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## **Behavioral Approaches in Overcoming Zoophobia: Virtual and Augmented Reality with Desensitization**

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Artikel diterima : 24-12-2024, direvisi : 26-12-2024, disetujui : 30-12-2024

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**Abstract:** Zoophobia, or excessive fear of animals, is a condition that can interfere with the daily lives of individuals who experience it. The purpose of this study is to discuss the behavioral approach in overcoming zoophobia with a focus on modern desensitization as a revolutionary therapy. The research method in this study uses a literature review obtained from international and national articles, followed by a thematic analysis of the articles using the keywords "desensitization," "phobia," and "behavior therapy." This analysis aims to evaluate the steps that can be taken in desensitization therapy, particularly in the implementation of Virtual Reality (VR) and Augmented Reality (AR) to overcome zoophobia. Through this method, individuals experiencing zoophobia can gradually reduce their fear of animals in a structured and systematic way. Research shows that desensitization can significantly alleviate zoophobia. This article aims to provide a deeper understanding of the implementation of desensitization in overcoming zoophobia.

**Keywords:** Desensitization; Phobia; Behavior Therapy

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**How to cite:** Nasution, Karneli (2024). Behavioral Approaches in Overcoming Zoophobia: Virtual and Augmented Reality with Desensitization. 8 (2) 92-99. <http://doi.org/10.20961/jpk.v8i2.96950>

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### **INTRODUCTION**

Phobia is an anxiety disorder characterized by excessive and irrational fear of a particular object or situation (Akbar, 2020; Mufida & Abdullah, 2024). Although fear is a natural human reaction, phobias occur when they interfere with daily life, affect quality of life, and cause sufferers to avoid the feared object or situation (Chaerunisa et al., 2022; Muslimin & Psycholog, 2018). The disorder is quite common, with an estimated 12.5% of the world's population experiencing phobias in various forms, including fears of heights, tight spaces, or even inanimate objects such as needles. One type of phobia that is often encountered is zoophobia, which is an excessive fear of animals (ESTU, 2023). Zoophobia can include a wide range of animals, from small insects to large mammals, and often triggers severe anxiety upon encountering the animal. People with zoophobia often avoid places where they could potentially encounter animals, such as zoos, parks, or even home environments with pets (Barash, 2000; ESTU, 2023). This irrational fear not only limits social

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interactions but also interferes with daily activities, making it important to address with effective therapeutic approaches (Rosita, 2008; Suranata et al., 2022).

The impact of zoophobia on one's social and mental life cannot be underestimated (Forkasiewicz, 2015; Laybolt, 2021). In addition to excessive fear, individuals with zoophobia often feel isolated as they avoid situations or places where they could potentially encounter animals (Alvear-Suárez et al., 2019; Perrotta, 2019). This can limit social, work and even leisure activities, such as visits to zoos or parks. Entrenched fears can exacerbate generalized anxiety and affect overall quality of life, which makes treating zoophobia crucial (Ariska et al., 2020; Prasetyaningtyas et al., 2022).

Therapeutic approaches to overcome phobias have developed rapidly, desensitization being one that can be used. This therapy is based on behavioristic principles, which prioritize changing behavior through experience and direct exposure to the feared object (Eysenck & Martin, 2013; Prasetyaningtyas et al., 2022). Desensitization therapy is carried out by gradually introducing individuals to the object they fear, starting with situations that cause the least anxiety (Guo, 2021; Majid et al., 2020). Over time, the fear of the animal decreases, and individuals learn to manage their anxiety. Research conducted by Hofmann (2014) shows that cognitive behavioral therapy that includes desensitization techniques can significantly reduce phobia symptoms in a relatively short time

However, the development of modern technology can be an advantage in today's society (Nasution et al., 2023) and has opened up new opportunities in the application of desensitization therapy. The use of technologies such as Virtual Reality (VR) and digital-based applications now allow desensitization therapy to be conducted in a more controlled and accessible environment at any time. These technologies give clients the opportunity to interact with images or simulations of animals in a safe environment, thus minimizing the potential risk of further trauma. This approach not only increases patient comfort but also accelerates the desensitization process with higher exposure rates.

Overall, an understanding of the mechanisms of zoophobia and the use of more innovative and modern therapeutic approaches such as technology-assisted desensitization may be a more effective solution in helping individuals overcome their fear of animals. With the application of this method, it is expected to provide faster results and give individuals the freedom to live a better life without being limited by irrational fears. Through further research and development, modern desensitization could become a revolutionary therapy in the treatment of zoophobia, helping patients to regain a sense of comfort and well-being in their lives.

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**METHODS**

The research methods used in this article are literature review and case study analysis. The literature review was conducted by collecting data from various sources, including scientific journals, textbooks, and other related articles that discuss zoophobia and behavior therapy. The research also includes the analysis of several case studies of individuals who have undergone desensitization therapy to overcome zoophobia. By combining quantitative and qualitative data, we were able to provide a more comprehensive picture of the effectiveness of this approach. One of the studies in focus is the research conducted by Olatunji et al. (2010), which looked at the impact of desensitization therapy on individuals with zoophobia. In the study, participants who underwent therapy showed significant reductions in levels of anxiety and fear of previously feared animals. The methods used in this study included measuring anxiety levels before and after therapy, as well as in-depth interviews to understand participants' experiences during the therapy process (Choy et al., 2007).

In addition, researchers also consider other factors that may influence the effectiveness of therapy, such as social support, individual motivation, and previous experience with animals. Research shows that individuals who have strong social support tend to show better results in behavioral therapy (Hofmann et al., 2012). Therefore, it is important to involve family and friends in the therapy process to create a supportive environment for individuals with zoophobia.

**RESULTS**

Based on the analysis carried out, 30,200 articles were found that discussed desensitization of phobias on Google Scholar, and 5 articles were selected related to the implementation of certain phobias using various research methods, and the following articles will be discussed further in the results and discussion section. The articles are shown below:

<b>Author &amp; Year</b>	<b>Title</b>	<b>Methodology</b>	<b>Key Findings</b>	<b>Novelty</b>
(Choy et al., 2007)	Treatment of specific phobias in adults	A systematic literature review (SLR)	Cognitive therapy helps with claustrophobia, and blood injury phobia is very responsive to applied tension.	In vivo exposure therapy, with most studies finding it more effective than placebo or wait-list controls, and some studies supporting response rates of 80 to 90%.

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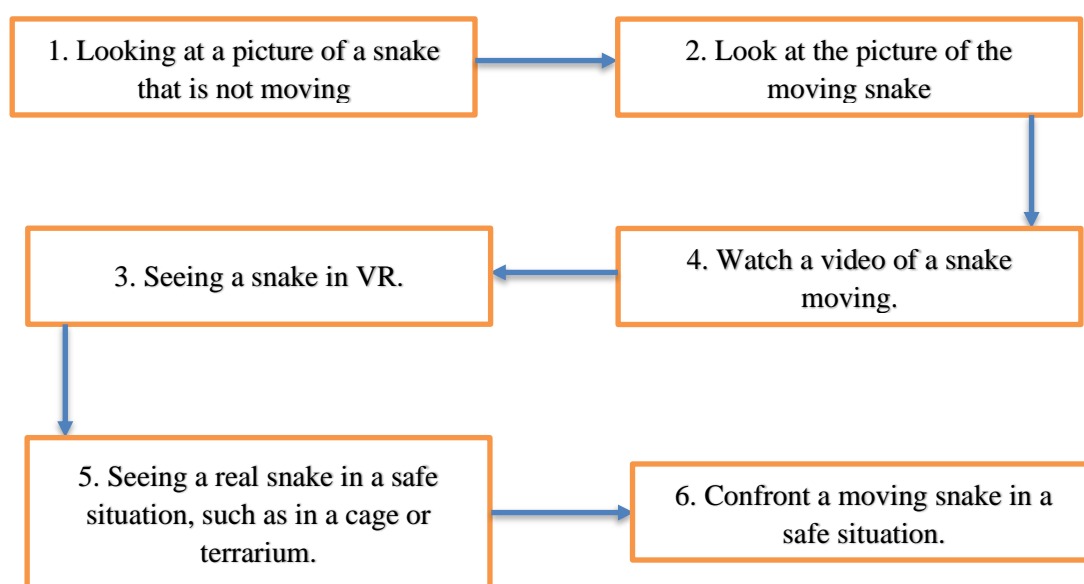
Author & Year	Title	Methodology	Key Findings	Novelty
(Fitriani & Supradewi, 2019)	Systematic Desensitization with Zikr Relaxation to Reduce Anxiety Symptoms in Cases of Phobic Disorder	The research method used a quasi-experiment or pseudo-experiment with a <i>pretest posttest one group</i> design.	Systematic desensitization therapy with dhikr relaxation can reduce physical and psychological anxiety symptoms so that there is a change in the level of phobia of the subject, from severe phobia to moderate phobia and mild phobia.	Application of dhikr relaxation with desensitization technique
(Kyrana & Arafat, 2023) (McNeely & Cha, 1994)	Designing Media Therapy Using Virtual Reality with Desensitization Method for Animal Phobia Patients	The research method used is a qualitative method. The data collection methods used are observation, interview, and literature study.	Produce media prototypes using Virtual Reality with Desensitization Method	Application of VR with desensitization therapy
(Wandira & Karneli, 2022)	Individual Counseling Systematic Desensitization Techniques To Reduce Phobia To Candy	Research method using experiment with 11 therapy sessions	The client is able to give a natural response when seeing, touching and holding candy, the client is also able to control anxiety and fear of candy.	Desensitization to candy phobia
(Aliyu & Isah, 2023)	Assessment Of Systematic Desensitization Counselling	A systematic literature review (SLR)	The above-mentioned social phobia problems can most likely be treated with systematic desensitization technique.	Global prevalence of American undergraduate students' social phobia with desensitization.

Overall, technological desensitization offers a more affordable and effective approach in helping individuals overcome irrational fears of animals, opening up opportunities to introduce new therapeutic solutions within the field of psychology. The success of this therapy demonstrates the importance of continuing to develop innovative methods that can help improve the quality of life of individuals with phobias.

## DISCUSSION

Based on the results of the study, it can be analyzed that desensitization is effective in alleviating client phobia. The stages that can be done to implement a behavioral approach with desensitization techniques in overcoming zoophobia (Pereira-lores et al., 2024; Ren & Meng, 2024) are: (1) Interview and Initial Assessment, the counselor conducts an interview to understand the extent to which the fear of snakes affects the client's life. This includes anxiety levels, anxiety

triggers, and understanding of the phobia. Tests or questionnaires may be used to measure the client's level of anxiety or physiological response to images or videos of snakes; (2) Education and Explanation of Therapy, the counselor provided an explanation of the systematic desensitization process, its benefits, and how the client would be trained to manage anxiety through relaxation techniques. The explanation also includes the understanding that the fear of snakes can be controlled and cured through gradual exposure; (3) Relaxation and Mindfulness Training, clients are taught progressive muscle relaxation techniques to help reduce physical tension associated with anxiety. Mindfulness: Mindfulness exercises are applied to help clients stay focused on breathing and relaxation while imagining or viewing snakes, which can speed up the process of anxiety control; (4) Use of Technology, virtual reality can be used to provide a more immersive experience in overcoming fear of snakes. Clients can "experience" interactions with snakes in a safe and controlled environment. VR allows clients to see snakes in a more realistic context, ranging from images of stationary snakes to moving or approaching snakes; AR can be used to add snake elements to the real world through mobile devices or headsets. For example, an AR app can display snakes in the room where the client is, providing a simulation of snakes in a real situation to gradually reduce fear. Technological Advantages: These technologies allow clients to initiate exposure in a safe environment without having to physically come face-to-face with the snake. The use of VR or AR also allows for dynamic adjustment of anxiety levels; (5) Building the Anxiety Hierarchy, the client and therapist together construct an anxiety hierarchy that describes the order of snake-related situations, ranging from the mildest to the most frightening. Example of Anxiety Hierarchy utilizing technology. Anxiety hierarchy design can be seen in the following framework (Madrigal-Burgaleta et al., 2022; Spytka, 2024):



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Systematic Desensitization process begins with the client reaching a state of deep relaxation. The client is then asked to imagine the least anxiety-provoking situation, such as looking at a picture of a motionless snake, while remaining relaxed. Gradually, the client is exposed to more intensive elements of the anxiety hierarchy, while maintaining a state of relaxation. This could involve viewing images of moving snakes, videos of snakes, or simulations of snakes in VR. Once the client feels comfortable enough with the less challenging situation, the exposure is continued with a more challenging one (e.g., seeing a real snake in a cage).

Based on this discussion, it was also found that various studies related to the implementation of desensitization to overcome phobias show that techniques such as exposure therapy, whether based on virtual reality (Freitas et al., 2021), augmented reality (Azar et al., 2022), or exposure directly (in vivo) (Guo, 2021), has significant effectiveness in reducing phobia symptoms. These studies highlight the importance of sustained exposure in reducing fear reactions to phobic stimuli, although there are variations in the degree of effectiveness, depending on the type of phobia being treated. For example, virtual reality exposure treatment (VRET) has been shown to be effective in treating most phobias, although in some cases in vivo exposure is not effective in certain phobias (Freitas et al., 2021). The use of technologies such as virtual reality and augmented reality also offers promising alternatives, with the potential to reduce costs and increase the accessibility of therapy (Azar et al., 2022). Nevertheless, some studies, such as those addressing subliminal exposure to phobic stimuli (Frumento et al., 2021), show promising results in reducing psychophysiological reactions, although they have not been proven to be effective in reducing subjective fear. Research conducted by (Dantani & Patrick, 2021) also shows that systematic desensitization is effective in reducing psychometric phobia in student teachers. Therefore, although systematic desensitization techniques have proven effective in many cases, further research is needed to delve deeper into the application of these techniques to a larger population and with more diverse phobias, as well as to provide the most optimal combination of techniques in treating them. various types of phobias.

## CONCLUSION

Overall, the behavioral approach through modern desensitization proves to be a revolutionary therapy in overcoming zoophobia. With a structured and systematic method, individuals who experience zoophobia can significantly reduce their fear of animals. Research shows that this therapy is not only effective in reducing phobia symptoms, but can also improve the quality of life of individuals by giving them the ability to interact with animals without fear. Through a deeper understanding of the mechanisms behind zoophobia and the application of appropriate therapies, we can help individuals to overcome their fears and build a more positive relationship with the animal world.

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