Effect of Cognitive Behaviour Therapy on Internet Addiction Among Undergraduate Students at the University of Abuja, Nigeria

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ABSTRACT

This study investigated the effect of Cognitive Behaviour Therapy on internet addiction among undergraduate students at the University of Abuja, Nigeria. Two research questions were generated based on two objectives and two null hypotheses were formulated and tested at 0.05 level of significant. The review of related literature was presented on conceptual framework, conceptual analysis, theoretical framework, review of previous studies and summary. The research adopted a quasi-experimental design involving pre-test and post-test. The sample size comprised 57 students in 200-level of Department of Civil Engineering and Sociology for 2024/ 2025 academic session. The participants were divided into experimental and control group. The experimental group received six weeks CBT intervention treatment for two sessions per week, at 40 minutes per session while the control group received no treatment. Data were collected using adapted Internet Addiction Test (IAT) which was validated by four experts from Faculty of Education. The data collected were analyzed using frequency counts, mean, Wilcoxon Signed Rank Test and ANCOVA. The findings revealed a significant reduction in internet addiction mean scores among undergraduate students exposed to CBT intervention compared to those in control group. There was no significant difference in the pretest and posttest mean scores of undergraduate students with internet addiction in control group. It recommended that University management should institutionalize Cognitive Behaviour Therapy (CBT) as a major counselling intervention for students identified with internet addiction and Professional counsellors should regularly organize CBT-based intervention programmes to assist students in developing healthier internet-use behaviours in order to improve their psychological well-being.

Keywords: Cognitive Behaviour Therapy, Problematic internet use, university students, quasi-experimental design, Internet Addiction Test.

INTRODUCTION

Internet has become a vital tool in modern society and has revolutionized communication, access to information, education, and recreation. Online learning and social interaction, academic research, and entertainment are the digital technologies that are becoming more and more important to university students. Despite the enormous advantages of these technologies, unregulated use of internet can become problematic internet use (PIU) which is characterized by lack of control and interruption of normal functioning. This issue is of special concern to university students due to their heavy use of internet and the possible implications on their academic and mental health (Stevens, Zhang, Cherkerzian, Chen, & Liu, 2020).

Internet addiction is more common among different populations, geographical locations and different methods of assessing it. In a systematic review and meta-analysis of 101 studies with 128,020 university students in 38 countries and territories, Liu, Gui, Chen, Feng, Wu, Su, Cheung, et al. (2025) estimated an overall world prevalence of 41.84. Another difference that was found by the researchers was based on geographical location, level of income, COVID-19 period, and values of diagnostic cut-off. The results of these studies show that prevalence estimates need to be interpreted in their methodological and cultural contexts and not in the sense that one number fits all.

It is also linked to inappropriate psychological and academic results due to problematic internet use. Stevens, Zhang, Cherkerzian, Chen and Liu. In a study that analysed the results of 43,004 undergraduate students in the United States, (2020) identified that 10% of participants reported problematic internet use or computer gaming that had a negative impact on academic performance. Mental health symptoms were also higher among these students. These results indicate that problematic internet use is an issue worth consideration in university counselling and student-support services, but the associations do not alone prove causation.

Internet access in higher education in Nigeria facilitates academic engagement, communication and sharing of information. Nevertheless, when it is overused, it can disrupt the educational and personal duties of the students. The findings of scholarly research across the globe cannot be directly transferred to the case of undergraduates at the University of Abuja since socioeconomic conditions, educational needs, access to the internet, and social culture might affect the patterns of internet use. This leads to the necessity of context-related research on the issue and the potential psychological treatment of the problem.

Cognitive Behaviour Therapy (CBT) is a systematic treatment of the mind, which aims at identifying negative thought patterns and behaviours that cause psychological problems. CBT can also be used in the treatment of internet addiction by helping students to recognize emotional triggers, disprove beliefs that support excessive internet use and come up with more viable coping strategies to handle academic pressure, loneliness, and stress. Its practical skills involve cognitive restructuring, self-observation, control of stimuli, management of time, scheduling of activities, and problem-solving. These measures are used to enhance self-control instead of going all the way to the point of stopping to use the internet, which is still needed in school work.

There is empirical evidence that CBT-based interventions may be effective. Yang, Hu, Morita, Ogai, Saito and Wei, (2022) carried out a randomised controlled trial of 43 Chinese college students, of which 21 belonged to the intervention group, and 22 to the control group. The short-term, intensive internet addiction CBT-based group programme alleviated symptoms of internet addiction and procrastination and enhanced the feeling of coherence of the participants. Nevertheless, it did not have a substantial effect on the mean daily internet use or psychological stress. These results indicate that therapeutic success can be measured by changes in problem behaviours and functioning and not screen time.

Jiang, Liu, Qin, Wang, He, and Chen (2024) also offer additional evidence as their systematic review and meta-analysis included 66 studies with 4,385 young people. Their results suggested that a number of non-pharmacological therapies such as CBT were linked with the decreases in internet addiction symptoms. However, there is a lot of heterogeneity among the studies included and this implies that the overall effect estimates should be interpreted with caution. It was also suggested that the authors should conduct more studies with bigger samples and better study designs.

Although these findings are promising, the applicability of CBT to the undergraduates of the University of Abuja is an empirical issue. Cultural differences in expectations, academic demands, relationships with others, and access to counselling services can affect the outcomes of the interventions. Thus, the current research explores how CBT influences internet addiction in undergraduate students in the University of Abuja, Nigeria. The research aims to add context-specific information on university counselling services and approaches to more healthy internet use, by assessing a structured therapeutic intervention.

This study is anchored on the Cognitive Behavioural Theory, which explains how maladaptive thoughts, emotional triggers and behavioural patterns contribute to problematic internet use. The theory suggests that stress, loneliness and academic pressure may encourage excessive internet use as a coping mechanism. CBT addresses these patterns through cognitive restructuring, self-monitoring, stimulus control, time management and healthier coping strategies. Accordingly, the six-week intervention aimed to modify problematic internet-use behaviours, with its effectiveness assessed through changes in participants' Modified Internet Addiction Test (MIAT) scores.

Statement of the Problem

The widespread internet use among university students has spawned significant apprehensions about computer addiction, which has a negative influence on their psychological welfare, academic progress and general well-being. Excessive and uncontrollable online use which has been labelled as internet addiction has been linked to increased feelings of anxiety, depression, social isolation and poor academic performance. Digital technology in the field of education, interpersonal relationships and recreation is making undergraduate students especially the University of Abuja easier prey to this behaviour disorder. The Internet addiction in students in Nigeria has many more implications after excessive screen time. Among the most noticeable consequences is impairment of performance in school. Internet addicts often face difficulties in keeping their head consistently focused on their school work, leading to procrastination, dropping grades, and less engagement in classroom work.

Despite the recognized negative connotations of internet addiction, there is little good intervention that can take place within college settings. Traditional punitive strategies, which include restricting access to internet services, have not helped much as they fail to address key psychological and behavioural elements leading to the need to engage in continuous internet use. Cognitive Behaviour Therapy (CBT) is one developing intervention of the behaviour addictions by helping individuals to identify and resolve the maladaptive thinking styles and developing better coping strategies. Yet, there is a lack of empirical studies exploring the effectiveness of CBT to overcome internet addiction among undergraduate students in Nigeria and at the University of Abuja particularly.

The need to undertake this research was based on critical reviewing of literature on the importance of counselling strategies towards healthy digital habits among university students in Nigeria. This review found a disturbing pattern that internet addiction is on the rise among Nigerian undergraduates with far-reaching adverse effects on their academic performance, mental well-being and social functioning. Despite this increasing issue, there is still a large gap in the use of evidence-based psychological interventions, especially cognitive-behavioral intervention, to negate the issue in the Nigerian university setting. The specified gap in research and practice was a driving force behind conducting this study, targeted at assessing the impact of Cognitive Behaviour Therapy on internet addiction in a group of undergraduate students, enrolled at the University of Abuja in Nigeria.

Purpose of the Study

The purpose of this study was to investigate the effect of cognitive behaviour therapy on internet addiction among undergraduate students at the University of Abuja. The objectives of the study were to:

a. identify the difference in the pre-test and post-test mean scores of experimental group for undergraduate students with internet addiction;
b. identify the difference in the pre-test and post-test mean scores of undergraduate students with internet addiction in control group;

Research Questions

The following research questions were raised to guide the researcher in the study.

1. What is the difference in the pre-test and post-test mean scores of experimental group for undergraduate students with internet addiction?
2. What is the difference in the pre-test and post-test mean scores of undergraduate students with internet addiction in control group?

Hypotheses

The following null hypotheses were formulated and were tested at 0.05 level of significance.

H01 There is no significant difference in the pre-test and post-test mean scores of experimental group for undergraduate students with internet addiction.

H02 There is no significant difference in the pre-test and post-test mean scores of undergraduate students with internet addiction in control group.

METHODOLOGY

The research design for this was quasi-experimental research design. The population of the study consisted of all 200 levels full-time students of the seventeen faculties in the University of Abuja comprising five thousand, three hundred and forty-nine (5,349). Source: (Academic Planning Unit, University of Abuja, 2024/2025 session). The sample size of 57 (fifty-seven) second year students from the University of Abuja, was selected using a multi-stage sampling. To classify faculties, stratified sampling was used, which was categorized into Physical Sciences (Sciences and Engineering) and Humanities (Education, Social Sciences, Arts and Management Sciences). Second, purposive sampling was employed to determine the disciplines, in which Civil Engineering and Sociology Departments were selected because of their relevance to the objectives of the study and accessibility. Initially 60 students (30 boys and 30 girls) were selected from 360 students and screened with the help of Modified Internet Addiction Test (MIAT) in the internet. A final sample of 57 participants met the eligibility criteria with 29 participants in experimental group and 28 participants in control group

The instrument that was used for this study is titled: Modified Internet Addiction Test (MIAT) that was adapted by the researcher because it suitable for collecting information on the effect of cognitive behaviour therapy on undergraduate students with internet addiction. Section A, was on the demographic data of the respondents. Section B, contained 20 statements with 4-point rating scale of rarely, occasionally, frequently and often. The IAT total score was the sum of the ratings given by the respondents for the 20 item responses. Each item was rated on a 4-point rating scale ranging from 1 to 4. The maximum score was 80 points. The higher the score, the higher is the severity of the problem. Total scores that ranged from 1 to 20 points were considered to reflect a normal level of Internet usage; scores of 21 to 40 indicate the presence of a mild level of Internet addiction; 41 to 60 reflect the presence of a moderate level; and scores of 61 to 80 indicated a severe dependence upon the Internet.

The experimental group participated in a structured six-week Cognitive Behaviour Therapy (CBT) intervention designed to address problematic internet-use behaviours among undergraduate students. The intervention consisted of two sessions per week, with each session lasting about 40 minutes, resulting in a total of 12 intervention sessions. The sessions were conducted through group counselling by professional counsellor, who had relevant CBT training and experience. The intervention focused on identifying and modifying maladaptive thoughts, emotional triggers and behavioural patterns associated with excessive internet use. The programme covered psychoeducation about problematic internet use, self-monitoring of internet-use behaviours, identification of triggering situations, cognitive restructuring, behavioural modification, stimulus control, time management, alternative coping strategies and relapse prevention. Each session followed a planned sequence of therapeutic activities, with opportunities for participants to discuss their experiences and practise the strategies introduced. Intervention fidelity was maintained through actual monitoring procedure. Participants' attendance was recorded, and the facilitator used checklist to monitor adherence to the intervention protocol. The control group did not receive the CBT intervention during the six-week study period.

RESULTS

Table 1: Distribution of respondents by Group

Group	N	Percentage
Experimental	29	51
Control	28	49
Total	**57**	**100**

The study participants were divided into the experimental and control groups as shown in Table 1. A total of 57 participants were involved in the study. These included 29 participants (51%), who were in the experimental group and 28 participants (49%), who were in the control group. As the table shows, the sample was properly distributed, which gives a solid foundation in the comparison of the effect of the experimental treatment with the control condition.

Research Question One: What is the difference in the pre-test and post-test mean scores of experimental group for undergraduate students with internet addiction?

Table 2: Mean score and Standard Deviation of Pretest and Posttest Scores of Experimental Group for Undergraduate Students with Internet Addiction

Experimental Group	N	Mean	Std. Dev.
Pretest	29	2.42	0.44
Posttest	29	2.26	0.41
Mean difference		**0.16**	

Table 2 shows the average score and standard deviation of the pretest and posttest scores of the undergraduate students having the internet addiction in the experimental group. According to the results, the mean score of the students in the pretest was 2.42 with a standard deviation of 0.44 and the mean score in the posttest was 2.26 with a standard deviation of 0.41. This is a mean difference of 0.16, which is a decrease in the score of internet addiction of students in the pretest to the posttest. Therefore, there was a difference of 0.16 between the pretest and posttest mean scores in the experimental group.

Research Question Two: What is the difference in the pre-test and post-test mean scores of undergraduate students with internet addiction in control group?

Table 3: Mean score and Standard Deviation of Pretest and Posttest Scores of Undergraduate Students with Internet Addiction in Control Group

Control Group	N	Mean	Std. Dev.
Pretest	28	2.07	0.52
Posttest	28	2.11	0.51
Mean difference		**0.04**	

Table 3 presents the mean score and standard deviation of the pretest and posttest scores of undergraduate students with internet addiction in the control group. The results show that the pretest mean score of the students was 2.07 with a standard deviation of 0.52, while the posttest mean score was 2.11 with a standard deviation of 0.51. This indicates a slight increase of 0.04 in the mean score from the pretest to the posttest. Therefore, there was a difference of 0.04 between the pretest and posttest mean scores in control group.

Ho_1: There is no significant difference in the pre-test and post-test mean scores of experimental group for undergraduate students with internet addiction.

Table 4: Summary of Wilcoxon Signed Ranks Test Results of Pretest and Posttest Scores of Undergraduate Students with Internet Addiction in Experimental Group N=29

Experimental	N	Mean Rank	Sum of Ranks	Z	Sig@0.05	Remark
Negative Ranks	23	13.26	305.00	-2.798	0.005	Significant
Positive Ranks	6	18.25	73.00			

Table 4 presents the Wilcoxon Signed Ranks Test results comparing the pre-test and post-test scores of undergraduate students with internet addiction in the experimental group. The results indicate that 23 participants had negative ranks (post-test scores were lower than the pre-test scores), with a mean rank of 13.26 and a sum of ranks of 305.00, while 6 participants had positive ranks (posttest scores were higher than the pretest scores), with a mean rank of 18.25 and a sum of ranks of 73.00. The test produced a Z-value of -2.798 and a p-value of 0.005. Since the p-value of 0.005 is less than the 0.05 level of significance, the difference between the pretest and posttest scores is statistically significant. Therefore, the null hypothesis one, which states that there is no significant difference in the pre-test and post-test mean scores of undergraduate students with internet addiction in the experimental group, is rejected.

H_{O2}: There is no significant difference in the pre-test and post-test mean scores of undergraduate students with internet addiction in control group.

Table 5: Summary of Wilcoxon Signed Ranks Test Results of Pretest and Posttest Scores of Undergraduate Students with Internet Addiction in Control Group N=28

Control	N	Mean Rank	Sum of Ranks	Z	Sig@0.05	Remark
Negative Ranks	8	16.5	132	-1.377	0.168	Not Significant
Positive Ranks	20	12.95	246			

Table 5 presents the Wilcoxon Signed Ranks Test results comparing the pre-test and post-test scores of undergraduate students with internet addiction in the control group. The results show that 20 participants had positive ranks, indicating that their post-test scores were higher than their pre-test scores, while 8 participants had negative ranks, indicating lower posttest scores than pretest scores. The positive ranks had a mean rank of 12.95 with a sum of ranks of 246, whereas the negative ranks had a mean rank of 16.50 with a sum of ranks of 132. The test yielded a Z-value of -1.377 with a p-value (Sig.) of 0.168. Since the p-value of 0.168 is greater than the 0.05 level of significance, the difference between the pre-test and post-test scores is not statistically significant. Therefore, the null hypothesis two, which states that there is no significant difference in the pre-test and post-test mean scores of undergraduate students with internet addiction in the control group, is not rejected, i.e. it is accepted.

DISCUSSION

The first result of the study was that there was a significant difference between the means of pre-test and post-test results of undergraduate students with internet addiction in the experimental group. This finding suggests that the Cognitive Behaviour Therapy (CBT) was effective in the reduction of internet addiction in the group of participants who received the treatment. This observed change in internet addiction scores indicates that CBT was successful in altering the maladaptive cognitions, beliefs and behaviours of undergraduate students regarding the Internet. This finding gives empirical evidence that CBT is an effective therapeutic intervention in the control of internet addiction in the Nigerian university setting. This result echoes that of Khalily et al. (2020) who found that culturally adapted CBT was effective in reducing excessive smartphone use in participants and also in enhancing depression, anxiety, stress and peer relationships. The parallels between these results and the current study could be due to the use of similar principles of therapy, such as self-monitoring, cognitive restructuring, behaviour rehearsal and relapse prevention. These methods empower people with actionable strategies to identify addictive factors and to shift their addictive behaviours into healthier alternatives.

The second results of the study showed that the mean scores of pre-test and post-test for the undergraduate students of Internet Addiction group in the control group were not statistically different. The results suggest that those who did not receive CBT had no significant change in their internet addiction scores during the study. The discovery implies that internet addiction will not subside by itself without a proper psychological program. This once again highlights the chronicity of Internet addiction, and the importance of evidence-based therapeutic strategies to combat this problem among undergraduate students. The discovery aligns with Zheng, Zhang and

Zhang et al. (2020) who reported that participants were instructed to continue their regular schedule and not report any substantial decreases in problematic smartphone use as compared to CBT or mind-body exercise participants.

There is some consistency between both studies which indicates that behavior addictions like internet addiction do not need to be spontaneous, but rather intentional behavior changes. The agreement may be because both studies used quasi-experimental designs with treatment and control groups, and the results could be attributed to one particular variable, the program. Likewise, the results align with those of Yang, Hu, Morita, Ogai, Saito and Wei (2022), who observed that the internet addiction symptoms of college students in the control group did not significantly improve compared to those who underwent the CBT intervention. The parallels in the results could be due to the theoretical assumption, which underlies these two studies, that thoughts and behaviours are not likely to change without conscious cognitive restructuring and behaviour modification.

Students not receiving therapeutic guidance did not decrease their problematic use of the internet. The similarity of this study with the present study could be due to the fact that both the studies used similar research design, although they are conducted in different locations.

The present finding also corroborates that of Ede, Nnabugwu, Ikpo and Ogbonnaya (2023) who found that the individuals who were put in the control group remained to have pathological internet use during the study period, while the individuals who were given Group Cognitive Behaviour Therapy experienced significant improvement. The similarity of the findings of both the present study and the above study can be explained as both studies targeted the same population. Although, while the study by Eze et al was conducted in Enugu, the present study was conducted in FCT, Abuja which make room for generalizability of the effective of Cognitive Behavioural Therapy despite different cultural context.

CONCLUSION

The present study investigated the effect of Cognitive Behaviour Therapy (CBT) on Internet Addiction among the undergraduate students of the University of Abuja, Nigeria. The results indicated that CBT was effective in significantly decreasing Internet addiction in the experimental group and there was no significant difference in the control group. It means that a targeted, psychological treatment, not just normal university activities is effective in solving problematic internet usage. CBT interventions included cognitive restructuring, behaviour modification, self-monitoring and relapse prevention which facilitated the identification of unhealthy patterns of Internet use, challenging irrational beliefs, self-regulation and the establishment of healthier behavioural patterns.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations are made:

1. Counselling centers and university management should implement CBT as a regular intervention for undergraduate students with internet addiction.
2. Student support services should include regular counselling programmes based on CBT to encourage healthy internet use and support the academic, psychological and social health of students.
3. Internet addiction should not be addressed by inaction in the universities. Instead, structured counselling interventions like Cognitive Behavioural Therapy (CBT) should be included in university counseling system to promote meaningful change in behavior of students who suffer from internet addiction.

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