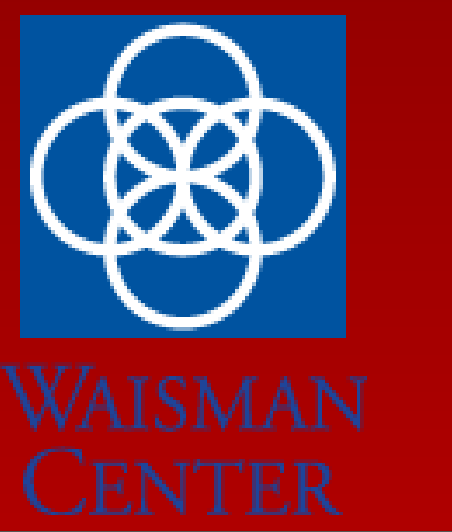




Feeding Challenges in Children with ASD and the Relationship with Parent and Child Outcomes



Colleen Althoff, OTS, Kate Dorrance, OTS, Molly Hamre, OTS, Muhammad Al-Heizan, MS, & Karla Ausderau, PhD, OTR/L



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

Introduction

- Feeding can be difficult for children with ASD with as many as 89% experiencing food selectivity¹
- Feeding difficulties include nutrient-deficient diets, self-feeding challenges, swallowing, eating inedible objects, mealtime behaviors, not following the family diet, or participation in family mealtime^{1, 2, 3}
- Parents with children that reported more feeding problems during mealtimes had higher ratings on self-reported stress and exhaustion⁴
- Sensory processing behaviors occur in 69 to 94.4% of individuals with ASD and is the most common parent reported feeding related challenge^{5, 6, 7}
- Adaptive behaviors are skills including self-care, communication, and social skills that support independence in daily activities^{8, 9}
- The Feeding Assessment for Children with Autism is a comprehensive, caregiver-report measure that was developed to better characterize feeding problems in children with ASD

Purpose of the Study: To determine the relationship between four feeding constructs (health, sensory, behavior, and oral motor skills) identified by the Feeding Assessment for Children with Autism, parent stress and child outcomes.

Methods

- Online survey study design
- Participants: 303 caregivers of children with ASD, age 2-12, were recruited through Interactive Autism Network (IAN)
- Multivariate regression models were used to predict parenting stress (PSI-SF), child adaptive behavior (SIB-R), and child sensory patterns (SEQ 3.0)

Exclusion criteria

- Children with Rett syndrome, Childhood Disintegrative Disorder, significant visual, hearing, or physical impairments, and other conditions known to be co-occurring with ASD (e.g., Fragile X syndrome, tuberous sclerosis)

Measures

- Feeding Assessment for Children with ASD
- Parenting Stress Index Short Form (PSI-SF)
- Scales of Independent Behavior-Revised (SIB-R)
- Sensory Experience Questionnaire (SEQ 3.0)
- Social Responsiveness Scale (SRS-2)

Results

	t	p	β	F	df	p	R ²
Parent Stress Index – Short Form (PSI-SF)							
PSI Child							
Oral Motor	-2.20	.03*	-.19	7.93	5, 296	.00*	.12
Health	-.09	.39	-.06				
Behavior	1.51	.25	.07				
Sensory	.34	.73	.02				
PSI Parent							
Oral Motor	-.36	.72	-.03	9.60	5, 296	.00*	.14
Health	.43	.67	.03				
Behavior	-.88	.39	-.05				
Sensory	.14	.89	.01				
PSI Dyad							
Oral Motor	-.40	.69	-.04	4.28	5, 296	.00*	.07
Health	.44	.66	.03				
Behavior	.36	.72	-.02				
Sensory	-1.01	.31	-.07				
PSI Total							
Oral Motor	-1.17	.24	-.10	9.24	5, 296	.00*	.14
Health	.01	.99	.00				
Behavior	-.10	.92	-.01				
Sensory	-.28	.78	-.02				
Sensory Experience Questionnaire (SEQ)							
SEQ Hyper							
Oral Motor	-.65	.52	-.11	11.83	5, 296	.00*	.17
Health	-1.14	.25	-.14				
Behavior	.55	.59	.06				
Sensory	.47	.64	-.06				
SEQ Hypo							
Oral Motor	1.17	.24	.11	10.96	5, 296	.00*	.16
Health	1.86	.06	.13				
Behavior	-1.01	.31	-.07				
Sensory	.53	.60	.04				
SEQ EP							
Oral Motor	-1.33	.18	-.10	3.09	5, 296	.01*	.05
Health	-.54	.59	-.03				
Behavior	.73	.57	.04				
Sensory	-.20	.84	-.01				
SEQ Seeking							
Oral Motor	-1.28	.20	-.26	9.54	5, 296	.00*	.14
Health	2.08	.04*	.31				
Behavior	.34	.74	.05				
Sensory	-.16	.88	-.02				
SEQ Total							
Oral Motor	-.99	.32	-.36	18.73	5, 296	.00*	.24
Health	1.03	.30	.28				
Behavior	.33	.75	.08				
Sensory	-.20	.84	-.05				
Scales of Independent Behavior Revised (SIB-R)							
SIB Support Score							
Oral Motor	.27	.78	.05	6.18	5, 296	.00*	.09
Health	-2.25	.03*	-.29				
Behavior	1.04	.30	.12				
Sensory	-.48	.63	-.06				
SIB Standard Score							
Oral Motor	-.55	.58	-.16	10.34	5, 296	.00*	.15
Health	-2.28	.02*	-.47				
Behavior	1.29	.20	.25				
Sensory	.62	.54	.13				

Significant construct predictors:

- Oral motor and Difficult Child subtest (PSI-SF)
- Health and sensory seeking patterns (SEQ 3.0)
- Health and standard score of independent skills (SIB-R)
- Health and support needed for ADLs and maladaptive behaviors (SIB-R)

ASD severity (SRS-R) accounted for:

- 14% of parent stress
- 24% of sensory patterns
- 15% of functional outcomes



<http://www.designhub.it/cometa/wp-content/uploads/2015/11/cibo-bambino.jpg>

Conclusions

- Oral motor concerns predicted higher levels of child stress on PSI-SF, suggesting that oral motor issues may contribute to child mealtime behaviors that are stressful and disruptive to parents
- Health construct predicted sensory seeking patterns. Child may seek sensory input to modulate health related pain and gastrointestinal symptoms
- Health concerns predicted lower adaptive behaviors and higher level of support needed, suggesting unmet medical needs may increase a child's need for functional support

Existing literature emphasizes sensory and behavior challenges and may be overlooking the impact that oral motor and health have on feeding challenges

Future Research

- Include data such as professional observation, evaluations, and mealtime logs, in addition to parent report measures

Implications for Practice

- Occupational therapists have a strong role in teams addressing feeding challenges
- Screening, assessments and interventions should consider comprehensive factors, including oral motor and health, when approaching children's feeding challenges
- Better addressed feeding challenges may improve child independence, management of sensory seeking behaviors, and family stress

References

- Ledford, J. R., & Gast, D. L. (2006). Feeding problems in children with autism spectrum disorders: A review. *Focus on Autism and Other Developmental Disabilities, 21*(3), 153-166. doi:10.1177/10883576060210030401
- Manikam, R., & Perman, J. A. (2000). Pediatric feeding disorders. *Journal of Clinical Gastroenterology, 30*(1), 34-46.
- Ausderau, K., & Juarez, M. (2013). The impact of autism spectrum disorders and eating challenges on family mealtimes. *ICAN: Infant, Child, & Adolescent Nutrition, 5*(5), 315-323. doi:10.1177/1941406413502808
- Allen, S. L., Smith, I. M., Duku, E., Vaillancourt, T., Szatmari, P., Bryson, S., ... & Roberts, W. (2015). Behavioral pediatrics feeding assessment scale in young children with autism spectrum disorder: Psychometrics and associations with child and parent variables. *Journal of Pediatric Psychology, 40*(6), 581-590. doi:10.1093/jpepsy/jsv006
- Baranek, G.T. (2009). *Sensory experiences questionnaire version 3.0*. Unpublished manuscript.
- Crane, L., Goddard L., & Pring, L. (2009). Sensory processing in adults with autism spectrum disorders. *Autism: The International Journal of Research and Practice, 13*(3), 215-228. doi:10.1177/1362361309103794
- Leekam, S., Nieto, R., Libby, C., Wing, S., & Gould, J. (2007). Describing the sensory abnormalities of children and adults with autism. *Journal of Autism and Developmental Disorders, 37*(5), 894-910. doi:10.1007/s10803-006-0218-7
- Gulati, S., & Dubey, R. (2015). Adaptive functioning and feeding behavior: Key targets in autism management. *The Indian Journal of Pediatrics, 82*(8), 671-672. doi:10.1007/s12098-015-1824-1
- Kanne, S., Gerber, M., Quirbach, A., Sparrow, J., Cicchetti, L., & Saulnier, S. (2011). The role of adaptive behavior in autism spectrum disorders: Implications for functional outcome. *Journal of Autism and Developmental Disorders, 41*(8), 1007-1018. doi:10.1007/s10803-010-1126-4

Acknowledgements

- We would like to thank the families for participating in the research and generously sharing their stories. Thank you to our research team members including Muhammad Al-Heizan, Brittany St. John, Caitlin Dammann, Sarah Hope, first year MS-OT students, and our mentor Dr. Karla Ausderau.
- Funding support through Wisconsin Alumni Research Foundation