

## Nursing's Impact on Pediatric Sensory-Based Feeding Difficulties: A Commentary

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### OVERVIEW

Feeding is critical, life-sustaining skill. Feeding is 25 to 32 skill-based stepped process that must be cultivated and developed [1]. The skill-based steps are reliant upon each sense processing and responding appropriately; the ability to sit upright (vestibular) and look at the foods (visual), manipulate the foods (proprioception), touch the foods (tactile), and smell (olfactory) and taste the food (oral). Due to the complex nature of eating, an estimated 80% of children with developmental delays experience feeding difficulties [2]. Feeding difficulties are often categorized as developmental, motor-based, sensory-based, or behavioral. Developmental feeding difficulties are resultant of delayed milestone acquisition [3]. A child's diet based on chronological age, while negating the child's stage of actual development, can result in gagging/choking behaviors and other undesirable consequences. Motor-based feeding problems are a result of immature or weak motor function [3]. Sensory-based feeding difficulties are a result of hyper- or hypo sensory processing. Feeding is a complex process; due to this complexity, there are often multiple issues present, such as both motor and sensory-based feeding difficulties [4]. Due to the large percentage of children afflicted with feeding difficulties, there is a wide range of complications from consuming an inadequate amount of food or drink to a total refusal to eat and eventual dependence on supplemental feedings [5]. Children affected can have diagnoses of prematurity, chronic illness, multiple medical interventions, neurological conditions, and sensory processing disorders compounded by aversive oral-tactile experiences, delayed introduction of oral feedings, and gastrointestinal issues can confound sensory-based feeding difficulties [2]. Signs and symptoms of sensory-based feeding difficulties vary depending on the child [5]. Some children will only accept a narrow range of food choices (e.g., only eating beige colored foods) while others will demonstrate an extreme preference for certain brands of food (e.g., only French fries from a McDonald's fries' container) or category of food (e.g., only eating yogurt).

Some will display anxiety when faced with a new food item where others will experience the inability to eat any foods, including foods regularly chosen within the home. Other children will avoid food while some will experience frequent emesis or gagging when served certain foods. Many children with sensory-based feeding difficulties will have prolonged mealtimes. When feeding issues are present, children as well as their parents experience stress due to the disturbances in mealtime routines [6]. These indicators are often overlooked due to other concerns taking precedent. Nurses can play a crucial role in recognizing these sensory-based feeding difficulties to assure proper evaluation by observing and identifying these otherwise unnoticed signs and symptoms. When a child has a suspected sensory-based feeding difficulty, he or she may be evaluated by a speech pathologist, an occupational therapist, a psychologist, a dietitian, a gastroenterologist, and/or an otolaryngologist, depending on the severity [1]. A radiologist, social worker, neurologist, and/or a pulmonary therapist also may participate in the evaluation and care process. During this period, the nurse may need to take on the role as a guide for the family and child to help educate and support them through the complex process.

### INTENT

Pediatric nurses can work in a variety of settings. Each setting provides a unique role that a pediatric nurse can assume regarding sensory-based feeding difficulties. In a hospital setting, a nurse can identify a child who receives

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supplemental tube feeding and provide a set of intervention strategies to help the child transition from tube feedings [1].

A nurse can also educate families about ways to promote positive food-based sensory experiences if the child is unable to consume foods and/or liquids. In an outpatient clinic setting, a nurse can ask about a child's diet and food consumption during intake interviewing while noting themes of aversion or selectivity. A nurse can proceed to notify the child's doctor or therapist of the reported sensory-based feeding difficulties. In a school setting, a nurse can document medically related procedures performed during the school day that indicate possible sensory-based feeding difficulties. A nurse can then alert and educate the parents about the observed signs and symptoms to ensure proper evaluation. In a physician's office, a nurse can assess and screen children for nutritional deficiencies. A nurse can also inquire about their daily eating habits and inform the doctor of any concerns. Pediatric nurses have the ability to apply their strong use of logic and reasoning to identify sensory-based feeding difficulties. Knowing the strengths and weaknesses of various intervention approaches allows them to provide viable solutions to families, as well as doctors, social workers, and therapists. There are various interventions to address sensory-based feeding difficulties [7]. The three main types are behavioral-based interventions, parent-directed/educational-based interventions, and physiological-based interventions. Behavioral interventions include positive and negative reinforcement, shaping, physical guidance, discrimination, fading, and escape extinction [8]. Parent-directed/educational-based interventions incorporate maternal support, parenting skills, and feeding competence of children and mothers [8]. Physiological-based interventions include positioning, sensory stimulation, oral support, pacing, and manipulation of feeding methods [8]. Often, a range of interventions is used for children with feeding difficulties, often in combination [9].

One unique intervention is the Sequential Oral Sensory (SOS) Approach to Feeding, which encompasses the areas of sensory, motor/oral-motor, behavioral/learning, medical/organs, nutrition, and environment during intervention [1]. In the SOS Approach, feeding difficulties are viewed as predominantly body based. Through this approach, a child's behavior is conceptualized as a form of communication, regarding the child's immediate physiological experience of food [1]. If the feedings have been difficult, positive reinforcement of this experience is lacking, and the child learns that eating is to be avoided. The SOS Approach does not assert that a child has a behavioral feeding problem; instead, it is described as a collection of learned avoidance reactions to an experience that is physically challenging [1]. During intervention, behaviors either illustrate that the child does not have the physical skills to manage the situation or demonstrates the avoidance of situations that cause physical discomfort. The SOS

Approach teaches children how to physically manage foods comfortably, promoting the natural reinforcement related to the enjoyment of feeding [1].

## ARGUMENT

Pediatric feeding difficulties are complex and challenging. Children who need assessment and individualized treatment for feeding difficulties are best served through a team. Two team approaches have been utilized in the treatment of pediatric feeding, including interdisciplinary and transdisciplinary. Nurses have the adaptability to be an integral part of either team. An interdisciplinary team has various disciplines involved in reaching a common goal in which each discipline provides his or her expertise [10]. A transdisciplinary team requires each team member to be sufficiently familiar with the concepts and approaches of his and her colleagues to enable the team to focus on the problem [10]. Both approaches have proven effective; however, the differences lie in the intervention approach utilized by the team [1,2,4,9,11]. When addressing sensory-based difficulties, it is critical that the intervention includes sensory integration techniques and strategies. Nurses can advocate for the inclusion of these techniques and strategies while coordinating the treatment of the sensory-based feeding difficulties. The nurse on the interdisciplinary team can assure the sensory integration techniques and strategies are accomplished through the incorporation of the speech therapist and the occupational therapist. The nurse on the transdisciplinary team could begin to educate the families about the effectiveness of sensory integration techniques and strategies whether it be through handouts, demonstration, or hands on. Nurses can advocate for the team to continually create positive food experiences. The nurse on the interdisciplinary team could accomplish this experience through the incorporation of the psychologist and the speech therapist. The nurse on the transdisciplinary team could promote and educate the families about positive food experiences during the child's time at the hospital, clinic, or school setting.

## IMPORTANCE TO OCCUPATIONAL THERAPY

Occupational therapy practitioners often are required to address these feeding-related issues and provide effective interventions [12]. In young children with sensory-based feeding problems, occupational therapy practitioners focus on enhancing children's feeding experiences [2], which includes a continuous sequence of hierarchical steps of accepting a wide variety of foods of appropriate developmental texture as well as effectively, efficiently, and safely sucking, chewing, propelling, and swallowing the food [1]. In addition, occupational therapy practitioners focus on promoting appropriate interactions with the family and the environment by working with parents or primary caregivers to create a positive, supportive experience during mealtimes. Feeding is an important activity of daily living [12]. Feeding goes beyond the act of bringing food from the

plate to the mouth, and it can affect multiple areas of occupation. The ability to engage in feeding affects nutritional intake. Proper nutrition is essential for optimizing the brain's capacity and development [7]. Lack of proper nutrition can affect focus for learning. Feeding also affects motor function and sensory processing. Motor function is initially controlled by reflexes but then relies on volitional control while sensory processing is driven by early sensory and motor experiences [7]. Delayed motor function can affect functional mobility and communication. Impaired sensory processing can affect all aspects of ADL and instrumental ADL. Finally, the ability to engage in feeding has social implications. Feeding affects parent-child interaction as well as social engagement [7]. Feeding is one of the most complex activities one engages in during early childhood, and there is a progression of feeding skills that is contingent upon adequate maturation and experiences across time [13]. Any delay or inadequacy in achieving those skills can be assisted through occupational therapy intervention [8]. Occupational therapists can address the fine motor coordination skills that are limiting the ability to grasp utensils effectively. Occupational therapists can address the lack of strength and control that is limiting the ability to bring the spoon to the mouth without spilling. Occupational therapists can also address the hypo- or hypersensitive responses to new textures and tastes. Sensory-based feeding difficulties require the assessment of multiple areas to provide a sufficient intervention [1]. Occupational therapists can assess the child's sensory functioning as well as the environment in which the feeding difficulties are taking place. An occupational therapist can evaluate the eight areas of sensory processing to help determine function and dysfunction [8]. In turn, the inability to adjust to environmental stimuli due to sensory processing difficulties can have significant implications for feeding. The setup of the environment requires assessment to determine proper seating, table height, lighting, and utensils [14,15]. Some children may require adaptations or modifications to their mealtime environment to promote successful feeding. Occupational therapists are adept at assessing sensory function and the environment, which allows the interdisciplinary or transdisciplinary team a better understanding of the child [8].

## CONCLUSION

The varieties of settings that nurses work in offer advantageous viewpoints of children's interaction with food. Nurses can help identify any of the signs and symptoms of possible sensory-based feeding difficulties. Any setting allows for nurses to advocate for their patients whether it is in a school, a clinic, or a hospital. Nurses have the ability to communicate their observations to the doctors and families of these children. Along with their keen observations, nurses will now have a basis for the treatment of sensory-based feeding difficulties. Nurses can educate those who are involved with the child about ways to coordinate assessment

and evaluation to determine if intervention is necessary. Occupational therapists can assist by providing key insight into addressing sensory-based feeding difficulties, and nurses have a significant role in identifying, advocating, and educating doctors and families of possible sensory-based feeding difficulties.

## REFERENCES

1. Toomey KA, Ross E (2011) SOS approach to feeding. *Perspectives on Swallowing & Swallowing Disorders (Dysphagia)* 20(3): 82-87.
2. Benson JD, Parke CS, Gannon C, Muñoz D (2013) A retrospective analysis of the sequential oral sensory feeding approach in children with feeding difficulties. *J Occup Ther Sch Early Interv* 6(4): 289-300.
3. Mitchell RB, Pereira KD (2009) *Pediatric otolaryngology for the clinician*. Humana Press.
4. McComish, C, Brackett K, Kelly M, Hall C, Wallace S, et al. (2016) Interdisciplinary feeding team: A medical, motor, behavioral approach to complex pediatric feeding problems. *MCN Am J Matern Child Nurs* 41(4): 230-236.
5. Chatoor I (2009) Sensory food aversions in infants and toddlers. *JZT* 29(3): 44-49.
6. Provost B, Crowe TK, Osbourn PL, McClain C, Skipper BJ (2010) Mealtime behaviors of preschool children: Comparison of children with autism spectrum disorder and children with typical development. *Phys Occup Ther Pediatric* 30(3): 220-233.
7. Pineda RG (2016) Feeding: An important, complex skill that impacts nutritional, social, motor and sensory experiences. *Acta Pediatric* 105(10): e458.
8. Howe TH, Wang TN (2013) Systematic review of interventions used in or relevant to occupational therapy for children with feeding difficulties ages birth-5 years. *Am J Occup Ther* 67: 405-412.
9. Roche WJ, Eicher PS, Martorana P, Berkowitz M, Petronchak J, et al. (2011) An oral, motor, medical, and behavioral approach to pediatric feeding and swallowing disorders: An interdisciplinary model. *Perspectives on Swallowing & Swallowing Disorders (Dysphagia)* 20(3): 65-74.
10. Gagnon K, Kennedy E, Jeffries L, Chiarello L, Rapport MJ, et al. (2010) Team-based service delivery approaches in pediatric practice. Available online at: <https://pediatricapta.org/includes/factsheets/pdfs/Service%20Delivery.pdf>
11. Simonsmeier V, Domenech RM (2007) Establishment of an interdisciplinary pediatric oral-motor-sensory feeding clinic team. *Infant Young Child* 20(4): 345-354.

12. American Occupational Therapy Association (2014) Occupational therapy practice framework: Domain and process (3<sup>rd</sup> ed.). *Am J Occup Ther* 68(1): S1-S48.
13. Davis A, Bruce A, Khasawneh R, Schulz T, Fox C, et al. (2013) Sensory processing issues in young children presenting to an outpatient feeding clinic. *J Pediatr Gastroenterol Nutr* 56(2): 156-160.
14. Miller LJ, Reisman JE, McIntosh DN, Simon J (2001) An ecological model of sensory modulation: Performance of children with fragile X syndrome, autistic disorder, attention-deficit/hyperactivity disorder, and sensory modulation dysfunction. Wiley pp: 1469-8749.
15. Roley EI, Blanche, Schaaf RC (2015) Understanding the nature of sensory integration with diverse populations. Amazon pp: 57-88.