Task Strip in Improving Oral Hygiene in Children with Autism

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INTRODUCTION

- About 1 in every 36 children is diagnosed with Autism Spectrum Disorder (ASD) according to the Centers for Disease Control.
- Maintaining proper at-home oral hygiene care is difficult in children with autism spectrum disorder (ASD) due to impairments in communication and behavior that can lead to dental concerns such as cavities.
- Behavior analysts utilize visual task strips as one of their ABA strategies when working with patients with ASD since they have improved the ability to establish communication and compliance significantly.
- In the office, dentists can improve communication, alleviate fear and anxiety, facilitate the delivery of quality dental care, build a trusting relationship, and promote the child's positive attitude toward oral health just by using task strips.
- This research will focus on creating a protocol of the visual task strip with a preventive goal that can be used for at-home oral hygiene between dental appointments.

PURPOSE

Patients with Autism Spectrum Disorder (ASD) often struggle with oral hygiene, so effective oral care strategies are needed. This pilot study aimed to measure plaque change in children with ASD using a visual task strip at home designed to help them follow brushing steps over 3 months. Plaque scores using the Silness-Löe Plaque Index were recorded. Comparative evaluations implementing visual task strips determined the improvement of oral hygiene among ASD patients.

METHODOLOGY

DATA COLECTION

Children with ASD (N=46) and their parents visiting the NSU MSC dental clinic were evaluated. The 46 children were divided into 26 test subject cases and 20 control subjects.

Patients who had moderate and high plaque corresponding to a Silness and Löe plaque index of 2 or higher were invited to participate.

Yoked control design

- 1 participant in the experimental group
- Matched participant in the control group.

For the experimental group, the parents were instructed to follow the directions of the home task strip training by the ABA therapist and mark the brushing data sheet given to them.

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DATA ANALYSIS

Baseline plaque scores were recorded on all the study subjects using Silness and Löe plaque index on teeth # A, E, J, K, P, and T (or on teeth # 3,8,14,19, 25, 30, if present). Plaque scores range from 0-3.

- Plaque scores were recorded at baseline and then, at intervals of 1 month and 2 months along with a follow-up questionnaire at the end of the visit.
- Descriptive statistics were calculated, including patient demographics.
- Mean plaque index scores were calculated, and two-way mixed ANOVA was conducted to examine differences in plaque scores among groups over time.

RESULTS

(Table 1)

Variable	N	%
Gender		
Male	35*	76.1%
Female	11	23.4%
Race		
White	37*	78.7%
African American	6	13.0%
Multi race	2	4.3%
Unknown	1	2.1%
Hispanic Ethnicity		
Yes	30*	63.8%
No	14	30.4%
Not reported	2	4.3%

Caregiver Information *(Table 3)*

Variable	N	%
Education (N=25)		
High School	3	12.0%
Associates	5	20.0%
BA/BS	11*	44.0%
Masters	3	12.0%
PhD, MD, DMD, JD	3	12.0%
Brushing Habits (N=25)		
Three times daily	2	
Twice daily	22*	8.0%
Once	1	88.0%
		4.0%
Floss Daily (N=25)		
Yes	20*	80.0%
No	5	20.0%
Importance of good oral health for caregivers (N=32)		
Very Important	32	100%

Patient Oral Health Habits *(Table 2)*

Variable	N	%
Brushing Habits (N=46)		
Twice daily	32	69.6%
Once daily	14	30.4%
Daily Floss (N=46)		
Yes	23	50.0%
No	23	50.0%
Caregiver rating of child's oral health habits (N=32)		
Excellent	3	9.4%
Good	15*	46.8%
Fair	11	34.4%
Poor	3	9.4%
Caregiver feelings when it is time to brush (N=25)		
Excited or very excited	3	12.0%
Neither anxious nor excited	15*	60.0%
Very anxious or anxious	7	28.0%
Time it takes to complete brushing (N=25)		
No brushing	18	39.1%
0-1 minute		
1-2 minutes	24*	52.2%
2-3 minutes		
3+ minutes	4	8.7%
Caregiver satisfaction with child's oral health habits (N=25)		
Dissatisfied or very dissatisfied.	6	24.0%
Neither satisfied nor dissatisfied	6	24.0%
Satisfied or very satisfied	13 *	52.0%
How does child react when going to the dentist (N=25)		
Excited or very excited	12*	48.0%
Neither anxious nor excited	7	28.0%
Anxious	6	24.0%

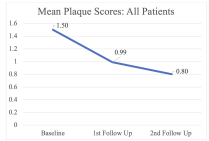
Mean Plaque Scores (N=46): All Patients *(Table 4)*

	Baseline	1st Follow Up	2nd Follow Up
Mean	1.50 *	0.99	0.80*
Standard Deviation	0.62	0.50	0.49
Range	0.33-3.00	0.00-2.00	0.00-1.85

Mean Plaque Scores by Treatment Condition *(Table 5)*

	Experimental Group: Use of Task Strip	Control Group: Treatment as Usual
Baseline	1.61	1.35
1st Follow-up	1.03	0.94
2nd Follow-up	0.72*	0.92

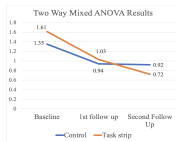
SIGNIFICANT RESULTS *(p<0.05)*



The baseline mean plaque level for all patients was 1.50

Overall plaque scores decreased from 1.50 at baseline to 0.80 at the 2nd follow-up.

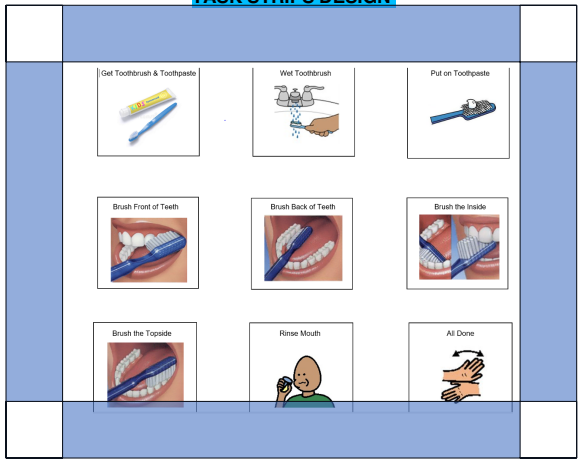
The mean plaque score changed over time depending on whether the task strip was used or not



The plaque scores significantly decreased between all 3-time points in the strip group: baseline and the first follow-up (p=0.002), first follow-up and second follow-up (p= 0.015), and baseline and the second follow-up (p < 0.001).

RESULTS

TASK STRIPS DESIGN



CONCLUSIONS

For children with autism, this approach helps emphasize preventive oral care at home with the help of parents and caregivers who struggle to provide home oral hygiene care, creating a protocol that can be used for at-home oral hygiene between dental appointments. These designed strips are based on clinical procedures specific to dentistry.

Overall plaque scores decreased from 1.50 at baseline to 0.80 at the 2nd follow-up. The plaque score decreased significantly between the baseline and 1st follow-up appointment (p < .001) and between the baseline and 2nd follow-up appointment (p < .001).

Findings illustrate a reduction in the plaque score of patients using task strips as a positive indicator of the improvement of oral health demonstrating the effectiveness of its use in patients with ASD.

REFERENCES

ACKNOWLEDGEMENTS

I want to express my deepest gratitude to my research mentor Dr. Jennifer Chung. Thanks to Dr. Maria Levi-Minzi, Marilyn Taylor, Krystel Eischen, and Valentina Charris, for their continued support and guidance at MSD. My endless gratitude to our NSU faculties and Program Director for their motivation and support. Thanks to NSU for providing ethical approval and resources to collect our data. Thanks to the HPD Grant program for supporting this study.

This project was supported by the Health Resources and Services Administration (HRSA) of the U.S. Department of Health and Human Services (HHS) under grant number D88HP20126 and titled, "Postdoctoral Training in General, Pediatric and Public Health Dentistry and Dental Hygiene". This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, HHS, or the U.S. Government.