The Relationship between Therapy Services and Oral Health among Children with ASD
Jessica Leffring, OTS & Ruth Benedict, DrPH, OTR

OCCUPATIONAL THERAPY PROGRAM, DEPARTMENT OF KINESIOLOGY, UNIVERSITY OF WISCONSIN-MADISON

Introduction

Background:
- Individuals with Autism Spectrum Disorder (ASD) are at an increased risk for poor oral hygiene routines when compared to typically developing children.
- Difficulties with oral hygiene can be attributed to a number of ASD symptoms including: sensory processing abnormalities, adherence to routines, reduced cognition, and limited fine motor skills.
- Occupational therapy (OT) interventions for children with ASD increase independence in everyday activities including oral hygiene skills.
- Speech therapists (SLP) identify oral health issues among children with ASD in their work with the oral cavity during interventions focused on communication.

Hypothesis:
Children with ASD who receive speech and/or occupational therapy services are more likely to have their parents describe their oral health as excellent/very good when compared to children not receiving therapy services.

Research Design & Methods

Participants
- Participants were selected from the 2011-2012 National Survey of Children’s Health (NSCH).
- A cross-sectional telephone survey of parents of children ages 0-17 from all 50 states. One child from each home was randomly selected for participation.
- Representative sample of children ages 2-17 diagnosed with ASD (N=1,515).

Independent Variable
Receipt of therapy services, including occupational therapy and/or speech therapy (Yes/No).

Dependent Variable
Child’s Oral Health Condition (3 levels)
- Excellent/Very Good
- Good
- Fair/Poor

Covariates:
Age, sex, race, ASD severity, federal poverty level (FPL), parent’s educational level, whether or not the child received dental care in the last 12 months, and whether or not the child’s family could afford their health care costs.

Analyses:
- Chi-square statistics were used to compare demographic characteristics between therapy and non-therapy groups.
- A multinomial logistic regression was used to test the hypothesis while controlling for covariates.

Results

Description of Participants:
- Mean Age = 10.51 years (+/- 4.0 years)
- Percentage of Males = 81.2%
- ASD Severity:
  - Mild ASD = 56%
  - Moderate ASD = 32.7%
  - Severe ASD = 11.2%

Independent Variable: Therapy Services
- 1,019 children did receive occupational and/or speech therapy.
- 496 children did not receive occupational or speech therapy.

Dependent Variable: Oral Health
Comparison of oral health condition between children with ASD who received therapy services and children with ASD who did not receive therapy services.

Hypothesis was not supported: The relationship between therapy services and oral health among children with ASD was not significant after controlling for covariates in the multinomial logistic regression.

Significant Covariates:
When compared to children with poor oral health:
- Age: Children with excellent/very good oral health were less likely to be in the 7-12 year old age group (RRR=0.24; CI=0.11-1.51) and in the 13-17 year old age group (RRR=0.36; CI=0.16-0.79).
- Poverty Level: Children with excellent/very good oral health were more likely to have an income of 200-300% FPL (RRR=2.13; CI=1.05-4.35) or greater than 400% FPL (RRR=3.17; CI=2.00-6.89).
- Affordability of Health Care Costs: Parents of children with excellent/very good oral health were more likely to be able to afford their child’s healthcare costs (RRR=1.81; CI=1.05-3.15).
- ASD Severity: Children with good oral health were more likely to have mild ASD (RRR=3.19; CI=1.15-8.82).

Conclusions
- Therapy services, as measured in the NSCH, were not significantly associated with oral health. Possible explanations include:
  - Oral health issues not addressed in therapy
  - Oral hygiene interventions were not effective
  - Lack of specificity of therapy definition
- Consistent with the literature, the following characteristics were identified as oral health risk factors:
  - Severity of ASD - need for assistance and oral sensitivities increase with severity
  - Family income – access to dental care
  - Age- prevalence of oral disease rises with age
- Future research should examine the effectiveness of OT oral hygiene assessments and interventions among children with ASD.

Implications for Practice
It is important for occupational therapists to:
- Be aware that children with ASD are at increased risk of poor oral health.
- Evaluate children with ASD’s oral health including asking parents questions about daily oral hygiene routines and dental care to determine if oral hygiene skills should a targeted intervention.
- Provide families with oral health resources including connecting them with dentists who have experience working with children with ASD.

References

Acknowledgments
First, I wanted to give a special thank you to Dr. Benedict and Dr. Traverse for their expertise and guidance throughout the course of this research project. Second, I wanted to thank the survey respondents for taking time to complete the NSCH survey. Finally, I would not have been able to complete this project without the support of my classmates and family.