

Decreasing Appointment Durations for Pediatric Patients at the Waianae Coast Comprehensive Health Center: A Quality Improvement Project



NYU Langone Dental Postdoctoral Residency Programs

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INTRODUCTION

Dental anxiety in children can prolong appointments and reduce clinical efficiency. Music therapy is a non-invasive, cost-effective technique shown to reduce anxiety in healthcare settings^{1,2}. A meta-analysis, that involved 24 controlled clinical and 1830 participants, supported the use of music distraction as a method to significantly reduce dental anxiety during invasive procedures under local anesthesia². In another study that compared the effectiveness of aromatherapy and music distraction in managing pediatric dental anxiety, both interventions led to a reduction in pulse rate and respiratory rate¹.

PURPOSE

This quality improvement (QI) project evaluated whether playing calming instrumental music during operative dental appointments for pediatric patients ages 9–12, with and without nitrous oxide, would reduce appointment durations and improve process stability at a community health center.

METHODS

A QI project, utilizing the Institute for Healthcare Improvement Model for Improvement method, was conducted at the Waianae Coast Comprehensive Health Center. The pre-intervention phase (March–May 2025) included standard care without music, and the post-intervention phase (June–September 2025) included instrumental music during procedures. Appointment durations were recorded manually and analyzed using X and R control charts to compare mean duration, variability, and process stability before and after the intervention.

RESULTS

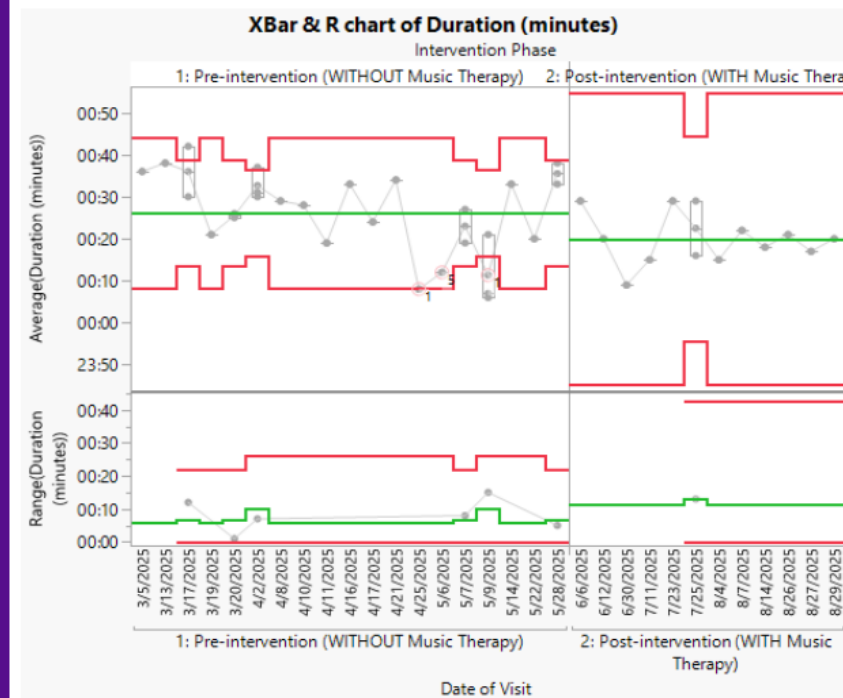
For patients who received nitrous oxide, mean appointment duration decreased from 26 to 20 minutes (23.1%), and the stability index improved from 1.64 to 0.53. For patients who did not receive nitrous oxide, mean duration decreased from 27 to 22 (18.5%) minutes, and the stability index improved from 1.77 to 0.92.

CONCLUSIONS

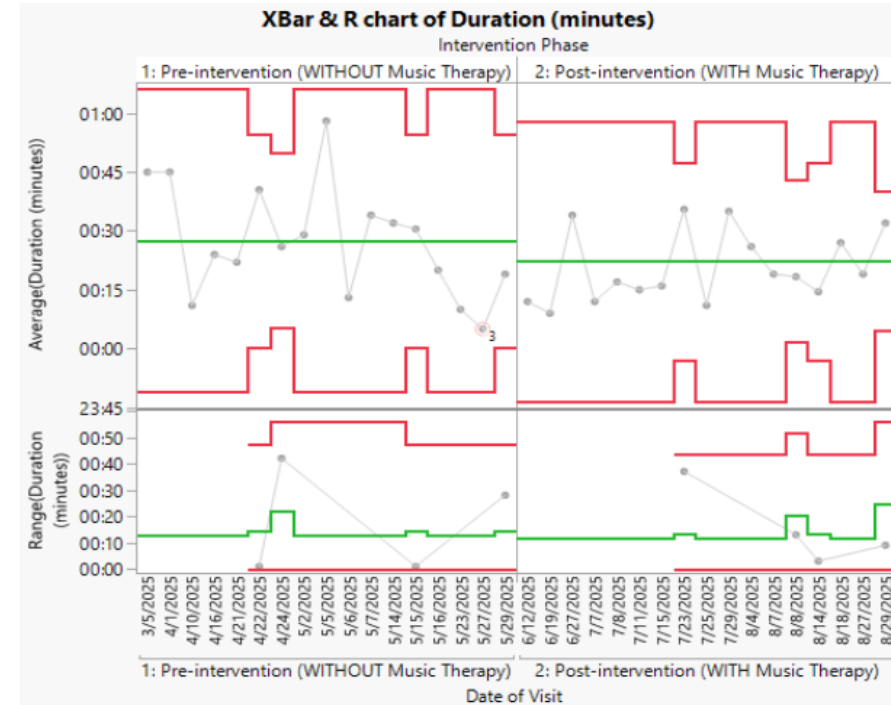
Playing calming instrumental music demonstrated shorter, more consistent operative appointment durations for pediatric dental patients.

FIGURES

WITH nitrous – 9-12 years



WITHOUT nitrous – 9-12 years



Nitrous	Phase	Average appointment duration (minutes)	Stability Index	Overall Sigma	Within Sigma
with nitrous	Pre-intervention	26	1.64	590.24	360.4
	Post-intervention	20	0.53	0.53	691.26
without nitrous	Pre-intervention	27	1.18	1.18	771.02
	Post-intervention	22	0.92	0.92	712.52

REFERENCES

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