# Behavior Management Techniques for Pediatric Patients: Investigating the role of a visual aid during a routine dental hygiene appointment

SAINT LOUIS UNIVERSITY
CENTER FOR ADVANCED DENTAL EDUCATION

SSMHealth Cardinal Glennon Children's Hospital

## Introduction

Behavior management of the pediatric patient can be one of the greatest challenges to the pediatric dentist. When caring for children, communication with the patient is an important means to gaining trust, setting goals, and completing treatment (1,17). Understanding these tools is essential to not only accomplish necessary procedures, but also to shape the patient's experience in a positive way. Common methods of behavior management include tell-show-do, positive reinforcement, voice control, and desensitization. These techniques have been researched and utilized in a practice setting to increase cooperation (1, 4). Another behavior management technique, the use of a visual aid, creates an individualized plan while offering the opportunity for reward when desired goals are met (9). While this tool is more commonly used in school classrooms and many forms of therapy, further research is necessary to understand the effectiveness of visual aids in behavior management in pediatric dentistry (9, 22, 36).

## Purpose

The goal of this research is to determine if the use of a visual aid, in the form of a penny board, may result in improved behavior during a dental visit.

Research question: Does the use of an individualized visual aid improve behavior, in the form of completed tasks, in pediatric patients?

Hypothesis: Pediatric patients that are provided with individualized visual aid are likely to show improvements in behavior, in the form of completed tasks, during a routine dental cleaning appointment.

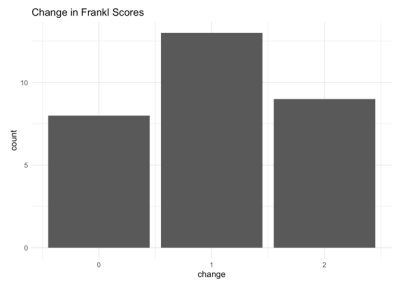
## Methods

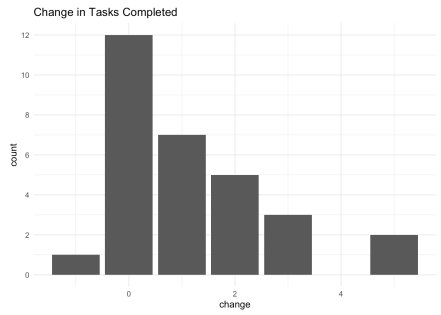
The penny board for this study was designed with a series of colorful pictures depicting steps of a routine dental cleaning appointment. These steps include sit in dental chair, wear protective eyewear (sunglasses), lean dental chair back, turn on overhead light, open mouth wide, use dental mirror, count teeth, brush teeth with toothbrush, brush teeth with prophy cup, rinse with water, use of suction, application of fluoride, and completion of x-rays. The pictures used to describe the tasks were selected by the researcher, with the approval of the remaining research team. A small picture of each task was available, depending on the patient's appointment goals. Once selected, the appointment tasks were adhered to the left side column of the patient's penny board. After an appointment task was completed, a penny was added to the right-side column of the penny board, symbolizing completion of the appointment task.. Once patient understanding was confirmed, the appointment began. When all tasks are completed, the patient has earned their reward in the form of a prize from the clinic's prize box. At the end of the appointment, a Frankl score was assigned by an independent observer. The number of completed appointment tasks was also recorded. The new Frankl score and the new number of completed tasks were compared to previous Frankl score and previous number of completed tasks, noted in the patient's chart. This research project included 30 active patients of SLU Pediatric Dentistry. The goal of this visual aid is to not only provide clear goals for the patient, but also to better involve the patient with the appointment and provide a reward system for positive reinforcement.

## Results

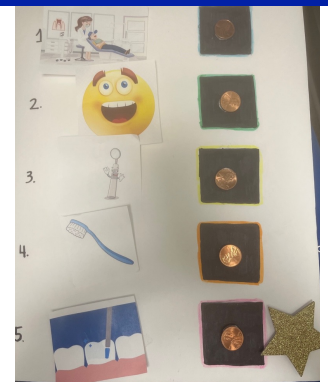
A Wilcoxon signed rank test with continuity correction indicated that the new Frankl scores were statistically significantly higher than the previous Frankl scores, (V=253□=253, p=0.00002361□=0.00002361).

A Wilcoxon signed rank test with continuity correction indicated that the new number of tasks completed scores were statistically significantly higher than the previous number of tasks completed, (V=166.5□=166.5, p=0.0003823□=0.0003823).




## Penny Board Example



## Conclusion

The penny board, used as a visual aid, may serve as a useful tool during routine dental recall appointments for patients that have struggled with behavior (previous F1 or F2) during past appointments.

## References


1. Behavior Guidance for the Pediatric Dental Patient. *Pediatr Dent*. 2017;39(6):246-259

17. Khandelwal M, Shetty RM, et al. Effectiveness of Distraction Techniques in Managing Pediatric Dental Patients. Int J Clin Pediatr Dent 2019;12(1):18–24.

9. Dowd, Mary. *Types of Audiovisual Aids Used in Teaching*. Classroom.synonym., https://classroom.synonym.com/benefits-visual-aids-5040418.html, 2018 Sept. 7. 2023 May 15.

4. Shindova M, Belcheva-Krivorova A. Influence of dentists' age, gender, working experience, and practitioner type on the use of behaviour management techniques in dental treatment of children. *Folia Med (Plovdiv)*. 2022;64(2):314-320. doi:10.3897/folmed.64.e64841

22. Loring,Whitney F. M., *Visual Supports and Autism Spectrum Disorders*. Autism Speaks. https://www.autismspeaks.org/tool-kit/atnair-p-visual-supports-and-autism, 2011 March, 2023 May 10.

36. Swiderski, Catherine. *Using Visual Aids to Support Daily Routines*. Nature's EdgeTherapyCenter,https://www.naturesedgetherapycenter.org/2020/08/21/usig