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Understanding lactation consultants' evaluation of oral mechanism function and dysphagia in nursing neonates

Elizabeth Louise Howard

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Running head: UNDERSTANDING LACTATION

Understanding Lactation Consultants' Evaluation of
Oral Mechanism Function and Dysphagia in Nursing Neonates

by

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Thesis

Submitted to the Department of Special Education

Eastern Michigan University

in partial fulfillment of the requirements

for the degree of

MASTER OF ARTS

in

Speech-Language Pathology

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March 11, 2013

Ypsilanti, Michigan

Dedication

For mom, my strongest advocate and cheerleader. Without you none of this would be possible. In loving memory of my dad, Jim Kyer, and grandparents, Terence and Louise Maguire, my models of perseverance and dedication. And for my son, Aedan, the impetus for my interest in this topic and a grounding force. I love you all and my life is much richer for the opportunity to have you in it, however short that time may have been.

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Abstract

Infants with dysphagia are at increased risk for poor health and nutritional outcomes (Arvedson, 2008) if improperly diagnosed or managed. Communication between multidisciplinary team members is imperative for transition from screening to intervention. An overlap in scope of practice may exist between lactation consultants (LCs) and speech-language pathologists (SLPs). In order to facilitate multidisciplinary understanding and communication, this study was designed to understand how LCs evaluate oral mechanism function and dysphagia in breastfeeding neonates as well as their understanding of the role of SLPs in the management of dysphagia in neonates through a comparative multi-case, summative qualitative study. Participants described a multifaceted clinical assessment process. The participants' understanding of the role and knowledge of SLPs in the care of neonates with idiopathic dysphagia was limited. The study identified a clear position for the SLP in the assessment and interpretation of craniofacial/orofacial function and dysphagia in newborns.

Table of Contents

Dedication	ii
Acknowledgments.....	iii
Abstract.....	iv
Table of Contents.....	v
Chapter 1: Introduction.....	1
Chapter 2: Methods.....	9
Chapter 3: Results.....	11
Chapter 4: Discussion.....	24
Chapter 5: Conclusion.....	29
References.....	32

Introduction

Background

The assessment of dysphagia in infants is more complex and requires more consideration than observation of the child feeding (Arvedson, 2008). Arvedson (2008) states that the professionals involved in the assessment and management of infants with dysphagia [and feeding problems] must possess sufficient understanding of feeding/swallowing issues as well as associated health conditions. Lactation consultants (LC) certified through the International Board of Lactation Consultant Examiners (IBCLC) are members of the support team for the breastfeeding dyad, consisting of the nursing mother and breastfeeding neonate, who specialize in breastfeeding management and care (IBCLC, 2011). LCs possess highly specialized clinical evaluative knowledge that includes assessment of the neonatal oral mechanism and feeding efficiency (IBLCE, 2011). However, their knowledge regarding infantile dysphagia is unclear, nor is it clear what they know about the role and knowledge of SLPs when it comes to managing dysphagia in infants.

Problem Statement

If infants presenting with dysphagia are improperly diagnosed or managed, they are at an increased “risk for poor nutrition and health outcomes” (Arvendson, 2008). Swift, accurate diagnosis and management is imperative for this population. The clinical evaluation of neonatal swallowing and oral motor function by LC’s will precede, and may potentially be the impetus for, the addition of the SLP to the multidisciplinary dysphagia team.

Justification

The transition from screening to intervention requires clear communication between professionals involved in the child's case. The multidisciplinary team approach incorporates members of numerous disciplines, possibly including speech pathology, occupational therapy, nutrition, otolaryngology, and behavioral psychology among others (Genna, 2013; Jadcherla, Stoner, Gupta, Bates, Fernandez, DiLorenzo, & Linscheid, 2009; Miller & Willging, 2003; Prasse & Kikano, 2008) and, in the case of breastfeeding mothers, may include the LC in the treatment of an individual. This approach allows for multidisciplinary consultation focusing on the whole child (Arvendson, 2008). Part of working as a team is to understand the scope of practice for the other members involved in the intervention process. An overlap in the scope of practice of team members may exist. For the multidisciplinary team involved in the assessment and treatment of nursing neonates presenting with dysphagia in the absence of concomitant factors in the nursing neonatal population (idiopathic dysphagia), an overlap in scope of practice exists between speech-language pathologists and lactation consultants. A review of the literature revealed minimum discussion regarding the coordination of care between these two disciplines.

Significance

The American Speech-Language-Hearing Association (ASHA) describes the role of the speech-language pathologist (SLP) in feeding disorders to include clinical feeding and swallowing evaluations, defining abnormal swallowing anatomy and physiology, and diagnosing swallowing disorders (ASHA, 2002). In performing these tasks the SLP is expected to work as part of the multidisciplinary team and, if appropriate, educate other professionals about the role of the SLP in dysphagia evaluation and intervention, as well as "advocating for services for individuals with swallowing and feeding disorders" (p. 1).

ASHA provides some guidance for the role of SLPs when it comes to the neonate population contained within the neonatal intensive care unit, specifically, discussion regarding evaluation and intervention of breast-feeders, bottle-feeders, and pre-feeders, and infants transitioning to breast or bottle from other nutritional interventions (ASHA, 2005). As for neonates presenting with idiopathic dysphagia, one may look to ASHA's position statement on the Roles and Responsibilities of the Speech-Language Pathologists in Early Intervention (2008), which outlines ASHA's position that SLPs should be involved in the early intervention team to address delays and disabilities in feeding/swallowing (ASHA, 2008).

The role of the SLP in evaluation and treatment of neonatal dysphagia is multifaceted. The assessment process implemented by SLPs includes, but is not limited to, a review of developmental, medical, and family history; pre-feeding assessment of oral structure and function; and clinical evaluation of feeding and swallowing (ASHA, 2002; ASHA, 2007; Arvedson, 2008). Assessment data are translated into diagnosis. The information gathered during assessment provides a platform for an individualized intervention plan. Intervention plans support "developmentally appropriate feeding and swallowing skills for safe and adequate hydration and nutrition" (ASHA, 2005, p. 9). This support is achieved through discovery of abnormal anatomical structure/function and/or identification of additional disorders of the upper aerodigestive tract (ASHA, 2002). Assessment results may also identify the need for instrumental swallowing assessment or the need to refer out to a different discipline (ASHA, 2002).

ASHA supports SLP involvement in early intervention of feeding/swallowing delays and disabilities based on the notion of care addressing a "broad spectrum of priorities and concerns" (ASHA, 2008, p. 1). The SLP is in the unique position to provide initial assessment and

determination of intervention plans. Additionally, SLPs possess the expertise to clinically describe swallowing difficulty, identify need for further evaluation, including instrumental assessment, and develop treatment approaches to address the dysphagia. The need for additional assessment by the SLP is an important consideration if the decision is made to switch the neonate from breast to bottle feeding to ameliorate feeding problems. Change in nutritional delivery system may resolve the feeding issues of one child but conversely may present another child with subsequent risk such as increased risk of aspiration.

Accurate diagnosis and appropriate intervention plans are imperative for the neonate population. Prolonged difficulty with feeding may result in child/caregiver stress (Garro, Thurman, Kerwin, & Ducette, 2005) and poor nutrition outcomes (Arvedson, 2008). Poor nutrition outcomes, such as malnutrition, can have lasting impact on long term health and achievement.

Purpose and Objectives of the Study

The main purpose of this study was to understand the clinical evaluation process, evaluation of feeding and swallowing based upon observation, case history, formal training, and experience, employed by lactation consultants in the assessment of oral mechanism function and idiopathic dysphagia in the nursing neonatal population. As members of the pediatric dysphagia multidisciplinary team, SLPs will benefit from a firm understanding of the evaluation procedures employed by other team members so the evaluation process is streamlined, allowing for expedited intervention. In order to facilitate multidisciplinary support, this study will investigate what LCs know about SLPs as a resource for breastfeeding infants with feeding and swallowing difficulties. Finally, SLPs who desire to expand their understanding of assessment of dysphagia in neonates will find that the research available on the clinical assessment of infantile dysphagia

is limited (Bell & Sheckman-Alper, 2007). This study is intended to add to the limited information available regarding clinical evaluation of infantile dysphagia.

Research Questions

Infants with dysphagia are at increased risk for poor health and nutritional outcomes (Arvedson, 2008) if improperly diagnosed or managed. Communication between multidisciplinary team members is imperative for transition from screening to intervention. Although an overlap in scope of practice may exist between LCs and SLPs, research regarding the coordination of care between the disciplines is absent in pediatric dysphagia literature. In order to facilitate multidisciplinary understanding and communication, this study was designed to answer the following questions:

1. What is the clinical evaluative process employed by lactation consultants in the assessment of infants' oral mechanism function and dysphagia in the absence of concomitant factors in the nursing neonatal population?
2. What do lactation consultants know about the role and knowledge of SLPs in the management of dysphagia in neonates?

Theoretical Framework

ASHA states that services provided should be family-focused and team-based (ASHA, 2008; ASHA, 2002). As such, this study is based upon the theoretical frameworks of family-centered care and a multidisciplinary team approach to intervention. Family-centered care focuses on keeping the needs of the client and his or her family in the forefront of assessment and intervention (Bruce, DiVenre, & Bergeron, 1998; Bruce, Letourneau, Richie, Dennis, & Elliot, 2002). Family-centered care evolved through recognition that hospitalization is stressful for children and acknowledging benefits from incorporation of families into the care process

(Bruce, et al., 2002). The multidisciplinary team approach integrates the varied perspectives and expertise of numerous disciplines into the assessment, development, and implementation of intervention, providing the client with a balanced and individualized intervention strategy (Blackmore & Persaud, 2012). A multidisciplinary team approach has the underpinnings to support family-centered care by promoting the integration of family input and preference with the expertise of multiple disciplines in the decision-making process.

Review of Literature

The ASHA Scope of Practice (2007) outlines the scope of SLP services in addressing typical and atypical feeding and swallowing difficulties by delineating the areas of expert knowledge to include stages of swallowing, oral-motor function, and orofacial myology; this scope of practice extends to the neonatal population (ASHA, 2004). SLPs are expected to provide clinical services including assessment, consultation, diagnosis, collaboration [with family and multidisciplinary team members], and referral (ASHA, 2007). Provision of service occurs in locations that include but are not limited to healthcare settings, including hospitals, private practice, and individuals' homes (ASHA, 2004).

Preferred practice patterns for intervention for children with swallowing and feeding difficulties are further addressed by ASHA (2004) to assist in clarifying the role of the SLP in serving the pediatric population. ASHA defined the services that may be provided as part of a collaborative team effort and identified the specialized knowledge an SLP would bring to an intervention team, that extends beyond identification of typical/atypical structure and function and includes support of adequate hydration/nutrition, minimizing risk of pulmonary complication, and facilitating coordination of oral/pharyngeal mechanism movement and the respiratory system (2004). The ability to assess intervention outcomes and effectiveness within the World Health Organization framework for classification of functioning, disability, and health (2001) provides the SLP with the knowledge to discontinue or alter the intervention plan, or to refer out to another discipline if appropriate (ASHA, 2004).

Little guidance is available for the SLP who desires to extend his or her area of dysphagia expertise to the neonate presenting with dysphagia in the absence of concomitant factors. However, the ASHA Code of Ethics (2007) substantiates the ability of the SLP to provide

support to breast-feeding neonates and their families experiencing feeding and swallowing difficulties, in both the absence and presence of concomitant factors, regardless of intervention setting. Recognition of pediatric dysphagia has increased although research regarding assessment and intervention continues to be limited (Bell & Sheckman-Apler, 2008). An expanded base of research would be helpful to those practicing with this population.

ASHA points to the role of the SLP in pediatric dysphagia to include participation in multidisciplinary teams (ASHA, 2002). Arvedson (2008) discussed the increased benefits of multidisciplinary, coordinated case management to include a level of problem solving that is difficult to achieve as an independent practitioner. Clarity of the roles and responsibilities of team members contributes to successful team functioning (Blackmore & Persaud, 2012).

Methods

Design

This research was structured as a comparative multi-case, summative qualitative study. Five case studies compared and contrasted the knowledge of unrelated practitioners to identify themes; findings were reported following conclusion of data analysis for all cases (Bogdan & Biklen, 2003).

The comparative multi-case study nature of this research provided an opportunity to establish a base of knowledge regarding the clinical evaluation processes employed by LCs as well as their understanding of the role of the SLP in treatment of neonates with idiopathic dysphagia. The qualitative approach allowed the participants to describe the expertise possessed, challenges faced, and connections made through their years of experience. The limitations imposed by the sample size include minimal generalization of findings to the at-large population of LCs. Additionally, the summative evaluation process left participants without answers to questions posed to the researcher, perpetuating their lack of knowledge.

Participants

For this study, five IBCLC lactation consultants were interviewed. No participant was excluded due to gender, ethnic background, or health status. Participants were identified through the use of professional directories and contact with institutions providing lactation support by the above mentioned discipline. Data were collected through semi-structured, in-depth interviews, intended to facilitate a deep understanding of the subjects thinking with a few general questions addressed with each subject (Bogdan & Biklen, 2003), resulting in researcher field notes and transcripts created from taped interviews. Participation in this study was solely voluntary, and participants were able to withdraw at any time without negative consequences.

Procedure

Participants took part in a face-to-face audio-recorded interview approximately 1 hour in length. Oral and written presentation of the research procedures were provided within the disclosure of the informed consent document. Each participant was provided a copy of the informed consent document to retain for reference.

Identity of research participants was protected by the assignment of pseudonyms in transcripts and the research summary. All materials relating to participant identity, personal identity, and any institutional affiliations was stored in a locked drawer in a locked faculty office. Place of employment was not indicated by name or geographic location in the research summary. The transcriptionist used in the transfer of audio recordings to printed transcripts was a professional, informed of confidentiality procedures and not provided with any participant information that would allow identification. Audio recordings were destroyed at the end of the study. The author applied for and was granted approval from the Eastern Michigan University Human Subjects Review Committee (UHSRC).

Data Analysis

Typed interview transcripts and researcher field notes were evaluated for identification of coding categories. Coding categories were compared across case-studies to identify major themes. Themes were used to organize presentation of research findings that addressed the original research questions while exploring themes presented by participants.

Results

The Participants

Sally, an LC in her early thirties, provides private in-home lactation support. She also volunteers, providing nutritional and dietary support to mothers and children under the age of two years as part of the Women Infants and Children Program (WIC) and is accredited as a La Leche League Leader. After the birth of her third child, Sally pursued the non-medical LC path to identify an avenue of support for mothers and infants.

Like Sally, Mary, an LC in her late forties, sought a way to support breastfeeding mothers following her own experience with breastfeeding. Mary identified the need to support mothers and babies to succeed in breastfeeding; to address that need she became a La Leche League Leader, providing peer support for breastfeeding. It was suggested to Mary that she pursue the LC credential, which led her down the non-medical path where she now provides lactation support in a private practice setting, working with clients in her office and at their homes.

Jane also identified the need to support mothers in order to achieve success with breastfeeding. An advanced practice nurse in her late fifties, she has held an LC credential for 12 years. She pursued becoming an LC for many reasons, the most personal of which were obstacles to breastfeeding her oldest child. Jane expressed that the lack of support for her preferred nutritional delivery system, and situational obstacles, compounded her feelings of “failure” as a mother. This experience led to her decision that no mother should have go through that experience. Currently, Jane provides lactation support in a hospital setting and networks with community members to strengthen community support for breastfeeding mothers.

Margaret, a nurse in her early fifties, has been an LC for seven years. She provides lactation support in a hospital setting primarily to mothers of neonates under 48 hours old.

Margaret shared that through her years of nursing experience, she realized that “breastfeeding liked me.” She added, “I can’t really tell you I picked it, it kind of picked me.” After struggling to breastfeed a child with a severe ankyloglossia, limited lingual mobility due to a shortened frenulum, sometimes referred to as “tongue-tied,” she surrendered the effort following a second bout of mastitis. The following year she took a course for Lactation Specialist. A hospital initiative facilitated her pursuit of LC credentials. As the sole LC for her hospital, she has strived to support the education of staff nurses to provide breastfeeding support in the hours she is not available.

Not all of the participants were led to the path of LC from personal experience or through identification of lack of breastfeeding support. Similar to Margaret, Kendra, an advanced practice nurse in her mid-fifties, also came to be an LC through the workplace. However, it was a clinical focus on nutrition as an obstetric nurse with credentials in breastfeeding which led her toward the path of obtaining an LC credential. Currently, she provides lactation support in a hospital setting to the mothers of breastfeeding neonates generally under 72 hours old.

Each participant brought to the study a unique set of experiences and varied years of practice. Though backgrounds, experiences, and practice settings varied, commonalities among responses emerged within the data set as the participants addressed the research questions.

Assessment

The discussion regarding assessment is indicative of the participants’ clinical/diagnostic perspective; however, their lack of reference to dysphagia may be indicative of limits within their base of knowledge. The assessment process presented by the participants involved gathering case history, assessment of the craniofacial/orofacial structures, and functional assessment of the oral mechanism.

“My level of evaluation depends on the problem.” Determining the nature of the “problem” begins with the LC’s attempt to differentiate between a situation of immediacy versus crisis. The first piece of the puzzle is case history. As a neonate is less than four weeks old, considerable attention is paid to the labor and delivery process. According to Mary, the duration of time the mother spends pushing during delivery is just one of the considerations she explores during her collection of case history.

Margaret explained that the labor process can provide an understanding for the symptoms presented by the neonate surrounding feeding. She indicated differences between vaginal and cesarean deliveries. Mary supported Margaret’s example and expanded, “A lot of babies who are born cesarean their suck reflex, for whatever reason, is nonexistent.” Margaret clarified that extended labor and delivery can result in an exhausted and sore neonate. She explained that the muscles necessary for successful feeding are stretched during the labor and delivery process. If the neonate becomes “hung up,” stalled at a particular stage of labor/delivery, the typical stretching experienced by the neonate during delivery may be exaggerated. Jane added that position prior to and during delivery can contribute to feeding difficulty. Torticollis, a contraction in the muscles of the neck, commonly referred to as “wry-neck,” which may result from positioning within the womb or during delivery, can reduce range of motion of the neck and temporomandibular joint, Jane expounded. She pointed out that although torticollis may impact the infant’s ability to breastfeed, its presence would result in referral, as intervention for torticollis is beyond her scope of practice.

Kendra specified delivery may result in compression of the cranial plates and associated nerves. Sally explained how “molding of the skull from the birth...might indicate that there’s some nerves or musculature that’s been (maybe) just temporarily (sort of) damaged for nursing.”

Mary concurred, “Sometimes a nerve can be compressed...” Jane explored the presence of head molding and potential of nerve involvement in relation to the coordination of sucking and swallowing, saying, “You can see what your baby’s head looks like, and that involves nerves that involve [innervate] sucking, swallowing, [and] coordinating [the suck and swallow] all of that when we [they] have hurt heads...” which affects ability to successfully feed. She stressed that, for many neonates with head molding/nerve involvement, the infant needs time to recuperate from the birth process in order to experience successful breastfeeding. Jane added that molding is not restricted solely to the head; the face and jaw can also exhibit molding related to prenatal and/or perinatal position.

In addition to history of labor and delivery, family observations are also considered during collection of case history. Both Sally and Jane described soliciting the family’s account of the neonate’s behaviors surrounding feeding. Jane simply asked the parents, “What has been happening?” while Sally’s examples were more directly related to identifying presence of certain behaviors (e.g. tongue thrust). Both practitioners stressed the importance of the family’s observations in determining how to proceed with the clinical evaluation process.

The discussion of case history disclosed a focus on birth process and prenatal/perinatal positioning. Family observations of feeding behaviors assist the LCs in their clinical assessment. The participants divided clinical assessment into two categories: structure and function. Clinical assessment of the craniofacial and orofacial structures involved visual as well as tactile assessment. Functional assessment of the oral mechanism, craniofacial structures, and associated musculature involved manual examination and naturalistic observation of feeding. The assessment of the state and completeness of craniofacial and orofacial structures occurred prior to feeding observation for all participants. The assessment process implemented by SLPs

includes but is not limited to a review of developmental, medical, and family history; pre-feeding assessment of oral structure and function; and clinical evaluation of feeding and swallowing (ASHA, 2002; ASHA, 2007; Arvedson, 2008).

“Geography” of craniofacial/orofacial structure. “I first look for symmetry,” Mary shared. Ears, eyes, nose, mouth, cheeks, and chin are all evaluated through visual observation. Mary expanded, “I look at the head as well...does it have plates that are laying ‘funny’?” Asymmetric structures are an indicator for referral according to Mary: “What does it mean...then, what can you do about it?” She reiterated the potential of nerve involvement. Jane described how she will look at the neonate “full-on” to determine craniofacial symmetry. Asymmetry of the craniofacial structures, Jane explained, may relate back to prenatal/perinatal position and/or birth process. While she examines an infant for symmetry, Sally will use the eyes as an indicator for hydration and jaundice. “... also general tone of muscle, so we’re looking for are the lips really floppy or loose? Are they very, very tight? Do they have normal kinds of tones?” Sally added. Mary explained that muscle tone, hypertonic as well as hypotonic, may contribute to feeding problems for infants.

Margaret echoed her compatriots’ concern over muscle tone and identified the chin as an additional structure of importance. She described examining the chin for proportion and location in relation to the maxilla. Jane provided a potential rationale for Margaret’s examination of the chin by explaining that in order for a neonate to transfer milk, the infant must be able to get behind the nipple onto the areola.

Examination of orofacial structures was described to involve three primary structures: gums, palate (discussed as one unit), and the frenulum. For the gums and palate, continuity appeared to be the focus. Sally described continuity of the “gumlines” as indices of potential

misalignment within the maxilla or mandible. The importance of palatal continuity was explained by Jane. The breast must be compressed against the hard palate by the tongue in order to create a “negative pressure to stroke the milk out.” Discontinuity of the hard or soft palate could compromise creation of that negative pressure. Palatal clefts were one manifestation of discontinuity identified by the participants. Sally described how the arch of the palate may dome or bubble, each of which creates its own considerations. Mary described palates as a “landscape unto themselves.” She added that palates can be wide, narrow, long, short, bumpy, smooth, or “channeled.” All of these potential palatal geographies may complicate milk transfer.

Although the participants described structural evaluation of the tongue, it was actually the position of the frenulum that drew the most attention during discussion of oral structure. Kendra explained, “I am looking at their [the neonate’s] tongue, I am looking under their tongue...” She elaborated that her identification of ankyloglossia has resulted in conflict with physicians. Jane supported Kendra’s discussion of conflict surrounding ankyloglossia in her identification of split findings within the literature. “For every paper about, yes, tongue-tied can have problems...equal amounts say no,” she summarized. Sally concurred, “tongue-tie is a huge issue.” Margaret offered an explanation to the laissez-faire attitude surrounding ankyloglossia to be a result of enculturation of bottle-feeding during previous generations, saying “They [physicians] just thought it wasn’t a problem during bottle feeding, but it is a problem later for speech and dental...” She elucidated that although presenting limited challenge to bottle-feeding, ankyloglossia severely limits the lingual range of motion necessary for breastfeeding.

The respondents described evaluation of oral cavity structures to be the most invasive portion of the evaluation process. Perspective regarding appropriateness of the oral stimulation resulting from such an exam appeared to be influenced by infant age, practice location, and

amount of staffing available. The discussion regarding structural assessment is indicative of the participant's diagnostic perspective; however, gross structural anomalies result in referral to primary care physicians.

“Wiggle rhythmically” and other indicators of coordination. Discussion of functional assessment was indicative of the participant's understanding of oral motor function, specifically swallow efficacy; however, lack of discussion connecting disordered suck, swallow, breathe pattern to dysphagia is indicative of limited global understanding of swallow function. Description of the assessment process for craniofacial and orofacial function was delineated as manual assessment versus observational assessment. Manual assessment of function was described in the evaluation of the tongue, specifically related to range-of-motion. Mary described how she wants the tongue to chase her finger during assessment. She explained how she wants to see a full range of motion from the tongue during the chase: “Can they lift the tongue? Can they stick out the tongue? Can they lateralize?” It is during this “game” that she will quickly scoop under the tongue with her finger to assess the frenulum. Sally also described utilizing the manual exam to explore lingual range of motion. “Is the baby's tongue coming out and cupping underneath my finger?” She equated the necessary lingual range of motion for breastfeeding to acrobatics.

The majority of the functional assessment described as observational focused on fluidity of movement of the temporomandibular joint and the masseter muscle. Jane discussed tightness of the mouth as a concern; “Some babies I swear have lock jaw,” she said, referring to the minimal range of motion observed in this situation. She reiterated the importance of practitioners understanding which cranial nerves innervate the oral musculature, explaining “They control the

suck itself and the coordination of that.” Sally described her indicator of appropriate jaw movement during nursing as a deep rocker motion that causes the ears to “wiggle rhythmically.”

It is important to note assessment did not follow a strict order between participants. Practitioner preference, clinical setting, and proximity to time of delivery appeared to influence visual versus manual assessment order. Mary was quick to point out that “...the level of my evaluation depends on the problem.” She explained how lactation support involves more than assessment of the infant, and there are times when she feels the baby is not the most important component in assessment of the breastfeeding dyad.

Discussion of functional assessment focused on the rhythm and/or coordination of the orofacial/craniofacial musculature. The respondents stressed the impact of reduced range of lingual motion resulting from ankyloglossia. Markedly absent from the discussion of function was identification of dysphagia.

“Disordered coordination in the breathe, suck, swallow pattern.” Dysphagia was not discussed as a concept unto itself, nor were specific stages of swallowing identified by any of the LCs interviewed. Instead the practitioners indirectly identified dysphagia as a result of disordered coordination in the breathe, suck, swallow pattern observed in breastfeeding and through discussion of signs/symptoms of aspiration indicative of a deficiency in knowledge concerning swallow function. Margaret stressed complexity of the steps necessary for the neonate to transfer milk, saying, “breathe, suck, swallow is a pretty big coordination effort.” Jane described evaluation of breathe, suck, swallow coordination as identifying a rhythm in movement pattern. Jane also expressed she uses the rhythm of the suck as a positive indicator of dysfunction, but confessed, “I can’t even explain how I feel it.” Unlike Sally, Jane evaluated the

rhythm tactilely as well as visually through the observation of muscle movement along the temple, cheek, and jaw.

Margaret explained that the “suck” portion of the pattern is actually a series of three consecutive sucks followed by the swallow. It was described by all participants that through synthesis of assessment findings, the specific location of disorder is identified. The participants alluded to the disorganization of this pattern as one of the primary causes for difficulty feeding. Swallowing may be further impacted by reaction precipitated by suctioning. “If they will suck really well and then gag, that is another issue,” Jane explained. If transfer of milk posteriorly results in gagging and retching, Jane will explore the possibility of suctioning.

Aspiration was addressed by the respondents to address safety concerns within the neonate population. “Aspiration is something that I don’t see very often because those mothers who are dealing with that normally don’t perceive themselves as having an issue with lactation,” Sally offered. She continued, “Aspiration is very rare in the very early newborn stage with colostrum...” Sally cited viscosity of colostrum as the potential reason for lack of aspiration in the earliest hours/days of breastfeeding.

Mary pointed out that aspiration is not something covered professionally by LCs, so her understanding has come from clinical experience. She first listed coughing as an overt sign/symptom of aspiration, but explained, “I think that there can be other ways...I think there are quiet aspirations that could be going on as well.” Mary concluded by stating, “And so obviously, any time a baby is making noises while they’re feeding, that’s unusual.” Kendra also identified noises such as “gurgly” or congested sounds as the infant feeds as a major indicator of potential aspiration. Sally concurred, “I have seen stridor in a couple of babies.” She followed by explaining her understanding of stridor: “My understanding of stridor is that there is something

happening in the vocal cords to [cause] that event, or something. I don't remember when I last read about that.”

Participants also expressed reliance upon visual movement of the jaw and “audible swallow” as indicators of appropriate swallow function. Sally described movement she is looking for as a “deep kind of rocker motion.” In order to guarantee perception of the audible swallow, she will place a stethoscope on the throat and listen for “gulps” of milk. Jane also watches for the jaw movement resulting in movement of the muscles along the jaw into the temple. She describes the audible swallow as a “cckk.” Kendra proposed the use of an audible swallow and jaw movement; however, she simply wants “to see jaw motion” but does not look for anything specific in the motion.

The discussion of dysphagia is indicative of the participant's clinical diagnostic perspective. Identification of the intricacy of the “breathe, suck, swallow” pattern observed in breastfeeding infants depicts a rudimentary understanding of the stages of swallowing. The participants focused on the presence of ankyloglossia and resistance from physicians to acknowledge presence of the condition, and then provide surgical intervention as causal to prolonged breastfeeding difficulty. The disagreement identified by the participants regarding presence/absence of ankyloglossia may be due, in part, to the absence of a “well-validated” (Segal, Stephenson, Dawes, & Feldman, 2007, p. 1027), uniform system to grade severity of ankyloglossia (Messner, Lalakea, Aby, Macmahon, & Bair, 2000; Segal et al., 2007). Signs and symptoms of aspiration discussed pointed to dependence on audible/visible signals, reflecting lack of consideration for variance in upper aerodigestive structure between infants and adult. No discussion addressing reduced incidence of aspiration and colostrum viscosity was identified within the literature.

Role of SLP

The participants' discussion addressing the role of the SLP in intervention of neonates with dysphagia was indicative of their understanding of the role of multidisciplinary team members. Description of the scope of practice by the participants was indicative of lack of understanding of the breadth and depth of services provided by SLPs.

Sally summarized the understanding of her colleagues when she stated, "It's just never been on my radar....I don't even really know what it is there for. I have never heard it come up." Sally described her connectedness to other LCs through personal relationships as well as an email group composed of practitioners from across the globe. In the years she has been part of the email group, which generates approximately fifty messages a day, she confessed, "I can recall no concrete discussion of that profession."

Margaret offered, "I really don't have any concept of the role of the speech pathologist....I know that they are resources for our babies as they grow and get older, and that is always how I interpreted the speech pathologist..." She shared a story of an occupational therapist (OT) working with one of her "babies" the previous week and how the OTs intervention resulted in dramatic improvement of the neonates function. Margaret, excited by the potential for future collaboration with the OT, stated, "I told my boss, 'You need to let physical therapy (PT) know we are going to start using them more...'" Margaret's statement illuminated a foundational lack of understanding for all support therapies.

"We do not..." Mary replied, when asked to describe her experience referring neonates to SLPs. She continued, "It's ironic because they should..." She added that SLPs would look at the same structures and function as LCs, but that is where her understanding of SLPs stopped; "Just instead of (your) feeding, they're looking at speaking, but the goal is still oral functioning..." Of note, Mary herself recommended a reference book authored by an LC designed to facilitate

multidisciplinary team understanding of lactation support. Within this book is a small section in the first chapter dedicated to dysphagia. The section specifies professionals involved in dysphagia assessment and treatment to include SLPs and OTs with a brief explanation of the specialty of SLPs.

Jane explained her limited understanding of the role of the SLP to include evaluation of lingual function, but more related to later emerging speech difficulties related to ankyloglossia. Jane, although unsure of the full scope of practice of a SLP, expressed confidence in the validity of SLPs as team members serving breastfeeding neonates. However, she was concerned over acceptance of SLPs by physicians, asking, “Would you get physicians to play into that and say that teaching a baby to breastfeed, they should go see a speech pathologist? Probably not, because I can’t get them to believe the whole cranial nerve thing...”

Kendra expressed a broader understanding of the role of the SLP when she explained it to include a more thorough assessment of the suck and swallow. She did not allude to a specific understanding of the assessment process employed by SLPs. Kendra shared that she did have experience with SLPs as a resource when she worked in a homecare setting, but explained it was not an option in her current setting, saying, “I have heard of it, but I don’t believe we have, at least, those resources here.”

Jane expressed frustration around the inability to make primary referrals within her service setting, an issue also discussed by Margaret and Kendra. She noted further difficulty in that, “I have no one to refer to. I try to tell the physicians and then usually by that point, if I am not able to succeed [in aiding the neonate to breastfeed], those moms have already quit [breastfeeding].” Even with her extensive connections throughout her community, Jane was not aware of any SLPs who provide service to breastfeeding neonates. She speculated, “I think the

only way I would find something [someone] like that is if that speech pathologist had a child of her own.”

The discussion surrounding the role of the SLP in assessment and intervention of neonates with dysphagia indicated nominal knowledge of SLP as a profession. Although professional literature supports the role of the SLP as part of the multidisciplinary team and identified specialized knowledge to include support of adequate hydration/nutrition, minimizing risk of pulmonary complication, and facilitating coordination of oral/pharyngeal mechanism movement and the respiratory system (ASHA, 2004), the LCs interviewed were unfamiliar with the role of a SLP in treatment of dysphagia.

Discussion

Exploration of the LC assessment process was aimed at determining similarities between the evaluation processes employed by LCs and SLPs and clarifying the role of the SLP in assessment and intervention of breastfeeding neonates with idiopathic dysphagia. The clinical assessment process described by the participants was multifaceted. Case history disclosed a primary focus on birth process and prenatal/perinatal positioning. Information gathered through collection of case history data aids in determination of potential etiology of feeding related issues as well as identification of areas of special interest during the clinical evaluation. Interpretation of structural assessment resulted in two decision paths: continuation to functional evaluation and referral to health care provider. In certain instances structure is such that it may not indicate referral but may influence milk transfer, such as arched palate, which could require compensatory strategy implementation. Functional assessment of the oral mechanism, craniofacial structures, and associated musculature focused on determination of the presence of incoordination within the breathe, suck, swallow pattern, indicating swallow dysfunction, ergo dysphagia.

In addition to most of the items noted by the LCs, the evaluative process employed by SLPs also incorporates medical/developmental history with clinical assessment of craniofacial/orofacial structure, oral-motor function, and orofacial myology (ASHA, 2004), with specialized skill and focus in recognition of swallowing and feeding disorders (ASHA, 2002). SLP literature did not discuss specific, uniform procedures for the structural and functional evaluation; instead the evaluation process is described to originate from advanced study in craniofacial/orofacial structure and function of associated musculature (ASHA, 2002; ASHA 2007).

The participants identified coordination of the intricate “breathe, suck, swallow” pattern as essential to successful breastfeeding. Identification of the coordination of function depicted rudimentary, informal understanding of the stages of swallowing. The connection between disordered coordination and the presence of dysphagia did not emerge within the interviews. Discussion of the signs and symptoms of aspiration did not acknowledge the variance between the upper aerodigestive structure of infants and adults. The respondents also demonstrated an extremely limited knowledge regarding the signs and symptoms of aspiration in neonates. However, Mary’s discussion of the neonates’ variable importance in the assessment of lactation may explain why LCs are less focused on neonatal dysphagia. The LCs interviewed expressed a focus of maintaining and supporting milk supply. Each participant described a separate evaluation process for the mother which includes assessment of the nipples and breast tissue.

The limitation in knowledge regarding disordered function presents a challenge in determining intervention strategies. When the participants identified a need for more in-depth evaluation, they described being met with resistance from primary care physicians. The resistance required the LCs to increase advocacy on behalf of their patients resulting in delay of referral and intervention. The delay of referral and intervention created concerns over nutrition and hydration resulting in transition to bottle feeding in an attempt to ameliorate feeding difficulties. Transition to bottle-feeding may appear to resolve feeding issues but may also delay/stop identification of dysphasia and increase risk of respiratory complications.

Difficulty or incoordination within of the act of swallowing is the definition used by SLPs to identify the presence of dysphagia (Garg, 2003; Groher & Crary, 2010). For the SLP, identification of a dysfunction in the breathe, suck, swallow pattern may result in extended evaluation beyond that of typical/atypical structure and function. The extended evaluation may

include support of adequate hydration/nutrition, minimizing risk of pulmonary complication, and facilitating coordination of oral/pharyngeal mechanism movement and the respiratory system (ASHA, 2004). The ability to assess intervention outcomes and effectiveness within the World Health Organization framework for classification of functioning, disability, and health (2001) provides the SLP the knowledge to discontinue or alter the intervention plan, or to refer out to another discipline if appropriate (ASHA, 2004). The participants identified an inability to provide direct referral from LC to appropriate multidisciplinary team members.

The SLP literature does not address the assessment processes employed by LCs. The participants' report of utilizing information related to birth process is supported by ASHA's description of the roles and responsibilities of SLPs in early intervention (2008). The comprehensive nature of assessment process includes a review of developmental, medical, and family history; pre-feeding assessment of oral structure and function; and clinical evaluation of feeding and swallowing (ASHA, 2002; ASHA, 2007; Arvedson, 2008). Comparing the process described by the participants to ASHA's Scope of Practice (2007) reveals an overlap in assessment in the general evaluation of craniofacial/orofacial structure and function. A variance in the interpretation of functional assessment results was noted. The participants were able to acknowledge problems resulting from disorder in the breathe, suck, swallow pattern but were unaware of the connection a discoordination may have to dysphagia.

The potential role of the SLP in idiopathic dysphagia is to identify the potential presence of dysphagia through in-depth evaluation. SLPs are also equipped to describe the nature of the swallow dysfunction in relation to the stages of swallowing and identify the need for invasive instrumental assessment. The individualized intervention plans designed by SLPs support developmentally appropriate sucking and feeding skills and support adequate hydration/nutrition

while preserving respiratory safety (ASHA, 2005). ASHA identified the specialized knowledge of a SLP to extend beyond identification of typical/atypical structure and function to include support of adequate hydration/nutrition, minimizing risk of pulmonary complication, and facilitating coordination of oral/pharyngeal mechanism movement and the respiratory system (2004).

The participants' understanding of the role and knowledge of SLPs in the management of dysphagia was exceedingly limited. Only Kendra identified dysphagia evaluation to fall within the scope of practice of the SLP; her identification only acknowledged the evaluation of "suck and swallow" as mere fact – no further information was offered. Other participants defaulted to the role of the SLP to be with speech and could not conceive of additional services. Sally discussed her participation in an email forum for LCs consisting of more than three thousand practitioners from all over the world and stated, "I've been on it for several years. I can recall no concrete discussion of that profession." Margaret expressed concern over the acceptance of the SLP as part of the multidisciplinary team by the primary care physicians. This concern may be due, in part, to the perception expressed by all participants that LCs are not respected by the physicians, as members of the multidisciplinary team.

Literature comparing the overlap and/or convergence in roles and responsibilities of the LC and SLP is minimal. Although recognition of pediatric dysphagia has increased, research regarding assessment and intervention continues to be limited (Bell & Sheckman-Apler, 2008). The ASHA Code of Ethics (2007) substantiates the ability of the SLP to provide support to breastfeeding neonates and their families experiencing feeding and swallowing difficulties. ASHA identified the specialized knowledge of a SLP to include facilitating coordination of oral/pharyngeal mechanism movement and the respiratory system (2004). Arvedson (2008)

discussed the increased benefits of multidisciplinary, coordinated case management to include a level of problem-solving that is difficult to achieve as an independent practitioner. The limitation in knowledge regarding disordered function presents a challenge in determining intervention strategies by the LC.

When the participants identified a need for more in-depth evaluation, they described being met with resistance from primary care physicians, particularly in the hospital setting. The resistance required the LCs to increase advocacy on behalf of their patients resulting in delay of referral and intervention. The impact of stress caused by breastfeeding difficulties was discussed by the participants as considerations for the well-being of the family unit. The effects of stress experienced by the parents of children with feeding disorders were discussed by Garro et al. (2005) to include two aspects: self-perception and social isolation. The participants agreed both new and experienced mothers incur pressure to be successful in breastfeeding. The persistence of breastfeeding difficulty, coupled with delay of referral and intervention encountered by these families, created concerns over nutrition and hydration. Often these concerns resulted in transition to bottle feeding, even if the mother's preference was to breastfeed. Respect for and incorporation of the family's preferences fosters "optimally successful intervention strategies" (Bruce, DiVenere, & Bergeron, 1998, p. 85). Functioning of the multidisciplinary team can positively or negatively affect the service provided; poorly functioning teams may limit or inhibit positive patient outcomes (Blackmore & Persaud, 2012).

Conclusion

The LCs who participated in this study described a multifaceted clinical assessment process. Discussion regarding case history disclosed a primary focus on birth process and prenatal/perinatal positioning. Abnormality revealed during structural assessment follows a clear pathway to referral and intervention, while abnormal function of the craniofacial/orofacial musculature and/or disordered coordination in the breathe, suck, swallow pattern did not yield such a path. Participants also exhibited a limited knowledge of the signs and symptoms of aspiration in neonates. The participants' understanding of the role and knowledge of SLPs in the care of neonates with idiopathic dysphagia was limited. Concern was expressed by the participants regarding the acceptance of the SLP as part of the multidisciplinary team.

Lactation Consultants specialize in the evaluation of the breastfeeding dyad. Improper diagnosis and/or management of infants with dysphagia may place them at increased "risk for poor nutrition and health outcomes" (Arvendson, 2008). Swift, accurate diagnosis and management is imperative for this population. The clinical evaluation of swallowing and oral motor function in breastfeeding neonates by LCs may precede that of the SLP. The transition from screening to intervention requires clear communication between professionals involved in the child's case, which appears to be lacking, based on this limited sample.

Part of working as a team is to understand the scope of practice for the other members involved in the intervention process. Clarity in the roles and responsibilities of team members contributes to successful team functioning (Blackmore & Persaud, 2012). Literature comparing the overlap and/or convergence in roles and responsibilities of the LC and SLP is minimal. This study revealed an overlap between the clinical assessment strategies employed by the participants and the competences expected of the SLP by ASHA. The study also identified a

clear position for the SLP in the assessment and interpretation of craniofacial/orofacial function and dysphagia.

The findings of this study are limited by the small sample size and geographic area. Generalization of results is limited regarding possible perceptions of LCs and the role of the SLP; however, it is instrumental in guiding discourse for further research. As this was the first study looking at the relationship between the professions, it provides critical first insights into the potential for improvement in team services to neonates and their families. The researcher elected to omit discussion of several themes discovered during the course of data analysis, specifically, evaluation/considerations related to the mother and identified members of the multidisciplinary team. These themes, although rich in information, exist beyond the scope of this study.

The findings indicated a clear role for the coordination of care between the SLP and the LC in the assessment and treatment of neonates presenting with idiopathic dysphagia. The results described a gap in the knowledge base of LCs concerning the scope of practice and knowledge base of SLPs. Defining the role of the SLP allows him or her to step into the multidisciplinary team assessment without creating redundant assessment information, increasing time before intervention. As a profession, SLPs need to acknowledge that other members of the multidisciplinary team may not recognize assessment and intervention of dysphagia to fall within the SLP scope of practice. It falls to the SLP to facilitate understanding and communication surrounding their role in neonatal dysphagia. As a profession, this lack of knowledge represents a significant opportunity to provide education to colleagues and an untapped resource for improving feeding outcomes for neonates.

Based on the findings and in an attempt to aid development of multidisciplinary discourse, recommendations for future research include determination of validity of the audible swallow as a positive indicator for adequate swallow function; identification of the team members utilized by LCs; cranial nerve involvement in neonatal feeding difficulties; description of typical breathe, suck, swallow pattern in neonates; effects of ankyloglossia on breastfeeding efficacy; multidisciplinary development of a standardized assessment tool for degree of ankyloglossia; physician perspective on assessment/intervention with breastfeeding neonates; and the assessment/intervention strategies employed by OTs in neonatal dysphagia.

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