



VR can be as an effective tool to minimize pediatric pain and stress due to venipuncture. The MOT-based VR game was suitable for children at the studied age range. This solution can be easily applied by nurses in their clinical practice” Piskorz and Czub (2017).

Abstract:

PURPOSE: Virtual reality (VR) technology is an effective tool in treatment of acute pain. Numerous studies show the effectiveness of this method both in a clinical context and in the laboratory. However, research results on the effectiveness of VR in pediatric venipuncture pain is not conclusive-not all studies report the analgesic effect of VR. In addition to testing effectiveness of VR, we also assess the usability of a novel hands-free interface.

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DESIGN AND METHODS: Patients of paediatric nephrology clinic (N = 38; mean age 11 years, range 7-17) participated in a posttest only between group quasi-experimental study. Participants in the treatment group received the venipuncture procedure with VR distraction. They were wearing a head-mounted Oculus DK2 HMD, and playing a game designed by the

authors of the study. The game was based on Multiple Object Tracking (MOT) task, where players have to remember and simultaneously track several moving targets. MOT has been used in many studies on attention and working memory. Participants rated their pain and stress intensity on visual analogue scales (VAS) on a scale of 0 to 100 and answered a short questionnaire.

RESULTS: The VR group reported significantly lower pain intensity than the controls (mean = 15.16 ± 20.51 vs. 37.05 ± 30.66 ; $t = 2.59$, $df = 36$, $p < .02$, $d = 0.863$). Similar results were obtained for stress level (11.16 ± 18.58 vs 41.89 ± 40.89 ; $t = 2.98$, $df = 36$, $p < .01$, $d = 0.993$). There were no correlations with age.

PRACTICE IMPLICATIONS: VR can be as an effective tool to minimize pediatric pain and stress due to venipuncture. The MOT-based VR game was suitable for children at the studied age range. This solution can be easily applied by nurses in their clinical practice.

Reference:

Piskorz, J. and Czub, M. (2017) Effectiveness of a virtual reality intervention to minimize pediatric stress and pain intensity during venipuncture. *Journal for Specialists in Pediatric Nursing*. November 20th. .

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