Managing Children's Perioperative Anxiety: A Descriptive and Feasibility Study

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Background: More than 5 million children undergo surgical procedures in North America every year, and up to 75% of them experience considerable perioperative anxiety (Perry et al., 2012). Perioperative anxiety is associated with many adverse medical, behavioural, and psychological outcomes. Numerous attempts have been made to reduce perioperative anxiety in children, but few are readily available because they are expensive and time-consuming (Fortier et al., 2011). Accordingly, we developed a novel tablet-based virtual reality program that re-creates the hospital experience for children as a means of reducing preoperative anxiety, as well as postoperative morbidity in children. Prior to the implementation of our intervention study, we conducted two pilot studies to describe the stability of perioperative anxiety in children and to examine feasibility issues.

Methods: In Study 1, we recruited 30 children aged 8-13 years who underwent elective outpatient surgery at McMaster Children’s Hospital. Children and parent anxiety levels were measured using validated self-reports (Story-Telling Medicine Questionnaire [STMQ], Self-Report for Childhood Anxiety Related Disorders [SCARED] and State-Trait Anxiety Inventory [STAI]) and behavioral checklist (Post-Hospital Behaviour Questionnaire [PHBQ]) at three time points: 1 week before surgery, immediately pre-operatively, and 1 month after surgery at post-op follow-up. In Study 2, we recruited 30 children aged 8-13 years and administered the same validated self-reports and behavioral checklists at three time points: 1 week before surgery, immediately pre-operatively, and 1 month after surgery via telephone.

Results: This initial pilot study provided evidence that children’s STMQ scores ($r = 0.46, p < 0.05$) and parents’ STAI scores ($r = 0.54, p < 0.05$) remained stable across pre-op visits. We also demonstrated that participant recruitment and anxiety measurement were feasible at our time points of interest. We also identified the issue of reduced retention during post-op visits. This was due to the fact that many outpatient surgical patients do not return to the clinic. Another pilot study (Study 2) is currently recruiting another 30 children (8 to 13 years of age) and their parents to assess the feasibility of completing the post-surgical assessments over the phone in order to increase retention. The long-term goal of this work is to test an inexpensive, non-invasive and easily transferable virtual reality intervention program we developed to manage perioperative anxiety and its effects on children in a randomized controlled trial.

References:
