

Effect of cognitive behavioural therapy (CBT) on social media addiction among university students in Rivers State, Nigeria

Amadi Uchechukwu¹, Akaeze Charlice Chukwudumebi²

¹ Department of Medical Social Services, University of Port Harcourt Teaching Hospital, Harcourt, Nigeria

² Department of Social Work, University of Port Harcourt, Harcourt, Nigeria

Abstract

This study investigated the effect of Cognitive Behavioural Therapy on Social Media Addiction among university students in Rivers State. Four (4) objectives were generated to determine the effect of CBT on students' addicted behaviour and to determine any gender difference in students' addiction towards social media usage. It also attempted to find out the effect of CBT in restructuring the minds of university students regarding their reasons for excessive use of social media. Hypotheses were formulated and tested. Quasi-experimental pre-test-post-test, control design was employed for the study. The population of this study was 58,375 students from three (3) universities in Rivers State out of which forty (40) students were purposively sampled and used for the study. The instrument used for data collection was Social Media Addiction Test (SMAT). The Social Media Addiction Test (SMAT) is a scale consisting of 38 items of expression related to social media use. This instrument consists of two sections: Section A (1-24) consists of items that measures the presence and severity of social media dependency among students to determine the level of social media addiction and Section B (25-38) consists of various reasons for being addicted to social media. Data were analysed using ANCOVA. The findings of the study revealed that CBT has significant effect in reducing the level of social media addiction among university students in Rivers State. It also helped in restructuring the minds of the students regarding their reasons for excessive use of social media and the effect of CBT didn't vary with gender in all results. Based on the findings, it is evident that CBT is an effective treatment for social media addiction. Therefore, it was recommended that counsellors should use Cognitive Behavioural Therapy (CBT) to treat addictive behaviour of students towards social media use.

Keywords: Cognitive behavioural therapy (CBT), social media, social media addiction

Introduction

Social media play a crucial role in learning environments. It is a key communication channel and a source of social support. Many social networking websites are specifically designed for learning and have many advantages as they provide wide access to information and information resources. They reduce barriers to group interaction and telecommunications, support collaborative learning activities, active and social learning, encourage learners to learn more about self-learning, increase engagement and learner's motivation.

With the development in information technology, especially with the rapid increase of Internet-based social media the ways of interpersonal communication have drastically changed. In addition to providing opportunities in facilitating and improving the quality of global communications, it has created some threats (Kuss, Griffiths & 2013) ^[11]. When the use of social networks is managed poorly, they can have negative consequences, social media addiction is one of the consequences that many social network users may experience.

Problematic social media use, also known as social media addiction or social media overuse, is a form of psychological or behavioural dependence on social media platforms, (Kuss & Griffiths. 2017; Hogan. Strasburger & Victor, 2018) ^[9, 10]. It is generally defined as the compulsive use of social media platforms that results in significant impairment in an individual's function in various life domains over a prolonged period. Social media addiction can be diagnosed when an individual engages in online activities at the cost of fulfilling his daily responsibilities or pursuing other interests, and without regard for the negative

consequences. Literature on social media use have been written, which identified many risk factors for Internet addiction and several negative consequences resulting from this problem. Such risk factors include socio-demographic, social, psychological and mental factors. It produces physical, social, and psychological problems, in addition, to poor academic performance and career difficulties (Lee & Stapinski, 2012) ^[12]. It is known that adolescents and young adults are the high-risk groups and more vulnerable to internet addiction (Canan, Yildirim & Sinani, 2013) ^[4]. Both groups especially adolescents suffer from emotional and social stress, in addition to lack of behavioural control due to incomplete psychological maturity, which motivate them to engage in risk-related behaviours such as internet addiction (Tang, Zhang & Li, 2014) ^[16].

One can evaluate student's social media habits and behaviour towards it to help determine if an addiction is present. Addiction is a certain type of impulse control disorder, which may lead one to lose track of time while using social media. For instance, one's psychological clock may run slower than usual and self-consciousness is compromised (Turcl, Brevers & Bechara, 2018). Therefore, individuals may passively consume media for longer amounts of time. In the digital age, it is common for adolescents to use their smartphones for entertainment purposes, education, news and managing their daily life. Therefore, adolescents are further at risk for developing addictive behaviours and habits. Many medical experts have looked at the survey and come up with a clear conclusion, saying that teenagers' excessive smartphone use has an impact on their behaviour and even their mental health (Shankar, Rani & Brundha, 2020) ^[14].

Gok, (2015) ^[7] investigated if there were any gender variations in the usage of social networking sites. The findings revealed that of the many students (both males and females) in the rested in social networking, some became addicted, and as a result, suffered a negative impact to their academic performance, habits, and social life. Another study linked one of the most widely used social networking platforms, Facebook, to low academic performance in both genders, if it was used in the classroom. Another finding notices experiences something rewarding, neurons in the principal dopamine-producing areas in the brain are activated, causing dopamine levels to rise. Therefore, the brain receives a "reward" and associates the drug or activity with positive reinforcement. This is observable in social media usage; when an individual gets a notification, such as a like or mention, the brain receives a rush of dopamine and sends it along reward pathways, causing him or her to feel pleasure. Social media provides an endless amount of immediate rewards in the form of attention from others for relatively minimal effort. Therefore, the brain rewires itself through this positive reinforcement, making people desire likes, retweets, and emoticon reactions. This is what triggers the addiction and why it is so easy to fall into (Young, 2017) ^[19]. Another reason why people are addicted to social media is that it serves as a source for escapism. Young, (2017) ^[19] defined escapism as a behaviour employed to distract oneself from real life problems. Individuals sometimes feel the need to escape from their reality because of boredom or unpleasant situations and social media can act as either an escape from real-life troubles or to avoid thinking about unpleasant thoughts. It allows individuals to create a totally different profile and image to fit one's desired liking. As many people underestimate how social media can influence and affect their lives, they are not usually aware that they are addicted to it. Thus, it is often too late to notice the effect and to change before it comes to a point that is harmful.

When the use of social networks is managed poorly, they could have negative consequences at the individual and social levels. It was observed that as a result of this addiction, most students seem to experience physical, social, and mental or psychological problems such as sleep disturbance, eating problems, limited physical activity, back strain, eyestrain, and others. Research has demonstrated that Internet addiction leads to a poor health condition, excessive daytime sleepiness, insomnia nightmares, difficulty in falling asleep and night awakenings (Canan, Yildirin Sinani 2013) ^[4], loss of energy, physiological dysfunction, weakened immunity (Goel Subramanyam & Kamath 2013), overweight, obesity, and impaired vision. (Be Al-Mahdi & Ali 2011). This study would try to identify which of those problems are prevalent amongst students in tertiary institutions in Taraba State and whether the use of Cognitive Behavioural Therapy would be effective in mitigating the problems.

Cognitive Behavioral Therapy for Internet Addiction (CBT-IA) is the first model of its kind and the most effective type of therapy for Internet addiction that is focusing; on cognitive behavioural therapy (CBT) (Malak, 2018) ^[13]. The CBT usually takes 2 months of treatment or approximately 8 weekly sessions. The focus of this the: to assess the client's patterns of use and then develop new schedule to change the past formed patterns. External influences such as activities that demand to addict to leave Internet could be applied.

There are also treatment programmes that help the client in identifying goals about the time needed for using the Internet. The CBT-IA model is a comprehensive approach which can be divided into phases, including (1) behaviour modification, (2) cognitive restructuring, and (3) harm reduction therapy (HRT). The goal of cognitive behaviour therapy is to teach people that while they cannot control every aspect of the world around them, they can take control of how they interpret and deal with things in their environment (Goldman, 2020) ^[8]. One of the greatest benefits of cognitive behavioural therapy is that it helps clients develop coping skills that can be useful both now and in the future. In universities in Rivers State, students seem to suffer from all forms of internet addiction disorder arising from excessive social media use. It was observed that as a result of this addiction, most students experience physical, social, and mental or psychological problems such as sleep disturbance, eating problems, limited physical activity, back strain, eyestrain, and others.

It has been observed that this non-substance addiction is viewed as severe psychological dependency and behavioural addiction to internet. Many students spend most of their valuable time on it without focusing on education issues. This is evident in instances where in spite of some strict school rules that are meant to forbid the use of cellphones and any other forms of electronic media during classes or lectures, a vast number of students are still found connecting to the internet as much as they please. This kind of activity is found to be causing a lot of distraction during instructional time, and impact negatively on their learning. Previous efforts and programmes like traditional family counselling; the association of punishment and rewards and psycho-drama techniques showed on televisions which aimed to correct these behavioural problems seem ineffective probably because the needed behaviour technique to curb the menace is lacking. It is based on this background that the researchers determined the effect of Cognitive Behavioural Therapy (CBT) in handling social media addiction among university students in Rivers State.

Purpose of the Study

The main purpose of this study was to examine the effect of Cognitive Behavioural Therapy (CBT) on social media addiction among university students in Rivers State. Specifically, this study investigated:

1. Effect of Cognitive Behavioural Therapy (CBT) in reorganising social media usage of university students in Rivers State.
2. Gender difference on the effect of Cognitive Behavioural Therapy (CBT) in reorganising social media usage in universities in Rivers State.
3. Effect of Cognitive Behavioural Therapy (CBT) in restructuring the minds of university students regarding their reasons for excessive use of social media.
4. Gender difference on the effect of Cognitive Behavioural Therapy (CBT) in restructuring the minds of students regarding their reasons for excessive use of social media.

The following hypotheses guided this study

H₀₁: There is no significant difference on the effect of Cognitive Behavioural Therapy (CBT) on social media addiction scores between experimental and control groups among university students in Rivers State.

H02: There is no significant difference on the effect of Cognitive Behavioural Therapy (CBT) on social media addiction between male and female university students in Rivers State.

H03: CBT has no significant effect in restructuring the minds of university students in Rivers State regarding their reason for excessive use of social media.

H04: There is no significant difference on the effect of Cognitive Behavioural Therapy (CBT) in restructuring the minds among male and female university students in Rivers State regarding their reasons for excessive use of social media.

Methodology

The study adapted quasi-experimental pre-test-post-test control design. The target population for this study is 58,375 students from three (3) universities in Rivers State. The target population contains members of a group that a researcher is interested in studying. To arrive at the sample size, multi-stage sampling procedure was used in selecting the students. At the first stage, purposive sampling was used. Social Media Addiction Test was administered to students from different tertiary institutions to enable the researcher picked those students who are addicted to social media based on their social media usage.

The Social Media Addiction Test (SMAT) is a scale consisting of 38 items of expression related to social media use. The instrument was validated by some experts. The Validation Index Ratio of SMAT is 0.80. A pilot test was conducted on 40 students. The data obtained from the pilot testing was subjected to statistical analysis using Cronbach Alpha to determine the internal consistency coefficient of the instruments, the value of the reliability coefficient of SMAT stood at 0.93 which indicate that the instrument is reliable. This instrument consists of two sections: Section a (1-24) consists of items that measures the presence and severity of social media dependency among students to determine the level of social media addiction and Section B (25-38) consists of various reasons for being addicted to social media. The samples were drawn after the administrations of Social Media Addiction Test.

The second stage, the researchers used stratified random sampling. The aim of stratified random sampling is to select participants that best represents the entire population. Data collected were analyzed and were used as baseline for the selection of the samples. Students were categorized according to the level of addiction. Forty (40) highly addicted students comprise both male and female were picked to participate in the study. The students were assigned purposively into two groups of 20 each, an experimental group and a control group.

Data collected were classified into pre-test and post-test for experimental group and control group. Further classification of the data was that of male and female, since the study has gender as a moderator variable. Analysis of Covariance (ANCOVA) statistics was used to test the research hypotheses and the covariates pie-test. The null hypotheses that were formulated were tested at a significant level of 0.05.

Results

H01: The first hypothesis tested stated that there is no significant effect of CBT in reducing level of social media addiction of university students in Rivers State.

Table 1: Results of one-way analysis of covariance of cbt in reducing the level of social media addiction

Sources of Variation	Sum of squares	Df square	Mean	F	Sig	Partial Eta squared
Corrected	9.62 ^a	2	4.81	59.12	0.00	0.76
Intercept	3.56	1	3.56	41.24	0.00	0.53
Pre-level of addict	0.03	1	.03	.41	0.53	0.01
Group	9.33	1	9.33	114.56	0.00	0.76
Error	3.01	37	0.8			
Total	288.26	40				
Corrected	12.63	39				

a. R Squared = .762 (Adjusted R. Squared = .749)

Table 1 is a one-way between groups analysis of covariance to compare the effect of CBT in reducing the level of social media addiction among university students in Rivers State. After adjusting for the pre-test scores, there is a significant difference between the two groups on the level of social media addiction $F(1, 37) = 114.65, p = 0.00$, with large effect size (partial eta squared = 0.76). The effect size shows that 76% of the variance in students' level of social media addiction is based on the CBT. Thus, the hypothesis CBT has no significant effect in reducing the level of social media addiction of university students in Rivers State is hereby rejected.

H02: There is no significant difference in the effect of CBT in reducing the level of social media addiction among male and female university students in Rivers State.

Table 2: Tests of between-subjects effect of gender on students' level of social media addiction

Sources of Variation	Sum of squares	Df square	Mean	F	Sig	Partial Eta squared
Corrected	0.07 ^a	2	0.03	0.29	0.75	0.03
Intercept	0.99	1	0.99	8.74	0.01	0.34
Pre-test	0.06	1	0.06	0.53	0.48	0.03
Sex	0.01	1	0.1	0.13	0.73	0.01
Error	1.92	17	0.11			
Total	93.19	20				
Corrected	1.99	19				

a. R Squared = .033 (Adjusted R Squared = -.080)

Results from Table II show a one-way between groups analysis of covariance to compare the level of social media addiction of male and female students in CBT treatment. After adjusting for the pre-test scores, there is no significant difference between the level of social media addiction of male and female students, $F(1,17) = 0.13, p = 0.73$. The effect size (eta squared - (0.01) shows that only 1% of the variance in the level of social media addiction of the students is attributable to the sex of the students. Thus, the hypothesis of no significant difference in the effect of CBT in reducing the level of social media addiction of male and female university students in Rivers State is therefore not rejected.

H03: The third hypotheses tested state that there is no significant effect of CBT in restructuring the minds of university students regarding their reasons for excessive use of social media in Rivers State.

Table 3: Results of one-way analysis of covariance of cbt in restructuring the minds of university students regarding their reasons for excessive use of social media in rivers state

Source of Variation	Sum of Squares	Df	Mean square	F	sig	Partial Eta squared
Corrected Model	0.21 ^a	2	0.10	0.58	0.56	0.03
Intercept	4.46	1	4.46	25.00	0.00	0.40
Pre-reason	0.09	1	0.09	.48	0.49	0.01
Group	0.14	1	0.14	0.79	0.38	0.02
Error	6.60	37	0.18			
Total	300.34	40				
Corrected Total	6.81		39			

a. R Squared = .030 (Adjusted R.S Squared = .022)

Table III is a one-way between groups analysis of covariance to compare the effect CBT in restructuring the minds of university students regarding their reasons for excessive use of social media in Rivers State. After adjusting for the pre-test scores, there is no significant difference between the two groups on reasons for excessive use of social media $F(1, 37) = 0.79, p = 0.00$, with small effect size (partial eta squared 0.02). The effect size shows that CBT contributed only 2% making the students' change their reasons for excessive use of social media. Thus, the hypothesis CBT has no significant effect in restructuring the minds of university students regarding their reasons for excessive use of social media in Rivers State is hereby not rejected. That is, CBT has no significant effect in restructuring the minds of university students regarding their reasons for excessive use of social media in Rivers State.

H04: There is no significant difference in the effect of CBT in restructuring the minds of male and female students regarding their reasons for excessive use of social media in Rivers State.

Table 4: Tests of between-subjects effect of gender on restructuring the minds of male and female students regarding their reasons for excessive use of social media

Source of Variation	Sum of Squares	Df	Mean square	F	sig	Partial Eta squared
Corrected Model	0.19 ^a	2	0.09	0.49	0.62	0.06
Intercept	2.33	1	2.33	12.21	0.00	0.42
Pre-test	0.00	1	0.00	0.01	0.91	0.00
Sex	0.15	1	0.15	0.81	0.38	0.05
Error	3.24	17	0.19			
Total	144.26	20				
Corrected Total	3.43	19				

a. R Squared *.055 (Adjusted R Squared = -.056)

Results from Table IV show a one-way between groups analysis of covariance to investigate the effect of CBT in the restructuring the minds of male and female students regarding their reasons for excessive use of social media. After adjusting for the pre-test scores, there is no significant difference in the restructuring of the minds of male and female students regarding their reasons for excessive use of social media, as indicated by $F(1,17) = 0.81, p = 0.38$. The effect size (eta squared =.05) shows that only 5% of the

variance in the in the restructuring of the minds of male and female students regarding their reasons for excessive use of social media is attributable to the sex of the students. Thus, the hypothesis of no significant difference in the effect of CBT in the restructuring the minds of male and female students regarding their reasons for excessive use of social media is therefore not rejected.

Discussion of findings

The study with respect to H_{01} , found out the significant difference between experimental and control groups on the level of social media addiction after treatment with a large effect size. The pre-test mean scores of experimental group were not significantly different from that of control group- Results of one-way analysis of covariance to compare the effect of CBT on social media addiction between groups, after adjusting for the pre-test scores revealed that there is a significant difference between the two groups on the level of social media addiction with large effect size. The effect size shows that the variance in students' level of social media addiction in experimental group was based on CBT intervention. Thus the hypothesis that CBT has no significant effect on social media addiction of university students in Rivers State is hereby rejected. That is CBT has significant effect in reducing the level of social media addiction of university students in Rivers State. Significant effect means that students who received treatment under CBT have reduced the level of social media addiction treatment. The result could be attributed to the CBT techniques applied during intervention. In behavioural therapy, problems were analysed and problem behaviours were identified. During the intervention sessions, the participant received lectures on social media addictions. Handouts were also given individual. They were taught that the mechanism of change is facilitating the learning and implementation of effective behaviours to replace ineffective ones. The first phase or the early stage of the therapy is behaviour modification that focuses on specific behaviours and situations where the impulse control disorder causes the significant difficulty and was used to control compulsive internet use and reduce the time online by addicts. Another reason for this finding might be because participant became aware of the problem with their thinking and continuous validation and acceptance they got from the pictures and slides presented during the sessions showing the advantages and disadvantages of social media. Also, very interesting power point presentations from different speakers about social media addiction were presented. The finding of this study corroborates that of Van Rooij, A. J., & Nijkamp. L.M (2018) [18] who reported that the CBT program, which is ordinarily used for substance dependence and pathological gambling, fits the problem of internet addiction quite well. Interventions mainly focused on controlling and reducing internet use, and involved expanding (real life) social contacts, regaining a proper daily structure, constructive use of free time, and reframing beliefs. Therapists further indicated that the treatment achieved some measure of progress for all of the 12 treated patients, while patients reported satisfaction with the treatment and actual behavioural improvements. It is also in line with the result of a study conducted by Young (2011) on 114 Internet addicts using cognitive behavioural therapy as intervention. The outcome variables were evaluated on the third, eight and twelve sessions and

over a 6-month follow-up. The results showed that the majority of clients achieved apparent clinical improvement in managing their complaints at the end of the eight sessions, and the clients had ability to maintain their improvements in symptoms management at a 6-month follow-up. Another similar results reported by Du, Jiang and Vance, (2010) [6] who studied the effect of Cognitive Behavioural Group Therapy in treatment of Internet addiction. The results showed the treatment group had improvements in time management skills, emotional, cognitive, and behavioural symptoms.

Zhang, Zhang and Xu (2019) [20] in a study titled: Does cognitive-behavioural therapy reduce internet addiction? Protocol for a systematic review and meta-analysis. This study aims to assess the efficacy of cognitive-behaviour therapy for internet addiction symptoms and associated other psychopathological symptoms. The primary outcome is change of IA symptoms. IA was measured by adolescent pathological internet use scale, addiction components criteria, clinical symptoms of internet dependency, Chinese IA scales, Chinese IA scale revised, generalized problematic internet use scale, IA test, IA disorder diagnostic criteria, internet-related addictive behaviour inventory, Korea-IA scale, online cognitive scale, pathological use scale, problematic internet use questionnaire, young diagnostic questionnaire for internet addiction (IA),^J and other high quality scales on IA. Secondary outcome includes psychopathological symptoms, time spent online and dropout. Psychopathological symptoms are measured by symptom checklist-90-Revised, state-trait anxiety index, and other clinical and psychopathological measures. Therefore, CBT has been considered as a means for (IA), which is promising in producing significant symptom reduction.

On the hypothesis of no significant difference on the effect of CBT in reducing social media addiction between male and female students, the hypothesis is hereby not rejected, that is CBT has no significant effect on social media addiction of university students based on gender. The findings of this study had shown that there is no significant difference on the level of social media addiction between male and female students after treatment.

The finding of this study with respect to H03 indicated that CBT helped in restructuring the minds of student regarding their reason for excessive use of social media. However, though the findings shown that students had exhibited some changes after treatment, the effect size is too small to consider significant. The effect size shows that CBT contributed only 2% making students change their reason for excessive use of social media. This result can be attributed to some factors. Factors that may hinder restructuring to happen: 1. Environmental factors- family, friends, colleagues and even strangers. The subjects under treatment are surrounded with people who continuously engage in social media as much as they like, the pressure of going with the flow is stronger than the effect of short intervention they experience during treatment. 2. Social media addiction though similar to other addictions is different in nature; unlike alcohol, tobacco, and drugs we need social media to some extent, social media play a crucial role in learning environment that's why our aim is not to eliminate rather to re-organise only. 3. Time is another factor. This result can be attributed to the time duration of treatment. The researcher observed during the treatment phase that some students didn't really believe that

social media can harm them in any way. Students need time to adjust from their former beliefs to a more effective one we introduced and to achieve that, it requires participation from the patients. They need to put some effort and work to benefit from the treatment. Thus, CBT treatment maybe more effective if clients will be subjected to longer session so that they may truly realize and feel the importance of the therapy.

Thus the hypothesis CBT has no effect in restructuring the minds of university students in Rivers State regarding their reason for excessive use of social media is hereby not rejected. In the same vein the result of the study shows that there is no significant mean difference on the effect of CBT in restructuring the minds of male and female students regarding their reasons for excessive use of social media in Rivers State. This result shows that the effect of CBT is the same for both male and female students.

Conclusion

Cognitive Behavioural Therapy CBT is based on the idea that how we think (cognition), how we feel (emotion) and how we act (behaviour) all interact together. The researchers worked on cognitive theory that "What we think affects how we act and feel; what we feel affects how we think and do; and what we do affect how we think and feel" Based on the findings of this study, it is concluded that CBT has significant effect in reducing social media addiction among university students in Rivers State. The Study also attempted to find the effect of CBT in restructuring the minds of the students regarding their reasons for excessive use of social media which resulted not significant. This result could be link to what the theorist hypothesized that media recipients are aware of their needs, that they can express them and then link them to different media uses which gratify those needs. For instance, someone will consume a particular media content to gratify the need to escape, but will at the same time give a different response (consciously or otherwise) when being surveyed for research purposes. Instead of stating the actual reason, he/she might state that the motive for consuming the media content is the need to be informed, and not escapism. And this is a potential threat in almost every research on attitudes and behaviour. Also, it was revealed that the effect of CBT didn't vary with gender in all the results.

Recommendation

Based on the findings of the study, the following recommendations with respect to counselling among students are as follows:

1. Counsellors should use Cognitive Behavioural Therapy (CBT) to treat social media addiction among university students in Rivers State. It is evident from the findings that CBT-IA is an effective treatment for social media addiction.

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