

The University of Texas

Health Science Center at San Antonio

Transforming Dental Care for Pediatric Sensory Processing Disorders

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INTRODUCTION

- Sensory Processing Disorder (SPD) affects how the nervous system interprets sensory input, often leading to heightened sensitivity to touch, sound, light, and taste.
- Pediatric dental visits can be overwhelming and distressing for children with SPD due to uncontrolled sensory stimuli in Regular Dental Environments (RDE).
- Current gap: Traditional dental settings do not incorporate sensory-adaptive modifications, resulting in heightened anxiety, behavioral distress, and treatment avoidance.

PRIMARY OBJECTIVE

To determine whether a Comprehensive Sensory Adapted Dental Environment (C-SADE) reduces dental anxiety and improves behavioral cooperation in children with SPD compared to RDE.



Figure 1. RDE

Figure 2. C-SADE

METHODS

Randomized crossover trial with 20 children aged 2–17 years identified with clinically significant SPD characteristics.

- Each participant attended two dental visits:
- · One in RDE
- One in C-SADE
- Randomized order assignment, with visits spaced 3-4 months apart to control for potential bias.

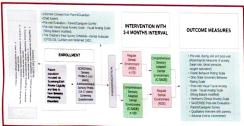
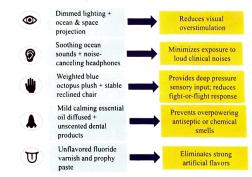


Figure 3. Randomized Crossover Trial Design

C-SADE DESIGN



Figure 4. Components of C-SADE



RESULTS

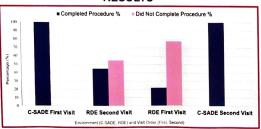


Figure 4. Completion Rates in C-SADE vs. RDE %

RESULTS (contd.)

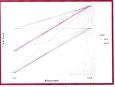


Figure 5. Improved Cooperation: Frankl Score RDE vs. C-SADE

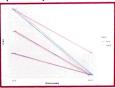


Figure 6. Reduction in Dental Anxiety VCAS Scores RDE vs. C-SADE

Physiological Measures:

Blood pressure significantly lower in C-SADE visits (P < .01), indicating a measurable stress reduction.

Caregiver, Patient, and Provider Perspectives on C-SADE:

- 100% of caregivers preferred C-SADE for future visits.
- Patients reported "no worries" in C-SADE. (P < .01) Postvisit anxiety was significantly lower in C-SADE (P < .001).
- Dental providers reported improved behavior and smoother, less stressful appointments.

CONCLUSIONS

- C-SADE significantly reduces anxiety and improves behavioral cooperation in children with sensory processing disorders.
- Caregivers, patients, and providers overwhelmingly prefer C-SADE.
- This is a scalable, evidence-based innovation that can be implemented today in the real world.

FUTURE DIRECTIONS

- · Immediate Clinical Feasibility: Low cost, easy installment
- Public Health & Policy Implications:
 - Reduce treatments under general anesthesia, lowering healthcare costs.
 - Advocate for policy-level integration of sensory-friendly environments.
 - **Beyond Dentistry**: Adaptable across medical specialties to serve neurodiverse populations.
 - Future research: Long-term benefits, scalability, and multi-site trials.

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