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EXPOSURE WITH VIRTUAL REALITY USE IN ACROPHOBIA TREATMENT

SANAL GERÇEKLİK İLE MARUZ BIRAKMANIN YÜKSEKLİK KORKUSU TEDAVISİNDE KULLANIMI

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Abstract

Acrophobia, is a psychological problem that is in the category of specific phobias, which leads to the deterioration of the functioning of the individual in business and social life. Exposure, which is one of the most basic techniques of Cognitive Behavioral Therapy, is the most useful technique use in the treatment of acrophobia.

This technique suggests that exposure to the feared subject and / or object of the person become more likely to control the anxiety as a result of the familiarization and extinction of the anxiety. This technique can be applied in three ways: In vitro, in vivo and virtual reality. The aim of this article is to provide information on the exposure with the virtual reality and to compile the researches on its effectiveness in acrophobia treatment.

Keywords: Exposure, Virtual Reality, Acrophobia, Specific Phobia, Anxiety

Öz

Özgül fobiler kategorisinde yer alan ve kişinin iş ve sosyal hayatındaki işlevselliğinin bozulmasına yol açan psikolojik bir sorun olan akrofobi tedavisinde en yaygın gören tedavi olan Bilişsel Davranışçı Terapinin en temel tekniklerinden biri olan maruz bırakma sıklıkla kullanılmaktadır. Kişinin korktuğu durum ve/ya nesneye maruz bırakmanın, kaygı uyandıran nesne veya durumlara karşı alışma ve kaygıdaki sönmenin sonucunda bireylerin kaygılarını kontrol edebilir hale geleceğini ileri süren bu teknik; imgeleme (in vitro), in vivo ve sanal gerçeklik (SG) şeklinde uygulanabilmektedir. Bu makalenin amacı, sanal gerçeklik ile maruz bırakma tekniği ile ilgili bilgilendirme vermek ve akrofobi tedavisinde kullanımındaki etkililiğine dair yapılan araştırmaları derlemektir.

Anahtar Kelimeler: Maruz bırakma, Sanal gerçeklik, Akrofobi, Özgül Fobi, Kaygı

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1. Introduction

Psychiatric disorders like post - traumatic stress disorder; obsessive-compulsive disorder and anxiety disorders lead to deterioration in most people's work and social life. Cognitive Behavioral Therapy (CBT) which used cognitive and behavioral techniques in the treatment is the most common and accepted treatment for these disorders (Hofmann and Smits, 2008). Exposure is one of the behavioral techniques of CBT. According to the exposure treatment, the most important step of managing anxiety is the confrontation with the feared object, event or object. However, it is normal for the person to want to avoid the object and / or situation that he / she is afraid of and avoidance prevents the person from discovering that the frightening object and / or situation is not as dangerous as it is actually thought. Exposure includes confrontation with the situation or object in which the patient is scared and avoided despite the difficulty experienced by the patient. Sufficient exposure to the feared situation or object is thought to reduce anxiety about the situation as a result of learning. The exposure process is continued until the person's anxiety is reduced. The aim of this article is to provide information on the exposure with the virtual reality and to compile the researches on its effectiveness in acrophobia treatment. Exposure treatment are often applied in a systematic and guided. First, a list of fear and avoidance hierarchy, in which the patient is feared and avoided, or in which the objects are graded according to their anxiety level, confronts the patient and the feared and avoided situation and / or object on this list until familiarization and extinction occur. Modern exposure therapy has been developed from systematic desensitization. In systematic desensitization, the patient applies relaxation techniques while facing a scary object and / or condition. However, recent research revealed that relaxation is not necessary to be part of the treatment. Modern exposure is usually carried out weekly, with one-hour sessions. There is a need for an average of 12-16 weeks of treatment in anxiety disorders, but fewer sessions are sufficient to achieve a favorable outcome in specific phobias. The first step of treatment is to determine the factors that trigger and sustain a person's anxiety and what behaviors to reduce the anxiety of the individual. Once the necessary information has been collected, the person is given a formulation, psychoeducation on the nature of anxiety, and information about the exposure treatment. At the next step of the treatment, a hierarchical list is created with the person about the object and / or condition that he / she is afraid of. The list of fear hierarchy is a road map for the person and the therapist during treatment (Blakey et al., 2015). Exposure can be applied in three ways as imagery, in vivo and in virtual form. Usually, imagery is used for situations that cannot be revived within the session room (Rodebaugh et al., 2004). In the method of imaging, the therapist wants the person to disregard the object and / or condition that he / she is afraid of. This technique is criticized for not giving the therapist control. The therapist is unable to determine the degree to which the patient is exposed because he cannot see how the patient fears in his mind and / or how he / she is animating the object. Another exposure method

is in vivo exposure. In the in vivo exposure method, the person is exposed to the object and / or condition that he fears in the real life. This technique, which is frequently preferred in treatment and has been proven by many studies, has been criticized for not allowing the therapist to control the variables outside the session room, in terms of violating patient - therapist limits and patient confidentiality (Olantunji et al., 2009). Considering all these criticisms, virtual reality exposure technique has been developed with the effect of developing technology as an alternative to these techniques. Virtual reality defined as in a computer-generated three-dimensional simulation of a real-world situation the user senses this simulation environment with special devices on it, and is able to control this artificial world effectively through these devices, in other words, a system where reality is rebuilt (Kayabaşı, 2005). In exposure with virtual reality, the person is exposed to feared objects / situations in the virtual environment. In contrast to other techniques, this technique provides the therapist control and not violate patient-therapist limits and patient confidentiality as it is applied within the session room (Carlin et al., 1997; Emmelkamp et al., 2001).

2. Materials and Methods

In this review, it is especially focused on exposure-based intervention for acrophobia. Systematic searches were conducted using PsycINFO, MEDLINE, JSTOR and Google Scholar. In the title, abstract or keywords of the articles, virtual reality, exposure with virtual therapy, acrophobia and specific phobia were searched for. Patients who enrolled in an exposure based treatment with virtual reality were included in this review.

3. Results and Discussions

Acrophobia, or fear of height, is a phobic disorder characterized by a person's severe avoidance behavior and uncomfortable stress sensation, when he is disproportionately scared of height and can face height. People with acrophobia avoided climbing steps, climbing staircases, approaching the edge of the glass on one of the high floors, crossing over the bridges, watching the theater from the balcony lodges (Wiederhold and Bouchard, 2014). The feared situation in this phobia is usually a fall, serious injury and / or death. Some patients are visually dreaming that they dream of falling, while some patients cannot resist the desire to jump is observed (Beck, 1985). Few studies have been conducted showing the effectiveness of exposure with virtual reality in the treatment of acrophobia. A case in which exposure with virtual reality was used to treat acrophobia was reported by Rothbaum et al. (1995). The participant is a graduate student at the age of 19 and is particularly afraid of elevators. After a total of 5 sessions per week, the intensity and avoidance of anxiety were evaluated and a significant decrease has been observed. In another study in which the efficacy of exposure with virtual reality and in vivo exposure therapy was compared was performed with the participation of 17 acrophobia patients. Participants were randomly assigned to one of the treatment groups or control groups. The treatment group was subjected to 35 and 45 minute sessions lasting 7 weeks. These sessions were conducted in the form

of feared situation. In the virtual reality group, during these sessions the participants were confronted with three different situations: virtual elevator, virtual bridge and virtual balcony. At the end of the study, a significant decrease was observed in the acrophobia of the treatment group exposed in the virtual environment group, but this decrease was not observed in the control group which attended the vivo sessions (Hodges et al., 1995; cited in Ready et al., 2010). Rothbaum's study in 1995 examined the effect of exposure with virtual reality therapy on height phobia. In this context, 20 university students with height phobia were divided into control and experimental groups. The students in the experimental group of 12 were exposed to height images for seven weeks. At the end of seven weeks, there were decreases in anxiety level and height fears of the participants compared to the control group of 9 students (Rothbaum et al., 1995). In the study conducted by Emmelkamp et al. (2001), which was among the first studies on height phobia, exposure with virtual reality was compared with vivo exposure treatment. The study included 10 participants with height phobia. In the study, the results were found similarly effective in the in vivo exposure and exposure with the virtual reality groups. In addition, it was observed that the avoidance behaviors of individuals in the exposure with virtual reality group and also their anxiety was lower than the group with the in vivo exposure. At the end of the study, groups treated for 6 months were followedup and exposure with virtual reality was observed to be as effective as with the in vivo exposure (Emmelkamp et al., 2001). In another study comparing the efficacy of the in vivo exposure and exposure with virtual reality, 33 subjects with fear of height were randomly divided in to the in vivo exposure and exposure with virtual reality groups. After one week exposure treatment, it was found that there was a decrease in anxiety and avoidance levels in both groups. In a follow-up study conducted six months later, exposure with virtual reality was found to be as successful as in vivo exposure (Emmelkamp et al., 2002). In the study done by Emmelkamp, Bruynzeel, Drost and van der Mast (2001) with acrophobia patients, in vivo exposure and the efficacy of exposure with virtual reality were compared. Virtual environments are designed as a dive tower in a swimming pool and a tower building with glass lift. The in vivo exposure was performed at the fire exit, on the balcony of an 18-storey building and on the roof of a 5-storey building. As a result of the study, exposure with virtual reality was found to be as effective as in vivo exposure. In the next study of the same study group (Emmelkamp et al., 2002), patients were randomly assigned to either exposure with virtual reality group (n = 17) and in vivo exposure groups (n = 16). The study consists of three 60-minute sessions. In the follow-up of the study 6 months later, it was determined that the patients had the same improvement.

4. Conclusion

The first study using virtual reality to treat acrophobia was published in 1995 and after 24 years later there are still limited number of studies have been conducted in this field and moreover there is no study has been conducted in this field in out country. Although the researches reveal the effectiveness of the exposure with virtual treatment more research is needed.

Onam bilgisi: Onam formu gerekli değildir.

Etik kurul onayı: Etik kurul onayı sunulmuştur.

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References

Beck, A. T., Emery, G., Greenberg, R. L. (1985). Anxiety disorders and phobias: A cognitive approach. New York: Basic Book.

Blakey, Shannon & Deacon, Brett. "Exposure Treatment", 2015. In book: Phobias: The Psychology of Irrational Fear, an Encyclopedia. Chapter: Exposure Treatment, Publisher: ABC-CLIO, Editors: I. Milosevic, R. McCabe, pp.140-143

Carlin, A. S., Hoffman, H. G., Weghorst, S. (1997). Virtual reality and tactile augmentation in the treatment of spider phobia: A case report. Behaviour Research and Therapy, 35, 153-158. doi: 10.1016/S0005-7967(96)00085-X

David J. Ready, Robert J. Gerardi, Andrea G. Backscheider, Nathan Mascaro, and Barbara Olasov Rothbaum.Cyberpsychology, Behavior, and Social Networking.Feb 2010.ahead of printhttp://doi.org/10.1089/ cyber.2009.0239 Published in Volume: 13 Issue 1: February 11, 2010

Emmelkamp, P. M. G., Bruynzeel, M., Drost, L., van der Mast CAPG. (2001). Virtual reality treatment in Acrophobia: a comparison with exposure in vivo. Cyber Psychology Behavair, 4, 335–339. doi: 10.1089/109493101300210222

Emmelkamp, P. M. G., Krijn, M, Hulsbosch A. M., de Vries S, Schuemie M. J, van der Mast CAPG (2002). Virtual reality treatment versus exposure in vivo: a comparative evaluation in acrophobia. Behaviour Research and Therapy, 40, 509–516. doi: 10.1016/s0005-7967(01)00023-7

Hofmann, H. G., Smits, J. A. J. (2008). Cognitive-behavioral therapy for adult anxiety disorders: a meta-analysis of randomized placebo-controlled trials, Journal of Clinical Psychiatry, 69 (4), p. 621-632.

Kayabaşı, Y. (2005). Sanal Gerçeklik ve Eğitim Amaçlı Kullanılması. The Turkish Online Journal of Educational Technology – TOJET, 4(3), 151-158.

Olatunji, B. O., Deacon, B. J., Abramowitz, J. S. (2009). The Cruelest Cure? Ethical Issues in the Implementation of Exposure-Based Treatments. Cognitive and Behavioral Practice, 16, 172-180. doi: 10.1016/j. cbpra.2008.07.003

Rodebaugh, T. L., Holaway, R. M., Heimberg, R. G. (2004). The Treatment of Social Anxiety Disorder. Clinical Psychology Review, 24, 883-908.

Rothbaum, B. O., Hodges, L. F., Kooper, R., Opdyke, D., Williford, J. S., North, M. (1995b). Effectiveness of computer-generated (virtual reality) graded exposure in the treatment of acrophobia. Americal Journal of Psychiatry, 152, 626–628.

Wiederhold, Brenda & Bouchard, Stéphane. (2014). Advances in Virtual Reality and Anxiety Disorders. Boston: Springer.