

# The Experience Using Pain Stimulus-Stop Technique Based On Neo-Cognitive Behavioural Therapy On a Client Addicted to Virtual Video Games

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## Abstract

This study was conducted to investigate the Pain Stimulus-Stop Technique based on Neo-Cognitive Behavioural Therapy among clients who are addicted to virtual video games. This study has three aims: to identify the patterns of experience of clients who are addicted to virtual video games, the effect of the Pain Stimulus-Stop Technique on clients, and its effects on clients' feelings, behavior, and thoughts. This qualitative case study approach involved three university students who were addicted to virtual video games. A partially structured interview was conducted to observe clients' experiences in counseling sessions using the Pain Stimulus-Stop Technique. The Litchman model was used to analyze and identify the experiences that the client who is addicted to video games has using the Pain Stimulus-Stop Technique. It was found that there are three characteristics, experiences of the Stop Pain Stimulus Technique in a counseling session, and effects of the Pain Stimulus-Stop Technique on the feelings, behavior, and thoughts of clients who are addicted to virtual video games. This study has implications for counselors and counselor trainers in improving addiction through the use of the Pain Stimulus-Stop Technique.

**Keywords:** Pain Stimulus-Stop Technique, Neo-CBT, virtual video game addiction

## Introduction

Nowadays, video games in the virtual world are nothing new. Video games in the virtual world are now accessible to everyone. Online games are electronic games that are very popular with today's 21st-century generation, across all age groups, from children to adults. This century's generation prefers to play online games to fill their free time. However, uncontrolled online gaming can have negative effects on players, such as addiction, anti-sociality, depression, etc.,

which can affect relationships with family, friends, and academic performance. (Iskandar et al., (2022).

Virtual video games have visuals that appeal to all age groups. Some of the most popular favorite virtual video games are Mobile Legend, PUBG Mobile, and many more. Left unchecked, this leads to virtual video game addiction. Symptoms of virtual video games addiction include difficulty in stopping playing virtual reality video games, often thinking about virtual video games frequently, neglecting other daily activities, choosing virtual video games over physical needs such as eating, drinking, and sleeping, and experiencing pain symptoms such as headaches, dry eyes, and back pain for sitting too long.

According to Arwansyah et al (2022), a study found that the average UTHM student spends eight hours a day using electronic technology to play online games. This study found that if left unchecked, this will affect an individual's personal development, moral values, and social skills. Studies in the United States show that video games in virtual shape violent and aggressive behavior among students. This proves that video games in the virtual world not only stimulate the imagination but also they also shape the way people behave during the game.

This study concerns the experience of using pain-based stop stimulus techniques Neo-CBT for students addicted to virtual video games. According to Utusan Malaysia (2022), the study found that the issue of cyber addiction in Malaysia is now somewhat different other countries. The report found that awareness of parents and the younger generation was rather low related to cyber security risks. According to Mike Hayati (2021), the study found that 81% than generation Z are gamers. These players are easy to make a search for based on a virtual world video game. Furthermore, studies show that it is possible to become addicted to virtual video games affecting the physical health, psychological and social functioning of players. Addicted causes players to experience stress, changes in eating patterns and lack of sleep focus while studying or working and lack of social interactions. According to Adawiyah, Najihah & Naqiyah (2020), addicted to virtual world video games can produces aggressive behavior, obesity and disrupts students' eyesight. Moreover, Ericson Ginsos & Salleh (2022), an increase in aggressive behavior is related to teenagers who influenced by virtual world video games that depict violent acts. Investigation shows that violent virtual world video games can cause violent effect to behavior. According to Eryzal (2019), if the individual did not overcome their addiction to virtual video games at the teenage level, it can affect psychology, finances, behavior and student academic achievement.\

### **Literature Study**

The use of Neo-Cognitive Behavioral Therapy and Cognitive Behavioral Therapy

According to Mohd Al Hafiz Norisham and Muhammad Aziz Shah Mohamed Arip (2022), in their study of, Thought Patterns and Behaviour of Bipolar Disorder Using Cognitive Structuring Techniques Based on Neo-Cognitive Behavioural Therapy, two respondents who had bipolar I disorder and four respondents who had bipolar II disorder had positive effects, and it was noted that studies using neo-CBT theory need to be expanded.

According to Mohd Suhadi Mohamed Sidik and Nor Hernamawarni Abdul Majid (2022), their study on the Self-Esteem of Teenagers in Moral Rehabilitation Centres used the Neo-CBT module which emphasizes the concept of gratitude and found that it is easy for the teenagers to practice. This study also highlights that CBT-based counseling in this rehabilitation center can help them to identify their needs, accept the reality of life, make

realistic plans to cope with life, take responsibility for themselves and become responsible and fully functioning individuals.

According to Nor Farahzulaikha Abdullah and Mohammad Aziz Shah Mohamed Arip (2021), in their study on the effectiveness of cognitive restructuring on depression among university students was found that the use of cognitive restructuring techniques produced positive changes in depression. The students gave positive feedback on the reduction of depression symptoms after the intervention.

Furthermore, Nasim Shahro Khian, Saeid Hassanzadeh, Hadi Hashemi Razini, and Maryam Ramshini (2022), in the study of *The Effects of Cognitive-Behavioural Therapy (CBT) on Well-Being and Perceived Stress in Adolescents with Low Academic Performance During the COVID -19*, 30 Iranian adolescents with low academic performance were selected through simple random sampling. After conducting 10 group intervention sessions with 120 minutes for each session, it was found that CBT had a significant effect on well-being and perceived stress in the experimental group compared to the control group ( $p < 0.05$ ).

According to Jinzhi et al. (2022), in their study entitled *The Effect of Cognitive Behavioural Therapy on Depression, Anxiety, and Stress in Patients with COVID -19: A Randomised Controlled Trial*, involved 93 selected participants. The results of the study demonstrate the effectiveness of CBT in improving the mental health of patients living with COVID-19 and suggested that CBT should be focused on patients with chronic illnesses and those who remain in the hospital for prolonged periods. The findings of this study have important implications for clinical practice to improve mental health in the context of the COVID-19 pandemic.

According to Odeh Suleiman Murad (2021), a quasi-experimental method with 50 students was divided randomly into two groups equally which are the experimental group and the control group. The results of the study showed there is a significant difference in psychological distress and achievement motivation scores between the two groups. Experimental group students showed a better score after therapy than students in the control group. Therefore, this study advocates the use of cognitive behavioral therapy to reduce psychological distress and increase achievement motivation among university students.

#### Pain Stimulus-Stop Technique

Denwigwe, Chiaka Patience, Mbotto, and Odey Akomaye (2022) in a study examined a total number of 54 secondary school students in SS1 and SS2 classes of Government Secondary School Oyibo, Rivers State, Nigeria. The methodology used is a pre-test and post-test survey design to determine the effect of pain stimulus on quitting. Three types of pain stimuli were used in this study which are timeout techniques, response cost, and physical punishment. The results found that the Pain Stimulus-Stop Technique in the form of timeout and response cost is effective in reducing undisciplined acts such as being noisy and tardy in school among secondary school students. However, the use of corporal punishment has no significant effect on undisciplined acts such as truancy.

Kuswoyo, Nurul Hidayah, and Ahmad Muhammad Diponegoro (2021) conducted a study on improving discipline through behaviouristic group counseling with the stopping pain stimulus technique which involved eight students from class IX -F of SMP Negeri 1 Semanu. This study found that the pain stimulus technique had a positive effect on the discipline problem there. It was found that students are very active in reviewing, asking questions, answering questions, appreciating others, and expressing their opinions after going through the behaviouristic group counseling using the pain stimulus-stop technique. The frequency of

the students leaving the class during certain lessons is low and the percentage of absent students also decreased. This study proved that the increase in student discipline problem no longer apply after group counseling with the pain stimulation technique was carried out.

However, Andrew Allena, Mary Katsikitis, Prudence Millearc, and Nadine McKillop (2020), in their study was found that there are several therapeutic techniques such as pain stimulation techniques are no longer able to overcome sexual fantasy addiction. However, since sexual fantasies are caused by several factors, more research is needed to determine the effectiveness of this therapy.

Anthony L. Riley, Hayley N. Manke, and Shihui Huang (2022) found that the effect of the pain stimulus is no longer able to stop someone from using drugs. For example, if a person feels nauseous or has a stomach ache every time they take a particular drug, they may avoid taking that drug again. The stimulant effect of pain relief can play an important role in controlling drug use and helping to reduce the potential for drug abuse. Studies have shown that the effect of this analgesic stimulus occurs simultaneously with the effect of the reward, resulting in a combination of influences on drug use. However, factors such as psychology, experience, and more have a major impact on the effect of the pain stimulus to quit.

Adel M. Saeed, Nehad M. Osman, and Alaa Eldin A. Mohamed (2019) investigated the efficacy of the pain stimulus for smoking cessation among male heavy smokers aged between 21 to 70 years old. Three study groups were analyzed and it was found that Group 1 received pain stimulation therapy for smoking cessation, and have a higher smoking cessation success rate (30%) than Group 2 (15%) and Group 3 (15%). Pain stimulation for smoking cessation is also described as a simple and effective method to support smoking cessation. This study also found that there was a significant relationship between smoking cessation success and factors related to age, number of packets of cigarettes per year, duration of smoking, timing of smoking cravings, and degree of nicotine dependence.

The relationship between Neo-CBT and CBT techniques for virtual video game addiction According to Yang Xue et al. (2021), the study found that respondents had a more negative perception of virtual video game addiction. This type of perception may influence a person's emotional and behavioral responses to the distraction of virtual video games, such as higher levels of depression and lower levels of self-control. Therefore, educational programs and psychological interventions are needed to change the perception of their behavior. The results of the study show that treatment for virtual video game addiction needs to address not only the symptoms of virtual video game addiction but also other perceptions, such as the perception of low self-control. Cognitive behavioral therapy (CBT) and motivational therapy are approaches that can have a positive impact on reducing addictive behavior and help improve a person's motivation and ability to control their behavior when playing virtual video games.

Xue Yang, Titus Oloruntoba Ebo, Keiman Wong, and Xin Wang (2023) found in their study that 12.7% of students were classified as being at high risk for cyber addiction and 52.2% suffered from depression. The researchers also found that low psychological flexibility is associated with addiction to video games in virtual. In addition, there is a link between depression and unhealthy thinking with psychological flexibility and video game addiction in the virtual world. Therefore, the researcher applies and suggests the use of CBT theory because this theoretical technique is effective in reducing the symptoms of virtual video game addiction. This includes CBT techniques that incorporate elements such as reducing unhealthy thinking patterns, addressing unhealthy self-confidence, and finding solutions to problems

faced such as improving interpersonal relationships and communication skills. CBT is very effective in reducing the symptoms of depression and virtual video game addiction.

According to Amir H. Pakpour et al. (2022), a study found that the intervention outcomes of CBT techniques can control virtual video game addiction. The results of this study were obtained from a sample of 206 teenagers aged 13-18 years in Qazvin. Measurement tools used to test the effectiveness of CBT techniques included the Internet Gaming Disorder Scale, Insomnia Severity Index, Depression, Anxiety and Stress Scale, Level of Change Questionnaire, Decision Balance, and Self-Efficacy. The duration was measured at the beginning of months 1 and 3 months after the intervention. The results of the study proved that CBT can be effectively used as a complementary therapy to reduce the symptoms of virtual video game addiction.

Dewi Narullita and Erni Yuniati (2020) stated that there was a significant difference in the state of online gaming addiction in the intervention group after treatment with CBT and acceptance-commitment therapy (ACT). The use of CBT and ACT is recommended to overcome online gaming addiction in adolescents. Fifty-four people participated in this study, divided into 27 people (intervention group) and 27 people (control group). The results of the paired t-test showed that the mean online gaming addiction in the intervention group was 65.59 on the pre-test and 47.26 at the post-test, with a value of  $p = 0.000$ , proving that CBT and ACT techniques are recommended to overcome video game addiction.

According to Frida Andre; Isak Einarsson; Elisabeth Dahlstrom; Katalin Niklasson, Anders Hakansson; and Emma Claesdotter-Knutsson (2022), it was found that participants who responded to treatment showed changes in symptoms of virtual gaming addiction. Addiction criteria showed a change from 60% to 0%. The data show that this CBT treatment is effective against virtual video game addiction.

## **Methods**

The approach of this study is qualitative. This study is a case study. The purpose of this study is to explore the current condition of students with video game addiction. A structured interview has been done to understand the experience of using the Pain Stimulus-Stop Technique in a counseling session for students addicted to video games, and to explore the impact of the Pain Stimulus-Stop Technique on the feelings, behavior, and thoughts of students addicted to virtual video games. There are total number of three university students that participate in this study. The researcher used snowball sampling and the population in this study are the university students in Perak.

Since this interview study is oriented towards qualitative research, validity and reliability can be identified through triangulation methods obtained from having discussion with professional bodies and received validation from the expert by asking for views to avoid researcher bias with participants. The purpose of this triangulation is to get information from various sources or methods to ensure consistency of the data.

This research process is divided into several stages in the process of completing the study. First, the interview protocol was prepared and approved by the academic supervisor. Then, an informed consent form was prepared to explain about the research this and to ensure the confidentiality of the session. Next, give informed consent to the supervisor to check suitability (suitability), coincidence (coincidence) and etc. Fourth, conduct an interview with the respondent in the therapy setting. Fifth, analyze the data obtained from the interviews through transcriptions that have been made. Based on the transcription made, the

researcher also looked for similarities and differences as well as interpret the information stated in the recording. Seventh, which the last process is prepared a report research.

## **Results**

*Summary of the results based on the research question - What is the current state of the problem of video game addiction in the virtual world?*

The results of the study about the current state of students who have problems with video game addiction in the virtual world show that participants have experienced various current states, including problematic sleep behavior, difficulties in social behavior, and difficulties in controlling emotions. The summary of findings from this study shows the different types of conditions that participants faced while experiencing video game addiction in the virtual world.

*Summary of findings based on the research question - What were the experiences of using the Pain Stimulus-Stop Technique in counseling sessions for students addicted to video games?*

The research findings about the experiences of using the Pain Stimulus-Stop Technique in counseling sessions for students addicted to virtual video games. Among the experiences of using the Pain Stimulus-Stop Technique in counseling sessions is that it provides comfort, and this technique effectively can be used and are appropriate for a short period. The summary of the findings of this study shows that the experience of using the Pain Stimulus-Stop Technique provides good feedback among the participants who are addicted to virtual video games.

*Summary of results based on the research question - How does the Pain Stimulus-Stop Technique affect the feelings, behavior, and thinking of the students addicted to virtual video games?*

The results of the study show the effect of the Pain Stimulus-Stop Technique on the feelings, behavior, and thinking of students addicted to virtual video games. This effect is based on an analysis from the interviews about study participants' experiences with the Pain Stimulus-Stop Technique during the counseling sessions. This technique found that it gives more positive behavior, more positive feelings, and more positive thoughts. The summary of the results of this study shows the effect of the Pain Stimulus-Stop Technique brings good changes in the participants' thoughts, feelings, and behavior in virtual video game addiction.

## **Discussion**

Discussion on the current state of the problem of video game addiction

The results of this study, which show that there are several conditions under which the participants studied have problems with video game addiction in the virtual world, have similarities with the study by Tae Sun Han, Heejun Cho, Dajung Sung, and Min-Hyeon Park (2022), who looked at the effects of addiction. The study found that study participants who are addicted to virtual video games have emotional problems and have difficulty communicating with their peers.

In addition, the study's findings on the current state of the virtual world video game addiction experience also share similarities with a study by Sugiyanto (2020) that examined the impact of aggressive attitudes and antisocial attitudes on online game addiction. The study found that there was a significant relationship between temperament and antisocial behavior with virtual video game addiction.

Dhammavicaya (2022) examined the influence of aggressive attitudes and antisocial behaviors on online video game addiction. This study has similarities with the findings of the research conducted, that is, there is a similarity in the situation during video game addiction in the virtual world, namely that they tend to be more aggressive, emotionally unstable, and unable to resist pleasurable impulses that affect social relationships with others.

Understanding the experience of using the Pain Stimulus-Stop Technique in counseling sessions for students addicted to video games in virtual

According to Denwigwe, Chiaka Patience, Mbotu, and Odey Akomaye (2022), the pain stimulus technique is an effective method of disciplining students in Oyibo, Rivers State, Nigeria. This technique is effective in reducing certain indiscipline among students, namely noise-making and tardiness at school. Nevertheless, physical punishment has no significant effect on reducing indiscipline such as truancy. The results of this previous study are consistent with the results of the present study, i.e. that this technique is effective against problematic behavior.

Jin, Li & Yang, Zhang, Zhang, and Fan (in Yu-Jie Tao et al, 2019) explain some pain stimulation techniques that are effective in reducing alcohol dependence in China. Therefore, pain stimulation therapy with electro-acupuncture may be an effective option to reduce alcohol dependency. This previous study has similarities with the findings of this study, namely that pain stimulation techniques are effective in reducing dependence and addiction.

According to Zach Walsh et al (2021), in the study of Ketamine for the Treatment of Mental Health and Substance Use Disorders: Comprehensive Systematic Review, researchers examined the effectiveness of ketamine and pain stimulation techniques for quitting. The study shows that patients who opt for pain stimulation therapy quit as an alternative to reducing alcohol dependence. In conclusion, the use of ketamine with pain stimulation therapy for cessation can help patients to stop drinking alcohol more effectively. The different results of this previous study show that this pain stimulation technique is effective in reducing addiction in the long term, while the use of ketamine may cause patients to become too dependent on ketamine to reduce addiction.

Exploring the effects of pain stimulation technique on the feelings, behavior, and thoughts of students addicted to virtual video games

According to Kuswoyo, Nurul Hidayah, and Ahmad Muhammad Diponegoro (2021), this study found that the pain stimulation technique stop has a positive effect on disciplinary behavioral problems. This study shows that after using the pain stimulation technique in school, students are very active in participating in class which they are actively checking, asking questions, answering questions, appreciating others, and expressing opinions.

According to Zach Walsh et al (2021) in the study Ketamine for the Treatment of Mental Health and Substance Use Disorders: Comprehensive Systematic Review, the results showed found that pain stimulation technique effectively helps patients with addiction and opens patients' minds so that they can gradually control it without relying too much on ketamine. This study proved that patients who opted for pain stimulation therapy can reduce their video game addiction in the virtual world.

Adel M. Saeed, Nehad M. Osman, and Alaa Eldin A. Mohamed (2019) conducted a study on the effectiveness of the pain stimulus for smoking cessation among heavy smokers. The result of this study found that it helps in reducing their heavy dependence on smoking which leads to less stress and ability to control their emotions.

### **Implications Of The Study**

#### Theoretical implications

This study aims to explore the experience of a counseling session using the Pain Stimulus-Stop Technique based on Neo-CBT for clients who are addicted to video games. To understand why students are addicted to virtual video games it can be understood thru the Self-Determination Theory (SDT). By understanding this theoretical aspect is a great contribution to research because using this theory allows counselors or other interested parties to better understand why the student behaves a certain way.

There are similarities between this theory and the results of studies that have been conducted. These include the need for autonomy. After the counseling session, you want to have the autonomy to control this virtual video game addiction. They want to feel free to act according to their values and interests. When participants have successfully satisfied their need for autonomy, they are usually more enthusiastic, motivated, and satisfied with their lives.

This study can give a greater knowledge of the Pain Stimulus-Stop Technique in Neo-CBT and how negative behavior can be modified utilizing pain stimuli from rubber bands based on the understanding of the Neo-CBT approach. It can assist you comprehend how this strategy can help you improve your behaviors.

#### Implications for Practise

This study benefits not just counselors, but also other parties such as lecturers or professors that work directly with this group of students. Understanding these parties' attitudes regarding these students' addictive behavior in virtual world video games can help to improve the effectiveness of cultural diversity teaching. This also benefits the role of the counselor in the issue of cultural diversity. This study also added value to the competence of counselors in carrying out services in their work environment in particular.

Furthermore, the findings of this study have policy implications for Malaysian policymakers, particularly the Ministry of Education and Culture. This is necessary to guarantee that students can continue to study and have a better life in the future. This study also assists parents of students in understanding their children's troublesome behavior. Parents can also learn about the variables that drive their children to behave in this manner. This can also indirectly improve the effectiveness of counseling intervention sessions.

### **Conclusion**

Students will suffer a variety of negative consequences if they continue to indulge in addictive internet video game behaviors. The student's experience will give an impact on himself, his family, and society. Students who participate in such behavior are more likely to lose interest in and want to have a happy life.

If students do not get their video game addiction under control, they will suffer a loss of knowledge and a loss of the future because they are unlikely to produce quality work. It is difficult for individuals to get a good job if they lack information, skills, and certification. So if students fail to acquire knowledge and experience in the ivory tower, society will remain at the same level and will not change.

In addition, the researcher suggested that more studies should be conducted to use the Pain Stimulus-Stop Technique approach as a solution to this condition. Thus, the findings of this study can serve as a basis for developing a treatment based on a psychological approach to help address the problem of virtual video game addiction so that today's young



generation can continue to function and contribute to the self-development of students and the community in the country.

## References

- Abdullah, N. F., dan Arip, M. A. S. M. (2021). The Effectiveness of Cognitive Restructuring on Depression among University Students: Neo-CBT Case Study. *International Journal of Academic Research in Progressive Education and Development*, 10(4), 99–106. doi :10.6007/IJARPED/v10-i4/10559.
- Kuswoyo, K., (2021) Peningkatan Kedisiplinan Melalui Konseling Kelompok Behavioristik dengan Teknik Aversion Therapy. *Jurnal Syntax Admiration* 2(11), 1-15. Diperoleh dari <https://doi.org/10.46799/jsa.v2i11.342>
- Lee, D. K., Lipner, S. R. (2022). Update on diagnosis and management of Onychophagia and onychotillomania. *International Journal of Environmental Research and Public Health*, 19(6), 3392. <https://doi.org/10.3390/ijerph19063392>
- Li J, L. (2020). The Effect of Cognitive Behavioral Therapy on Depression, Anxiety, and Stress in Patients With COVID-19: A Randomized Controlled Trial. *Front. Psychiatry*, 11(580827). doi: 10.3389/fpsy.2020.580827.
- Murad, O. S. (2021). Effectiveness of a Cognitive-Behavioral Therapy Program on Reducing Psychological Stress and Improving Achievement Motivation among University Students. *Universal Journal of Educational Research*, 9(6), 1316-1322. doi: 10.13189/ujer.2021.090621.
- Riley, A. L., Manke, H. N., dan Huang, S. (2022). Impact of the aversive effects of drugs on their use and abuse. *Behavioural Neurology*, 2022, 1–27. <https://doi.org/10.1155/2022/8634176>
- Samia I Hassan, Ahlam Mohammed Ibrahim Gouda, Ahmed Hashem El-Monshed, dan Nadia Youssef Abd-Ella. (2021). Effect of Cognitive Behavioral Therapy on Depression, Anxiety, Stress, Achievement, and Coping Strategy among Young Female Students with Primary Dysmenorrhea. *Egyptian Journal of Health Care*, 12(2), 1383-1395. Diperoleh dari <https://www.researchgate.net/publication/353527484>.
- Scherz, C., & Mpanga, G. (2019). His mother became medicine: Drinking problems, ethical transformation and maternal care in Central Uganda. *Africa*, 89(1), 125–146. <https://doi.org/10.1017/s0001972018000736>
- Setia Juli Irzal Ismail et al. (2020). Study of Internet and Social Media Addiction in Indonesia during Covid-19. *International Journal of Applied Information Technology*, 4(2), 69-80. Diperoleh dari <http://journals.telkomuniversity.ac.id/ijait>.
- Tao, Y.-J., Hu, L., He, Y., Cao, B.-R., Chen, J., Ye, Y.-H., Chen, T., Yang, X., Xu, J.-J., Li, J., Meng, Y.-J., Li, T., & Guo, W.-J. (2019). A real-world study on clinical predictors of relapse after hospitalized detoxification in a Chinese cohort with alcohol dependence. *PeerJ*, 7. <https://doi.org/10.7717/peerj.7547>
- Tuncay, B., & Göger, B. (2022). Investigating the relationship between Digital Game Addiction and sleep quality in adolescents. *Journal of Turkish Sleep Medicine*, 9(1), 79–84. <https://doi.org/10.4274/jtsm.galenos.2021.52207>
- Walsh, Z., Mollaahmetoglu, O. M., Rootman, J., Golsof, S., Keeler, J., Marsh, B., Nutt, D. J., & Morgan, C. J. (2021). Ketamine for the treatment of mental health and Substance Use Disorders: Comprehensive Systematic Review. *BJPsych Open*, 8(1). <https://doi.org/10.1192/bjo.2021.1061>.