Health training institutions in Kaduna State. Table 8 shows the relative contribution of the independent variables. The results reveal an R of .404, R square of .163. It then implies that the independent variables made 16% prediction of Facebook Addiction. The ANOVA for the multiple regression was also statistically significant F(8,339) = 8.266, P = .001. It could be deduced that four variables contributed towards Facebook addiction prediction. Monthly mobile Internet GSM GB made the greatest significant contribution to the prediction Facebook addiction (Beta = .285, t = 5.495, P < .001), followed by duration of cell phone ownership (Beta = .316, t = 5.141, P < .001).
P<.001), duration of smartphone ownership (Beta = -.280, t=-4.368, P<.001), and age bracket been the least (Beta = -.150, t=-2.584, P=.010). The other four independent variables did not significantly contributed towards the prediction of Facebook Addiction.

**Discussion of findings**

The first finding of this study revealed that the prevalence levels of Nomophobia among students in health institutions were significantly high. This finding is consistent with the submission of other researchers (Dixit, et al., 2012; Choliz, 2010; King, et al., 2013). There are abundant literature that found that majority of the students perform nomophobic behaviours. Adnan and Gezgin (2016) in assessing the prevalence of Nomophobia among 433 higher education students discovered that Nomophobia levels of these students are higher than average and students tend to perform nomophobic behaviour. Another finding of this research revealed a statistically significant low level of Facebook addiction among the students. This is indeed very surprising. One expected a high Facebook addiction among the students. This finding is contrary to the submission of Andreassen, et al., (2012) and Koc, et al., (2012). Facebook addiction which can be regarded as troubled internet use becomes more crucial when e and adolescent are involved.

The third finding revealed that the relationship between Facebook addiction and Nomophobia prevalence was not statistically significant. In fact, it produced an inverse relationship between the two variables. The interpretation could be that Nomophobia prevalence could be high but not influenced by Facebook addiction. It could be seen that even the Facebook addiction among the students was low, below expectation. The finding of this research is not in agreement with the submission of Elphinstone and Nolleen (2014) who expressed Facebook addiction as excessive involvement in Facebook activities. An individual can become nomophobic in behaviour without the involvement of Facebook; for there are different uses and activities once can do with the Smartphones.

Another finding of this research is that there was no statistical significant difference between male and female students as it relates to both Nomophobia and Facebook addiction. This finding is contrary to the research finding of Gezgin, et al., (2017) indicating that female students showed more nomophobic behaviours compared to their male students. However, this research finding is
in concordance with a similar study conducted by Dixit, et al., (2010) in India, who found no difference in terms of gender between the nomophobic levels of the students.

The next finding of this research revealed that academic programmes, daily smartphone checking time and monthly Mobile Internet GSM GB, made significant prediction towards Nomophobia, while other independent variables failed to make any contribution. This finding is not surprising, in that the variables that contributed greatly are activities associated with Nomophobic propensity. This finding is in line with researchers like (Qulasavirta, et al., 2012; Hong, et al., 2012). Who posited that compulsive checking, over dependency and excessive usage of a mobile or smartphone addiction can be shown as examples related to these problems – Nomophobia. In addition, this finding tends to confirm what Birin, et al., (2013) discovered in a similar research, for it was reported that a significant relationship exist between styles of smartphone usage such as duration of smartphone, frequency of daily smartphone, mobile internet use on a smartphone and the prevalence of Nomophobia.

Finally, age bracket, duration of cell phone ownership and smartphone ownership as well as monthly mobile Internet GSM GB significantly contributed and predicted Facebook addiction. This finding corroborates earlier research findings by (Qulasavirta, et al., 2012; Hong, et al., 2012; Birin, et al., 2013). However, this finding is contrary to the submission of Adan, et al., 2016; Gezgin, et al., 2016, Yildirim, et al., 2016 in their individual studies which found no significances between the duration of mobile usage and Nomophobia.

**Conclusion and Recommendations**

1. The prevalence levels of Nomophobia among students in Health training institutions was found to be high.
2. The level of Facebook addiction was found to be however low.
3. There was an inverse weak non-significant relationship between Nomophobia and Facebook addiction.
4. There was no difference between male and female students as it relates to both their Nomophobia prevalence and Facebook addiction.
5. Academic programme, daily smartphone checking time and monthly mobile Internet GSM GB relatively contributed to the prediction of Nomophobia.
6. Age bracket, duration of cell phone ownership and smartphone ownership as well as monthly mobile Internet GSM GB relatively predicted Facebook addiction.

It is recommended that administrators of tertiary institutions of learning, especially nursing training institutions should be aware of the adverse effects of both Nomophobia and Facebook addiction as one of the 21st century problem and devise strategies and interventions to curtail it consequential effects on students. Periodic seminars and workshops aimed at addressing the hazards of smartphone addiction should be organize for both students and staff. Institution should endeavor to organize healthy activities like inter-departmental sports and games, drama, cultural shows, debate, et c to positively engage the students in worthwhile ventures, capable of developing sound and healthy personality among students.

References


