# **Immersive Virtual Reality in Occupational Therapy practice** as a non-opioid analgesic during burn wound-care procedures

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## Introduction

For daily burn wound care procedures, opioid analgesics alone are often inadequate <sup>1</sup>. Commonly, burn patients experience uncontrolled acute pain during dressing changes leading to anxiety and reluctance to participate in wound care and rehabilitation, thereby increasing morbidity and length of hospital stay<sup>2</sup>. It is the intention of this study to use Immersive Virtual Reality (IVR) as an adjunct to opioid analgesics to reduce procedural pain in adult burns patients.

# **Methods**

#### **Study Design**

A single-case experimental, multiple baseline design was used.

### Subjects

Two patients who were admitted to the Professor Stuart Pegg Adult Burns Unit who were over the age of 18, were competent in English and were remaining in hospital for seven wound care procedures were approached.

Subjects were excluded if they:

- 1. Were significantly cognitively impaired or had active psychosis
- 2. Had facial/scalp burns
- 3. Had their wound care procedure undertaken in the shower

#### Procedure

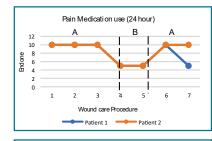
Outcome measures were recorded for three wound care procedures without IVR (Phase A), two wound care procedures with IVR (Phase B) and two wound care procedures without IVR (Phase A). At each interval, the following outcome measures were recorded:

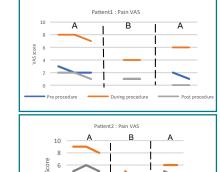
- 1. Self-reported numerical rating scale for pain pre, during and post procedure
- 2. Self-reported numerical rating scale for anxiety pre, during and post procedure
- 3. Medication chart review to quantify opioid requirements for the 24-hour period
- 4. Duration of wound care procedure in minutes

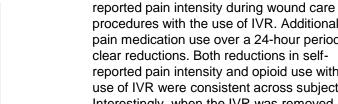
# Analysis

Visual analysis techniques were used to assess the effect of IVR on the outcome measures

of pain intensity, anxiety, medication use and procedure duration.







use of IVR were consistent across subjects. Interestingly, when the IVR was removed during the next A phase, pain intensity levels and opioid use increased.

There was a marked visual reduction in self-

# Conclusion

IVR has a marked effect on during procedure self-reported pain intensity and oral pain medication use over a 24-hour period. This small study supports the recent systematic review on the use of IVR with burn-injured patients <sup>4</sup>. IVR is a valid technique to add to the armamentarium of pain management for burn-injured patients.

References: Available on request.





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# Discussion

procedures with the use of IVR. Additionally, pain medication use over a 24-hour period had clear reductions. Both reductions in selfreported pain intensity and opioid use with the

