



Review J Clin Nurs. 2022 Nov;31(21-22):3032-3059. doi: 10.1111/jocn.16217.

Epub 2022 Jan 23.

# Use of virtual reality in managing paediatric procedural pain and anxiety: An integrative literature review

Sofia Addab<sup>1 2</sup>, Reggie Hamdy<sup>1 2</sup>, Kelly Thorstad<sup>2</sup>, Sylvie Le May<sup>3 4</sup>, Argerie Tsimicalis<sup>2 5</sup>

Affiliations

PMID: 35068011 DOI: [10.1111/jocn.16217](https://doi.org/10.1111/jocn.16217)

## Abstract

**Aims:** This integrative review aimed to identify, analyse and synthesise studies investigating the clinical efficacy of virtual reality (VR) distraction for children undergoing varying painful and anxiety-inducing medical procedures across different hospital settings and to identify implications for research and clinical practice.

**Background:** Virtual reality has been leveraged as a distraction tool in the healthcare setting to help patients manage procedural pain and anxiety. Initial studies in the burn wound care setting using VR as a non-pharmacological analgesia led to the use of VR during other medical procedures.

**Design:** An integrative review of the literature was conducted following the PRISMA guidelines across four electronic databases. Published studies between 2000 and 2020 investigating the clinical efficacy of VR in managing paediatric procedural pain or anxiety were included for review.

**Results:** Reviewed studies collectively included 2,174 patients aged 6 months-18 years used VR during burn wound care, post-burn physiotherapy, dental, needle-related and other procedures. Additionally, ten studies included samples with adults, for which paediatric data could not be isolated ( $n = 507$ ). Overall, studies supported the efficacy of VR in managing procedural pain and anxiety in the paediatric setting.

**Conclusion:** Virtual reality is redefining pain management by immersing children in a virtual world, reducing pain and anxiety at the hospital. A notable gap was the neglected use of VR in children with chronic conditions receiving orthopaedic procedures as part of their standard care.

**Relevance to clinical practice:** Ultimately, VR distraction will reduce the fear associated with medical interventions, preventing increased pain sensitivity, exacerbated anxiety and healthcare avoidance in adulthood. Nurses will play an important role in ensuring the smooth integration of VR in clinical practice by championing the technology and transferring evidence-based methods for VR use.

**Keywords:** distraction; innovation; medical procedures; paediatrics; procedural anxiety; procedural pain; virtual reality.

© 2022 John Wiley & Sons Ltd.

## Related information

[MedGen](#)

## LinkOut – more resources

Full Text Sources

[Ovid Technologies, Inc.](#)

[Wiley](#)

**Medical**

[Genetic Alliance](#)

**Miscellaneous**

[NCI CPTAC Assay Portal](#)