



# Avatar Therapy Model and Ethical Principles in the Treatment of Auditory Hallucinations in Patients with Schizophrenia

## *Şizofreni Hastalarında İşitsel Halüsinasyonların Tedavisinde Avatar Terapi Modeli ve Etik İlkeler*

 Zeynep Özerol<sup>1</sup>,  Sezin Andiç<sup>1</sup>

<sup>1</sup>Antalya Bilim University, Antalya

### ABSTRACT

Schizophrenia is one of the most debilitating mental disorders. Auditory hallucinations, which are known to be closely related to interpersonal relationships, are the most common type of hallucinations observed in the course of schizophrenia. Virtual reality has been developing in various fields with the development of computerized technologies and has started to appear in the field of clinical psychology in the form of virtual reality therapies. Avatar therapy is among the interpersonal-based virtual reality therapy models that focus on auditory hallucinations among the symptoms of schizophrenia. The aim of avatar therapy is to enable the person to have control over auditory hallucinations. Within the scope of this review study; the past, present and future of schizophrenia treatment, effective intervention methods in the treatment of schizophrenia, virtual reality therapy, the main outlines of the avatar therapy model, the effectiveness studies of avatar therapy and ethical issues were discussed. The results of the research on the effectiveness of avatar therapy reveal the need for further research in this field.

**Keywords:** Schizophrenia, auditory hallucination, avatar therapy, ethics

### ÖZ

Şizofreni ruhsal bozukluklar içerisinde en yıkıcı özelliklere sahip olanlardan biridir. Kişilerarası ilişkilerle yakından ilişkili olduğu bilinen işitsel halüsinasyonlar şizofreni gidişatında en sık gözlemlenen halüsinasyon türüdür. Sanal gerçeklik, bilgisayarlı teknolojilerin gelişmesiyle çeşitli alanlarda gelişim göstermektedir ve klinik psikoloji alanında sanal gerçeklik terapileri şeklinde karşımıza çıkmaya başlamıştır. Avatar terapisi, şizofreni belirtileri arasındaki işitsel halüsinasyonlara odaklanan kişilerarası temelli sanal gerçeklik terapi modelleri arasında yer almaktadır. Avatar terapisi ile amaçlanan, kişinin işitsel halüsinasyonları üzerinde kontrol sahibi olabilmesinin sağlanmasıdır. Bu derleme çalışması kapsamında; şizofreni tedavisinin dünü, bugünü ve yarınını, şizofreni tedavisindeki etkili müdahale yöntemlerine, sanal gerçeklik terapisine, avatar terapi modelinin ana hatlarına, avatar terapisinin etkililik çalışmalarına ve etik ile ilişkili konulara değinilmiştir. Avatar terapisinin etkililik çalışmalarına dair araştırma sonuçları bu alanda yapılacak daha fazla araştırmaya ihtiyaç olduğunu ortaya koymaktadır.

**Anahtar sözcükler:** Şizofreni, işitsel halüsinasyon, avatar terapi, etik

## Introduction

The history of schizophrenia dates back to ancient times. Throughout history, many scientists have worked on this psychiatric disorder, and the disorder's symptom cluster has occurred with cumulative progress (İnceç 2018). Schizophrenia is still a common mental disorder today. The prevalence of schizophrenia in the general population is 1%, and clinical presentations of schizophrenia include both negative and positive symptoms, with the course of the disorder differing from person to person (Kocal et al. 2017). According to the DSM-5 diagnostic criteria, symptoms of schizophrenia disorder should be present for at least six months within the context of the clinical presentation of schizophrenia. It should include at least one month of active psychotic episode. Within this period; for the diagnosis of schizophrenia, at least one of (1) hallucinations, (2) delusions, (3) disorganized conversations, (4) highly disorganized behaviors or catatonia, (5) silent (negative) symptoms must be present as one of the first three symptoms (Koroğlu 2013). In other words, hallucinations, delusions, disorganized behaviors, and negative symptoms are observed as symptoms of individuals diagnosed with schizophrenia (APA,

**Address for Correspondence:** Zeynep Özerol, Antalya Bilim University Graduate School of Education Department of Clinical Psychology, Antalya, Türkiye **E-mail:** zeynep.ozerol@outlook.com

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2013). However, the most common type of hallucination in schizophrenia is auditory hallucinations (Özden 1990). These auditory hallucinations may be directive, insulting, harassing, or aimed at causing harm. While some patients are aware that these voices are part of their illness, others believe they are authentic (Çalışkan et al. 2021). Given its many destructive consequences, different approaches to treating schizophrenia have focused on auditory hallucinations. It has been advocated that they are of great importance for the survival of the individual (Mortan-Sevi and Tekinsav-Sütçü 2011, Staring Huurne and Gaag 2013). In this context, along with the increasing focus on vocal methods and dyadic dialectics within the scope of the treatment of auditory hallucinations, the tendency toward technology-based intervention methods that provide the opportunity to obtain information about interpersonal relationships is also increasing (Craig et al. 2020). Thus, in this article, after reviewing the historical development of schizophrenia treatment and the intervention methods used in Türkiye, avatar therapy, a new approach to treating schizophrenia covered within virtual reality therapy, was introduced. The avatar therapy model was explained by addressing the relevant effectiveness studies and ethical issues, and the possible consequences of its use were explored.

## **Past, Present, and Future of Schizophrenia Treatment**

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When the history of schizophrenia is studied, it can be traced back to 1400 BC. The Vedic texts mention that during those years, some people in Indian society expressed great concern that they would see evil, claim to be gods, and travel naked (Kocal et al. 2017). Hippocrates was one of the first scientists to mention schizophrenia in the early period. At the same time, in Rome, it is widely known that people tried to bring out the evil spirit by piercing their skulls with the thoughts that an evil spirit had infiltrated them. However, during the same period, when the Ottoman state was examined, Bimarhanes were opened for psychological disorders, and scientists, especially İbni Sina, produced works on mental health (İngeç 2018). The symptoms emphasized today prioritize the positive symptoms of schizophrenia. In treating schizophrenia as a mental disorder, antipsychotic drugs, electroconvulsive therapy (ECT), individual therapy, psychosocial interventions, and family therapies are applied (Patel et al. 2014). In the late 90s, with the view that drug treatment was found to be insufficient for all patients, the use of empowering techniques became widespread, and changes in the basic perspective emerged (Sungur and Yalnız 1999). Although the use of Cognitive Behavioral Therapy-based applications in psychosis is relatively new, studies suggest it as a promising treatment method (Mortan-Sevi and Tekinsav-Sütçü 2011, Staring Huurne and Gaag 2013).

With the rapid development of computer systems, virtual reality technologies, which offer the opportunity to work in many fields, have also made progress. Virtual Reality (VR) can be defined as an immersive computer simulation experience consisting of a three-dimensional interactive virtual environment through a head-mounted display and controller (Bisso et al. 2020). While the virtual reality model within these new world technologies is used in daily life and professional business life, these technologies are also widely used in various disciplines, including medicine and psychology (Akdeniz et al. 2020, Javaid and Haleem 2020). This technology has also taken its place in psychiatry and psychology with virtual reality therapy (Krijn et al. 2004, Gregg and Tarrier 2007, Akdeniz et al. 2020).

Virtual reality therapy can be defined as an intervention method that aims to provide the person with the most realistic experience and enables the person to encounter situations that make life difficult in a virtual environment (Bilge et al. 2020, Bisso et al. 2020). Natural simulations that are closely related to reality and controlled are used in virtual reality therapy to create realistic experiences, stimulating the senses of sight, sound, and touch while producing a variety of experiences (Gregg and Tarrier 2007, Akdeniz et al. 2020). Virtual reality glasses, tablets, computers, and phones are used during virtual reality applications (Vardarlı 2021). The goal of virtual reality therapy is to help people learn coping skills and avoid situations that cause anxiety or fear by simulating them in a virtual environment. Recently, virtual reality therapies have been recommended to treat various psychiatric disorders, including schizophrenia spectrum disorders (Bisso et al. 2020). The Avatar therapy model, which can be categorized within virtual reality therapies, is also a novel therapy model in which interpersonal relationship-based psychotherapeutic processes are implemented (Ward et al. 2022).

Since avatar therapy is included in virtual reality models, it is considered within the scope of new technology models, and effectiveness studies are also considered within this framework. Although effectiveness studies yield varying results, the need to develop the avatar therapy model remains a constant theme (Aali et al. 2020). Findings from studies carried out by diverse researchers came from a variety of sources, including group comparisons, insight analysis, and potential side effects of exposure (Beaudoin et al. 2021). As a result, more discussion about avatar therapy's ethical concerns is necessary.

## **Different Approaches to Schizophrenia and Auditory Hallucinations**

Hallucinations are included in the DSM-5 diagnostic criteria of schizophrenia, which is one of the mental disorders commonly seen in the society (Şahinbaş 2020). Hallucinations can be defined as unreal perceptual experiences in which a distortion in perception occurs, although there is no evidence of the existence of the object (Özden 1990). Auditory hallucinations are the most common and disabling type of hallucination that can be seen as auditory, visual, tactile, olfactory, taste, and complex forms during the course of schizophrenia (Montagne-Larmuner et al. 2009, Çetin and Eker 2011). Auditory hallucinations are defined as the individual's hearing and perception of non-existent stimuli despite the absence of external stimuli (Saraçlı et al. 2012). These sounds are not only human voices, but can also be in the form of bells, whispers, humming and motor sounds. While patients often describe these voices as abusive and harming, critical voices that never stop and distressing voices, the voices heard have no connection with reality (Şahinbaş 2020). Patients with good insight know that the voices are caused by this disorder, while patients with poor insight believe that the voices really exist and that they are talking to them (Çalışkan et al. 2021). Patients with schizophrenia may experience visual or auditory hallucinations in line with the deterioration in perception throughout their disease process. Approximately 25% of patients have been reported to continue to experience auditory hallucinations even if they continue their treatment regularly and for a long time (Øverland and Vogel 2018).

Auditory hallucinations can be seen in 3 categories; the first category is characterized by the presence of repetitions of voices repeating the person's thoughts, and the second category is characterized by the presence of voices accompanied by one or more voices that the person hears. The third category is characterized by hearing voices related to the actions performed by the person (Şahinbaş 2020). These voices can be directive, which may or may not be compatible with the severity of the patient's disorder. The voices in auditory hallucinations can affect the person's life-sustaining ability negatively or neutrally. Under all circumstances, the person's coping strategies against these voices may vary considerably (Çalışkan et al. 2021). To this end, whether or not the voices in the hallucination are a compelling factor in the person's life can be decisive for the treatment plan and types of intervention.

Schizophrenia is a severe mental disorder that usually lasts a lifetime and requires lifelong antipsychotic medication. However, although medication plays an effective role in improving symptoms, there are opinions that there are patients in whom auditory hallucinations do not disappear (e.g., Montagne-Larmuner et al. 2009) and that it is not effective in increasing the person's adjustment to life (Soygür 2003, Bekiroğlu and Özden 2020). In this respect, it can be stated that only drug treatments may not be sufficient in schizophrenia, and psychosocial factors are also crucial for the course of the psychiatric disorder (Yüksel 2007, Özdemir et al. 2017). Danacı et al. (2015) reported that schizophrenia and related disorders have the highest rate of stigmatization and impairment among mental disorders based on their follow-up studies. Moreover, individuals are not only affected by the consequences of stigmatization in the psychological aspects, but they may also experience psychosocial impairments more severely (Katschnig 2000, Danacı et al. 2015).

Currently, in addition to pharmacological treatment, the view that schizophrenia patients should be included in psychosocial intervention programs in order to raise their living standards comes to the forefront. The accepted models in the literature underline the significance of increasing the cognitive adaptation capacity of biopsychosocial disorders with psychosocial treatments and the place and impact of society in the interaction with biological dimensions (Soygür 2003, Özdemir et al. 2017, Chaudhury et al. 2018). Katschnig (2000) reported that the quality of life of patients with schizophrenia disorder is lower than the general population. Due to its nature, this lower quality of life may be associated with difficulties in treating the disease. Besides these difficulties, the inability of the social environment to adapt quickly to the state of illness and the inability to determine the resources related to the situation affect the individual's functionality and quality of life (Soygür 2003).

Bigelow et al. (1991), who conceptualized the quality of life in schizophrenia based on Maslow's hierarchy of needs, proposed three essential dimensions that constitute the concept of quality of life: satisfaction with one's life, the presence of social support, and the capacity to sustain life by fulfilling social roles. Therefore, in addition to drug treatment, psychosocial treatments, including interventions such as group psychotherapies, individual therapies, skills training, psycho-educational activities, work adjustment programs, substance abuse, and intervention programs, should be added to the treatment plans of individuals with severe mental disorders (Bekiroğlu and Özden 2020). Psychosocial interventions aim to increase the functionality of individuals with a disability and improve their quality of life. Within this context, the goal is to increase the social adaptation of the person to his/her family and environment and to support him/her in developing healthy coping skills with his/her problems (Çakmak et al. 2016). Psychosocial interventions increase the harmony in the lives of

schizophrenia patients, and significant improvements in negative symptoms are also reported (Özdemir et al. 2017).

Psychotic symptoms are severe and chronic. Although structured therapies are effective in psychosocial interventions, the psychotherapist may also need to be creative and flexible. In a study conducted in this direction, psychosocial interventions for individuals with severe mental illness and their families between 2000 and 2019 were systematically analyzed. The results revealed positive effects in domains such as adapting to treatment, transferring emotions, using healthy coping skills, improving quality of life, reducing the burden on caregivers and increasing family functionality (Bekiroğlu and Özden 2020). In short, psychosocial intervention practices have been reported to positively affect the course of the disease. With the integration of psychosocial treatments into treatment plans, it was noted that the rate of hospitalization decreased, and approaching the patient and family in a psycho-educational manner led to good results in terms of gaining insight (Çakmak et al. 2016). In a study carried out in Turkey with the participation of 150 schizophrenia patients, a comparison of schizophrenia patients receiving regular drug treatment with the schizophrenia patient group receiving psychological and social adaptation support in addition to drug treatment showed that the group receiving additional psychosocial support had significantly higher symptom reduction, insight development and quality of relationship with caregivers (Özdemir et al. 2017).

The results of previous studies on the effectiveness of psychosocial treatments in patients with schizophrenia show consistency. In a study that was designed to create a cognitive behavioral intervention program aiming to facilitate coping with auditory hallucinations and examined the effectiveness of this program in patients with schizophrenia and schizoaffective disorder, among the participants divided into two different groups as intervention group and control group, there was a significant decrease in the intensity of hallucinations, duration of dealing with hallucinations, frequency of delusions and intensity of negative symptoms in the group that progressed with cognitive behavioral techniques in addition to drug treatment (Mortan et al. 2011). While no significant difference was found in the control group that did not have any social interaction, in the one-year follow-up period, findings did not show any change (Mortan et al. 2011). The results of another study comparing schizophrenia patients who participated and did not participate in psychosocial intervention rehabilitation in a community mental health center indicated that the treatment compliance of those who regularly participated in psychosocial intervention at least once a week was higher than those who never participated in psychosocial interventions (Üstün et al. 2018).

When studies involving cognitive behavioral therapy used in addition to standard treatment were considered together in a study reviewing empirical studies to evaluate the effectiveness of cognitive behavioral group treatment programs in the treatment of schizophrenia and other psychotic disorders, the effects of positive and negative symptoms in schizophrenia patients and other psychotic disorders decreased. Comorbid problems such as anxiety and hopelessness were also reduced (Mortan-Sevi and Tekinsav-Sütçü 2011). In a similar vein, negative symptoms and dysfunctional beliefs decreased within 6 months in a pilot study where 20 sessions of cognitive behavioral therapies were evaluated for negative symptoms of schizophrenia (Staring et al 2013).

Cognitive behavioral approaches have not been used in the treatment of schizophrenia for a long time. However, it is known that disorders in the structure and content of thought and problems in emotional and social factors are highly crucial for psychopathologies (Kingdon and Turkington 1991). However, the research results mentioned above reveal the effectiveness of CBT-based psychosocial interventions. In this respect, while many branches of science, including psychology and psychiatry, have started to use new technologies, a similar situation may arise with the widespread use of technology-based approaches such as virtual reality therapy. Thus, one of the ways to establish a better therapeutic relationship with the person seeking treatment is to understand their interpersonal relationships. Focusing on dual dialectics in the detailed examination of auditory hallucinations may facilitate understanding interpersonal relationships (Yıldız et al. 2003). An interpersonal relationship is assumed to have an essential role in understanding factors such as the person's reactions in the face of auditory hallucinations, the position of hallucinations in his/her inner reality, and what kind of communication curtain is in question. Hence, technology-based approaches may facilitate the interpretation of interpersonal relationships in the interpretation of auditory hallucinations and the understanding of the ties that the person establishes with internal hallucinations (Craig et al. 2020).

## **Virtual Reality Therapy**

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Computer-based applications have developed and become widespread with the advancement of computerized technologies. Computerized technology products are developing on the basis of differentiation and renewal in various fields, and their use in everyday life, where the virtual world is more active, is increasing day by day (Bilge

et al. 2020). Virtual reality model is also a part of these new world technologies. Virtual reality technology is realistic and controllable natural simulations in which visual, auditory, and tactile sensations are stimulated, and different experiences are achieved (Işıklı et al. 2019). Visual-spatial models of virtual reality have become widespread due to natural simulation technology. The use of virtual reality applications in many fields, such as education, medicine, engineering, and psychology, is becoming widespread (Javaid and Haleem 2020).

In line with the increasingly active applications in the field of psychiatry and psychology, virtual reality technologies have started to be used in psychotherapies. According to Akdeniz et al. (2020), new intervention technologies added to these therapies are generally used to treat anxiety, phobias, and fears. In this way, it becomes possible for the individual to experience a more realistic experience in the treatment process, and it also saves time considering its immediate and practical applicability (Bilge et al. 2020). In addition to the widespread use of virtual reality technologies in the treatment of anxiety, fear, and phobia, it is also known that they are used in the treatment of other mental disorders such as eating disorders, obsessive-compulsive disorder, and schizophrenia (Vardarlı 2021). The avatar therapy model is a virtual reality therapy model based on interpersonal relationships and designed to make sense of the mechanism of auditory hallucinations in a person's life (Ward et al. 2022). Virtual reality therapies, among other new-world technologies, are likely to be preferred in the coming years over costly treatment options for treating mental disorders that are difficult to understand using traditional therapy models.

### **Avatar Therapy Model**

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Avatar therapy models are therapy models developed with computerized technologies and software that address the virtual world and new formations, and are considered within the scope of virtual reality-related therapy models in psychiatry and psychology literature (Aali et al. 2020). In avatar therapy, which is among the digital health analyzes, it is critical how patients engage with the voices heard (Øverland and Vogel 2018). There is a structured treatment plan in the implementation of avatar therapy. Within this plan, the duration of a session and how many sessions the treatment will last are predetermined (Jeff et al. 2014). The client, who takes part in avatar therapy with a special software, starts the psychotherapy process in a room with a screen. It is ensured that the client creates an avatar of his/her visual hallucination on the screen, or if he/she does not have one, a mental model of his/her auditory hallucination, and at the same time the therapist sees the client's avatar drawing on the screen in a different room (Jeff et al. 2014, Craig et al. 2016). Then, the avatar is gradually animated by the therapist in the electronic environment by taking into account the characteristics of the person's auditory hallucinations such as gender, sound frequency, and sound intensity (Jeff et al. 2014). In this step, the therapist is not present with his/her own self. Although the therapist and the patient are not in the same environment, through the shared screen effect provided by the software, the therapist can see the patient's avatar and conduct the therapy from the other end of the screen. In the second stage of the therapy, the therapist gives the vocalization commands to the avatar created by the patient and the therapist's voice is not used as his/her own voice. The process proceeds in such a way that auditory hallucinations persist. As the therapy sessions continue, the therapist tries to move away from auditory hallucinations and towards a more supportive therapy in which the person become active (Craig et al. 2016, Øverland and Vogel 2018). In other words, as the patient gains insight, symptoms that are ego-syntonic move towards an ego-dystonic direction. This is associated with an increase in the ability to assess reality, and the ability to assess reality can be expressed as the ability to distinguish between what is going on in one's thoughts and the reality in the outside world (Özdemir et al. 2012). In this therapy model, the first sessions consist of assertiveness training, then the patient is asked to express the positive qualities obtained through the avatar, and in the finalization phase, recovery and the patient's progress are discussed (Øverland and Vogel 2018, Aali et al. 2020).

In summary, the therapist communicates with the patient through the avatar created by the software. The communication of the avatar makes the situation more realistic for the person by moving away from the amateur form of the therapy flow (Ward et al. 2022). Based on the information about hallucinations obtained from structured sessions, the therapist continues the dialog, the intention here is not to cause confusion on the patient in the first place and to prepare the ground for further processes. In addition, it is aimed for the person to experience the experience in the most realistic way (Craig et al. 2016). The first dialogues established by the therapist are equivalent to the patient's auditory hallucinations, where the therapist must have sufficient equipment and knowledge about animation (Aali et al. 2020, Ward et al. 2022). At the end of the avatar therapy sessions, the patient is given an audio recording of the interview, to be exposed to the voices and their own reactions, and in the following processes, as the patient begins to observe their own reactions, their perspective on the reenactments begins to change. In the later stages of avatar therapy, the therapist gradually begins to break away from the hallucination's enactments, reflecting that the patient has the power of control, and

continues with positive enactments aimed at strengthening interpersonal relationships (Ward et al. 2022). The goal is to repair the structures related to the patient's past experiences by bringing the avatar, who had a humiliating communication in the first stages of the therapy, to a more supportive and loving position (Jeff et al. 2014). In this direction, avatar therapy is also related to the past experiences of the person. During the first phase of the treatment, patients were reported to experience anxiety and withdrawal. However, as the power felt against the voice increased in the following processes, the continuity of the treatment was maintained (Jeff et al. 2014). Although the avatar exhibited a more hostile attitude in the first stages, in the second stage, the anxiety of the individuals decreased and they could be able to communicate more easily (Jeff et al. 2014, Ward et al. 2022).

In the application of avatar therapy, the therapist has the opportunity to focus on the patient's reactions, and hence; visualizations, the channels through which communication takes place, the person's responses to auditory hallucinations and directive reactions can be closely tracked (Şahin 2020). The main purpose of avatar therapy is thought to be based on the development of the patient's control mechanism against auditory hallucinations and the patient's ability to recognize this situation. Craing et al. (2016) reported that the fact that the voice recordings can be listened to outside of therapy by providing them to the person after the avatar therapy session is critical in terms of exposure. Apart from the main purpose of the therapy, the therapy process may have a supportive role in helping the person to create his/her avatar and to concretize the voices he/she hears even though he/she does not have visual hallucinations. Discovering other options and experiencing different options with this discovery are among the other goals of therapy (Aali et al. 2020). The therapist's ability to better frame events from the patient's perspective can have a strengthening effect on the therapeutic relationship. The sessions provide insight into how a person's self-esteem and object representations among other people are formed. This interpretation can help to strengthen the therapeutic relationship even more (Calafell et al. 2020). However, there may be some negative issues that arise in this relationship. For example, patients may be unable to tolerate interview audio recordings and may need to discontinue therapy (Aali et al. 2020).

Avatar treatment does not focus solely on the auditory hallucinations of those who seek treatment (Calafell et al. 2020). It is a model that, in addition to focusing on auditory hallucinations, assists the individual in developing social skills and improving communication channels in the same direction (Şahin 2020). In the therapy environment, the patient can experience life, interpersonal relationships, and situations related to his or her social life.

### **Effects of Avatar Therapy on Mental Disorders and Efficacy Studies**

Various researchers have examined the effect of the avatar therapy model on schizophrenia and related disorders. However, the avatar therapy model has started to go beyond being a treatment program limited to schizophrenia and psychosis-related disorders in terms of its psychotherapeutic effects within virtual reality therapies (Rehm et al. 2016). In the emerging field of online psychological health interventions, the avatar therapy model has become a commonly used approach within virtual reality models in the treatment of schizophrenia and related disorders, autism, obsessive-compulsive disorder, and social phobias (Rehm et al. 2016, Vardarlı 2021). Avatar models are used to reduce auditory hallucinations in psychotic disorders (Amira et al. 2021), to quickly observe the reactions of people with phobias, to contribute to social development in autism, and to understand obsessive individuals' compulsions more clearly (Vardarlı 2021). On this basis, the effectiveness studies of the avatar therapy model were examined within the context of different disorders.

In a study aiming to increase the awareness between reality and perception distortion in line with the perceptual stimulation sent to the person through the avatar in avatar therapy, the hallucination symptoms of the individual intervened with avatar therapy decreased and therapy goals were reported to be achieved with the improvement of self-control skills (Amira et al. 2021). In a study in which Leff et al. (2014) used avatar therapy in auditory hallucinations with persecution content, findings on the effectiveness of avatar therapy were obtained through software in computer programs. In the study, the control group and the research group receiving avatar therapy were compared. There was a significant decrease in the frequency and intensity of auditory hallucinations and in the characterization of hallucinations as omnipotent and malicious in the second group in which avatar therapy was applied. Furthermore, three months later, it was reported that persecution themes decreased in the group that received avatar therapy, and the frequency and intensity of voices decreased more than in the other group (Leff et al. 2014). In another study on effectiveness, Ward et al. (2022) evaluated the role of characterization of the avatar therapy model on auditory hallucinations. According to the findings of this study, personalization during the avatar creation process benefits individuals in a variety of ways (Ward et

al. 2022). However, no definitive conclusion was reached in the study regarding the effectiveness of avatar therapy, and it was stated that more research is required. Another study supporting this view found that avatar therapy had a mild effect on auditory hallucinations compared to other supportive interventions (Aali et al. 2020).

Studies on the effects of the avatar therapy model on various mental disorders have also been conducted. In a study on its use in the treatment of social phobia, Brinkman et al. (2012) investigated the effects of social phobia treatment with remote intervention. In this application, people with social phobia establish dialogues with the avatar under the supervision of a therapist. The most important goal of the process was to use the avatar to communicate information about the person's social phobia to the therapist. In the following stages, the avatar model demonstrated positive results in reducing the symptoms of social phobia patients by making sense of the person applying for treatment's behaviors and in follow-up studies (Brinkman et al. 2012). In a study conducted by Freeman et al. (2018), virtual libraries were created with 24 participants diagnosed with social phobia. These libraries contained avatars, and most feedback from people who had tried virtual reality revealed that the virtual environment affected their minds (Freeman et al. 2018). According to the information provided by the participants, the researchers reported that similar concerns emerged in the real world (Freeman et al. 2018). Both studies concluded that the avatar model was effective in treating social phobia (Brinkman et al. 2012, Freeman et al. 2018).

In individuals with autism spectrum disorder, where the development of social skills is essential, virtual cafes are designed in the context of virtual reality therapies to improve the social skills of individuals with autism (Vardarlı 2021). Virtual cafes aim to create avatars so that individuals with autism can communicate with healthy people. Through the avatar model, the therapist realizes the goal of contributing to social development by communicating with the individual with autism. Lorenzo et al. (2016) conducted an effectiveness study on the avatar therapy model with children aged 7-11 years with autism. Didehbani et al. (2016) conducted a study on the social development of children diagnosed with autism between the ages of 7-16 on the avatar model in virtual reality therapy. The common result of both studies is that children with autism respond positively to avatar therapy. The potential for the virtual reality avatar model to assist in the social development of autistic people has been highlighted (Didehbani et al. 2016, Lorenzo et al. 2016). In support of this, Kim et al. (2017) reported that in their virtual reality-based avatar therapy with patients with obsessive-compulsive disorder, increases in the anxiety dimensions of obsessive individuals occurred during the exposure phase, and the virtual reality environment was perceived as very realistic by the individuals.

### **Ethical Issues in Avatar Therapy**

The advantages of the avatar therapy model in the therapy process in schizophrenia and related disorders have led to an increase in its preference. For example, the avatar therapy model is expressed as a very effective and powerful feature that allows the therapist to make sense of the visual image of the sound generated in the minds of individuals with only auditory hallucinations (Jeff et al. 2014, Craig et al. 2016). The therapist obtains information about the dialogues, reactions, responses, and thought content of the person with schizophrenia disorder through the avatar as more meaningful data. Observations provide direct information to the therapist about the condition of the person experiencing mental symptoms (Jeff et al. 2014, Craig et al. 2016). Since the auditory hallucination of the schizophrenia patient is vocalized by the therapist through the avatar and is a step-by-step process, the aim is for the patient to gain control over the hallucination during the therapy process. Therefore, the person experiencing the disorder is intended to move from the position of obeying the hallucination to the position where he/she provides all powerful control (Jeff et al. 2014). The avatar therapy model provides a low-cost and person-active exposure technique in schizophrenia and related disorders and other mental disorders. In this respect, the fact that it provides effective results in a short time can be considered as a significant advantage. Moreover, compared to traditional therapy approaches, in the avatar therapy model, the therapist is more than a spectator or observer, and plays an active role in the therapy process. As such, the therapist can better understand the mental world of the individual and his or her communication with his or her hallucinations.

On the other hand, the disadvantage of the avatar therapy model in the therapy process in schizophrenia and related disorders is that it may be disturbing for the individual to see the avatar of auditory hallucinations. Besides, providing audio recordings of the therapy process to the patient may negatively affect the treatment program and may lead to ethical problems in terms of confidentiality or the patient's sense of security (Karakuş 2021). From another point of view, achieving fast results in a short period of time may also cause the recovery to fade after a certain period of time (Danacı et al. 2016). It is also not clear how the therapeutic relationship

with the therapist will be affected by the inclusion of the avatar in the therapy process. In this respect, the lack of sufficient follow-up and efficacy studies on the avatar therapy model prevents the prediction of the possible outcomes of the applications in the clinical field. This situation may also prompt discussions that there is insufficient evidence for its widespread use in the field of practice.

Virtual reality models have started to be preferred more frequently due to factors such as low cost, easy accessibility and rapid effects compared to the procedures and length of traditional therapy methods (Rehm et al. 2016, Gök and Uçanak 2022). The frequent use of technology in the globalizing world has also been reflected in therapy models, and virtual reality models (Gök and Uçanak 2022) and the avatar therapy approach (Rehm et al. 2016), which are among the frequently used intervention methods, have emerged to the fore. Compared to virtual reality therapies, the avatar therapy model is a model in which the therapist has an active dialog with the patient. The avatar is made to speak by the therapist, which is thought to make the virtual reality experience more realistic compared to static virtual reality therapies. The use of avatars as part of face-to-face therapies is believed to be useful in the treatment of many disorders by helping emotion recognition and emotional expression, discovering the patient's identity through embodiment in an avatar by reducing communication barriers, and manipulation and control of treatment stimuli (Rehm et al. 2016). Compared to the cognitive behavioral therapy-based exposure technique in the treatment of mental disorders, it is argued that in the avatar therapy model, exposure takes place in a more qualified and active manner (Safir et al. 2012). Besides, with the therapist taking an active role in the process in avatar therapy, it becomes more possible to quickly detect reactions to all behavioral and emotional changes occurring in the individual.

From an ethical perspective, apart from the limitations of effectiveness studies, problems related to confidentiality come to mind due to the fact that psychotherapy takes place through software. The limits of confidentiality are clearly defined within the scope of the ethical regulations of the Turkish Psychological Association (2004) and the Turkish Psychiatric Association's (2002) code of ethics for psychiatry, and if the psychologist or psychiatrist is going to use data in any procedure, they are obliged to inform the patients who apply for treatment beforehand. However, the widespread use of technology in treatment leads to the necessity of regulating ethical principles in this direction. Another of the most commonly observed situations that occur in violation of privacy is the loss of the mobile device or unauthorized access to the device (Karakuş 2021). In this case, it is not clear to what extent the voice recordings of patients will be stored securely in a situation that may pose a problem with privacy. Additionally, the occurrence of a security leak caused by software can disrupt the principle of confidentiality and lead to consequences that may harm the patient.

Psychologists and psychiatrists should take all necessary precautions to avoid potential harm during the treatment process and seek the most significant benefit (Turkish Psychiatric Association 2002, Turkish Psychologists Association 2004). Regarding ethics, the therapist should always perform professional activities with the least potential for harm and the highest benefit. Given that the therapist's use of hallucinatory language in the first stage of therapy may cause psychological harm to the patient, the ethical principle of being beneficial and not harming was called into question. The therapist may find it challenging to portray a character who speaks in a high pitch, insults or humiliates the person, but it was determined to be appropriate in the flow. However, when investigating the steps of avatar therapy for disturbing voices, it was discovered that the attitude during exposure might interrupt therapy. In this case, it is necessary to be more sensitive (Calafell et al. 2020). Similarly, some argue that licensed therapists should only initiate virtual reality and mobile therapy model applications; otherwise, competence violations may occur (Karakuş 2021). The therapist should have sufficient equipment and knowledge about the animation he/she does in his/her interaction with the patient in the therapeutic process of avatar therapy (Aali et al. 2020, Ward et al. 2022). Besides, most of the withdrawals experienced in the therapy may be due to the first stage in which the avatar exhibits hostile attitudes (Calafell et al. 2020). Thus, the therapist who will apply avatar therapy must be competent. If competence is ignored, it should be emphasized that harmful consequences may occur while seeking to benefit patients. Due to the uncertainty of the effects of the avatar therapy model and its risks in the clinical setting, many researchers highlight the necessity of testing the development studies and applications with a structured method (Aali et al. 2020).

## Conclusion

Schizophrenia is a mental disorder that exists in 1% of the society and causes significant difficulties with its effects on the life course of the person (Kocal et al. 2017). The disorders associated with schizophrenia affect not only the person with this disorder but also their family, social environment, work or academic life and society. One of the key elements in the treatment of schizophrenia is the addition of psychosocial treatments and family education to the treatment plan in addition to pharmacotherapy (Fallon 1998). The devastation in



the social life of schizophrenia patients cannot be prevented even if medication is used regularly (Sungur et al. 2003). Many studies in the literature show that adding psychosocial treatments to the treatment plans of schizophrenia patients positively affects the life of the person and his/her family (Mortan et al. 2011, Özdemir et al. 2017, Üstün et al. 2018, Bekiroğlu and Özden 2020). Therefore, the importance of putting emphasis on psychosocial interventions in addition to drug treatments to reduce the exacerbations that occur during the disease process of schizophrenia patients and the problems experienced in the society is very clear (Yüksel 2007).

On the other hand, although trying to understand the content of thoughts is neglected by various theories and theorists, trying to understand the content of auditory hallucinations can provide an insight into what the individual experiences and can be a guide in treatment (Gallese and Ferri 2013). Individual-specific interventions and psychosocial interventions can be facilitated by the integration of technology into treatments. While computerized technology products are developed in various fields based on differentiation and renewal, the ways in which virtual world applications are used to treat mental disorders are also expanding. With the rapid advancement of technology, new psychotherapy techniques for the treatment of schizophrenia with auditory hallucinations, which are the most commonly observed among positive symptoms, are emerging (Sevi et al. 2011). Virtual reality therapies (Akdeniz et al. 2020) are among the new psychotherapy techniques that have developed within the scope of the treatment of many disorders such as phobias, anxiety, eating disorders, and schizophrenia. When the Turkish literature is examined, however, the studies related to virtual reality therapies are of introductory nature (Vardarlı 2021) and are limited to social anxiety disorder (Gök and Uçanak 2022) or phobias (Bilge et al. 2020).

Avatar therapy is one of the latest virtual reality treatment modalities that focuses on auditory hallucinations in schizophrenia (Ward et al. 2022). This concept, which is focused on interpersonal relationships, is the subject of current research. The patient builds an avatar for use in their virtual therapy sessions with the therapist. With software that simulates the sound frequency of auditory hallucinations, the therapist performs this avatar's speech action (Craig et al. 2016). In the era of globalizing technology, treatment with an avatar related to the auditory hallucination that the person is constantly exposed to can strengthen the bonds between reality (Kurtuluş 2017). When the effectiveness studies in the relevant literature were examined, Leff et al. (2014) examined the avatar treatment for auditory hallucinations involving persecution. Another study was conducted by Aali et al. (2020) with people with schizophrenia-related disorders, exploring the effects of avatar therapy on people with schizophrenia and symptoms related to this mental disorder. Calafell et al. (2020), on the other hand, conducted research on avatar therapy for disturbing voices and its effectiveness. Ward et al. (2022), in a study similar to this one, discovered the role of characterization in the avatar therapy model on auditory hallucinations. In this regard, avatar technologies are viewed as a positive approach with constantly developing and renewing technologies (Kurtuluş 2017).

The inadequate sample sizes in the studies where effectiveness trials are undertaken come to the fore when avatar therapy is assessed at the most fundamental ethical level. Moreover, the literature analysis highlights the need for additional study on avatar therapy within the context of the Turkish sample. Confidentiality, utility, harmlessness, and competence are considered to cause moral dilemmas when the ethical issues in the application phase of avatar treatment are studied. While using software to implement avatar therapy, it's essential to take data leakage into account. When data leaks occur, confidentiality violations may occur. As a result, rather than being beneficial to the person receiving avatar therapy, negative situations such as privacy violations and harm may occur (Karakuş 2021). On the other hand, it is critical that the practitioner therapist be an expert in his or her field with completed training and that a sufficient number of interviews be conducted with the patient with whom the application will take place.

Conducting efficacy studies and researching the effects of avatar therapy on various psychotic symptoms, as well as neurotic disorders and personality disorders, may be beneficial in clinical practice. On the other hand, while pharmacotherapy is the primary treatment approach in patients with schizophrenia, there is a growing emphasis on the efficacy of holistic treatment approaches. This review study is expected to contribute to discussions on the use of technology in psychotherapy approaches and ethical perspectives supporting this point of view.

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