DISTRAKSI IMERSIF BERBASIS VIRTUAL REALITY: PENDEKATAN INOVATIF DALAM MANAJEMEN NYERI PROSEDURAL PADA ANAK USIA PRA-SEKOLAH PASCA OPERASI

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ABSTRAK

Nyeri prosedural merupakan pengalaman yang sering dihadapi anak usia prasekolah pascaoperasi, terutama saat menjalani tindakan invasif seperti pengambilan darah, pemasangan infus, dan pemberian obat intravena. Keterbatasan kemampuan anak dalam memahami dan mengungkapkan nyeri dapat memicu kecemasan, ketakutan, serta respons negatif yang berpotensi mengganggu kenyamanan dan pemulihan. Kondisi tersebut menunjukkan perlunya strategi nonfarmakologis yang mampu menarik dan mempertahankan perhatian anak selama prosedur. Distraksi imersif berbasis Virtual Reality (VR) menghadirkan pengalaman visual interaktif yang berpotensi mengalihkan perhatian anak dari stimulus nyeri. Penelitian ini bertujuan menganalisis efek distraksi imersif berbasis VR terhadap intensitas nyeri prosedural pada anak usia prasekolah pascaoperasi. Penelitian kuantitatif menggunakan desain quasi-eksperimental dengan posttest-only control group design. Populasi terdiri atas 175 pasien anak prasekolah pascaoperasi yang menjalani prosedur invasif pada periode Juli-September 2025, sedangkan penelitian dilaksanakan pada November 2025-Januari 2026 di RSAB Harapan Kita. Sampel dipilih menggunakan purposive sampling berdasarkan kriteria inklusi dan eksklusi, dengan 36 anak yang terdiri atas 18 kelompok intervensi dan 18 kelompok kontrol. Besaran sampel ditentukan menggunakan Rumus Federer dan ditambah 10% untuk mengantisipasi drop out. Kelompok intervensi diberikan distraksi VR selama prosedur, sedangkan kelompok kontrol memperoleh perawatan standar. Intensitas nyeri diukur menggunakan Wong-Baker Faces Pain Rating Scale. Uji normalitas Shapiro-Wilk menunjukkan data tidak berdistribusi normal pada kelompok intervensi (p=0,022) dan kontrol (p=0,037), sehingga perbedaan dianalisis menggunakan Mann-Whitney U. Hasil menunjukkan perbedaan bermakna antara kedua kelompok (p=0,001; Z=-4,825), dengan effect size r=0,804 yang termasuk kategori sangat besar. Temuan ini menunjukkan bahwa distraksi imersif berbasis VR memiliki potensi kuat sebagai pendekatan nonfarmakologis dalam manajemen nyeri prosedural anak dan dapat dipertimbangkan sebagai terapi pendamping keperawatan untuk meningkatkan kenyamanan selama prosedur invasif.

ABSTRACT

Procedural pain is frequently experienced by preschool-aged children post-surgery, especially during invasive procedures such as blood draws, IV insertions, and intravenous medication administration. The limited ability to understand and express pain

can trigger anxiety, fear, and negative responses that may disrupt comfort and recovery. This highlights the need for non-pharmacological strategies that can capture and sustain children's attention during procedures. Immersive distraction based on Virtual Reality (VR) provides an interactive visual experience that can divert attention from pain stimuli. This study aims to analyze the effects of VR-based immersive distraction on procedural pain intensity in preschool-aged children post-surgery. This quantitative study used a quasi-experimental design with a posttest-only control group design. The population consisted of 175 preschool postoperative patients who underwent invasive procedures from July-September 2025, with research conducted from November 2025-January 2026 at RSAB Harapan Kita. The sample was selected using purposive sampling based on inclusion and exclusion criteria, with 36 children: 18 in the intervention group and 18 in the control group. Sample size was determined using the Federer Formula and increased by 10% to anticipate dropouts. The intervention group received VR distraction during procedures, while the control group received standard care. Pain intensity was measured using the Wong-Baker Faces Pain Rating Scale. The Shapiro-Wilk normality test showed non-normal data in the intervention group (p=0.022) and control group (p=0.037); therefore, differences were analyzed using the Mann-Whitney U test. The results showed a significant difference between groups (p=0.001; Z=-4.825), with an effect size of r=0.804, classified as very large. These findings indicate that VR-based immersive distraction has strong potential as a non-pharmacological approach to managing procedural pain in children and may serve as complementary nursing therapy to enhance comfort during invasive procedures.

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