

## HOW CAN USE OF VIRTUAL REALITY TECHNOLOGY HELP IMPROVE AN INTERVENTION FOR CHILDREN WITH EMOTIONAL PROBLEMS?

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5<sup>th</sup> International Congress of Clinical and health psychology on children and adolescents, Oviedo, Spain, November 2019

Exposure training and behavioral experiments are common and well-supported mechanisms in cognitive behavioral therapy (CBT) for anxiety and depression in children. Virtual reality (VR) technology applies computer-generated, three-dimensional virtual environments, which have the potential to create realistic situations that can be repeated and rehearsed several times. Virtual environments, therefore, provide an opportunity to enhance exposure training and behavioral experiments by introducing training in situations, which are not easily reproduced in real life settings (in vivo training). Thus, employing VR potentially optimizes the exposure and behavioral portion of these targeted interventions.

Using VR as part of the treatment, particularly related to anxiety, have shown promising results. Overall, multiple meta-analyses have indicated that VR is a promising tool, providing larger mean effect sizes in the VR conditions compared to the control conditions, and yielding equal results compared to regular in vivo exposure training. Research on the use of VR technology in CBT is limited however, and some of the studies show reduced methodological quality (e.g., small sample sizes, lack of control group). Much of the work is conducted on specific phobias (e.g., arachnophobia, fear of heights). Studies on other anxiety disorders or depression, especially with children, and in the prevention field are even sparser.

VR-technology for behavioral experiments and exposure training will be used to provide control over stimuli presented in groups during the EMOTION intervention in the ECHO study. The VR-situations will be created using 3D-videos with head-mounted display (HMD), using professional filmmakers to make the situations as realistic as possible. The emphasis will be on creating VR-videos that mimic situations that are difficult to produce in a group setting, with the goal of rehearsing challenging situations in safe surroundings. The development and use of VR technology in an indicated preventive transdiagnostic intervention for children will be discussed at the symposium.

Fodor, L. A., Coteș, C. D., Cuijpers, P., Szamoskozi, Ș., David, D., & Cristea, I. A. (2018). The effectiveness of virtual reality based interventions for symptoms of anxiety and depression: A meta-analysis. *Scientific Reports*, 8, 10323. doi:10.1038/s41598-018-28113-6

Martinsen, K. D., Stark, K., Rodriguez, K. O., & Kendall, P. C. (2014). *Mestrende barn Manual*. Oslo: Gyldendal Norsk Forlag.

Opriş, D., Pintea, S., García-Palacios, A., Botella, C., Szamosközi, Ş., & David, D. (2012). Virtual reality exposure therapy in anxiety disorders: a quantitative meta-analysis. *29*, 85-93.  
doi:10.1002/da.20910