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Duration and Frequency of Social Networking as Predictors of Pathological Symptoms among University Undergraduates, Nigeria

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Abstract:
As a sort of psychopathology, social media addiction affects a large number of people across the globe. Although it is widely debated in medical and related literature, there is a dearth of literature on duration and frequency of social networking and psychopathological symptoms among Nigerian youth. Undergraduates (N= 300) purposively drawn from two Nigerian universities responded to Bergen Facebook Addiction Scale (BFAS) and Frequency of Social Networking Usage Questionnaire (FSNUQ). Reported prevalence of pathological social networking was 16.3%. Observed pathological social networking symptoms are salience (22.3%), tolerance (15.7%), mood modification (15.7%), relapse (14.7%), withdrawal (16.3%) and conflict (15.0%). Duration of Social Networking (DSN) is positively related with salience, tolerance, mood modification, relapse, withdrawal, and conflict. DSN and Frequency of Social Networking (FSN) both have significant relative and composite predictive influence on salience, tolerance, mood modification, relapse, withdrawal and conflict.

Keywords: Duration, frequency, social networking, psychopathology, Nigeria

1. Introduction

1.1. Social Networking Addiction
Over the past decades internet addiction has been widely debated in medical literature (Mitchell, (2000) as a sort of psychopathology (Block, 2008) that affects large number of people (Aboujaoude, Koran, Gamel, Large & Serpe (2006). People engage in a variety of activities on the internet some of which are addictive (Kuss & Griffiths, 2011). Social networking addict spends excessive time in Social Network Sites (SNSs) such a way that it interferes with the important activities of his daily life (Martin & Schumacher, 2000; Rice, 2005; Douglas et al.; 2008; Adedeji, 2011; Walker, 2012).
The prevalence of internet addiction among children and young adults around the globe show 6.0% among Chinese teenage students (Tang et.al., 2014), 3.9% among Italian high school students (Bruno et.al 2014), 3.3% among Nigerian students with a male to female ration of 3:1 (Adiele et.al 2014). According to Gonzalez et.al., (2014) one in ten Spanish university students are problematic Internet use. Among Finnish teenagers 61% reported being mild over-users and 24% were moderate or serious over-users of internet (Sinkkonen, 2014). Between 1.5% –3.5% of German teenagers show signs of internet addiction or excessive use (Peukert et.al, 2010).In North America and Europe the prevalence rate of internet addiction ranges from 1.5% to 8.2% (Weinstein et al., 2010) and 8.2% in Greece (Konstantinos et al., 2008).Park et al., (2009) reported that 10% of South Korean youth are considered to be at high risk for internet addiction, 18% of British students were considered to be pathological internet users (Niemz et.al 2005). About 4% of Norwegian youth between 16-29 years are internet addicts with 19% at risk (Bakkanet.al., 2008), among South African technology workers the prevalence of problematic internet use 4% (Thatcher et.al., 2008).

1.2. Impacts of Social Media Use on Psychological Health
The negative impact of internet overuse use can be seen across a wide range of aspects of the individuals life (Leung & Lee, 2012;Tonioni, D'Alessandris, Lai, Martinelli, Corvino, et al., 2012), and equally affect several aspects of family functioning (Alizadeh,Khosravi, &Yusefnejad, 2011). According to Guangheng, Qilin, Hui,& Xuan, (2011) individuals classified as internet addicts manifest a range of co-morbid psychological symptoms such as attention deficit and hyperactive disorder (ADHD), (Griffiths, 2012; Gundogar, Bakim, Oze, & Karamustafalioglu, 2012), depression (Young, & Rodgers, 1998,; Peukert et.al 2010,; Gundogar, Bakim, Ozer, &Karamustafalioglu, 2012),correlated with higher rates of depression, anxiety, and lower school achievement (Peukert et.al 2010) and associated with social isolation and low self-esteem (Yen, Ko, Yen, Wu, &Yang, 2007;, Kim, & Haridakis, 2009). Internet addicts have also been found to show a range of personality traits (Jiang & Leung, 2012) such as sensation seeking (Ko, Hsiao, Liu, Yen, &Yang, et al. 2010;, Park, Park, Lee,

Jung,& Lee, et al. 2012), impulsivity (Lee, Choi, Shin, Lee, &Jung, et al. 2012) and aggression (Ko, Jen, Liu, Huang, &Yen, 2009; Ma, 2012).

In 2012, Rosen, Cheever, & Carrier coined the term "iDisorder," defined as the negative relationship between technology usage and psychological health. In 2013, Rosen et al. studied the Facebook usage of 1,143 college-age students and found that major depressive disorder, dysthymia, bipolar-mania, narcissism, antisocial personality disorder, and compulsive behavior were predicted by one or more Facebook usage variables (general use, number of friends, use for image management). Time spent on Facebook were positively correlated with depression among Croatian high school students (Kraut et al. 1998;, Pantic, et al., 2012), predicted higher narcissism scores (Rosen, (2013). Among American students participants who spent more time online and those who performed more social networking manifested more clinical symptoms of major depression (Rosen, et al. 2013), predicted increased loneliness (Lou et al., 2012), lower emotional adjustment to college life and reported having lower self-esteem than those who spent less time Kalpidou et al. (2011).

Apart from the fact that young people are the highest users of social media, they are also the population more prone to experiencing mental health challenges as one in four young adults experiences a depressive state between 18 and 24 years of age. (Grant & Potenza, 2010). Given that social media is becoming increasingly prominent in young adults' lives, it is important to understand how this usage may affect them.

1.3. Objectives
- Determine the prevalence of social networking and identified symptoms of pathological social networking among Nigerian undergraduates.
- Find the relationship between Duration of Social Networking (DSN) and pathological social networking symptoms among Nigerian undergraduates.
- Find if DSN and Frequency of Social Networking (FSN) predict pathological social networking symptoms among the sample.

2. Methods

2.1. Participants
A cross sectional survey design was employed in the study. The population comprised of undergraduates in University of Lagos (UNILAG) and Redeemer's University (RUN) Nigeria. A purposive sampling technique was adopted to select across the various colleges, 130 participants from University of Lagos and 170 from Redeemers University.

2.2. Measures
The Bergen Facebook Addiction Scale (BFAS) by Andraessen, et.al. (2012) of the University of Bergen Norway was adapted. This scale comprised 18 items, three for each of the six core features of addiction: salience, mood modification, tolerance, withdrawal, conflict, and relapse. Each item is scored on a 5-point scale using anchors of 1: Very rarely and 5: Very often. The word "Facebook" was substituted for "social media (Facebook, Twitter, YouTube, Instagram etc)" in the items. Higher scores indicate greater (Social networking) addiction. The scale has a Cronbach's α of 0.89, and a Guttman split-half Reliability of 0.93 for this Nigerian sample.

Frequency of Social Networking Usage Questionnaire (FSNUQ) is a self structured six item questionnaires which measures the frequency of use of Facebook, Twitter, Blackberry Messenger, Instagram, WhatsApp and YouTube. Each item is scored on a six-point anchors of 0 = never", 1 = once a day, 2= several times a day, 3= once every hour, 4= several times an hour, and 5= all the time. The scale has a Spearman-Brown coefficient of .70 for the Nigerian sample.
Identified symptoms of pathological social networking examined in this study are salience, tolerance, mood modification, withdrawal, relapse and conflict.

3. Results

3.1. Demographic Characteristics of Participants
Distribution of participants by gender shows that 44% were male while 56% were female. This suggests that there is more female enrolment in Nigerian tertiary institutions than male.49% of the respondents were between the age of 16-20 years while (45.8%) fall between the age bracket of 21-25 years and (4.8%) were between the ages of 26-30 years and the mean age was 21 years about 43.3% of the respondents are from a federal university (UNILAG) while 56.7% were from a private university (RUN). The distribution of respondents by family types reveals that shows that 87.5% were from monogamous homes while 12.5% were from polygamous homes.

Variables	Prevalence of Social Networking Overuse		
	Mild	Moderate	Pathological
Social Networking overuse	56.0%	39.7%	16.3%
Salience	33.7%	11.4%	22.3%
Tolerance	41.0%	25.3%	15.7%
Mood modification	32.0%	29.6%	15.7%
Relapse	44.3%	29.6%	14.7%
Withdrawal	51.7%	39.4%	16.3%
Conflict	59.7%	44.7%	15.0%

Table 1: Prevalence of Social Media Overuse among Nigerian Undergraduates

Table above reveals a 56.0% prevalence of social networking overuse with 16.3% reporting pathological cases among the sample. Prevalence of pathological social networking domains returned by participants is salience (22.3%), tolerance (15.7%), mood modification (15.7%), relapse (14.7%), withdrawal (16.3%) and conflict (15.0%).

3.1.1. Hypothesis 1

Social networking will significantly relate with symptoms of pathological social networking.
A Pearson product moment correlation was used to analyze the data and test the hypothesis; the result of the analysis is summarized and presented in table 2

Variables	M	SD	salience	tolerance	mood	relapse	withdrawal	Conflict	SN
Salience	7.93	3.58	1						
Tolerance	8.63	3.38	.860**	1					
Mood	8.77	3.87	.679**	.712**	1				
Relapse	8.17	3.23	.736**	.770**	.648**	1			
Withdrawal	8.65	3.66	.789**	.809**	.660**	.775**	1		
Conflict	8.18	3.72	.771**	.766**	.637**	.772**	.804**	1	
Social Networking	16.53	6.63	.630**	.590**	.551**	.570**	.567**	.613**	1

Table 2: Bivariate Correlational Matrix Showing Relationship DSN and
Symptoms of Pathological Social Networking
**. Correlation Is Significant at the 0.01 Level (2-Tailed)

The analysis result in table 2 suggest that Duration Social Networking (DSN) is positively related to salience among undergraduate samples {r (300) = .63, p<0.05}. Also DSN is positively related tolerance {r (300) = .59, p<0.05}, mood modification {r (300) = .55, p<0.05}, relapse {r (300) = .57, p<0.05}, withdrawal {r (300) = .57, p<0.05} and conflict {r (300) = .61, p<0.05} among Nigerian undergraduates. This implies that the more the social networking the greater the saliency of social media, the more the tolerance (need to spend longer time to achieve same level of excitement) the more the mood swing, the more the relapse to social networking, the more the withdrawal and the more the desire for social networking conflict with other activities of the user.

3.1.2. Hypothesis 2

DSN and FSN will significantly predict saliency of social networking among the participants.

Model	SS	df	Mean Square	F	P
Regression	1872.62	2	936.31	141.26	.000
Residual	1902.30	287	6.63		
Total	3774.91	289			
Multiple Regression Coefficients					
Predictor	B	SE.B	β	t	P
(Constant)	.47	.48		.99	.321
DSN	.63	.09	.36	7.31	.000
FSN	.25	.03	.45	9.33	.000

Table 3: Multiple Regression Analysis of salience by DSN and FSN
[F (2, 289) = 141.26, p<0.05, R= 0.70, R^2 =.496]

The analysis in table above suggests that DNS and FSN jointly predict users' salience. It is observed that 49.6% variation variable of salience is jointly explained by the duration and, frequency of social networking. The relative contributions show that 35.5% of salience is predicted by duration of social networking (SN) and 45.4% by frequency of SN.

3.1.3. Hypothesis 3
DSN and FSN will significantly predict user's tolerance level.

Model	SS	df	Mean Square	F	P
Regression	1507.52	2	753.76	120.49	.000
Residual	1795.39	287	6.26		
Total	3302.90	289			
Multiple Regression Coefficients					
Predictor	B	SE.B	β	t	P
(Constant)	1.927			4.18	.000
DSN	.628		.380	7.51	.000
FSN	.203		.398	7.89	.000

Table 4: Multiple   Regression Analysis of Tolerance Level by DSN and FSN
[F(2, 289) = 120.49, P<0.05, R= 0.68, R^2 =.456]

The analysis in table above suggests that duration of social networking (DSN) and frequency of social networking (FSN) jointly predict users' tolerance. It is observed that 45.6% variation variable of salience is jointly explained by the duration and, frequency of social networking. The relative contributions show that 38.0% of tolerance level of user is predicted by duration of social networking (SN) and 39.8% by frequency of SN.

3.1.4. Hypothesis 4
DSN and FSN will significantly predict mood modification of user.

Model	SS	df	Mean Square	F	P value
Regression	1540.03	2	770.01	77.71	.000
Residual	2843.77	287	9.91		
Total	4383.80	289			
Multiple Regression Coefficient					
Predictor	B	SE.B	β	t	P
(Constant)	2.023	.580		3.49	.001
Duration	.530	.105	.28	5.03	.000
Frequency	.236	.032	.40	7.27	.000

Table 5: Multiple   Regression Analysis of Mood Modification by DSN and FSN.
[F(2, 289) = 77.71, P<0.05, R= 0.59, R^2 =.351]

The analysis in table above suggests that duration as well as frequency of social networking jointly predict users' mood. It is observed that 35.1% variation variable of user's mood modification is jointly explained by the duration and frequency of social networking. The relative contributions show that 27.8% of tolerance level of user is predicted by duration of social networking (SN) and 40.1% by frequency of SN.

3.1.5. Hypothesis 5
DSN and FSN will significantly predict relapse of user.

Model	SS	df	Mean Square	F	P
Regression	1180.76	2	590.38	91.40	.000
Residual	1853.82	287	6.46		
Total	3034.58	289			
Multiple Regression Coefficient					
Predictor	B	SE.B	β	t	P
(Constant)	2.299	.45		4.91	.000
Duration	.47	.09	.29	5.48	.000
Frequency	.21	.03	.42	7.86	.000

Table 6: Multiple Regression Analysis of User's Relapse by DSN and FSN
[F (2, 289) = 91.40, P<0.05, R= 0.624, R^2 =.389]

The analysis in table above suggests that duration as well as frequency of social networking jointly predict users' relapse (return to social networking). It is observed that 38.9% variation variable of relapse is jointly explained by the duration and frequency of social networking. The relative contributions show that 29.4% of tolerance level of user is predicted by DSN and 42.1% by FSN.

3.1.6. Hypothesis 6
DSN and FSN will significantly predict withdrawal.

Model	SS	df	Mean Square	F	P
Regression	1479.00	2	739.50	88.92	.000
Residual	2387.03	287	8.32		
Total	3866.03	289			
Multiple Regression Coefficient					
Predictor	B	SE.B	β	t	P
(Constant)	1.979	.532		3.72	.000
Duration	.520	.096	.290	5.40	.000
Frequency	.231	.030	.030	7.77	.000

Table 7: Multiple Regression Analysis of Users' Withdrawal by Duration and
Frequency of Social Networking
[F (2, 289) = 88.92, P<0.05, R= 0.619, R^2 =.383]

The analysis in table above suggests that duration as well as frequency of social networking jointly predict withdrawal. It is observed that 38.3% variation variable of withdrawal is jointly explained by the duration and frequency of social networking. The relative contributions show that 29.0% of withdrawal is predicted by duration of social networking and 41.8% by frequency of social networking.

3.1.7. Hypothesis 7
DSN and FSN will significantly predict conflict with other activities of users.

Model	SS	df	Mean Square	F	P
Regression	1633.43	2	816.71	99.72	.000
Residual	2350.66	287	8.19		
Total	3984.09	289			
Multiple Regression Coefficient					
Predictor	B	SE.B	β	t	P
(Constant)	1.611	.528		3.05	.002
Duration	.317	.096	.174	3.31	.001
Frequency	.203	.030	.534	10.14	.000

Table 8: Multiple Regression Analysis of Conflict of Activities by DSN and FSN
[F (2, 289) = 99.72, P<0.05, R= 0.640, R^2 =.410]

The analysis in table above suggests that duration as well as frequency of social networking jointly predict conflict of activities. It is observed that 41.0% variation variable of conflict of activities is jointly explained by the duration and frequency of social networking. The relative contributions show that 17.4% of conflict with other activities is predicted by duration of social networking (SN) and 53.4% by frequency of SN.

4. Discussions
Result of this study shows a high prevalence of social networking overuse among Nigerian undergraduates. This is in agreement with findings of similar previous studies on internet addiction and social networking among undergraduates from China (Tang et.al. 2014), Italy (Bruno et.al, 2014), Spain (Gonzalez et.al, 2014), Finland (Sinkkonen, 2014), Nigeria (Adiele et.al 2014), North America and Europe (Weinstein et al., 2010).

Duration of Social Networking (DSN) is found to be positively related to saliency of social media usage, tolerance, mood modification, relapse, withdrawal and activities conflict among the sample. This implies that the more the social networking the greater the salience of social media, (need to spend longer time to achieve same level of excitement) mood modification, relapse to social networking, withdrawal and conflict with other activities of the user. This finding agrees with Beard & Wolf (2001) and Block, (2007) who found the variable of internet addiction to include excessive use often associated with loss of time and self-neglect and neglect for basic drives, withdrawal leading to anger, tension and depression when computer (and internet) is not available, tolerance often included with need for better computer and internet connections, need for more hours of use, and other negative repercussions.

Duration of social networking (DSN) and frequency of social networking (FSN) were found to have composite and relative predictor influence on salience for social media (problematic internet usage) among the samples. This finding is supported by several previous researches, affirming a high prevalence of problematic internet usage (PIU) among

university students who spend lot of time on the internet either seeking information, knowledge about concepts in other to solve assignments, or communication with peers. Accordingly, the prevalence rate of Internet addiction among university students has been 26.1% in the United States, 10.6% in China, 5.9% and 17.9% in Taiwan, and 34.7% in Greece (Chou & Hsiao, 2000,; Wu & Zhu, 2004,; Christakis, Moreno, Jelenchick, Myaing, & Zhou 2011,; Frangos , Frangos & Sotiropoulos, 2011). People's Daily Online (2007) reported 13.7% of Chinese adolescent Internet users meet Internet addiction diagnostic criteria. Approximately 2.1% of South Korean children of ages 6–19 are afflicted with internet addiction and require treatment (Choi, 2007). Internet overuse is a growing psychiatric problem among adolescents (Shahrzad, 2012).

A significant relative and composite predictor influence was returned for DSN and FSN on user tolerance to social networking. Accordingly Pratarelli et al., (1999) noted that some individuals will also increase their use of the internet as feelings of isolation increases, possibly leading to a vicious circle of social withdrawal. This finding suggests that excessive internet usage may be, to escape-maintained (Romano, Osborne, Truzoli & Reed (2013), Pallanti, 2009) and self-fueling – engagement in the behaviour lowers mood, which then triggers further engagement to escape from the low mood.

DSN as well as FSN are significant joint and independent predictors of users' mood modification. Previous studies of people with problematic internet use suggest high rates of psychiatric comorbidity including mood and anxiety disorders (Black et al., 1999; Shapira et al.,2000). According Rice (2005) & Douglas et al. (2008) obsessive use of the Internet interferes with an individual's ability to lead a normal life. Compulsive overuse of the Internet causes irritable or moody behaviour when deprived of it (Mitchell, 2000). When people come offline, they suffer increased negative mood similar to those of people coming off from illegal drugs like ecstasy (Reed, 2013).

Also, DSN and FSN were significant joint and independent predictors of user relapse (return to social networking) among young adults. The immediate negative impact of exposure to the internet on the mood of internet addicts has been found to contribute to increased usage by those individuals attempting to reduce their low mood by re-engaging rapidly in internet use (Reed, 2013). Hence addiction to social networking leads to relapse. Block (2007) affirmed that internet addiction has high relapse rates and also makes co-morbid disorders less responsive to therapy. According to Rosen (2011) excessive use of social media networks could cause anxiety, depression, and loneliness and emit emotions and attitudes alien to a user.

This result also found that DSN as well as FSN has significant composite and relative influence in predicting user's withdrawal behavior among the sample. This finding is in line with previous research efforts which affirm an association between increasing use of the internet and withdrawal from family activities, increases in depression, and feelings of loneliness. Internet overuse has been found relate with withdrawal symptoms as feelings of anger, tension, and/or depression when the computer is inaccessible (Beard & Wolf, 2001, Dell'Osso, Altamura, Allen, Marazziti & Hollande, 2006; Hollander & Stein, 2006; Block, 2008, Reed, 2013.) In the same line of thought, Kraut et al., (1998) and Stein, (1997) in earlier findings opined that the internet provides a medium for creating false senses of interaction. Thus increased internet use leads to negative family functioning (Senormanci et al, 2014) damaged self-esteem (Stieger & Burger, 2010) and causes individuals to become isolated from their peers and from social interaction. Furthermore, it has also been noted that some individuals will also increase their use of the internet as feelings of isolation increases, possibly leading to a vicious circle of social withdrawal (Pratarelli et al., 1999, Reed, 2013).

Finally, the result revealed that DSN and FSN have significant joint and independent predicting influence on activity conflicts of sample. According to some studies, Internet overuse would bring several negative outcomes in different aspects of life including sleep, nutrition, physical activity, academic and professional progress, and family relationships. Eventually, all these issues can lead to various physical and psychiatric disorders such as low back pain, carpal tunnel syndrome, depression, anxiety, loneliness and low self-esteem (Young, 1998,; Nalwa & Anand, 2003). According to Rosen (2011) teens who use Facebook more often show more narcissistic tendencies while young adults who have a strong Facebook presence show more signs of other psychological disorders, including antisocial behaviors, mania and aggressive tendencies. Facebook can be distracting and can negatively impact learning. Daily overuse of media and technology has a negative effect on the health of all children, preteens and teenagers by making them more prone to anxiety, depression, and other psychological disorders, as well as by making them more susceptible to future health problems(Rosen,2011.

5. Conclusion

Duration Social Networking (DSN) is positively related to salience tolerance, mood modification, withdrawal, and conflict among Nigerian undergraduates. Also DSN and Frequency of Social Networking (FSN) were significant joint and independent predictors of users' salience, tolerance, mood modification, relapse, withdrawal and conflict of activities.

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