Parent Perception of Child's Behavior During the Initial Dental Visit among Children with Autism Spectrum Disorder: A Cross Sectional Study

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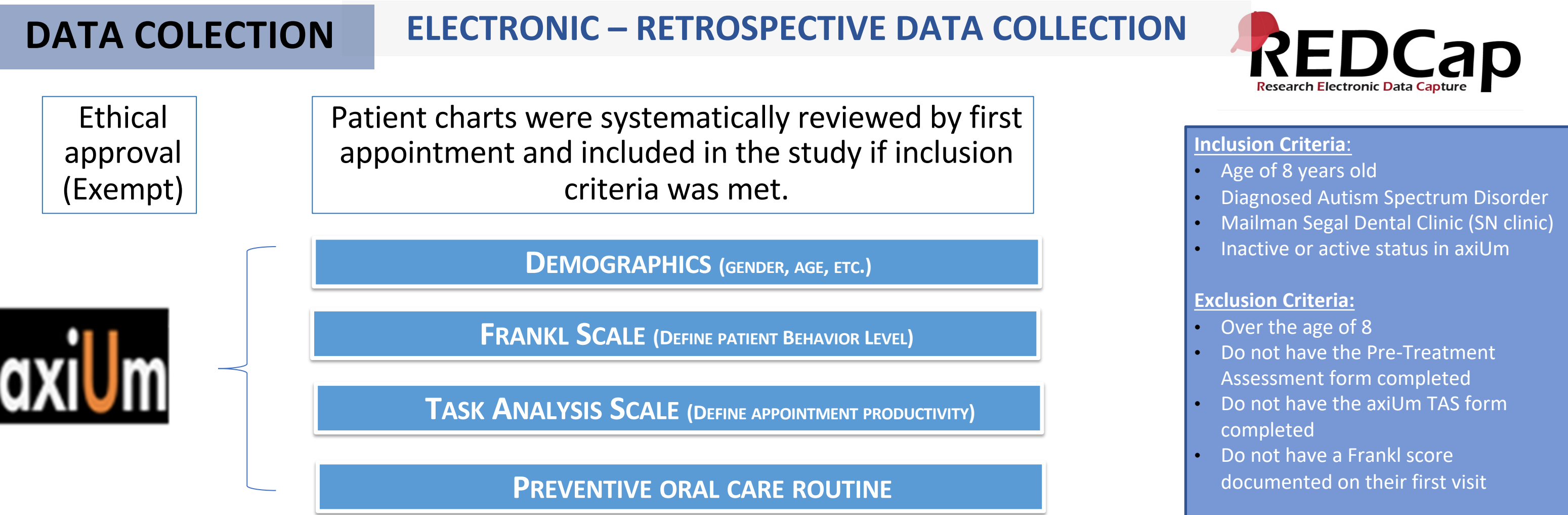
INTRODUCTION

- About 1 in every 36 children are diagnosed with Autism Spectrum Disorder (ASD) according to the Center for Disease Control.
- Oral health care is one of the most prevalent unmet health care needs among U.S. children, especially those with ASD.
- Parents with children that are diagnosed with ASD play a crucial role in the success of the child's dental appointments and should be taken into consideration when planning a patient's individualized oral health care plan.
- The need for comprehensive oral health care in patients with ASD, coupled with the crucial role of parents in the success of the child's dental appointments provides the basis for this important project.

PURPOSE

The purpose of this study was to assess parent perceptions of dental treatment cooperation by their child at the first dental visit at a special needs dental clinic. In addition, to determine the "success" of the first dental appointment for patients with ASD through measuring behavior via the Frankl score, and productivity level of the appointment via TAS score.

METHODOLOGY

DATA COLLECTION

ELECTRONIC – RETROSPECTIVE DATA COLLECTION

REDCap Research Electronic Data Capture

Ethical approval (Exempt)

Patient charts were systematically reviewed by first appointment and included in the study if inclusion criteria was met.

Inclusion Criteria:
- Age of 8 years old
- Diagnosed Autism Spectrum Disorder
- Mailman Segal Dental Clinic (SN clinic)
- Inactive or active status in axiUm

Exclusion Criteria:
- Over the age of 8
- Do not have the Pre-Treatment Assessment form completed
- Do not have the axiUm TAS form completed
- Do not have a Frankl score documented on their first visit

axiUm

- DEMOGRAPHICS (GENDER, AGE, ETC.)
- FRANKL SCALE (DEFINE PATIENT BEHAVIOR LEVEL)
- TASK ANALYSIS SCALE (DEFINE APPOINTMENT PRODUCTIVITY)
- PREVENTIVE ORAL CARE ROUTINE

DATA ANALYSIS

Descriptive Statistics
- Demographics (Age, Gender, Ethnicity)
- Verbal communication
- Past dental visit
- Patient Dental Needs
- Caregiver behavior management techniques
- Mean score: Parental Perception of behavior
- Mean score: Level of challenging behaviors

Parental perception of behavior score was made up of a scale based on 3 questions:

1. How would you describe your child's level of challenging behavior?
2. The Patient's level of cooperation is likely to be (check only one)
3. How would you describe your child's ASD?

Regression models
Models were constructed to examine the productivity level achieved during the first dental appointment (measured by outcome variables TAS and Frankl scores) by the following factors:

- Demographics (Age, Gender, Ethnicity, Verbal communication
- Parental Perception of behavior score and level of challenging behaviors
- Past dental visit and Patient Dental Needs
- Selected Caregiver behavior management techniques

RESULTS

Table 1: Patient Demographics

Mean patient age: 7.95 (SD=2.76, Range= 3-14)

Variable	N	%
Gender[1]		
Male	193	82.1%
Female	41	17.4%
Race		
Caucasian	105	44.7%
Multi-race	23	9.8%
African American	22	9.4%
Asian	8	3.4%
American Indian	1	0.4%
Unknown/not reported	76	32.3%
Hispanic Ethnicity		
Hispanic	69	29.4%
Non-Hispanic	48	20.4%
Unreported	118	50.2%
Income		
$0-$15,000	12	5.1%
$16,000-$29,000	10	4.3%
$30,000-$49,000	18	7.7%
$50,000-$69,000	15	6.4%
$70,000 or more	23	9.8%
Prefer not to answer	33	14.0%
Unanswered/missing	124	52.8%

[1]Data missing for 1 participant

Table 2: Patient Health Characteristics

	N	%
ASD Diagnosis	218	92.8%
ASD Level		
Mild	55	23.4%
Moderate	64	27.2%
Severe	10	4.3%
Other	76	32.3%
Co-Occurring disorders		
Speech Delay	92	39.1%
Developmental Delay	57	24.3%
Prescribed Medication	30	12.8%
Other Services Patient is Receiving		
Speech Therapy	133	56.6%
Occupational Therapy	108	46.0%
ABA	83	35.3%
Physical Therapy	16	6.8%
Patient Communication Style		
Uses Nonverbal Communication	86	36.6%
Can Communicate Verbally	83	35.3%
At Home Dental Care		
Manual toothbrush	121	48.5%
Electric toothbrush	37	15.7%
Toothpaste with Fluoride	84	35.7%
Uses Floss	31	13.2%

Table 3: Patient Dental Visit Characteristics

	N	%
Ever Visited the Dentist	91	38.7%
Patient Dental Needs		
Routine Exam	195	83.0%
Cleaning	133	56.6%
Not sure	39	16.6%
Fillings	13	5.5%

Table 4: Patient Behavioral Characteristics

	N	%
Caregiver Perceived Level of Patient Cooperation		
Short attention span	65	27.7%
Not Sure	72	30.6%
Non-focused	51	21.7%
Age Appropriate	49	20.9%
Aggressive	46	19.6%
Playful	34	14.5%
Caregiver Perceived Best Management Technique to Use During Appointment		
Not Sure	127	54.0%
Short Multiple Visits	85	36.2%
Sedation	36	15.3%
Restraint	21	8.9%
OR/General Anesthesia	7	3.0%
Caregiver Rating of Challenging Behavior		
Level of Challenging Behavior		
Minimal	52	22.1%
Disruptive (moderate)	69	29.4%
Severe (high)	16	6.8%
Not applicable	98	41.7%
Frequency of Challenging Behaviors		
<1 per day	32	13.6%
1-2 per day	63	26.8%
3+ per day	38	16.2%
Not applicable	100	42.6%

SIGNIFICANT REGRESSION RESULTS (p<0.05)

HISPANIC ETHNICITY	→	TAS SCORE	Hispanic patients have significantly lower TAS values than non-Hispanic patients.
AGE	→	FRANKL SCORE	An increase of one year is associated with an 0.08 increase in Frankl score.
PARENT PERCEPTION of behavior	→	FRANKL SCORE	As challenging behaviors increased, Frankl scores (i.e., cooperative behavior) significantly decreased.
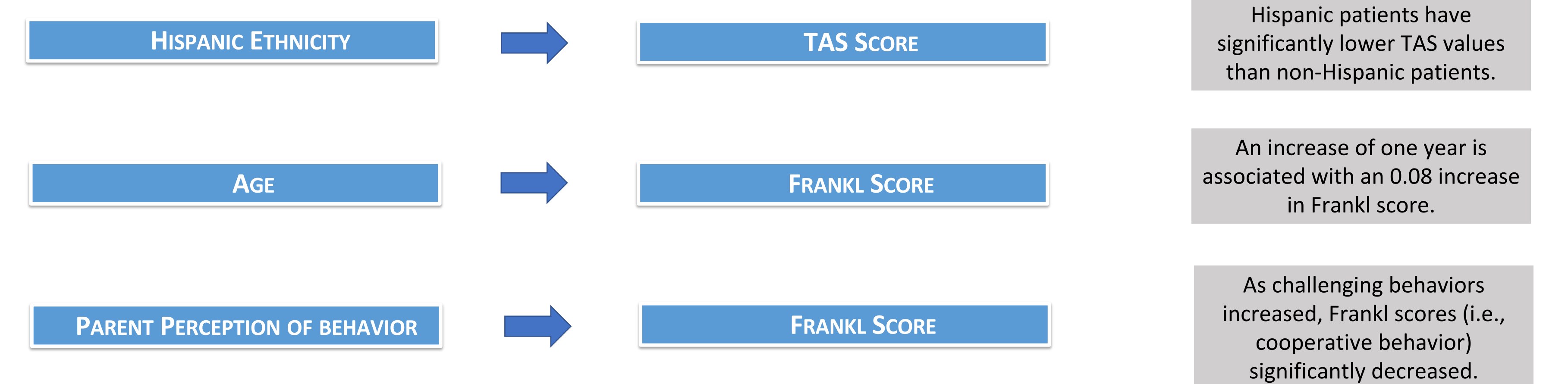
RESULTS

Patient Characteristics	B	95% CI for B		SE B	β	R^2	ΔR^2
		LL	UL				
Model						0.05	0.03
Constant	82.16	70.16	94.16	6.08			
Child Age	-0.08	-1.15	1.00	0.54	-0.01		
*Child Race/Ethnicity Hispanic**	*-10.36*	*-17.18*	*-3.53*	*3.46*	*-0.22*		
Male Gender	0.02	-7.30	7.34	3.71	0.00		
Verbal Communication	3.96	-2.38	10.31	3.22	0.09		

Patient Characteristics	B	95% CI for B		SE B	β	R^2	ΔR^2
		LL	UL				
Model						0.97	0.08
Constant	2.24	1.77	2.71	0.24			
*Child Age**	*0.08*	*0.04*	*0.12*	*0.21*	*0.27*		
Child Race/Ethnicity Hispanic	-0.20	-0.47	0.07	0.14	-0.11		
Male Gender	-0.10	-0.39	0.19	0.15	-0.05		
Verbal Communication	0.23	-0.02	0.47	0.13	0.13		

Caregiver Perception Behavior							
Model						0.07	0.06
Constant	3.15	2.94	3.37	0.11			
*Parent perception of behavior score**	*-0.07*	*-0.11*	*-0.03*	*0.02*	*-0.23*		
Parents reported 1-2 challenging behaviors a day	-0.15	-0.39	0.09	0.12	-0.09		

CONCLUSIONS

- These findings illustrate the importance of the parents' role in the dental team. Especially in children with ASD, parents may be a useful asset in determining the outcome of a dental appointment and they may know best what their child needs.
- While a parent may be able to accurately predict their child's behavior, they may not be able to accurately predict their cooperation level that is needed in a dental setting.
- These findings can help provide pediatric dentists and other health care professionals to better assist parents with assessing their child's anticipated behavior and cooperativity level during the initial dental visit. This can benefit the patient by bringing techniques learned in the dental setting home to enhance daily oral health care routine and prepare for future dental appointments to enhance success of the first dental visit.

REFERENCES

ACKNOWLEDGEMENTS