Parent Distress in Pediatric Dentistry: A Prospective Cross-Sectional Study

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ABSTRACT

Purpose: The aim of this cross-sectional study was to investigate the relationship between the diagnosis of caries in children and parental distress in a Post-Graduate Pediatric Dental Clinic in Houston, TX. **Methods**: Parents of new patients to the Graduate Pediatric Dental Clinic were recruited. Baseline pulse obtained and measured at various points throughout the appointment. Parents also completed a demographics questionnaire and a modified-ECOHIS questionnaire to assess distress qualitatively. **Results**: Forty-two subjects were enrolled and assessed. There was a significant increase in pulse as parents were informed of the caries diagnosis and treatment plan, particularly for parents of children with more than 3 quadrants of caries compared to the control (P<.05). There was also a significant increase in pulse of parents whose children required stainless steel crowns and extractions when compared to the control (P<.005). Parents whose children required nitrous sedation and moderate conscious sedation had a significant higher increase in pulse (P<.05). Parents with existing dental anxiety had a greater increase in pulse compared to parents without dental anxiety (P<.05). **Conclusions**: Parents of children with severe childhood caries, who require pharmacologic behaviour guidance and who have pre-existing dental anxiety are more likely to experience distress and vital sign fluctuation at the dental visit, emphasizing the need for family-centred care in pediatric dental offices.

BACKGROUND

- Parent distress is umbrella term for symptoms ie. uncertainty, anxiety, depression → can impair cognitive skills for caregiving and negatively impact long-term health.
- Parents with distress can transmit to children → negative coping behaviours, poor emergence from general anesthesia and increased child anxiety.
- Past studies measured parent distress qualitatively with stress questionnaires and quantitatively with pulse oximetry and heart rate monitoring
- A single study conducted in pediatric dentistry to date. They found dental treatment is distressing for parents, and introduction of pharmacologic behaviour management significantly increased stress felt by the parent.

- ***The objective of this study was to determine the relationship between parent distress and the diagnosis of caries, between parent distress and treatment plan modality, between parent distress and existing dental anxiety, and lastly identify which parents are at higher risk for experiencing distress.***

METHODS

- Study was approved by the UTHealth Houston IRB.
- **Inclusion criteria:** parents of new patients to the Post-Graduate Pediatric Dental Clinic, who consented, and spoke English or Spanish.
- **Exclusion criteria:** Parents with uncontrolled cardiac and respiratory disease or anxiety disorders.
- Parents completed demographic questionnaires prior to data collection.
- Parent distress was quantified using a wearable pulse oximeter monitor assessing heart rate and O2 saturation at 3 timepoints:
  - 1: Baseline
  - 2: Receiving Diagnosis
  - 3: Receiving Treatment Plan
- After discussion with dentist, parents answered a 3-question modified-ECOHIS questionnaire to assess distress qualitatively.
- Parents whose children had no carious lesions and therefore no proposed treatment became controls.
- Data were analyzed using R. ANOVA tests and Tukey-multiple comparison tests were conducted. P < 0.05 considered significant.

RESULTS

- Forty-two subjects included in the study.
- As number of quadrants of caries increases, there is significant increase in parent pulse when informed of diagnosis (P=0.006) and treatment plan (P=0.0009) (Fig. 1).
  - Driving force was significant increase in pulse for parents of children with 3 or more quadrants of caries
- Parents of children who required stainless steel crowns or extractions had a significant increase in parent pulse when informed of diagnosis (P=0.0006) and treatment plan (0.0.0009) (Fig. 2).
- Parents of children who required either nitrous sedation and moderate conscious sedation had a significant increase in parent pulse when informed of diagnosis (P=0.005) and treatment plan (P=0.0408) (Fig. 3).
  - Parents of children requiring nitrous or general anesthesia did not experience significant changes.
- Parents with existing dental anxiety had a greater increase in pulse upon receiving the caries diagnosis (P=0.0406) than parents without dental anxiety (Fig. 4).
- Parent distress was independent of all demographics assessed: Frankl score, SHCN, feeling upset/guilty/motivated, guardian type, annual family income, parent education level, birth-order of child and language spoken.
- O2 saturation did not significantly change in any circumstance.

Fig. 1: Mean Change in Pulse Vs. Quantity of Caries

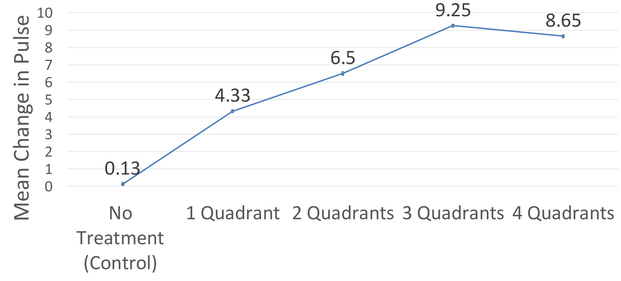


Fig. 2: Mean Change in Pulse Vs. Treatment Invasiveness

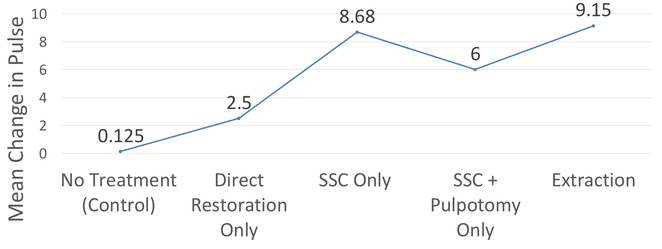


Fig. 3: Mean Change in Pulse Vs. Behaviour Guidance Modality

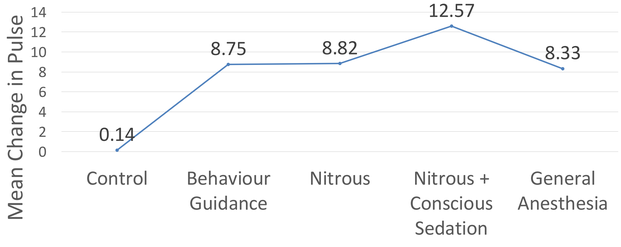
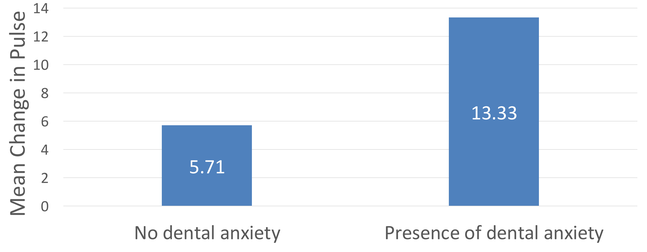


Fig. 4: Mean Change in Pulse Vs. Presence of Existing Parental Dental Anxiety (P=0.04)



DISCUSSION AND CONCLUSION

- Parents of children with greater caries burden have higher distress. Similar trend in medicine where parents report significant anxiety that is more pronounced with increased severity of medical conditions.
  - More caries > more complex treatment > advanced behaviour guidance techniques > potential to experience pain
  - Concerns of emotional, financial and logistical implications of more extensive treatment
- Parents of children requiring extractions of SSCs have higher distress
  - Crowns and extractions perceived as more painful, noticeable
- Parents of children requiring nitrous sedation or moderate conscious sedation experienced more distress
  - May be more comfortable with separate anesthesia provider (ie. for general anesthesia) or non-pharmacologic behaviour guidance
  - Children are awake and aware during nitrous and moderate sedation
- Parents with existing dental anxiety have higher distress. Dental environment alone can be triggering, even if the parent is not the patient.

- ***Parents experience distress at the dental office. Important for providers to offer reassurance, explain diagnosis and treatment plans in detail and address concerns in a professional manner to ease distress, and lead to improved patient outcomes.***

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