Virtual Reality as A Therapeutic Tool in Case of Psychological Disorders

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Abstract. The main goal of this paper is to present possible ways of applying virtual reality into a therapy of psychological disorders. Examples of procedures used in the case of social phobias, autism, eating disorders and delusional believes occurring in schizophrenia will be presented. At the end, important points, that should be noted in future research will be highlighted.

Keywords: virtual reality, therapy, psychological disorders, social phobia, autism, eating disorders, delusional believes

1 Introduction

The virtual reality is a graphically created world that provides sensations like seeing, hearing and feeling comparable to those experienced in a physical world. Most importantly, in the virtual environment people can interact with it. In contrast to the physical world, the incontrovertible advantage of the virtual world is the assurance of security and anonymity for patients as well as the opportunity to create and control given situations by therapists and researchers. Moreover, it can be more financially profitable, as it can generate lower costs within some cases. These features predispose virtual reality as a potentially appropriable therapeutic tool, that can be used in cases of various psychological disorders [1], [2].

The major goal of this work is concerned with a presentation of how virtual reality can be used for treatment of various psychological disorders. As an example, cases of social phobia [3], autism [4], eating disorders [5] and delusional believes that occur in case of schizophrenia [6] will be elaborated in order to discuss how the virtual reality can contribute to the improvement of currently used therapies and to indicate future directions of development.

2 Virtual reality as a therapeutic tool

2.1 Social phobia

Virtually created environments can be applied to overcome the fear of public appearances, which is the main characteristic for social phobia [3]. The aim is

to confront subjects with their fear and make them cope with their anxiety by the process of habituation. In this purpose different social conditions can be created where a short previously prepared speech at preordained topic can be delivered. The person undergoing treatment can be exposed to various stages of difficulty that differs within the numbers of avatars as well as within privacy and sensitivity of discussed topics. Thanks to several types of social situations, it is possible to freely choose circumstances which are the most appropriate for the given case. Consequently, people can learn how to gradually struggle with their fears and ultimately overcome them without doubts concerning the real exposure to members of the society.

2.2 Autism

With regard to autism, one of the biggest challenge is related to the process of establishing contacts with others. Thanks to the use of virtual reality, it is possible to produce appropriate situations that can teach how to pay attention to specific features, which play a prominent role during social interactions [4]. For example, different social task can be developed where avatar can tell a short story about his personal life. In such case, the person's assignment is to ask few questions in order to receive an additional information, which may be more or less private and subtle in its nature. As a result, people with autism can learn how important it is to maintain eye contact with the interlocutor, or how to keep appropriate selection and order of questions, depending on the sensitivity of a certain subject matter.

2.3 Eating disorders

People suffering from eating disorders struggle, among other things, with an inadequate representation of their own body. Therefore, the goal of virtual reality is to present the actual body appearance of ones person and to reverse certain beliefs about eating in general [5]. Due to the creation of various tasks, it is possible not only to make such patients more aware of their actual body image, but also to help with reversing some maniacal habits. It can also be shown that a body appearance does not only depend on the weight, but also on many other factors such as height and sex. During virtual therapeutic family members and friends can also play more prominent role. Through active participation in tasks performance, they can show their own perspective by creating a figure representing the person concerned.

2.4 Delusional beliefs

Schizophrenia is a serious disorder that is a heavy burden to carry on. Furthermore, it can be met with misunderstanding and rejection on the part of the society. In order to avert additional pressure, people with schizophrenia often use different defensive techniques, that are meant to insure before experiencing

possible suffering, for instance against rejection from the society. Consequently, avoidance is one of the most commonly used strategy, which might create a vicious circle. Avoiding elicits a false belief of safety, which confirms that society is in fact negatively attituded towards this person, which strengthens the originally created illusory belief. With the help of virtually created situations, it is possible to reverse this process and to help to regain a sense of security in social circumstances such as being in a crowded elevator or in an underground railway station [6].

3 Future directions

When it comes to usage of virtual therapy as a therapeutic tool, the biggest problem is a small amount of reliable data on the effectiveness of a given therapy. In the future, attention should be paid especially to the appropriate sample size, to the use of control groups and to establishing an adequate methodology. Afterwards, time can be spent on improving existing scenarios, creating new ones and addressing the case of other disorders. In addition, problems that each of us might face can be raised by implementing the use of virtual reality during other therapeutic sessions. It can contribute to increase interest in seeking psychological advice but also to change of peoples attitude toward this profession in general.

4 Summary

The examples discussed in this work show the wide range of virtual reality applications, which gives additional opportunities to improve various therapies. However, the priority for the future research is to follow the methodological rigor. After that, the use of virtual reality might be broadly expanded, because the biggest advantage of virtual reality lies in its applicability, that is mostly limited to our creative skills.

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