

Patient's Behavior During Dental Treatment at Different Clinical Appointment Times

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INTRODUCTION

Dental caries is widespread among US children, affecting 37% by age eight. Due to the challenge of treating young children, often due to age and behavior, behavior guidance techniques can be employed to assist dental practitioners. Advanced techniques like general anesthesia, conscious sedation, and protective stabilization are alternatives with potential risks and complications. Thus, prioritizing basic behavior guidance techniques is advised for outpatient pediatric dental care.

The goal of behavior management in pediatric dentistry is to help patients develop coping skills in the dental setting while minimizing risks involved with advanced techniques. Treating patients in an outpatient setting with basic behavior guidance helps prevent or stop inappropriate or disruptive behavior, provides quality dental care, and builds trust between the dental team and the child.

It is beneficial for dental providers to explore new approaches to help provide appropriate patient-specific and family-centered behavior guidance for patients. The literature suggests there is a potential impact of time-of-day on child behavior, such as the study of social behavior in center-based childcare by Tout et al. The authors found a rise in median cortisol levels from morning to afternoon, with boys showing more anger and aggression than girls. Literature on the association of time-of-day on child behavior, particularly in a dental setting, is an area of limited research.

This study aims to explore whether appointment time has a positive or negative impact on behavior of pediatric patients receiving dental treatment at Nicklaus Children's Hospital (NCH). This study aims to further our understanding of the behavioral outcomes of pediatric patients during dental appointments.

METHODS

This is a retrospective study reviewing charts of patients seen at the NCH dental clinic from January 2022 to June 2023.

Inclusion Criteria:

- ASA I or II, ages 3 to 6 years old
- Initial exam and first restorative appointment with the same NCH resident
- Completion of treatment of one or two teeth with resin composite and/or stainless-steel crowns using Nitrous Oxide
- Appointment lasting approximately 30 minutes

Exclusion Criteria:

- No restorative procedure was performed or unable to complete
- Patient received treatment other than resin composite and/or stainless-steel crown procedures

RESULTS

- A total of 256 patient charts reviewed; 44 were included in this study. Female patients accounted for 56% of the sample, with a mean age of five years and one month.
- Eighteen patients who received dental treatment before 10 AM had a mean Frankl's score of 3.28 (SD=0.752). Twenty-six patients who received dental treatment after 10 AM had a mean Frankl's score of 3.15 (SD=0.967). There was no significant difference in Frankl's score between patients with appointments before 10 AM compared to those after 10 AM.
- There was a statistically significant difference in behavior between the initial exam (mean=3.48, SD=0.762) and restorative appointment (mean=3.20, SD=0.878, p=0.038).
- Twenty patients had one tooth treated and twenty-four had two teeth treated. There was no significant difference in Frankl's score between one procedure (mean=3.05, SD=0.826) and two procedures (mean=3.33, SD=0.917, p=0.292).

Table 1: Before 10 am vs. After 10 am

Group Statistics				
Time	# of patients	Means (Frankl's score)	Std. Deviation	Std. Error Mean
Before 10 AM	18	3.28	.752	.177
After 10 AM	26	3.15	.967	.190
Independent T-test (variances are equal)				
Mean difference	Std. Error difference	p-value		
.124	.272	.651		

Table 2: Initial exam and restorative appointments

Paired Samples Statistics				
Type of Appt.	Number of patients	Means (Frankl's score)	Std. Deviation	Std. Error Mean
Initial	44	3.48	.762	.115
Restorative	44	3.20	.878	.132
Paired Samples Test (Initial and Restorative Appointment)				
Mean difference	Std. Deviation	two-tailed p value		
.273	.845	.038		

Table 3: Treatment on one tooth vs. two teeth

Group Statistics				
#Treatment	Number of patients	Means (Frankl's score)	Std. Deviation	Std. Error Mean
One	20	3.05	.826	.177
Two	24	3.33	.917	.190
Independent T-test (variances are equal)				
Mean difference	Std. Error difference	p-value		
.283	.265	.292		

DISCUSSION

Results showed there was no statistically significant difference in patient behavior when they were treated before 10 AM compared to after 10 AM. When the treatment time was within 30 minutes, patients showed no difference in behavior, regardless of whether one or two teeth were treated. There was a significant difference in behavior between the initial exam and the restorative appointment. Therefore, relying solely on a patient's behavior during the exam should not be the primary determinant for predicting behavior during subsequent restorative visits.

Limitations of this study include small sample size and variation in treatment types. This potentially resulted in longer appointments and subsequent behavior deterioration.

There are several factors that can influence children's behavioral responses during dental treatment. These factors can include innate and acquired elements such as cognitive development, personality, maturity, age, and past experiences. Other factors such as medical history, parental attitude, and office environment can also play significant roles in shaping children's behavior during dental visits. This study shows there is a need to further explore the association between appointment time and children's behavior during dental treatment as well as other factors that can play a role.

CONCLUSIONS

1. Findings did not show a significant difference in Frankl's score between patients with appointments before 10 AM compared to those after 10 AM.
2. Patient's exhibited better behavior, based on improved Frankl's score, during their initial exam than during restorative dental visits.
3. There was no difference in Frankl's score when patients received one versus two treatments during their visit.

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