

Effectiveness of Immersive Virtual Reality Therapy on Pain and Anxiety Among Children undergoes Painful Procedures

S K Mohanasundari*

Govt. Dental College & Hospital,
Thiruvananthapuram, Kerala, India

Received: August 08, 2020; **Accepted:** August 22, 2020; **Published:** August 26, 2020

Corresponding author:

S K Mohanasundari

✉ mohanahsundari@yahoo.com

Govt. Dental College & Hospital,
Thiruvananthapuram, Kerala, India.

Citation: Mohanasundari SK (2020) Effectiveness of Immersive Virtual Reality Therapy on Pain and Anxiety Among Children undergoes Painful Procedures. J Ora Med Vol.4 No.3:s105.

Children must often endure painful procedures as part of their treatment for various medical conditions. Those with chronic pain endure frequent or constant discomfort in their daily lives, sometimes severely limiting their physical capacities. With the advent of affordable consumer-grade equipment, clinicians have access to a promising and engaging intervention for pediatric pain, both acute and chronic. In addition to providing relief from acute and procedural pain, virtual reality (VR) may also help to provide a corrective psychological and physiological environment to facilitate rehabilitation for pediatric patients suffering from chronic pain. The special qualities of VR such as presence, interactivity, customization, social interaction, and embodiment allow it to be accepted by children and adolescents and incorporated successfully into their existing medical therapies. However, the powerful and transformative nature of many VR experiences may also pose some risks and should be utilized with caution. In this paper, we review recent literature in pediatric virtual reality for procedural pain and anxiety, acute and chronic pain, and some rehabilitation applications. We also discuss the practical considerations of using VR in pediatric care, and offer specific suggestions and information for clinicians wishing to adopt these engaging therapies into their daily clinical practice.

Venipuncture is one of the most painful and distressing procedure experienced by pediatric patients. Evidence suggests that distraction combined with age-appropriate procedural information can effectively decrease procedural pain and anxiety in pediatric patients. Immersive virtual reality (IVR) can simultaneously provide complete distraction and procedural information to patients. **Methods:** Guided by the gate control theory and Lazarus and Folk man's theory, this study aims to examine the effects of IVR intervention on reducing the pain, anxiety and stress, the duration of venipuncture, and the satisfaction of healthcare providers for the procedure. A

randomized controlled trial with repeated assessments will be conducted. A total of 200 pediatric patients aged 4-12 years will be recruited from a regional public hospital and randomly assigned to either the intervention or control group. The study will use two age-appropriate IVR modules that consist of procedural information. The intervention group will receive IVR intervention, whereas the control group will receive standard care only. The cost-effectiveness of IVR intervention will be compared with that of standard care. Outcome evaluation will be conducted at four time points: 10 min before, during, immediately after, and 30 min after the procedure. Intention to treat and generalized estimating equation model will be used to analyze the data. **Discussion:** This study is the first of its kind to adopt IVR intervention with age-appropriate procedural information for pediatric patients undergoing venipuncture. Findings of the proposed study may: (1) provide a novel, facile, and cost-effective intervention that can be used virtually at any time and place to manage pain and anxiety; and (2) shed light on the global trends of research and clinical development of IVR as an intervention for other painful and stressful medical procedures.