Managing Children's Preoperative Anxiety: Story-Telling Medicine

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Outline

- Preoperative anxiety:
  - Prevalence and Effects
- Intervention
  - The Past
  - Story-Telling Medicine
- STM Pilot studies
- Future directions
Background- Preoperative anxiety

- More than 5 million children undergoing surgeries in North America every year, up to 75% of them experience considerable preoperative anxiety

- Characterized by:
  - Excessive worry
  - Nervousness
  - Fears of the unknown
  - Increased stress

- Associated with many adverse clinical, behavioural, and psychological outcomes
Existing Intervention Strategies

- Pharmacological
  - Sedative pre-medication (i.e. midazolam)

- Non-pharmacological
  - Behavioural Preparation Programs
    - Child Life Specialists
    - Clown Doctors
    - Familiar Cartoons
    - Storybooks
    - ADVANCE
  - Alternative therapies
    - Music
    - Acupuncture
Limitations of Existing Strategies

- Resource intensive
- High costs
- Time constraints
- Disruption of the hospital routine
- Undesirable side effects of medication
Child Life at McMaster Children's Hospital

- Professionals who work with children in healthcare settings
- Trained in child development
- Strive to alleviate the stress and anxiety that accompany illness or hospitalization
A Novel Approach-Story-Telling Medicine

- 2 Engineering Graduate students & Dr. Buckley
  - Ali Shazada
  - Luis Michelangeli
- Pilot study (n=8) in 2011
  - A series of books and a toy "Ryan the Raccoon"
  - Virtual reality Program “Story-Telling Medicine” tablet
    - Recreates the hospital experience
    - "Ryan the Raccoon" tells a story of the perioperative process to prepare children for surgical experiences and procedures
    - Aims to educate and distract them from the surgical procedure
- Well-received by staff and parents
Story-Telling Medicine (STM)

Real Photos

Illustrations
Interactive storyboard @ the OR
Benefits of STM

- More closely approximates the real surgical procedure and experience
- Technology appeals to children
- Customizable (age, timing, setting)
- Repeated use
- Cost effective
- Less time & resources from medical staff
- Increased satisfaction
Research Question

- Is STM+Child Life preparation more effective than Child Life preparation alone in reducing preoperative anxiety in children 8-13 years of age undergoing elective outpatient day surgery (e.g., tonsillectomy)?

Outcomes:
- Child and Parent Anxiety Levels (STAI, SCARED, STMQ)
- Postoperative Behavioural Outcomes (PHBQ)
- Optimal dosage of video viewing
STM Study Design

- Sample: Sixty 8-13 year-olds receiving outpatient surgical procedures will be recruited at McMaster Children’s Hospital
  - Thirty children (controls) will receive regular pre-operative preparation by ChildLife Specialists
  - The treatment group (N=30) will access STM tablet after meeting with Child Life Specialists
# Measurement Occasions & Scales

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Pilot work
Where are we now?

- A pilot study (n=30) has been conducted to describe the stability of perioperative anxiety that exists before and after surgery, to examine feasibility issues, and to validate our STM anxiety scale.

Results:
- Recruitment completed in a month
- Measurement procedures were feasible
- Children’s STM anxiety remained stable across pre-op visits \((r = 0.46, p < 0.05)\)

Issues related to initial recruitment:
- Changes in surgical schedules
- Difficulty with retention at post-op visit
Our next steps

- A second pilot is being conducted to assess the feasibility of our new approach to post-surgical assessment (via telephone)
- Taking Intervention Live
- Testing this safe, inexpensive, non-invasive and easily transferable virtual reality intervention program to reduce perioperative anxiety and its effects on children in an RCT
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