

Surgical Performance Anxiety and Stress Evaluation in Pediatric Dental Residents

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INTRODUCTION

Dentistry is well-documented as a stressful profession, but limited research has explored stress among pediatric dental specialists, including residents. Stress and Surgical Performance Anxiety (SPA) may impact both the quality of patient care and the well-being of the dentist. Understanding these connections is important for optimizing training environments and minimizing stress.¹

This prospective cohort study investigates the relationships between SPA and physiological stress among pediatric dental residents. The research aims to determine whether physiological stress and SPA are interrelated and if the sedation type plays a role.

METHODS

IRB approval was obtained from the University of Southern California (USC). PGY-2 pediatric dental residents at the Herman Ostrow School of Dentistry of USC were recruited. The study included residents categorized as ASA I or ASA II, who are generally healthy or have mild systemic diseases. Exclusion criteria included pediatric dental residents with a history of cardiac disease, blood pressure above 170/110 mmHg prior to treatment, or self-reported malaise on the day of treatment, as these conditions could interfere with accurate stress measurements or pose health risks during the study.

Measures of physiological stress, including heart rate, blood pressure, and oxygen saturation, were taken before, during, and after each treatment appointment. Participants treated children using sedation types including nitrous oxide analgesia and oral minimal/moderate sedation. Each participant then completed a surgical performance anxiety survey to self-report their anxiety before, during, and after the appointment.

RESULTS

	N2O		OCS		CHANGE	
	PRE-TX PULSE	DURING-TX PULSE	PRE-TX PULSE	DURING-TX PULSE	PRE-TX	DURING-TX
Resident 1	67	76	70	74	3	-2
Resident 2	72	80	74	72	2	-8
Resident 3	65	72	59	72	-6	0
Resident 4	72	79	74	79	2	0
Resident 5	64	70	65	70	1	0
Resident 6	67	72	69	77	2	5
Resident 7	69	71	70	79	1	8
Resident 8	68	76	74	83	6	7
Resident 9	71	76	75	84	4	8
Resident 10	69	75	73	79	4	4

Table 1: Changes in heart rate with N2O treatment compared to OCS treatment. The mean heart rate measured in residents during N2O treatment is 75 bpm compared to 76.9 bpm during OCS treatment.

	Before	During	After
N2O	3.50	2.80	1.80
OCS	3.60	3.20	1.50
Change	0.1	0.4	-0.30

Table 2: Experiences of Performance Anxiety with N2O treatment compared to OCS treatment.

Participants were asked to rank how frequently they experienced performance anxiety before, during or after the operation on the following scale: 1-Never, 2-Infrequently, 3-Sometimes, 4-Frequently, 5-Always.

- When evaluating each individual resident, there appears to be a general trend showing a slight increase in heart rate with OCS compared to N2O treatment.
- Residents did express that their anxiety level increased with OCS compared to N2O both pre-operative and during the operation.
- Residents expressed a greater decrease in post-operative anxiety level with OCS versus N2O.

CONCLUSIONS

- Due to a small sample size we are unable to determine significance with the results
- There appears to be a trend for an increase in perceived anxiety with OCS compared to N2O procedures.
- Future studies should be expanded to include a larger number of participants with each reporting on multiple procedures. Procedures should be classified by complexity, age of patient, and whether the patient has had previous treatment.

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