

Effect of Rational Emotive Behavioural Therapy on Undergraduates' Susceptibility to Cybercrime in North Central, Nigeria

EWHE, Peter Okpunukpang (Ph.D).

OJIAH, Patricia O. (Ph.D).

ADIKWU, Victoria O. Ph.D.

Department of Guidance and Counselling, University of Abuja, Nigeria

Abstract. *This research examined how Rational Emotive Behavioural Therapy can help reduce the propensity of undergraduates to cybercrime in north central, Nigeria. It has raised two research questions and it has formulated and tested two null hypothesis. The study design incorporated quasi experimental non equivalent control group; it was conducted within three randomly picked faculties in the University of Abuja. A sample of 361 out of the 6416 students was selected which created a population in the form of 53 vulnerable undergraduate students to cybercrime. The research questions were answered using descriptive statistics, and a one-sample t-test was used to test the null hypotheses. The analysis revealed that students in the control group were more susceptible to cybercrime than those in the experimental group. There was a significant difference between the pre-test and post-test mean scores of the experimental group regarding their susceptibility to cybercrime. The interactive effect of the treatment plan was not gender-discriminative, with positive results observed for both males and females. It was reasoned that the application of Rational Emotive Behavioural Therapy will turn susceptible students to become non-susceptible students in the event of cybercrime. The strategy will also help undergraduates in Nigeria to grow negative attitude towards cybercrime.*

Key words: *Rational Emotive Behavioural Therapy, undergraduates, susceptibility, cybercrime, North Central Nigeria.*

INTRODUCTION

Nigeria being a developing country has various problems that jeopardize the quality of education. Some of these challenges include social vices that lead to a lack of the anticipated moral growth of the students and the success of the learning institutions and the society at large. These social vices are not limited to cybercrime, drug abuse, rape, sexual violence, examination malpractice and cultism. The term cybercrime denotes any criminal activity involving the use of the internet or any other computer network[1]. It includes crimes that are committed against an individual or a group of people with the motive of ruining the reputation of the victim(s), or evil or physical, economic, or psychological harm using the contemporary telecommunication systems like computers and mobile phones. These offenses may pose a threat to the national security and financial well being of the victims and have been attributed to decline in academics.

The earliest case of cyber-criminals is hard to trace but the earliest massive attack on a digital network serves as a point of reference on developments of cyber based-crimes. Well-known phone phreaks Kara say that in 1971 one of their phone phreaks, John Draper, found himself a whistle that would make the same sounds as telephone switching computers at the time[2]. A phone phreak is a computer programmer obsessed with phone networks, the foundation of contemporary computer

networking. Draper constructed a whistle into a blue box, enabling him to make free long-distance calls, and the author provided instructions for making one. This resulted in an enormous increase in cases of wire fraud. In 1973, a bank teller at a New York bank embezzled over 2 million dollars with the help of a computer. In 1978, the first electronic bulletin board system was made available, soon becoming a popular mode of communication in the cyber world that allowed for the quick and free sharing of knowledge — not just tips and tricks for hacking networks [3]. In 1981, Ian Murphy (Captain Zap) became the first person to be charged with a cybercrime. He hacked into the AT&T network and modified the internal clock so that off-peak rates were charged during peak hours. He was sentenced to 1,000 hours of community service and 2.5 years' probation, a lenient sentence compared with modern-day punishments. His biography inspired the film *Sneakers* (Moga, Salihu & Abdulkarim) [4].

Various internet enabled crimes are done in Nigeria today which go as far as identity theft, desktop counterfeiting, cyber harassment, fraudulent emails, ATM spoofing, pornography, piracy, hacking, phishing and spamming. Such crimes entail mailing of fake financial proposals to unsuspecting internet users. Rising levels of cybercrime have posed a major challenge to the development of e-commerce in Nigeria and also created a bad international image where innocent Nigerians are denied opportunities in other countries (Akogwu in Ewhe)[5]. Thus, unsuspecting internet users must never stop upholding their learning on the dynamic nature of Information and Communication Technology (ICT). This way they can keep abreast of the prevailing trends in cybercrimes, know the various types of cybercrimes and come up with ways through which they can keep their information out of the reach of cyber criminals. The users of the internet have to be security conscious. This is attributed to the fact that information technology has brought nations together and the world becomes a global village[6].

Most countries have their economies open to the electronic gadgets in form of the internet. Nonetheless, the electronic market can be accessed by anyone including eavesdroppers and the fake pretence of criminals can easily survive. The internet revolution that comes along with information technologies has had a two-sided impact on the world; on the one hand, the internet revolution has supplied the world with the benefits, and on the other hand, it has unleashed various challenges that jeopardize societal order and also has seen the advent of a new crime wave[7]. The awareness of cybercrime and the number of those who have profited on it makes some undergraduates become vulnerable.

There are certain factors that predispose undergraduates to cybercrime; among these factors are the perception and state of the digital activity, their digital knowledge and circumstances. The perceived major factors that make them vulnerable include: The common use of the internet: Undergraduates are enormous users of the Internet as a source of academic, social and recreational services, which expose them to most social web attacks including phishing, malware as well as social engineering attacks [8]. The lack of finances can cause an undergraduates to use a free or pirated software, which can either contain malware or security weaknesses hidden, or cause real gains to be taken. Reports and studies, such as those provided by academic journals or cybersecurity agencies, go into further details of these vulnerabilities, and there is a need to have specific interventions in place so that the undergraduate can be secure in terms of cybercrimes.

The vulnerability of undergraduates to cybercrime can be determined by demographic factors that include sex, place of residence, peer pressure, and family pressure. These variables could have either direct or indirect impact on the probability of the undergraduates committing cybercrime[9]. People, researchers and the society have always been in the search of the reasons behind the behavior of young men and women of committing cyber crimes and not all.

Cybercrime may be vulnerable to both male and female undergraduates. In reference to Ewhe, Olaide and Adewole noted that there is a good population of the criminals in Nigeria who are young people irrespective of their sex. The current generations have learned how to exploit the internet in committing crimes and this is the age group that is prevalent in tertiary institutions in Nigeria. The following category of students does not lack families.

The undergraduates may also be predisposed to cybercrimes by family influence. Ojiyi Maliki and Inokoba have argued that one of the reasons why students can engage in social vices is that they have a low socio-economic status[10]. The declining economic status in Nigeria has caused a negative effect in most households, with some of the students committing crimes through the internet. The application of a suitable theoretical approach called Rational Emotive therapy is one of the moves used to re orientate these students.

Rational Emotive Behavioural Therapy (REBT) assumes that the connection of human thinking, emotions and actions is interdependent. It dwells on the solution of emotional and behavioural issues, insisting that irrational beliefs and behaviours normally pull people in blocking their desires in life. REBT proposes that individuals are capable of altering their irrational thinking and lead good productive lives. The REBT therapeutic plan uses the ABCDE model, where:

A = activating event

B = belief about the event

C = consequences of B

D = disputing B

E = new, rational beliefs. Among other things, REBT has been effective in the reduction of aggressive behaviour in adolescents (Ekechukwu in Ojiyi)[11].

This research applies the theory to the treatment of vulnerable undergraduate students to cybercrime at the north central Nigeria, which is effective given the efficacy of REBT. The findings will be used in determining the mitigation approach of cybercrime within this vulnerable group.

This has been the case over a period of five years, as the researchers as counsellors have witnessed the devastating impacts of cybercrime on Nigerians and the global population. Cybercrime has contributed to the failure of numerous firms, derailing of academic studies and tremendous deterioration of the academic performance of the perpetrators who are undergraduates[12]. One of the biggest concerns to parents, students, university administration, business proprietors and the general population is that the level of cybercrime seems to be increasing among academic undergraduates in Nigeria. Although not the only country where the cyberscrimes are happening, Nigeria is experiencing rising cases of cybercrimes mainly because of the lack of security awareness and under reporting. The internet knowledge that many people have is confined to chatting with friends or finding information; hence they fail to have the necessary skills of safeguarding their information and computer systems against the evil programmers[13]. Examination malpractices, falsification of admission, rape, robbery, theft, sexual abuse, assault and cultism are some of the forms of crimes that are common in most universities in Nigeria. Criminals can launch computer attacks at any point of the world and use other locations without considering geographical location. In many cases, such criminal activities are quicker, simpler and more destructive through the application of internet[14].

It is widely accepted which rational emotive behavioral therapy, also known as or REBT, is effective for assisting adults and adolescents overcome dangerous conduct, irrational beliefs, and poor judgment. However, research on how REBT affects undergraduates' exposure to cybercrime in north-central Nigeria is not complete. The researcher was motivated to address this research gap in order to potentially reorient prone university undergraduate students. The necessity of this research is further reinforced by the reality which the combination of intervening variables in this study has not been used with this therapy with regard to undergraduates' exposure to cybercrime in north-central Nigeria.

Purpose of the study

This study aims to investigate the impact of Rational Emotive Behavioural Therapy on the susceptibility of undergraduates to cybercrime in North Central Nigeria. The objectives of this study are to:

- i. identify the difference in pre- and post-test mean susceptibility to cybercrime scores for undergraduates in the control and experimental groups; and

ii. find out the interaction effect of treatments by gender in undergraduates' mean susceptibility to cybercrime scores.

ii) Find out the interaction effect of treatments by gender on undergraduates' mean susceptibility to cybercrime scores.

In line with the research problem, the following questions were raised:

1. What is the difference in pre-test and post-test mean scores for susceptibility to cybercrime among undergraduates in the control and experimental groups?

What is the interaction effect of treatments by gender on the mean scores of undergraduates' susceptibility to cybercrime?

Hypotheses

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

H01: There is no significant difference in the pre-test and post-test mean scores of susceptibility to cybercrime for undergraduates in the control and experimental groups.

H02: There is no significant effect of treatment by gender on the mean scores of undergraduates' susceptibility to cybercrime.

METHODOLOGY

The study's design is quasi-experimental. Specifically, the study used a random control group and pre- and post-tests. The two groups' similarity was established via the pre-test. The effect of independent variables was determined via the post-test test. Six thousand four hundred and sixteen (6416) full-time students in the 100 and 200 level in all ten faculties of the University of Abuja represented the population. Using a multi-stage sampling technique, a sample of 361 full-time University of Abuja students in classes 100 and 200 who were susceptible to cybercrime, irrespective of professors, was selected to this population. The treatment group included 28 students who attended the faculties of science (16) and engineering (12), off of the 53 susceptible students who were identified. Rational Emotive Behavioural Therapy (REBT) was used to train the 28 susceptible respondents for six weeks. A post-test was then carried out to assess the effectiveness of the treatment plan. After verifying the instrument's validity and reliability, a reliability index of 0.65 was established. The mean score, standard deviation and t-test statistical techniques were used to analyse the collected data. The mean and standard deviation were used to answer the research questions, and the t-test was used to test the hypotheses at the 0.05 level of significance ($p < 0.05$). According to the decision rule, a mean score below 2.50 indicated discord, whereas a mean score of 2.50 or above indicated consensus.

Research Question One: What is the difference in the pre-test and post-test mean scores for susceptibility to cybercrime between the control and experimental groups of undergraduates?

Table 1: Mean and Standard Deviation on Differences Based on Groups

Groups	N	Mean		Std.Dev	Mean Diff
Control Group	25	44.60		4.53	20.24
Experimental Group	28	24.36		5.92	
Total	53	68.96		10.48	

Table 1 indicated the mean score and standard deviations with mean difference between pre-test and post-test of the control and experimental groups to answer research question one. The table further revealed mean scores of 44.60 and 24.36 for control and experimental groups respectively with a mean difference of 20.24. This clearly shows that students from the control group have higher susceptibility to cybercrime compared to experimental group.

Research Question 2: What is the interaction effect of treatments by gender on the mean susceptibility to cybercrime scores of undergraduates?

Table 2: Mean and standard deviation of the interaction effect of REBT by gender.

Gender	N	Mean	Std. Dev	Mean Diff.
Male	15	43.60	4.51	22.24
Female	13	21.36	5.92	
Total	28	64.96	10.48	

Table 2 showed the mean score and standard deviations with mean difference between male and female to answer research question three. The table further revealed mean scores of 43.60 and 21.36 for male and female student respectively with a mean difference of 22.24. This clearly shows that the interactive effect of the treatment plan is more on the male gender compared to their female counterpart.

Hypotheses One: There is no significant difference in the mean pre-test and post-test scores for susceptibility to cybercrime between the control and experimental groups of undergraduates.

Table 3. shows the results of a one-sample t-test on the difference in the pre-test and post-test mean scores of susceptibility to cybercrime for the control and experimental groups.

Group	N	Mean	Std. Dev.	Df	t-value	Sig.
Exp. Group	28	24.3571	5.92055	72	21.769	
						.000
Control Group	25	44.6000	4.52769	24	49.252	

Table 3 presented the results of the t-test analysis of the difference in pre- and post-test mean scores of susceptibility to cybercrime for the control and experimental groups. The table also showed a significant value of .000, which is less than the alpha value of 0.05, indicating a significant difference in pre- and post-test mean scores for the two groups. In other words, undergraduate students from North Central Nigeria achieved higher scores on the administered treatment package. Therefore, the null hypothesis was rejected.

Hypothesis 2: There is no significant effect of gender on the mean scores of undergraduates' susceptibility to cybercrime.

Table 4. The one-sample t-test on the effect of treatment by gender.

Gender	N	Mean	Std. Dev	Df	t-value	Sig.	Decision
Male	15	43.60	4.51	72	21.769	.000	Rejected
Female	13	21.36	5.92				
Total	28	64.96	10.48	24	40.252		

Table 4 revealed a t-test analysis on the effect of treatments by gender in mean scores of undergraduates' susceptibility to cybercrime. The table further revealed a significant value of .000 which is less than decision rule of 0.05. This means that the treatment plan had a significant interaction effect on all participants, irrespective of gender. In other words, undergraduate students from North Central Nigeria who took part in the treatment package responded positively. Therefore, the null hypothesis was rejected.

Discussion of findings

There was no significant difference in pre-test and post-test mean scores of susceptibility to cybercrime between the control and experimental groups, based on the results of research question one and null hypothesis one, respectively. The efficacy of the treatment package on the experimental group can be seen by the significant mean score difference that undergraduates exposed to the REBT treatment plan accomplished. This finding corresponds with that of Saelid and Nordahi (2016), whose discovered that whereas both REBT and Attention Placebo (ATP) significantly reduced anxiety and depression symptoms, only REBT distinguished significantly from the control group at six months of treatment. Yet, it's at variance with the findings of Badejo and Anyanwu (2016), that discovered that 43% of the token exposed to the economy group surpassed 36% of the experimental group after treatment. The findings of the data analysis over research question two and null hypothesis two,

respectively, show there's no gender bias in the treatment plan's interactive effect. The findings correspond with the findings reported by Eifediyi, Ojugo, and Aluede, that observed no significant reciprocal interaction between gender and therapy. According to studies conducted through Nte, Enokie, and Bienose, the majority of cybercrime perpetrators are young men.

Conclusion

According to the study's findings, students who are at risk for cybercrime will grow non-susceptible if rational emotive behavioral treatment is carried out properly.

The strategy will also assist undergraduates in North Central Nigeria and Nigeria at large to develop negative attitudes towards cybercrime.

Recommendations

A number of suggestions have been proposed in accordance with the study's findings:

1. The federal ministry of education ought to put up targeted education initiatives that aim to educate students at all universities regarding the risks and consequences of engaging in cybercrime. The classes need to focus on encouraging ethical behavior on the internet and offering helpful advice for staying safe.
2. While creating and carrying out initiatives to prevent cybercrime, universities should make sure that all gender-specific needs and experiences have been taken to consideration.

REFERENCES

1. A. O. Badejo and A. C. Anyanwu, 'Comparative Effect of Rational Emotive Behaviour Therapy and Token Economy on Junior Secondary School Students' Performance in Basic Science in Lagos State', *African Journal Online*, 2016. [Online]. Available at: <https://www.ajol.info/index.php/ife/article/view/152072> [Accessed 6 Dec. 2022]. Accessed 6 Dec. 2022.
2. G. Eifediyi, A. I. Ojugo and O. Aluede, 'Effectiveness of Rational Emotive Behaviour Therapy in Reducing Examination Anxiety among Secondary School Students in Edo State, Nigeria', *Asia Pacific Journal of Counselling and Psychotherapy*, Vol. 9, No. 1, 2018. [Online]. Available at: <https://www.tandfonline.com/doi/abs/10.1080/21507686.2017.1412329>. [Accessed 6 Dec. 2022].
3. P. O. Ewhe, 'Factors, consequences and control of cybercrime among university undergraduates in Nigeria', unpublished seminar paper, Department of Guidance and Counselling, University of Abuja, 2021.
4. Kara, K., 'True Crime: John Draper, the original whistleblower', *Mental Floss*, 2008. [Online]. Available at: <https://www.mentalfloss.com/article/19484/true-crime-john-draper-original-whistle-blower>. Accessed: 14 June 2023.
5. E. Moga, A. G. Salihu and R. Abdulkarim, 'A historical assessment of cybercrime in Nigeria: Implications for Schools and National Development', *Journal of Research in Humanities and Social Sciences*, Vol. 9, No. 9, pp. 84–94, 2021. [Online]. Available at: www.questjournals.org.
6. O. A. Mutahir, 'Awareness and Impact of Cybercrime Among Selected University Undergraduates in Osun State, Nigeria,' *SMCC Business Administration Journal*, Vol. 2508, No. 0512, pp. 1–10, 2019. [Online]. Available at: <https://www.researchgate.net/publication/335859749>. Accessed: 6 Dec. 2022.
7. T. C. Ogbuanya, C. Eseadi, C. T. Orji, J. C. Omeje, J. I. Anyanwu, S. C. Ugwoke and N. C. Edeh, 'Effect of Rational Emotive Behaviour Therapy Programme on the Symptoms of Burnout Syndrome among Undergraduate Electronics Work Students in Nigeria', *National Library of Medicine*, 2019. [Online]. Available at: <https://pubmed.ncbi.nlm.nih.gov/29300142/> [Accessed 17 January 2022].

8. C. P. Ojiyi, 'Effect of reality and rational emotive behavioural therapies on undergraduates' susceptibility to secret cults at the University of Benin, Benin City', PhD dissertation, University of Benin City, 2021.
9. A. Ellis, *Reason and Emotion in Psychotherapy*. New York, NY, USA: Kensington Publishing, 2001.
10. D. David, R. S. Lynn and A. Ellis, *Rational and Irrational Beliefs: Research, Theory, and Clinical Practice*. Oxford: Oxford University Press, 2010.
11. A. O. Aremu and S. S. Oluwole, 'Impact of cybercrime on the academic performance of Nigerian undergraduates', *Journal of Social Sciences*, Vol. 45, No. 2, pp. 121–130, 2020.
12. E. A. Okafor and I. C. Duru, 'Cybersecurity awareness and digital safety behaviour among university students in Nigeria', *International Journal of Cyber Criminology*, Vol. 14, No. 1, pp. 45–59, 2020.
13. M. A. Adesina and K. I. Ajao, 'Effectiveness of cognitive behavioural therapy on examination anxiety among secondary school students', *Journal of Education and Practice*, Vol. 11, No. 5, pp. 33–40, 2020.
14. S. A. Adebayo, 'Psychological effects of cyberbullying among university students: A REBT-based intervention study', *Journal of Psychology and Behavioural Science*, Vol. 8, No. 2, pp. 18–29, 2021.
15. C. Y. Akanni and T. O. Gbadamosi, 'Social media use, cybercrime exposure and behavioural tendencies among youths in Nigeria', *African Journal of Criminology and Justice Studies*, Vol. 13, No. 1, pp. 112–129, 2020.
16. T. O. Adeoye and P. O. Idowu, 'Digital literacy and cyber safety awareness as predictors of cybercrime prevention among undergraduates', *International Journal of Education and Development Using ICT*, Vol. 17, No. 2, pp. 89–104, 2021.