

# Virtual Reality as a Stress Management Tool in a Dental Scenario

*Abstract*



hello@relaxvr.co

www.relaxvr.co

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Severe dental anxiety, which affects 10 to 20 percent of the adult population, has been reported to be a common problem affecting to both patients and the dental profession (Ríos-Eraza, Herrera-Ronda y Rojas-Alcayaga, 2014). Recent studies have shown that dental anxiety has a significant impact on dental attendance, dental treatment and, ultimately, to oral health and patients' quality of life (Fiske & Newton, 2000). Traditionally, a dental care providers have used a variety of strategies to reduce patients' anxiety such as being friendly, avoiding being judgmental or instilling pain, or being composed and relaxed (Gordon, Heimberg, Tellez & Ismail, 2013). However, dental healthcare professionals don't use well-validated coping strategies such as relaxation or meditation.

The present pilot study is novel because uses VR as a representation of nature, including a breathing awareness technique to reduce the levels of state anxiety and to promote a positive mood of dental patients before a dental intervention. With this aim 25 participants were exposed to a virtual scenario depicting a virtual beach during 7 minutes while where waiting in the waiting room of a dental clinic (Clinical Dental Service) located in Panama. This pilot study was conducted between July and December 2018.

Before and after the exposure to the VR experience the participants' emotional state was assessed through the following questionnaires: MDAS (Humphris, Morrison & Lindsay, 1995) State-Trait Anxiety Inventory (STAI-S, Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983) and Positive and Negative Affect Schedule (PANAS, Watson, Clark, & Tellegen, 1988).

Results of this pilot study have shown that the exposure to Relax VR reduced the levels of dental anxiety, state-anxiety and negative emotions, being lower than those found during the baseline line. In addition, Relax VR was able to induce a positive mood on patients waiting for the dental procedure.

These initial findings suggest that virtual reality can be considered as a successful anxiety-management tool in patients undergoing a dental treatment. In future research studies is planned to conduct a controlled study in which the efficacy of Relax VR will be compared with an audio-narrative containing a breathing-awareness technique.



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