From Pain Worrier to Pain Warrior: A single psychoeducational session for the management of pain catastrophizing in pediatric pre-surgical candidates

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Background

- Greater PC is associated with greater disability among patients with various pain conditions (Wojtowicz et al., 2014), and is shown to maintain chronic pain (Darnall et al., 2014)
- In adults, PC predicts postsurgical pain intensity, opioid use, function, and the persistence of pain
  - Evidence suggests that treating PC and pain-related anxiety before surgery may improve recovery (Darnall, 2016)
- Persistent postsurgical pain (PPSP) is a complication in children
  - Pre-surgical factors predictive of PPSP include: pre-surgical pain intensity, child anxiety, child pain coping efficacy, and parental PC (Williams, Howard, & Liossi, 2017)
- It is important to involve parents in interventions that could reduce children's postsurgical pain and improve health-related quality of life (Darnall & Ciccone, 2015)
- Pediatric work in this area has been growing, and interventions to date have largely focused on cognitive-behavioural therapy (CBT) approaches (e.g., Williams, Howard, & Liossi, 2017)

Aim & Hypotheses

1. Develop and pilot a single psychoeducational session for the management of PC in a pediatric clinical population whose feasibility and effectiveness can be examined
- We hypothesized that this intervention would decrease PC in pre-surgical candidates
- We hypothesized that patients with higher levels of mood and anxiety related symptoms pre-workshop would experience less reduction in levels of PC post-workshop

This work was supported by a grant from the Department of Anesthesiology and Pain Medicine of the University of Ottawa

Methods

Procedures:

- 25 pre-surgical candidate youth (12-18 years) at CHEO and their caregiver participated via Zoom
- Youth and caregivers completed the pain catastrophizing scale (PCS), GAD-7 , and PHQ-2, pre & post-workshop
  - PCS completed 2 weeks post surgery as well
- Session content divided into education and coping strategies
  - Education component addresses mind-body connection, pain neuroscience, and pain catastrophizing
- Coping strategies from multiple frameworks; these are applied to pain management as well as emotional distress (*Figure 1*).
- Experiential practice of coping strategies: Participants were encouraged to create a coping toolkit using the strategies learned, online resources were provided

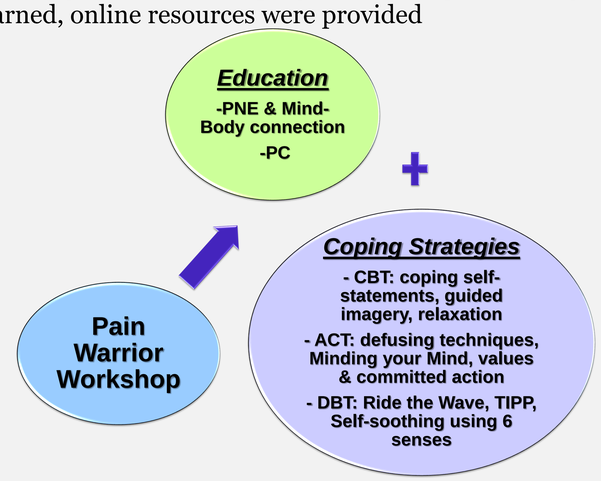


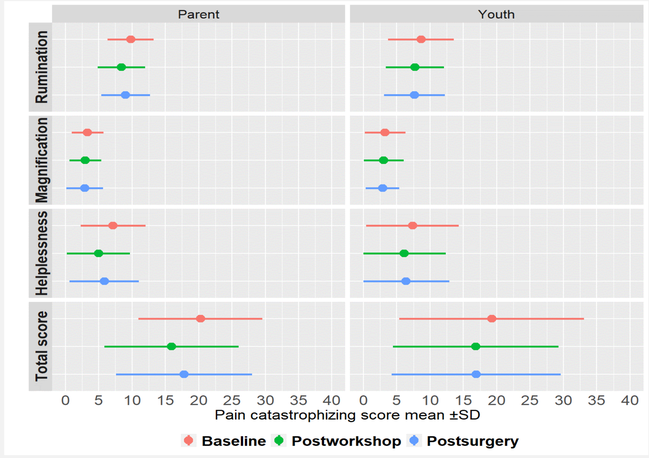
Figure 1. Pain Warrior Workshop Content

Statistical analysis:

- To test the difference in total PC score between parents and youth (dyads) and across the different time points (baseline, post-workshop and 2 weeks post-workshop), a linear mixed model was constructed.
- To examine the difference in total PC score between youth with higher anxiety GAD-7 score ≥ 10 vs <10 and for youth with mood disorder (PHQ-2 ≥3 vs those <3) across the different time points, a linear mixed model was conducted.

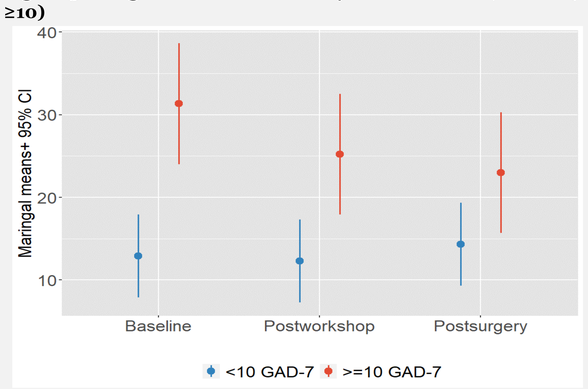
Results

Figure 2. Mean scores for PC scale for parents and youth as a dyads



- PC in caregivers and youth decreased when comparing pre-workshop to post-workshop scores (Estimate: -3.38 ; 95% CI: -6.24,-0.52; p = 0.021), however, this was not maintained post-surgery (Estimate: -2.4; 95% CI: -5.26,0.46; p=0.099)

Figure 3. Marginal means for PC for youth with GAD-7 scores (<10 vs ≥10)



- Youth with high anxiety (GAD-7 ≥10) versus low anxiety, had the greatest reduction in PC scores post-surgery compared to pre-workshop (Estimate: -9.75 (95% CI:-17.15,-2.36; p= 0.011) whereas mood measured by (PHQ-2 score) did not affect PC scores.

Conclusions & Future Directions

- This pilot provides proof-of-concept support for a virtual workshop on PC, contrary to our hypothesis, there was an anxiety dependent effect of the intervention on PC scores, where highly anxious youth (GAD-7 ≥10) responded best and mood did not affect PC scores
- Results warrant replication with larger and other relevant populations (e.g., oncology, chronic pain); adaptation for younger (e.g., 7-12 years) and older youth (e.g., 18+ years) as well as high catastrophizers (pre screened and scores moderate or high on PCS) & French families
- Investigating the impact of the PC intervention among various mental health profiles/comorbidities and adjusting intervention accordingly (e.g., traumatic stress)