

Effects of Virtual Reality on Perceived Pain

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Effects of Virtual Reality on Perceived Pain

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BACKGROUND/TRIGGERS

- Virtual Reality is a form of distraction that creates a life-like experience grounded in reality or science fiction
- VR uses computer generated 3D scenarios that simulates a realistic experience
- Patient dissatisfaction with pain levels
- Usage of pain medication
- HCAHP Scores

PICO QUESTION

In adult burn patients with less than 15% burns, how do dressing changes with virtual reality compared to dressing changes without, impact pain levels?

- P-** Adult burn patients with less than 15% burn
- I-** Virtual Reality
- C-** No virtual reality
- O-** Measurement of pain levels

EVIDENCE

VR applied to patients with an average of 8.4%TBSA during dressing changes within first 14 days of admission:

VR reduced the amount of pain reported on more than one dressing change/wound debridement session per patient (Faber, 2013) No patient complained of side effects during the study

Immersive VR for 5 minutes with thermal stimuli:

Burn patients report 35-50% reductions in procedural pain while in a distracting immersive virtual reality, and fMRI brain scans show associated reductions in pain related brain activity during VR (Hoffman, 2011)

In patients with chronic pain, virtual reality was applied for 5 minutes:

Average pre-session pain rating was 5.7; average post-session pain rating was 4.1; average during-session pain rating was 2.6; resulted in a 33% reduction in pain

Average rating on their engagement in the virtual world was 8.4
No participant complained about any degree of side effects (Jones, 2016)

METHODS

- Ten nurses were given a nurse reference powerpoint on proper usage of VR
- Five surveys were completed by patients after experiencing a dressing change with and without VR
- Perceived pain was measured on a numerical scale during a dressing change with VR compared to a dressing change without

INCLUSION/EXCLUSION

Inclusion

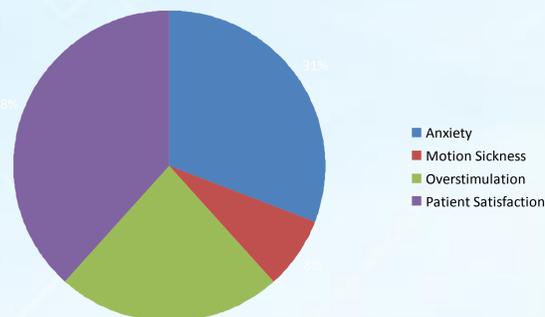
- Adult patients >18 years of age, non-intubated
- Less than 15% TBSA
- Non-operative and operative burn wounds

Exclusion:

- Patients who suffer seizures and motion sickness, or claustrophobic
- Patients on contact precautions
- Patients with head or face burns

RESULTS

Patient Experience of VR during dressing changes



OUTCOMES

- Patient average pain score decreased by 2 numbers on the 0-10 scale with the usage of VR
- Patients reported a decreased pain score while also experiencing unforeseen side effects from VR
- Significantly limited number of participants due to exclusion criteria (i.e. head burns, motion sickness, age, percentage of burns)

LIMITATIONS

- Technological issues (i.e. software issues, battery life, cost)
- Reported anxiety, overstimulation, and motion sickness from VR
- Staff compliance with proper usage of the VR device and completing surveys

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