

Virtual Reality as a treatment for Obsessive Compulsive Disorder: a review

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Introduction

Obsessive-compulsive disorder (OCD) is defined as a severe and debilitating mental disorder that is characterized by the presence of intrusive thoughts, impulses or recurrent doubts that cause high anxiety and, in addition, behaviors or behavioral or mental rituals, that are intentional and repetitive, are observed and they are done to reduce the anxiety caused by the disorder or obsessions (Kim et al., 2008).

Currently, treatments for OCD that have demonstrated their efficacy in a regulated manner are: exposure treatment with response prevention and psychopharmacological treatment (Vallejo, 2001).

Generally, the exposure and prevention of the response has been carried out in reality (*in vivo*) or in the imagination.

The use of virtual reality (VR) in therapy is a new approach that has been incorporated into the limitations of some traditional techniques. Virtual reality is an application that allows participants to navigate and interact in real time with a three-dimensional environment produced through the computer and can be used to make exposures (Laforest et al., 2016).

The aim of the present review study is to analyze, through the published bibliography, whether virtual reality exposure is a good alternative tool to *in vivo* exposure, for the treatment of obsessive-compulsive disorder.

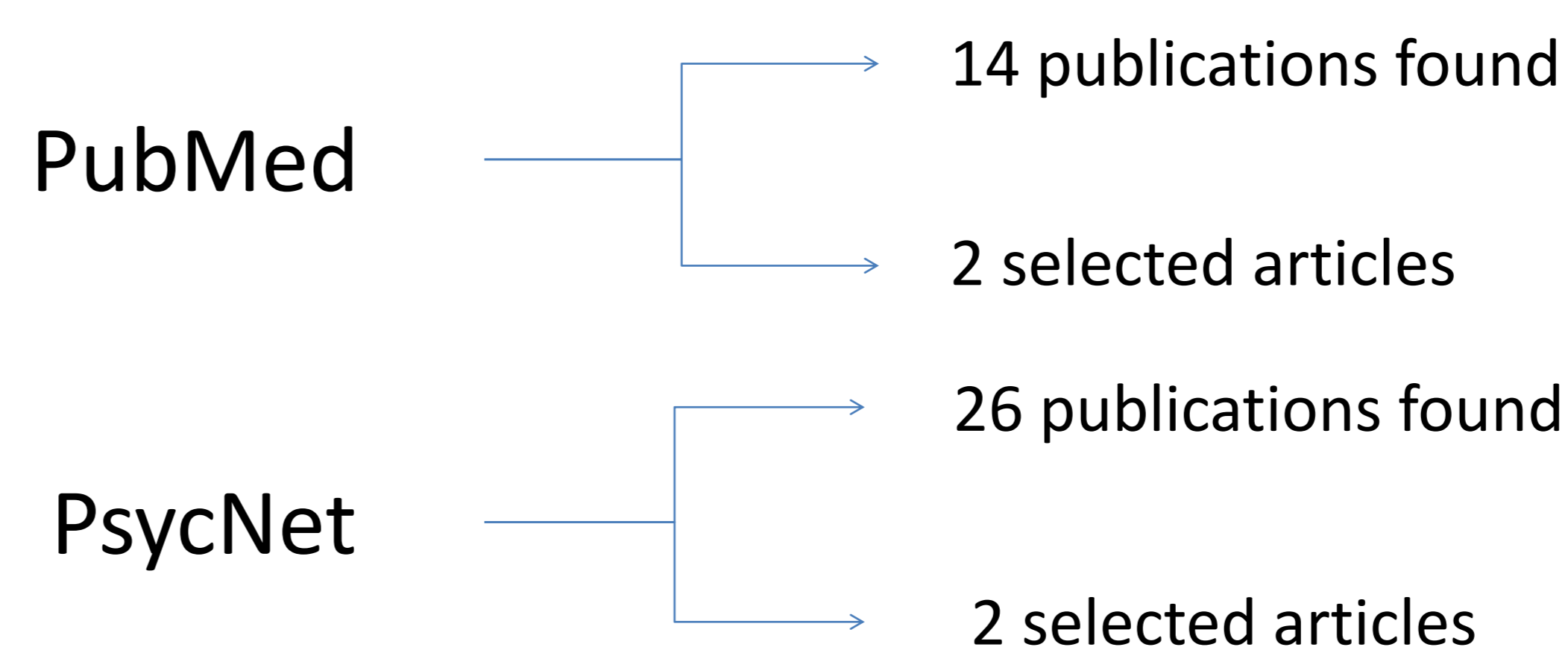


Methodology

The search process began by adding the terms "Virtual Reality" and "Obsessive-Compulsive Disorder" as the field in both databases.

The resulting entries were filtered by publication date, limiting it to the period between the years 1998-2017, both included; and also by the type of document (articles and reviews).

Once the search was done, a screening by relevance was carried out, obtaining the four most suitable articles for the study.



Results

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| Effectiveness of In Virtuo Exposure and Response Prevention Treatment Using Cognitive-Behavioral Therapy for Obsessive-Compulsive Disorder: A Study Based on a Single-Case Study Protocol. Laforest, M., Bouchard, S., Bossé, J., & Mesly, O. (2016). | Objective: to examine the effectiveness of a cognitive-behavioral program where the exposure is carried out in virtual reality. | Self-rating on the self-control of obsessions and compulsions Y-BOCS; TAI-Y2; ITQ; SSQ; EALF | -The ERV produced statistically significant improvements for participants. -Reduction of the severity of OCD symptoms from moderate (patient 1) and severe (patient 2) to mild. -Reduction of the severity of OCD symptoms from severe to moderate in the patient 3. |
| Virtual reality for obsessive-compulsive disorder: past and the future. Kim, K., Kim, C. H., Kim, S. Y., Roh, D., & Kim, S. I. (2009). | Objective: to review the empirical literature on VR research for OCD. | Y-BOCS BDI | Virtual exposure therapies have shown efficacy in patients with OCD. |
| Virtual reality exposure for OCD: is it feasible? Belloch, A., Cabedo, E., Carrió, C., Lozano-Quilis, J. A., Gil-Gómez, J. A., & Gil-Gómez, H. (2014). | Objective: to evaluate the usefulness of VRE from the perspective of patients with Obsessive-Compulsive Disorder (OCD) | Y-BOCS SCID I Interview RJPO VAS | Anxiety levels increased with increasing the "pollution" of virtual reality evoked scenarios in patients with OCD. |
| Anxiety Provocation and Measurement Using Virtual Reality in Patients with Obsessive-Compulsive Disorder. Kim, K., Kim, C. H., Cha, K. R., Park, J., Han, K., Kim, Y. K., ... & Kim, S. I. (2008). | Objective: to provide the validation of the VR as a tool to induce the variation of anxiety in people with OCD. | Y-BOCS; GAF WHOQOL; ITQ SSQ; PQ BDI; BAI | -The anxiety of patients with OCD is significantly higher than that of healthy controls in virtual reality. -The decrease rate in anxiety is faster for patients with OCD than for controls. |

Results

Of the 4 selected publications, one refers to the evaluation of anxiety levels in patients with OCD produced by RV. Two studies are based on VR as a treatment for OCD, in order to check its effectiveness. Finally, the remaining article reviews various VR tools that include both symptom assessment and OCD treatment. The most used evaluation instruments are: Y-BOCS, ITQ and SSQ.

All articles have been published in English during the 2008-2016 period.

One of the articles was a review, while the other 3 were experimental studies.

In all the studies, the sample is composed of an adult population.

Discussion/Conclusions

After the review carried out in this study, it has been observed that when using VR as an instrument for assessing anxiety in patients with OCD, it constitutes a tool to induce anxiety in this clinical population and, therefore, supports its usefulness as a technique of exposure as part of the TCC.

On the other hand, it has been seen that intervention in ERV produces significant improvements in the majority of patients treated with OCD.

The relevance of the use of VR as a treatment lies in the fact that this therapy allows to overcome the limitations of *in vivo* exposure. In addition, it offers a wide variety of advantages such as easy access to stimuli and greater control over them.

Currently, there is very little evidence and research to fully support the usefulness of VR as a treatment for OCD, therefore a greater number of studies with larger samples is needed to validate the effectiveness of this treatment.

In addition, it is necessary to carry out investigations with a child sample, since there is still no study on this population group.

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