



Section 4. Physiology

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VIRTUAL REALITY AS A REGULATED PSYCHOLOGICAL ENVIRONMENT: FROM SYMPTOM TREATMENT TO IDENTITY RECONSTRUCTION

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Abstract

The article considers virtual reality as a controlled psychological environment that can not only eliminate symptoms but also cause deeper changes aimed at restoring the integrity of the personality. It is shown that the development of virtual reality in psychology has led to its transformation from a simple technical tool for modeling situations to a structured therapeutic environment. It was proved that the limitations of the symptomatic approach are especially noticeable when psychological suffering affects bodily self-perception, personality continuity, and identity. The role of digital physicality, symbolic narrative, emotionally coordinated virtual environments, as well as ethical and neuropsychological aspects of immersion is revealed. An integrative model is proposed in which virtual reality is considered a tool for moving from treating symptoms to restoring identity.

Keywords: *virtual reality, regulated psychological environment, digital physicality, symbolic narrative, identity reconstruction, psychological help, emotional regulation, immersion, neuropsychological safety, VR therapy*

Relevance of the study

Currently, in psychology, virtual reality is increasingly perceived not only as a technical means to alleviate symptoms but also as a special, controlled environment for psychological impact. Its use goes beyond simply reducing anxiety, stress, or emotional tension, affecting deeper processes related to the perception of one's own body, emotional regula-

tion, rethinking traumatic experiences, and the formation of a new self-image.

This topic is especially relevant because many crisis conditions, such as chronic stress, emotional burnout, the consequences of severe physical treatment, and disorders in the perception of one's body, are not limited to just individual symptoms. In such cases, it is necessary not only to correct distress

but also to restore a sense of inner integrity, subjectivity, and personal continuity. Virtual reality is of scientific and practical interest as a space where a combination of sensory experience, digital presence, symbolic modeling, and controlled psychological impact is possible.

The relevance of the study is also related to the fact that there are still no holistic theoretical models that could explain how virtual reality helps to move from symptomatic care to identity restoration. Despite the increase in the number of studies on VR therapy, only isolated approaches to this topic exist in the scientific literature. However, modern psychological practice requires a holistic understanding of the immersive environment as a tool for deep transformation of the psyche.

Thus, the study of virtual reality as a regulated psychological environment is an urgent area. It meets the demands of modern science and practice, which seek to find new approaches to psychological care aimed not only at relieving symptoms but also at restoring the integrity of the individual.

The purpose of the study

The purpose of this study is to theoretically substantiate the use of virtual reality as a controlled psychological environment and to create an integrated model that facilitates the transition from symptom-oriented psychological care to identity reconstruction.

Materials and research methods

The study examined scientific papers that investigated the use of virtual reality in psychology, psychotherapy, and rehabilitation, as well as in research on body perception and immersive environments. Special attention was paid to works devoted to the clinical effectiveness of VR therapy (Freeman et al., 2018; Maples-Keller et al., 2017), the mechanisms of psychotherapeutic changes (Kazdin, 2007; Wampold & Imel, 2015), and the features of emotional regulation in virtual space (Browning et al., 2020; Chirico & Gaggioli, 2019).

A separate group of sources consisted of works on physicality and the feeling of reality in a digital environment (Farman, 2012), as well as author's publications on virtual reality, VR narratives, immersive environments, and

neuropsychological safety (Neumann-Zander, 2025).

The methodological basis of the research was the analysis and generalization of scientific literature, as well as a comparative theoretical approach and conceptual modeling.

The results of the study

Virtual reality (VR) has great potential in the treatment and rehabilitation of people with various neuropsychiatric diseases. Its use opens up new horizons for restoring cognitive and motor functions, reducing anxiety, and improving the emotional state of patients (Neumann-Zander N., 2025).

The development of virtual reality in psychology has gone from technical systems that create a presence effect to an effective means of clinical and psychological impact. Initially, VR was developed as a technology for modeling an artificial environment. However, it is precisely the ability to reproduce situations that are significant to a person in a controlled manner that has made it particularly in demand in psychology. Unlike ordinary observation or imaginary reproduction, the virtual environment allows you to combine emotional involvement with precise control of the parameters of the created situation. This is especially important for therapeutic practice.

One of the first applications of virtual reality in clinical practice was the treatment of phobias and anxiety disorders using exposure therapy. The virtual environment made it possible to safely and gradually introduce frightening stimuli while maintaining control over the intensity of exposure.

In the future, the scope of virtual reality has expanded significantly. It has been used not only in the treatment of anxiety disorders but also to combat post-traumatic conditions, pain, and stress, as well as in psychological rehabilitation programs. This has changed the very understanding of virtual reality. From a simple tool for creating stimuli, it gradually turned into a controlled therapeutic environment. In this environment, not only individual images are important, but also the level of immersion, the repeatability of the scenario, the manageability of the situation, and the ability to adapt the intervention to the patient's condition.

Currently, VR is considered an integral part of structured psychological intervention. This is confirmed by large clinical studies in which automated VR therapy in patients with psychosis has demonstrated a significant reduction in agoraphobic avoidance and distress levels compared to traditional therapy.

Thus, virtual reality in psychology has evolved from a simple technical means for imitating perception to an organized therapeutic environment that can be effectively used within the framework of modern psychological assistance programs. Table 1 shows the results of some studies confirming this trend.

Table 1. *The main stages of the evolution of virtual reality in psychology*

Stage	Characteristic	Significance for psychology
Early technological stage	Creating presence-based systems	The idea of creating an artificial environment for experiencing
The stage of clinical experiments	The use of VR in exposure therapy of phobias	Confirmation of the therapeutic potential of VR
The modern stage	Using VR in Anxiety, PTSD, Pain, and Rehabilitation	Transition to the therapeutic environment model

A source: compiled by the author based on (Freeman D., Haselton P., Freeman J., Spanlang B., Kishore S., Albery E., Denne M., Brown P., Slater M., Nickless A., 2018; Maples-Keller J. L., Bunnell B. E., Kim S. J., Rothbaum B. O., 2017)

For a visual representation of the main directions of virtual reality application in psychological practice and confirmed ther-

apeutic effects, it is advisable to refer to the data presented in Table 2.

Table 2. *Psychological goals and VR solutions*

The purpose of therapy	The VR Approach	Confirmed effect
Dealing with phobias	VR exposure	Reducing anxiety
Emotional regulation	Meditation scenes, CBT modules	Increasing resilience
Social adaptation	Interaction simulations, role-playing games	Confidence boost
Self-regulation training	Visualization of breathing, biofeedback VR	Reducing stress levels
Motivation activation	VR Game Scenarios	Increased engagement

A source: (Neumann-Zander N., 2025, p. 310)

Classical psychotherapy has proven effective in treating a variety of mental and behavioral disorders. However, the scientific literature constantly mentions some of its limitations, especially noticeable in cases of long-term, complex, and multicomponent diseases. Meta-analytical studies show that most clinical protocols aim at reducing symptoms, while long-term outcomes and patients' quality of life are evaluated much less frequently (Kazdin A. E., 2007).

One of these limitations is that many studies and practical recommendations focus

on reducing symptom severity. At the same time, long-term functional results, subjective quality of life, social recovery, and sustainability of change are often overlooked.

In modern discussions about psychiatric and psychotherapeutic research, it is explicitly stated that excessive dependence on symptomatic scales can distort the assessment of therapeutic effects and make it difficult to analyze results important to patients in their daily lives (Wampold B. E., Imel Z. E., 2015).

The limitations of the symptom-centered approach are particularly evident in cases

where psychological suffering is associated not only with anxiety, depression, or stress, but also with a violation of self-image, loss of a sense of bodily integrity, a change in life scenario, and the need to rethink one's own experience. In such situations, a decrease in the severity of individual symptoms does not always lead to the restoration of a sense of subjective continuity and internal integrity of the individual. It is important to note that for some patients, it is important not only to reduce symptoms but also to be able to re-understand and include a traumatic or crisis event in their personal history, as well as restore a sense of authorship of their biography.

Another limitation is related to the availability and implementation of evidence-based psychological treatment methods. Despite the high prevalence of mental disorders, many people do not receive the necessary help. Access to such forms of treatment can be difficult due to barriers that arise at different levels: patient, specialist, organization, and the healthcare system as a whole. This means that even effective therapy in the traditional format cannot always provide enough services and does not always meet the needs of patients with prolonged and complex forms of maladaptation.

Modern psychological and interdisciplinary literature also notes that states of chronic stress, burnout, post-traumatic maladjustment, and the consequences of severe physical treatment often affect not only the emotional sphere but also our perception of our own body, our sense of the boundaries of the Self, and how we feel about ourselves in the world. One publication on digital physicality indicates that interaction with virtual environments is associated with the mechanisms of perception, representation, and transformation of bodily experience. This means that working only at the level of symptoms may not be sufficient if deeper levels of self-perception are affected (Neumann-Zander N., 2025).

Digital physicality is a modern interdisciplinary concept that describes the perception and sensation of bodily presence in a virtual environment. It arises at the intersection of sensory experience, technology, and consciousness when a user interacts with digital reality through avatars, interfaces, sensors, and immersive platforms (VR, AR, and MR).

This concept is interpreted from the point of view of phenomenology, cognitive science, neuropsychology, media theory, and neuroaesthetics (Farman J., 2012).

Digital physicality is the most important condition for the psychological impact of the virtual environment. It describes the state when a person begins to perceive their virtual body as something related to their own bodily experience. This condition includes three main components: a sense of bodily belonging, a sense of control over the actions of the virtual body, and awareness of one's location in the virtual space. It is thanks to the combination of these components that the virtual environment acquires not only visual visibility but also subjective psychological significance.

Experiments demonstrate that a sense of bodily belonging can occur when visual, tactile, and motor signals work together. Synchronous stimulation and matching movements of the real and virtual body can create the illusion that you are part of a virtual space. This means that the digital body can temporarily integrate into the structure of a person's bodily perception, and the virtual environment begins to feel like a real space for personal presence and actions.

For psychology, digital physicality is of great importance because it transforms virtual reality not just into an image but also into a real experience that can be felt. Virtual reality technologies can help in restoring contact with oneself during chronic stress and burnout. This is achieved through working with bodily self-perception, awareness of one's presence, and attention to inner states. Thus, digital physicality becomes a key mechanism for creating a regulated psychological environment. It allows us to move from external influences to the inner experience of virtual experience as an integral part of our state (Neumann-Zander N., 2025).

In modern psychology, narrative is considered the most important tool for understanding and organizing personal experience. It helps a person comprehend past events, understand their present, and see prospects for the future. With the help of an inner story, a person combines disparate experiences into a single self-image. Narrative is especially important in crisis situations, when serious illnesses, traumatic experiences, or

prolonged psychological stress disrupt the coherence of self-description and make the image of one's self fragmented.

In this context, symbolic narrative plays a twofold role: it serves not only as a way to tell about experience but also as a mechanism for internal reconstruction. Its value lies in the fact that it allows not only to reproduce past experience but also to rebuild its semantic structure. Due to this, the experienced event ceases to be perceived as an isolated traumatic episode and is included in a broader system of personal history. This kind of processing makes it possible to move from a state of internal rupture to the formation of a new, more holistic sense of self.

In the context of virtual reality, this means that we are moving from simply showing images to creating an environment in which a person becomes an active participant in their own story experience. Virtual reality allows you not only to observe certain scenes but also to live them in a symbolically organized space, where each element of the experience acquires personal meaning. This shifts the focus of attention from the experience itself to its internal interpretation, and the emotional reaction is complemented by the process of rethinking the meaning (Nargiza Noimann-Zander. 2025).

This mechanism is especially important during periods when a crisis affects not only the emotional state, but also the identity of a person. After serious physical treatment, prolonged stress, or other significant events, people often need not only to reduce anxiety and cope with their experiences, but also to restore a sense of inner unity. In such situations, the symbolic narrative becomes a powerful tool that helps a person rethink their past, present, and future, integrate new experiences into their self-image, and gain a more stable inner position (Neumann-Zander N., 2025, p. 47).

Emotionally coordinated virtual environments are digital spaces in which visual, audio, and interactive elements adapt to the user's current condition and psychological assistance tasks. In such environments, virtual reality becomes not just a background, but also a specially organized context that helps reduce stress, restore emotions, and create a sense of internal control. The transition from static environments to adaptive systems

significantly increases the effectiveness of VR therapy, allowing us to take into account the psychophysiological state of a person (Neumann-Zander N., 2025, p. 129).

Open scientific research confirms that virtual reality can be an effective tool for emotional regulation. In particular, systematic reviews and meta-analyses demonstrate that the use of VR interventions in combination with relaxation, mindfulness, and pain control techniques improves emotional well-being and reduces stress levels (Chirico A., Gaggioli A., 2019).

Combined with relaxation, mindfulness, and pain control practices, VR interventions can help improve emotional and psychological well-being. The works on VR relaxation, which were included in meta-analytical and review studies, mainly used natural virtual environments such as forest and water landscapes. The results of these studies have shown that such interventions can be easily implemented and are effective in the short term to increase relaxation and reduce stress (Browning M. H.E.M., Mimnaugh K. J., van Riper C. J., Laurent H. K., LaValle S. M., 2020).

The ethics and neuropsychological safety of immersive immersion are important aspects that should be considered when using virtual reality in psychological and clinical practice. An immersive environment affects not only attention and emotions but also body perception, spatial orientation, a sense of control, and the subjective boundary between the real and virtual worlds.

Within the author's concept, the transition from treating symptoms to restoring identity is carried out through the sequential passage of several levels of exposure. The first level involves creating a safe immersive environment where meaningful events can be experienced under control. The second level is digital physicality, where the virtual body and space become part of a subjectively meaningful experience. The third level forms a symbolic narrative that allows not only to experience an event but also to rethink it in the context of personal history. The fourth level is characterized by an emotionally coordinated organization of the environment, in which the parameters of the virtual space adjust to the user's condition, supporting mental regulation. The combination of these

levels creates conditions for the transition from symptomatic improvement to internal reconstruction of self-image.

Within this concept, identity reconstruction is considered not as a simple change in self-esteem but as a process of restoring a holistic sense of self. During this process, a person reunites bodily experience, emotional reactions, biographical meaning, and ideas about their future. In open works devoted to narrative reconstruction in virtual reality, it is noted that immersion in the virtual world can restore a person's sense of control over their story and contribute to a more harmonious perception of themselves. Therefore, within this model, VR acts not just as a tool for correcting symptoms but also as a regulated psychological environment that promotes deeper changes in subjectivity.

Conclusions

In modern psychology, virtual reality should be considered not only as a technological tool for eliminating symptoms, but

also as a special regulated environment for psychological impact. Its therapeutic potential is due to the ability to combine safe immersion, bodily involvement, symbolic processing of the experience and the emotionally harmonious organization of the digital space.

Research has shown that a symptom-based approach, although it has practical value, may be ineffective if the crisis affects a person's self-perception, integrity, and identity. In such cases, the mechanisms of digital physicality and symbolic narrative play a special role, which help to move from external influence to internal reconstruction of one's image.

The proposed integrative model demonstrates that the long-term effect of VR therapy is associated with not only reducing anxiety, distress or stress, but also with restoring the integrity of self-perception, a sense of self-determination and internal control. This opens up new horizons for the development of psychological assistance aimed at deeper transformation and restoration of personality.

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