

Decreasing Appointment Durations for Pediatric Patients in Hawaii: A Quality Improvement Project



NYU Langone Dental
Postdoctoral Residency
Programs

Heather Bogy, DDS¹, Denise Padilla, DMD¹, Sarah Takahashi, DDS¹, Audrey Rawson, DDS² David Okuji, DDS³
¹PGY-2 Resident
² Associate Director, NYU Langone Dental Medicine, Advanced Education in Pediatric Dentistry, Oahu, HI
³ Senior Associate Director, NYU Langone Dental Medicine, Advanced Education in Pediatric Dentistry, Oahu, HI

Introduction

Invasive dental procedures often trigger pediatric anxiety and uncooperative behavior, leading to delayed care and increased provider stress¹. As a non-pharmacologic solution, music therapy leverages the Gate Control Theory of Pain to diminish the perception of discomfort by diverting sensory attention². In both dental and general medical settings, music distraction is proven to reduce anxiety, improve cooperation, and accelerate recovery³.

Purpose

This quality improvement project evaluated if music therapy reduces appointment duration during oral conscious sedation (OCS) with midazolam in pediatric dental patients (0–12 years) and during operative appointments with or without nitrous oxide in children (5–8 years) at the Waianae Coast Comprehensive Health Center in Hawaii.

Method

A quality improvement project used the Institute for Healthcare Improvement Plan–Do–Study–Act framework. Pediatric patients aged 0–12 years undergoing OCS and those aged 5–8 years receiving operative treatment with or without nitrous oxide were included. Data was collected from pre-intervention (March–May 2025, no music) and post-intervention (June–August 2025, with music). Appointment duration, from first to last handpiece use, was recorded manually. Statistical process control (X, R charts) and comparative descriptive statistics assessed mean duration, variability, and stability.

Results

- Mean appointment times decreased: OCS (23→21 min, 8.7%), operative with nitrous oxide (25→21 min, 16.0%), and without (15→10 min, 33.3%).
 - Overall variability declined as shown by the improvement in process stability: OCS (1.38→1.16, 16.2%) with nitrous (0.916 → 1.70, 85.6%), and all three treatment modalities demonstrated no out-of-control points.

Conclusions

Music therapy reduced appointment duration and enhanced process stability in pediatric dental care. Further PDSA cycles could help identify additional interventions to better serve the community in Hawaii.

References



Figure

Figure 1: Oral conscious sedation (0-12 years)

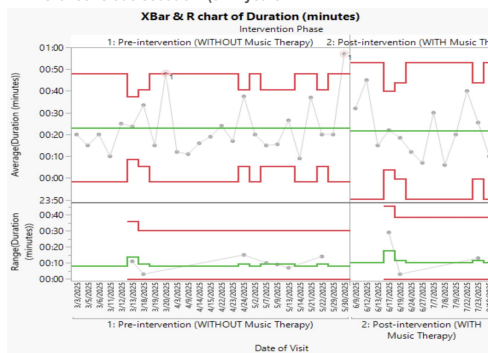


Figure 2: Operative without nitrous (5-8 years old)

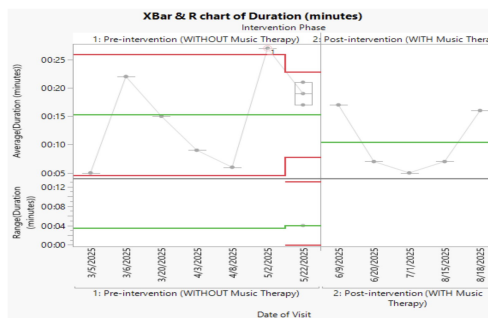
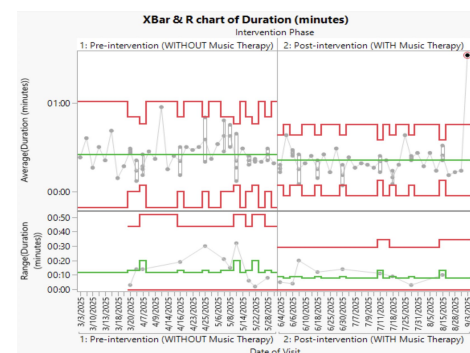


Figure 3: Operative with nitrous (5-8 years)



2. Summary of outcomes pre- and post-intervention

Age Range	Nitrous	Phase	Average appointment duration (minutes)	Stability Index
5-8 yrs old	With nitrous	Pre-intervention	25	0.916
		Post-intervention	21	1.7
5-8 yrs old	Without nitrous	Pre-intervention	15	2.26
		Post-intervention	10	-
0-12 yrs old	OCS	Pre-intervention	23	1.38
		Post-intervention	21	1.16