

Introduction

Childhood diseases generate changes in the emotional, social, and family states. If the disease requires a long hospitalization, it can tead to adaptations to the new environment. In this sense, this place becomes the main environment for social interactions, as well as the main stress source for the pediatric population, causing anxiety and pain. The inappropriate management of pain could generate affective disorders. Virtual Reality (VR) has recently gained importance as a tool to improve the management of pain therapy. The aim of this technological proposal is to describe the effectiveness of cognitive-behavioral training with VR in emotional regulation to reduce pain in pediatric patients.

Methodology

The flow chart of the methodology that was proposed for this research is shown in Figure 1.

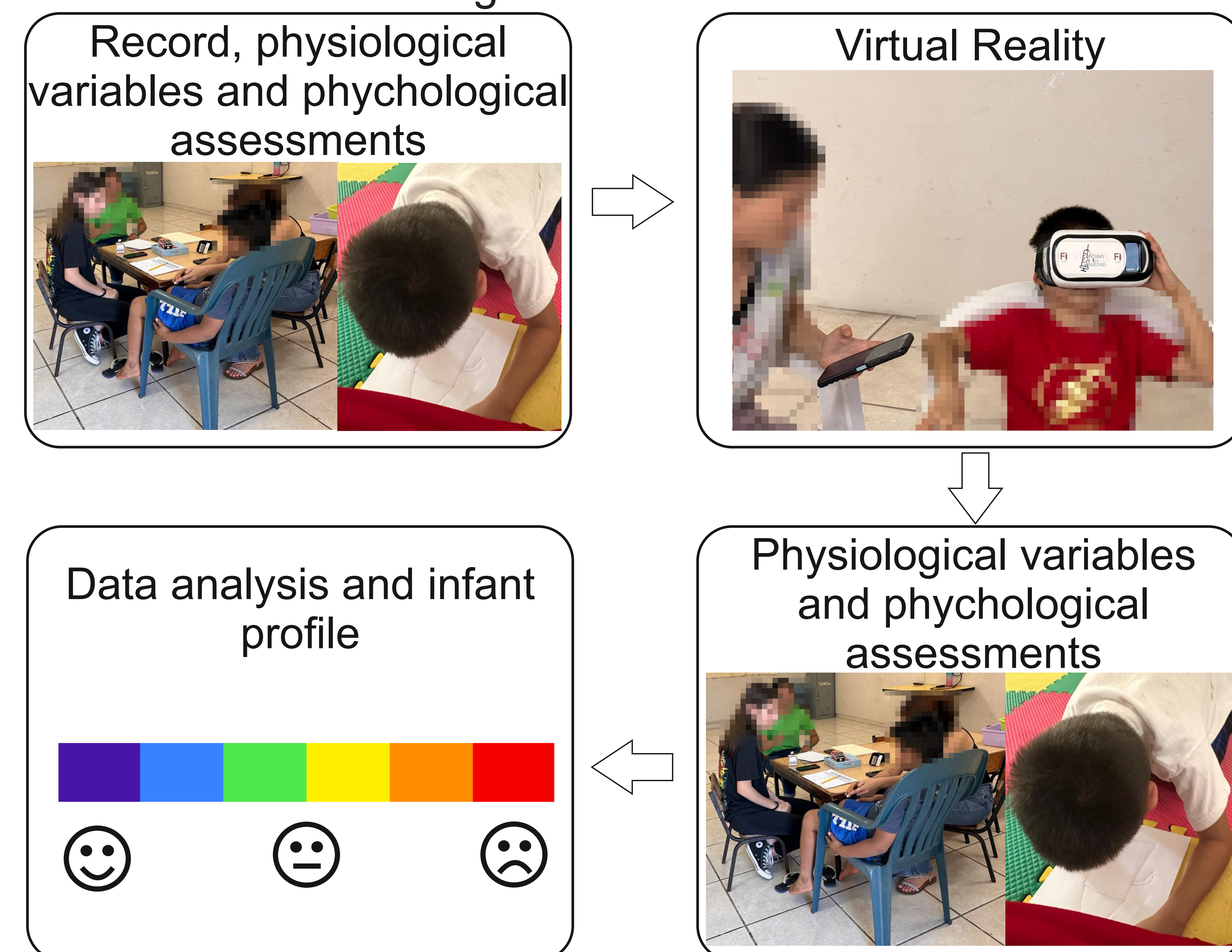


Figure 1. General methodology.

The following figures illustrate the VR scenarios that were used. They were designed by experts using images, colors, and music to enhance their beneficial effects.



Stroll by the street



Toy library



Zen garden



Grandparents' house



Stroll by the river



Stroll by the ocean

Results

The test was conducted on 12 children from an out-of-home care. They were divided into two groups, the first group included children over 10 years of age (G1) and the second group included children under 10 years of age (G2). Peripheral temperature was measured at the middle finger of the right hand at the beginning and end of the test. Once the database was obtained, the Shapiro-Wilk normality test was performed and the results showed a normal distribution of the data; then, the Student t-test for paired samples was performed. The obtained results are shown in Figure 2.

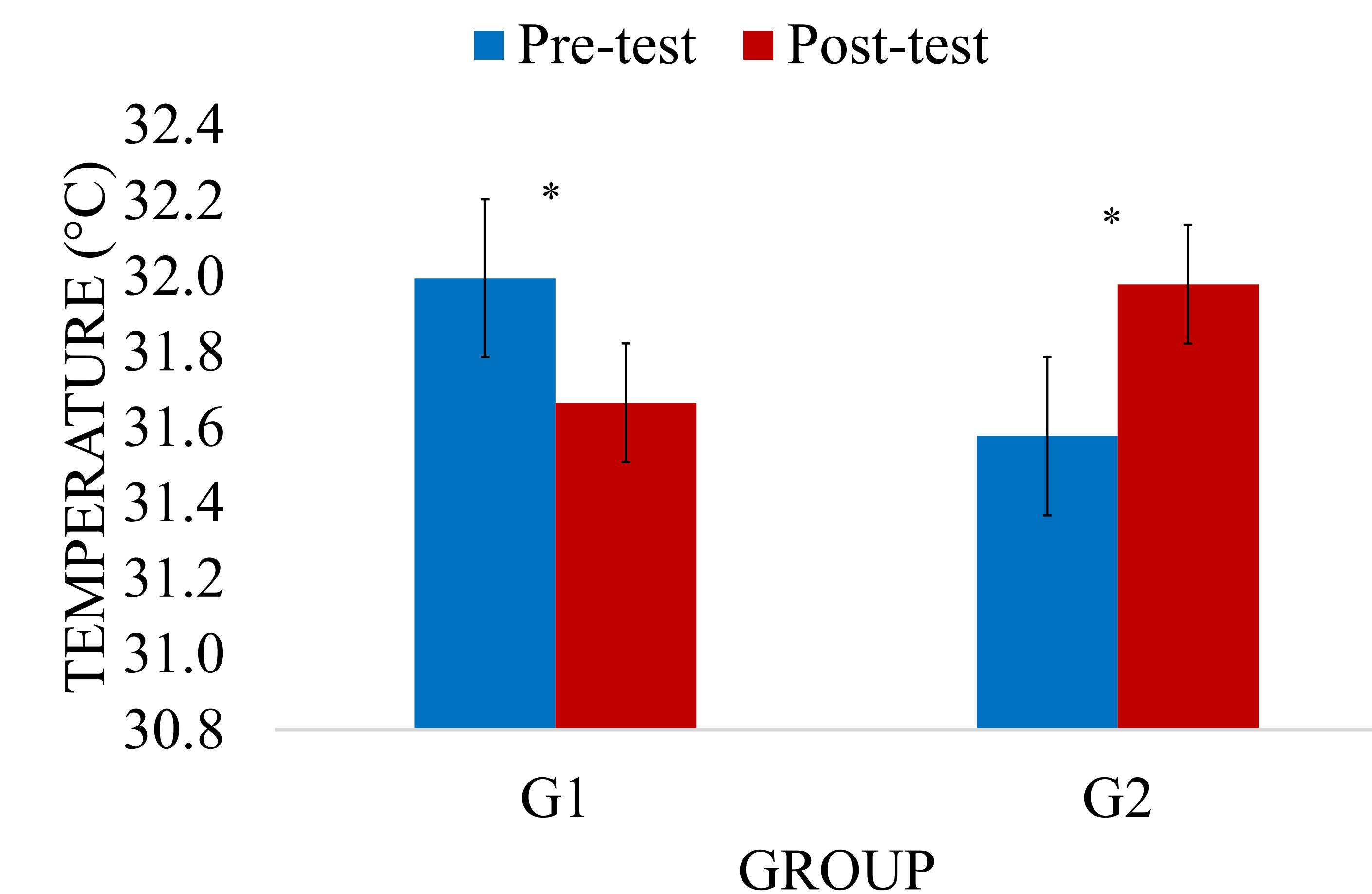


Figure 2. Statistical analysis (* p<0.05)

Conclusion

VR has important advantages because allows the patient to be immersed in an understandable, innocuous, and joyful environment. Hence, the therapist can guarantee complete control over the content and dose of stimuli, which optimizes the pace of work and performs psychotherapeutic techniques that may be abstract or difficult to understand for children.