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# Child Health Professionals and Their Role in Detecting Speech and Language Impairments: Perceptions and Current Practices

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UNIVERSITY OF NORTHERN COLORADO

Greeley, CO

The Graduate School

CHILD HEALTH PROFESSIONALS AND THEIR ROLE  
IN DETECTING SPEECH AND LANGUAGE  
IMPAIRMENTS: PERCEPTIONS AND  
CURRENT PRACTICES.

A Thesis Submitted in Partial Fulfillment of the  
Requirements for the Degree of  
Master of Arts

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College of Health and Natural Sciences  
Audiology and Speech-Language Sciences  
Speech-Language Pathology

August, 2015

This Thesis by: Carissa A. H. Johnson

Entitled: *CHILD HEALTH PROFESSIONALS AND THEIR ROLE IN DETECTING  
SPEECH AND LANGUAGE IMPAIRMENTS: PERCEPTIONS AND CURRENT  
PRACTICES.*

has been approved as meeting the requirement for the Degree of Master of Arts  
in College of Health and Natural Sciences in Department of Audiology and  
Speech-Language Sciences, Program of Speech-Language Pathology

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## **ABSTRACT**

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Speech-language impairments are one of the most common conditions of childhood and affect roughly 5-8% of preschoolers and 11-20% of kindergarteners. If left untreated, speech-language impairments persist in 40-60% of children under five years of age and are strong predictors of school failure. Despite strong evidence that supports early intervention, as many as 90% of eligible children are not receiving appropriate services.

This qualitative research study investigated child health professionals' current knowledge, perceptions, and practices for screening and referring children with possible speech and language impairments. Data were gathered primarily through participant interviews and scenario questions. The data were then analyzed and categorized into major themes. The themes included: parents and their role in early identification, impact of socioeconomic factors, perceptions of well-child visits and assessing, current practices of assessing, perceptions and preferences of referring, and the referral process.

A discussion section provides limitations of the study, implications for child health professionals and speech-language pathologists, and areas of future research. This study concludes that while participants provided a comprehensive look into the current knowledge, perceptions, and practices of assessing and referring children with possible

speech and language impairment, more research is needed to fully address early identification and intervention.

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## **CHAPTER I**

### **INTRODUCTION**

#### **Introduction**

Speech-language impairments are one of the most common conditions of childhood (Glascoe, 1991; van Agt, van der Stege, de Ridder-Sluite, Verhoeven, & de Koning, 2007) and affect roughly 5-8% of preschool children nationwide (American Academy of Pediatrics [AAP], 2006a) and 11-20% of kindergarteners (Glascoe, 1991). For language impairments alone, prevalence rates of 2.3-19% have been reported (AAP, 2006a). According to Glascoe (1991), a speech-language impairment is a “disorder, deviation, or delay in verbal, gestural, or vocal skills including articulation, fluency, voice quality, or language to the extent that academic learning, social adjustment, or communication skills are hindered” (p. 317).

If left untreated, speech-language impairments persist in 40-60% of children under five years of age (AAP, 2006a) and are strong predictors of school failure (Glascoe, 1991). Children under five years of age who exhibit speech and language impairments may have reduced reading skills, inadequate verbal and spelling skills, and overall lowered academic success (AAP, 2006a; Radecki, Sand-Loud, O’Connor, Sharp, & Olson, 2011). There is also strong evidence that language impairments in young children make the child vulnerable to later academic difficulties which become more evident as the child moves through school (Law, Rush, Anandan, Cox, & Wood, 2012). Children with severe language impairments run a high risk of attending special education

or repeating a grade level (van Agt et al, 2007). Whitman and Schwartz (1985) also reported that delay in early vocabulary skills is related to decreased cognitive levels in adulthood.

According to Regalado and Halfon (2001), the first three years of a child's life is crucial for brain growth and overall child development. Early intervention before two years of age significantly improves a child's outcome for functional development (Smith, 1978). Identification of developmental impairments, such as speech and language, at an early age can lead to intervention for the impairment and improve the overall outcome of the child (Aly, Taj, & Ibrahim, 2010; Sand et al., 2005). It is thought that a child's prognosis is greatest if the child participates in intervention services as early as possible (Aly et al., 2010). Bear (2004) stated that identifying children with developmental impairments in the first year of life provides the best opportunity for early referral and intervention. Early identification and intervention reduces the need for longer and more expensive education services and improves the child's overall academic success (Glascoe 1991).

Despite strong evidence that supports early intervention, as many as 90% of eligible children are not receiving appropriate services (Jimenez et al., 2014). Reports indicate that prevalence rates increase with age, yet considerable amounts of children with developmental impairments, such as speech and language, are not identified until well into their schooling (Hix-Small, Marks, Squires, & Nickel, 2007). While 12-16% of children are estimated to have developmental impairments, less than half of those children with language or other developmental impairments are diagnosed before entering school (Morelli et al., 2014; Aly et al. 2010). Other studies reported that less

than 6% of preschool aged children (Rosenburg, Zhang, & Robinson, 2008; Hix-Small et al., 2007) and only 1.8% of children birth through two years with developmental impairments are enrolled in early intervention (Hix-Small et al., 2007). This indicates a high percentage of children who are not identified at a young age who could have benefited from early intervention (Aly et al., 2010). These statistics also suggest that the process of early identification remains an issue (Law et al., 2012; AAP, 2006b).

Due to the importance of early identification and intervention for children with developmental impairments and the apparent lack thereof, the AAP (2006b) published a policy statement that mandated developmental screening during well-child visits. Title V of the Social Security Act (1935) and the Individuals with Disabilities Education Improvement Act (2004) also mandate that child health professionals, including pediatricians, family practice physicians, pediatric nurse practitioners, and pediatric physician assistants, provide early identification and intervention for children with developmental disabilities (AAP, 2006b). According to the AAP (2006b), it is imperative that well-child care involves the detection of developmental disorders.

### **Need for Study**

Many believe that child health professionals play a vital role and are in the best position for detecting and referring children with possible developmental impairments (Aly et al., 2010; Bear 2004). Ninety-five percent of children up to three years of age have a regular source of health care and are seen by a child health professional (Sand et al., 2005). Although early detection of developmental problems can be difficult, child health professionals are in the best position to monitor the child's development, screen,

and refer children with possible developmental problems (Aly et al., 2010; Bear 2004; Sand et al., 2005).

Although research conducted in the 1970s revealed that child health professionals were not shown the importance of identifying speech, language, and auditory milestones for detecting language impairments (Capute & Accardo, 1978), current research has revealed that child health professionals understand the need for and support early identification. Dobos, Dworkin, and Bernstein (1994) reported that between 88-100% of pediatricians believed that early identification improves the outcome for children with developmental impairments such as learning disabilities, language impairments, and hearing impairments.

Research has continued to focus on: (a) the effects and benefits of screening and early intervention (Hix-Small et al., 2007; Nelson, Nygren, Walker, & Panoscha, 2006; van Agt et al., 2007), (b) current practices and best methods for implementing developmental screening during well-child visits (Glascoe & Dworkin, 1995; King et al., 2010), (c) prevalence of developmental screening during well-child visits (Bethell, Reuland, Schor, Abrahms, & Halfon, 2011; Radecki et al., 2011; Sand et al., 2005; Schonwald, Huntington, Chan, Risko, & Bridgemohan, 2009), and (d) barriers associated with identifying and referring children with possible developmental impairments (Jimenez et al., 2014; Jimenez, Barg, Guevara, Gerdes, & Fiks, 2012; Morelli et al., 2014; Silverstein, Sand, Glascoe, Vidya, Tonniges, & O'Connor, 2006). While some research exists regarding child health professionals' current practices for identifying and referring children with possible developmental problems, more research is needed to fully

address the current practices and issues, specifically those for identifying and referring children with speech and language impairments.

### **Overview and Purpose of the Study**

Information regarding early identification and intervention for children with speech and language impairments combined with current research provided the framework for my research question. If early identification and intervention are shown to decrease the need for special education and increase the child's performance, and if law mandates early identification and intervention for those with developmental disabilities, why is there a lack of appropriate screening and referring of children with speech and language impairments? According to Glascoe (1991), most child health professionals rely on clinical judgment to identify potential developmental problems. If child health professionals rely on clinical judgment, what is their knowledge regarding speech and language development? Does their training and expertise provide enough basis to detect speech and language impairment using clinical judgment alone? The purpose of this study was to investigate child health professionals' knowledge, current practices, and perceptions of screening and referring children with possible speech and language impairments.

### **Research Questions**

The following questions were investigated through a qualitative research project:

- Q1     What are child health professionals' current practices for screening and referring children with possible speech and language impairments?
- Q2     What are child health professionals' perceptions regarding the screening and referring process for children with possible speech and language impairments?

- Q3      What are child health professionals' knowledge regarding speech and language development in children?

### **Definitions of Terms**

The study contains definitions that need explanation to further understand the research, participants, and results. The following definitions apply to the study:

**Child health professionals:** Child health professionals include all individuals who are medically trained to provide preventive, curative, promotional, or rehabilitative care to pediatric patients. For this study, these professionals include pediatric physicians, primary care physicians, pediatric nurse practitioners, and pediatric physician assistants.

**Developmental screening:** During well-child visits, child health professionals conduct developmental screenings. Developmental screening includes assessing all areas of the child's development including physical, mental, motor, speech, and language. In this study, developmental screening encompasses all mentioned areas with emphasis placed on speech and language development.

**Speech and/or language impairment:** Literature contains different levels of speech and/or language difficulties. Some difficulties are referred to as delays, whereas others are referred to as disorders. It is important to understand that delays and disorders are not synonymous. Speech or language delays describe exactly that, a delay in the child's speech and/or language ability wherein the child is expected to catch up with peers. Speech or language disorders are a more chronic condition wherein the child is not expected to catch up with peers and more intensive intervention is necessary. In this study, speech and/or language delays and

disorders are grouped together as speech and language impairments to ease confusion between delay and disorder.

### **Summary**

Speech-language impairments are one of the most common conditions of childhood (Glascoe, 1991; van Agt et al., 2007). If left untreated, speech-language impairments persist in 40-60% of children under five years of age (AAP, 2006a) and are strong predictors of school failure (Glascoe, 1991). Early identification and intervention of developmental impairments at an early age can improve the child's overall outcome (Aly et al., 2010; Sand et al., 2005). Despite strong evidence that supports early intervention, as many as 90% of eligible children are not receiving appropriate services (Jimenez et al., 2014). Child health professionals play a vital role in detecting and referring children with possible developmental impairments (Aly et al., 2010; Bear 2004) and are mandated to perform developmental screenings during well-child visits (AAP, 2006b). While some research exists regarding child health professionals' current practices for identifying and referring children with possible developmental impairments, more research is needed to fully address current practices and issues. This study investigated child health professionals' knowledge, current practices, and perceptions of screening and referring children with possible speech and language impairments.

## **CHAPTER II**

### **LITERATURE REVIEW**

#### **Effects of Screening and Intervention**

Although several studies have addressed the effectiveness of early intervention for children with developmental impairments, few have looked at the effectiveness of developmental screening. Van Agt et al. (2007) assessed the effects of screening and early treatment of preschool children with language delay for language development and school performance at age eight. The study was a controlled trial with over 5,000 children ages 15-24 months and involved a follow-up study when the participants were eight years old. Results indicated that screening toddlers for language delays reduced the percentage of children who required special education by 30% and lead to better language performance at age eight (van Agt et al., 2007).

Nelson et al. (2006) also investigated the effectiveness of screening and intervention for speech and language delay in preschool-aged children through a literature review. Results of the literature review (Nelson et al., 2006) indicated that while screening methods should be integrated into routine developmental practices of child health professionals, developmental screenings have not been adequately studied to determine best methods, instruments, age at which to screen, and screening intervals. The review also reported that data is not readily available for the effectiveness of screening in primary care settings, the role of surveillance by physicians, the long-term benefits of

non-speech and language interventions, and the adverse effects of screening and intervention (Nelson et al. 2006).

### **Current Practices and Best Methods**

Despite agreement among child health professionals regarding the importance of early detection of developmental problems, there is no agreement on the best methods for identifying young children with developmental problems, such as speech and language impairments, in the primary care setting (Nelson et al., 2006; Glascoe & Dworkin, 1995). Assessing children for speech and language impairments can include an assortment of approaches and currently there is no “gold standard” screening technique used in the primary care setting (Nelson et al., 2006). Techniques for early identification of developmental problems include: case history, parent concerns, developmental surveillance and clinical judgment, informal screening methods, and formal screening with standardized tests (Aly et al., 2010; AAP, 2006b; Glascoe & Dworkin, 1995; Nelson et al., 2006;)

### **Case History**

Case history is not widely mentioned in the literature, but is an important component to well-child visits (AAP, 2006b). Information provided in a case history can assist a child health professional in identifying developmental problems that necessitate further examination. A case history should include the child’s developmental history along with environmental, genetic, biological, social, and demographic factors (AAP, 2006b).

## **Parent Concern**

Along with case history, parent concern is another method used by child health professionals to detect children with speech and language impairments (Nelson et al., 2006; AAP, 2006a) and should be a part of every well-child visit (AAP, 2006b). The AAP (2006b) stated that parent concerns regarding development should be addressed during well-child visits throughout the first five years of the child's life. Not only should well-child visits elicit parent concerns, the child health professional must listen and recognize the concern as need for further evaluation (AAP, 2006b). Specifically, it is the responsibility of the child health professional to elicit and address any parent concerns regarding the child's speech and language since speech and language development is often an indicator of the child's developmental and cognitive abilities. (AAP, 2006a).

Regalado and Halfon (2001) stated that eliciting and assessing parent concern can reliably and accurately indicate developmental problems. Parents' opinions and concerns regarding their child's development seem especially indicative of the child's developmental abilities (Glascoe & Dworkin, 1995). A study by Glascoe and Dworkin (1995) revealed parents' accuracy in identifying a developmental problem. In a group of children who were initially unidentified as having a developmental problem and later diagnosed, 80% had parents with developmental concerns (Glascoe & Dworkin, 1995). In regards to speech and language, in a group of unidentified children ages 6-62 months who were later diagnosed, 72% of parents displayed concerns about their child's speech and language development (Glascoe & Dworkin, 1995). A similar study by Diamond (1987) revealed that out of a large group of children who displayed substantial school difficulty, 50% had parents who had raised concerns about speech, language, learning,

motor, cognitive or academic skills four years prior. Glascoe and Dworkin (1995) also stated that parental concerns typically reflected the type of impairment and the subsequent diagnosis. This suggests that parent concerns should not be taken lightly and can indicate the type of problem the child may have.

Although research has shown the importance of using parent concern in identifying children with speech and language impairments, not all child health professionals use this technique during developmental screening. Schor (2004) stated that 40% of parents were not asked whether they had concerns regarding their child's learning, development, or behavior. Morelli et al. (2014) also stated that parents of developmentally delayed children had raised concerns regarding their child's development more than a year before clinicians recognized the problem. Parents felt that child health professionals undervalued their knowledge and concerns regarding their child's development (Morelli et al., 2014). These thoughts were mirrored by the clinicians' perceptions that parents lacked knowledge of typical child development (Morelli et al., 2014). Clinicians in the study reported that they did not routinely rely on parental report regarding the child's development, but rather used a combination of parental report, clinical observation, and clinical judgment to evaluate the child's development (Morelli et al., 2014).

Combining parent concern and clinical judgment techniques is thought to be sensible practice. The AAP (2006b) recommended that both parent and child health professionals' concerns should be used in determining a potential developmental problem. Using parent concern alone to identify developmental problems produces a significantly high overreferral rate (Glascoe, 1991). Glascoe (1991) stated that parent

concern is best used as a prescreening technique and recommended that routine practice include administration of a standardized screening test to all young children at least once, and anytime parents express developmental concern. If either the parent or child health professional have concerns about the child's development, a developmental screening should be conducted (AAP, 2006b).

### **Clinical Judgment and Developmental Surveillance**

Most pediatricians rely on clinical judgment (Glascoe, 1991; Sand et al. 2005) and developmental surveillance to identify potential developmental problems (Aly et al., 2010; Morelli et al., 2014; McGookin & D'Sa, 2011). Developmental surveillance is a "flexible, continuous process whereby knowledgeable professionals perform skilled observations of children during the provision of health care" (Glascoe & Dworkin, 1995, p. 829). According to the AAP (2006b), surveillance can be helpful when determining developmental referrals, providing family education and care in regards to health development, and monitoring the effects of early intervention for developmental problems. While child health professionals have the expertise and knowledge to identify developmental problems (AAP, 2006b), clinical judgment should only be used as a prescreening tool (Glascoe, 1991).

Although standardized screening tools are recommended by the AAP (2006b, studies have shown that child health professionals prefer to rely on developmental surveillance (Morelli et al., 2014; Schonwald et al., 2009). Using clinical judgment alone, however, can negatively impact the identification of children with developmental problems. Fewer than 30% of children with intellectual impairments, language

impairments, or other developmental problems were identified when clinical judgment was solely used (Glasoe & Dworkin, 1993) and only 20-30% were identified before entering school (Sand et al., 2005).

Other researchers support that developmental surveillance when used alone is less accurate than standardized screening (AAP, 2006b; Glascoe & Dworkin, 1995; Hix-Small et al., 2007). Almost half of children with developmental disabilities are not identified by their child health professional when developmental surveillance is not used in combination with a standardized screening (Glascoe & Dworkin, 1995; Hix-Small et al., 2011). While child health professionals should trust their clinical judgment, they should realize their observational limitations and employ more standardized screening tools (Hix-Small et al., 2007). A recent study by Radecki et al. (2011) reported that the percentage of child health professionals who used clinical judgment without the use of a standardized screening tool decreased from 71% to 60% between 2002 and 2009.

### **Informal Screening**

Informal screening can include clinical judgment and developmental surveillance, but it can also include techniques such as informal checklists (Radecki et al., 2011) and has been a part of well-child visits for decades (Smith, 1978). Informal screening is defined as brief assessment procedures that help to identify children who require more evaluation and diagnosis (Radecki et al., 2011). A study by Sand et al. (2005) stated that almost all child health professionals reported assessing developmental milestones using various methods. Many child health professionals rely on informal checklists that are completed by the physician, office staff, or parents (Radecki et al., 2011, McGookin & D'Sa, 2011). Sand et al. (2005) stated that 71% of child health professionals reported

primarily using nonstandardized methods to detect developmental problems among children birth to three years of age. Thirty-seven percent of child health professionals reported using a nonstandardized office-generated checklist or similar method (Sand et al., 2005). While these methods can be helpful in identifying children with possible developmental problems, evidence suggests that assessing developmental problems might benefit from the use of structured, validated tools (Regalado & Halfon, 2001).

### **Standardized Screening Tools**

All children, even those who appear to be at low risk for developmental problems, should receive a standardized screening assessment at 9, 18, and 30 months and when developmental surveillance identifies possible concerns regarding a child's development (AAP, 2006b). Standardized developmental screening tools help to identify children who need to complete a more comprehensive evaluation (Bear, 2004). Although standardized screening does not provide a definite diagnosis, it improves the accuracy with which children with possible impairments are identified (Aly et al., 2010). Standardized screening instruments also offer a logical approach to screening for speech and language impairments during well-child visits (AAP, 2006a).

Many researchers stress the importance of standardized screening. Pelletier and Abrams (2002) showed that when child health professionals used standardized screening tools, detection rates for developmental problems increased significantly. Sand et al. (2005) also reported that as opposed to <30% of children who are identified using informal screening, standardized screening tools have sensitivities and specificities of 70-90%. Along with higher detection rates, children at higher risk for developmental problems who are screened using standardized tools, such as parent completed

questionnaires, are much more likely to receive early intervention services (Bethell et al., 2011).

### **Parent-Completed Questionnaires**

Standardized screening tools that are completed in the home are parent-completed questionnaires that have been developed to respond to parent concerns (Bear, 2004).

Parent-completed questionnaires make up the majority of standardized screening tools (Bethell et al., 2011) and provide an opportunity for parents to become active participants in the care of their child (Bear, 2004). Some examples of parent-completed questionnaires are the Ages and Stages Questionnaire (ASQ; Squires, Potter, & Bricker, 1995) and the Parent's Evaluation of Developmental Status (PEDS; Glascoe, 2010).

Several studies have examined the effectiveness of using parent-completed questionnaires. Morelli et al. (2014) conducted a phone survey regarding parent reported ease and effectiveness of parent-completed questionnaires. Of 1,016 respondents, 98.6% reported no difficulties completing the questionnaires. Roughly 98% reported that the standardized screening tools included important areas of child development, and 88.3% reported that the developmental screening tool helped them learn about their child's strengths and weaknesses (Morelli et al., 2014).

Similar reports regarding ease of use were found in a study by Rydz et al. (2006). Of the standardized parent-completed screeners distributed, greater than 90% of parents reported that the screeners were easy to use (Rydz et al., 2006). While parent-completed screeners have been shown to be easy and effective tools for detecting developmental problems (Morelli et al., 2014; Rydz et al., 2006), fewer than 20% of young children receive parent-completed developmental screeners (Bethell et al., 2011). This statistic is

unfortunate, especially because parent-completed developmental screeners have been shown to increase the amount of early intervention services provided for eligible children (Bethell et al., 2011).

### **Prevalence of Standardized Developmental Screening**

Although standardized developmental screening has become a central element to well-child visits (Sheldrick & Perrin, 2009) and is considered an important step in early identification and intervention (Bethell et al., 2011), child health professionals use standardized screening tools irregularly and only when parents display concern (Morelli et al., 2014; Bethell et al., 2011). A study by Radecki et al. (2011) reported that <25% of child health professionals consistently use standardized screening tools. This number is consistent with other surveys which revealed that only 23% of pediatricians consistently use an effective standardized screening tool (Sand et al., 2005). The infrequent use of developmental screening tools create missed opportunities of identifying at risk children, increase the level of dependency of the individual, and decrease the productivity of the community as whole (Aly et al., 2010).

While child health professionals' use of standardized screening tools increased between 2002 and 2009, the percentage remains low (Radecki et al., 2011). Only about half of child health professionals reported using a standardized screening tool (Radecki et al., 2011, Morelli et al., 2014). These numbers support statistics from Bethell et al. (2011) in which approximately 75% of children at risk for developmental problems or had a developmental problem that required intervention, had not received standardized screenings. These numbers are not surprising given that studies have shown that child

health professionals prefer to rely on surveillance and clinical judgment rather than standardized developmental screening (Morelli et al., 2014).

King et al. (2010) investigated the prevalence of standardized developmental screeners in pediatric practices. Staff from 9 of 17 practices reported that they used structured developmental screening; however, a more in-depth look into each practice and their 'structured developmental screening' revealed that none of the practices were using developmental screening as defined by the AAP policy statement (King et al., 2010). Five of the practices were using a structured instrument in an unstructured way, and one practice 'screened' children using a clinic-created checklist of milestones. Three of the practices used a structured developmental screening appropriately, but very inconsistently (King et al. 2010).

Although the use of standardized screening is low, a growing body of research suggests that developmental screening is effective, feasible (Morelli et al., 2014), and can be implemented in the clinic or home before attending the well-child visit (Schor, 2004).

A study by King et al. (2010) created and implemented a screening protocol at several child health clinics. During the nine month implementation period, monthly screening rates increased from 68- 86% across clinics. Over the entire study, 80% of target children were consistently screened. Results from the study revealed that the screening process is feasible within the pediatric care setting (King et al., 2010).

### **Barriers for Identifying and Referring**

Although literature supports the efficacy of developmental screening during well-child visits, the early identification of developmental problems is a challenge to child health professionals everywhere (Bear, 2004). Child health professionals are presented

with numerous barriers that impact implementation of developmental screening during the most important time in a child's life (Regalado & Halfon, 2001). Research has identified many barriers with the most frequent described as: inadequate time during well-child visits, little emphasis in pediatric training, insufficient effective and efficient screening tools, and lack of referrals and follow-up (Schor 2004; Regalado & Halfon, 2001; Radecki et al., 2011; Jimenez et al., 2014).

Additional barriers listed in the literature include: inadequate reimbursement for services, inefficient workflow plans, lack of community based resources for identified children, identifying roles and responsibilities of professionals, lack of staff to perform screenings, high turnover among staff, lack of confidence in ability to screen, minimal external incentives, and rare attention from researchers (Schor, 2004; Morelli et al., 2014; Regalado & Halfon, 2001; Radecki et al., 2011; Sand et al., 2005; King et al., 2010). Because child health professionals are the most frequent point of contact for young children and are best suited to identify developmental problems (Radecki et al., 2011), it is vital that these barriers are addressed and remedied.

### **Limited Time**

One of the major barriers listed throughout the literature was the lack of time during well-child visits to conduct appropriate developmental screenings. Aly et al. (2010) stated that time constraints do not allow the child health professional to implement screening practices and many do not feel they could eliminate other aspects of well-child care to accommodate developmental screening (Morelli et al., 2014). Hix-Small et al. (2007) reinforced the notion that well-child visits provide an insufficient amount of time for assessing all domains of development in addition to administration of vaccines and

discussion of other parental concerns. Reports of average time provided for well-child visits range from 10-20 minutes (Hix-Small et al. 2007; Reisinger & Bires, 1980; bSchor, 2004). With the reported average time for well-child visits already seeming low, King et al. (2010) reported that many clinics found it was hard to screen when the clinic was busy. Given the amount of time child health providers have to perform well-child visits, it is not surprising that many children are not identified with developmental problems (Hix-Small et al., 2007).

### **Easy and Effective Screening Tools**

Although time is a very evident barrier for identifying children with developmental problems, some screening tools take minimal time and can be easily administered under time constraints. For example, Hix-Small et al. (2007) identified that the ASQ (Squires, Potter, & Bricker, 1995) is feasible to use during well-child visits. Hix-Small et al. (2007) reported that the average time needed per client was <30 seconds for the office staff to explain the process, <30 seconds for the office staff to provide instructions, and three to four minutes for office staff to score the ASQ (Squires, Potter, & Bricker, 1995), complete referrals, and enter the results into the client's chart. While ASQ (Squires, Potter, & Bricker, 1995) completion time varies per client, the tool can be completed before the client comes for the appointment or while the client waits in the clinic waiting area.

There have been few validated and recommended assessment tools for child health professionals that are not lengthy developmental screening tests (Regalado & Halfon, 2001). In addition, there has been little direction regarding the use of the tools in a busy clinic setting or how to accurately administer and interpret the information

obtained (Regalado & Halfon, 2001). One proposed assessment tool is the ASQ (Squires, Potter, & Bricker, 1995), which can be used on children ages 4-60 months and addresses five developmental areas: communication, gross motor, fine motor, problem-solving, and personal-social (Hix-Small et al., 2007). The ASQ (Squires, Potter, & Bricker, 1995) is reported to take minimal administration time and has moderate to high sensitivity, specificity, and reliability (Hix-Small et al., 2007). More research is needed to build the battery of effective and efficient standardized screening tools that can be used in a pediatric setting.

### **Physician Training**

Well-child care is a main part of the pediatric profession but receives little emphasis during academic and professional training (Schor, 2004). Child health professionals should have the knowledge and skills needed to assess developmental milestones in children (Smith, 1978) yet there has been a lack of training in child development for both physician and non-physician staff (Schor, 2004). Regalado and Halfon (2001) suggested that a major challenge is connecting the knowledge and skills required in provided developmental screening and the limited training that often accompanies it. The clinical skills needed to determine a child's developmental needs, determine best intervention, and maintain positive change in the child have not been a main focus of child health professional training (Regalado & Halfon, 2001). Many pediatricians have reported the need for additional training to appropriately address developmental concerns (Regalado & Halfon, 2001). The paradox of the situation remains that the effectiveness of developmental screening is dependent on the physician's knowledge, yet there is evidence in a lack of physician training, which in turn

compromises the physician's skills in early identification (Aly et al., 2010). Regalado and Halfon (2001) proposed that physician residency training should be restructured so that appropriate developmental screening training becomes a part of regular academic curriculum.

### **Lack of Referral**

The AAP (2006b) recommends that every child with a failed developmental screening be referred for further evaluation. Despite policies that promote detection of developmental problems, identification does not automatically translate into services received (Jimenez et al., 2014; Jimenez et al., 2012). In fact, many children who are identified with a developmental concern are not referred to early intervention (Jimenez et al., 2014). Referral rates among children who failed developmental screens ranged from 48-78%, averaging 61% during a research study by King et al. (2010). A study by Schonwald et al. (2009) reported that despite an increase in identification, there was no significant increase in referrals. McGookin and D'Sa (2011) stated factors that may contribute to poor referral practices such as: inconsistencies with child health professionals' referral protocols for children with possible developmental problems (Sices, Feudtner, McLaughlin, Drotar, & Williams, 2004), and the child health professionals' preference to use clinical judgment when deciding whether or not to refer children (Schonwald et al., 2009).

Just as identification does not guarantee intervention (Jimenez et al., 2012) neither does referral. Many children who are referred to early intervention are never evaluated to receive services; in fact, up to 90% of eligible children do not receive services (Jimenez et al., 2012). These statistics are consistent with reports from Morelli et al. (2014) which

reported that despite high referral rate, only 9.2% of children completed the referrals for early intervention. While studies suggest that many children identified with developmental concern are not connected to intervention services, there is not a lot of information as to why the connection does not occur (Jimenez et al., 2014).

King et al. (2010) studied the referral process of several clinics in an attempt to identify some referral barriers. In cases where there is a developmental concern, the AAP (2006b) recommends administration of standardized screening tools before referring the child to further services. However, many providers do not take this additional step and refer children solely based on their surveillance (King et al., 2010). Children who are referred unnecessarily or who do not have an accompanying screening result may miss the connection to early intervention. Results from the study suggested that effective developmental screening requires two different implementation systems: one for screening and another for referrals (King et al., 2010).

Jimenez et al. (2014) also explored referral and early intervention barriers. The study revealed several potential factors such as: physicians may choose not to refer due to their lack of familiarity with community early intervention services, physicians may not want to cause parental anxiety which often accompanies referral, and even when referred many families do not complete the referral process (Jimenez et al., 2014; King et al., 2010). Factors such as minority race, young maternal age, low income, low education level, and not speaking English can negatively impact the referral and early intervention processes (Jimenez et al., 2014).

Another barrier to successful referral and intervention is a delayed or prolonged process. Bailey, Hebbeler, Scarborough, Spiker, and Mallik (2004) reported that on

average, first concerns regarding development were expressed at 7.4 months of age, the first diagnosis was 8.8 months, early intervention was first sought after around 11.9 months, referral to early intervention occurred at 14 months, and the service plan was developed at 15.7 months. On average, a total of almost 8 months was required to receive appropriate services. Along with a delayed process time, Jimenez et al. (2014) reported an average of seven contacts occurred between staff and families after the initial referral to early intervention. Each contact creates an opportunity for the referral process to fail (Jimenez et al., 2014).

Another possible factor in underreferral is the importance of an established medical diagnosis. Silverstien et al. (2006) revealed that 64% of child health professionals considered an established medical diagnosis to be important when considering referral to early intervention. For speech or language delay, only 36% reported that they would refer to early intervention, which is unfortunate considering that speech and language delay constitutes the majority of children in early intervention (Silverstein et al., 2006). A different study, however, revealed that the probability of a referral was significantly higher for children with physician-suspected communication delay (Hix-Small et al., 2007). These studies demonstrate that referral rates and protocols differ across child health professionals and may help explain why a small percentage of referred children receive services.

Family preferences, level of concern, and degree of understanding early intervention also play a factor in the amount of children who are referred to and receive early intervention. A qualitative study by Jimenez et al. (2014) reported that family preferences regarding referral can either promote or discourage referral to early

intervention. Providers also reported postponing referral if they believed that the family misunderstood the developmental screening. The study also revealed that physician referral did not necessarily mean that a family would follow through with a referral. Parents may be unsure of the need for early intervention and decide for themselves whether to follow-through with the referral or not (Jimenez et al., 2014). Many parents reported that regardless of the referral, the family ultimately wanted to decide whether or not to pursue services. All child health professionals said they respected parents' wishes if they did not want to be referred or did not follow-through with the referral. Jimenez et al. (2012) also suggested that pediatricians did not adequately address parents' perception of their child's development, did not assess the parent's willingness to follow-through with services, and did not provide sufficient information regarding early intervention. In fact, many parents confused early intervention services with child protective services. Better informing parents about the referral process and the benefits of early intervention may provide a higher rate of eligible children who receive services.

Along with better informing parents and acknowledging parent preferences, Jimenez et al. (2014) revealed that more referrals were completed when the office staff made evaluation appointments for the families. Pediatricians also noted that faxing referral forms improved the referral process (Jimenez et al., 2014). While these few suggestions regarding the referral process are appropriately noted, there remains much need for research and progress improvement.

### **Summary**

Literature has addressed the effectiveness of developmental screening, which indicates that screening for language delays reduces children in special education by 30%

(van Agt et al., 2007), and that more research needs to be done to determine best methods, instruments, age at which to screen, and screening intervals (Nelson et al., 2006). Despite agreement among child health professionals regarding the importance of early detection of developmental problems, there is no agreement on the best methods for identifying young children with developmental problems. Current methods for screening young children include: case history, parent concerns, clinical judgment, informal screening methods, and formal screening with standardized tests (Aly et al., 2010; AAP, 2006b; Glascoe & Dworkin, 1995; Nelson et al., 2006). Along with assessment methods and best practices, literature has described potential barriers that impact child health professionals' implementation of developmental screenings. The most frequently described barriers include: inadequate time during well-child visits, little emphasis in pediatric training, insufficient effective and efficient screening tools, and lack of referrals and follow-up (Schor 2004; Regalado & Halfon, 2001; Radecki et al., 2011; Jimenez et al., 2014). Additional barriers in the literature include: inadequate reimbursement, inefficient workflow plans, lack of community based resources for identified children, identifying roles and responsibilities of professionals, lack of staff to perform screenings, high turnover among staff, lack of confidence in ability to screen, minimal external incentives, and rare attention from researchers (Schor, 2004; Morelli et al., 2014; Regalado & Halfon, 2001; Radecki et al., 2011; Sand et al., 2005; King et al., 2010).

## **CHAPTER III**

### **RESEARCH METHODS**

#### **Introduction**

This chapter describes the research methods that were used in this qualitative study. Within a qualitative study, the researcher is the primary research tool (Boss, Dahl, & Kaplan, 1996); therefore, it is important to understand how the researcher was involved in the study. The philosophical and theoretical approach from which this study's framework was built is also discussed. The methodology, a qualitative study design, was the most appropriate to understand child health professionals' current knowledge, practice, and perceptions for screening and referring children with possible speech and language impairments. Participant selection will also be discussed along with the procedures that were used for collecting and analyzing the data to answer the research questions. Procedures that were taken to reduce bias and increase test reliability and validity are also discussed.

#### **Researcher Perspective**

Crotty (1998) stated that humans sort out information through personal experiences and perceptions; even objective data are interpreted subjectively. Whether the researcher is aware of it or not, personal beliefs and philosophical assumptions are often brought into research (Creswell, 2013). These beliefs and assumptions are accumulated throughout life's experiences such as educational training, reading articles and books, and talking with educational advisors and professionals. Whether evident or

not, my personal experiences with this research topic may have influenced how I interpreted it; therefore it is important to understand and acknowledge my personal experiences and perceptions.

As a researcher, biases, outlooks, and beliefs regarding the research topic need to be explained (Merriam, 2009). Reflecting critically on oneself as a researcher is known as reflexivity and is essential in supporting the integrity of the study. The reason for revealing my perspective, biases, and assumptions is “not to eliminate variance between researchers in values and expectations...but [to understand] how a particular researcher’s values and expectations influence the conduct and conclusions of the study” (Merriam, 2009, p. 219-220). Through reflexivity, I was better able to understand my perspective on the research topic and therefore better understand how I may have interacted with the participants and how the participants may have viewed the experience in a similar or dissimilar way.

As a speech-language pathology graduate student, I have learned and understand the importance of early intervention for children who have speech and language impairments. As discussed in the literature review, studies have supported the benefits of early intervention on a child’s academic success and overall prognosis (e.g., van Agt et al., 2007). I am a strong advocate for early intervention and believe that early identification and referral to intervention services provides the best possible prognosis for children with speech and language impairments.

Along with my educational background, I have experience working in the university’s speech-language and audiology clinic. During my time in the clinic, I have evaluated several children ages 24-41 months who exhibited severe speech and language

impairments. These young children were sometimes referred by their pediatrician, but other times they were brought in solely from parental concern. I also had the opportunity to work with a five year old boy who was nonverbal and whose physician, according to the parents, had never displayed concern regarding their boy's speech and language development. Why did this little boy's physician fail to refer him to services?

Unfortunately, I feel as though this little boy is not alone. Past studies have demonstrated that although children display speech and language impairments, they are not referred to and/or do not receive early intervention services (Jimenez et al., 2014). These experiences have led me to ask the following questions: Why are some child health professionals failing to refer children who need early intervention services? Are they not performing a standardized screening assessment? Are they relying on personal experience to detect a possible speech and language impairment? Do they know enough about speech and language development to do so?

### **Philosophical Approach**

Research in general is the idea of "inquiring into, or investigating something in a systematic manner" (Merriam, 2009, p 3). Within research, there are two main categories, basic and applied. Basic research is prompted by the desire to extend one's knowledge regarding a topic or phenomenon. Applied research, on the other hand, is motivated by the desire to improve the quality of practice for a particular discipline by addressing a specific problem within a setting, such as a well-child visit. This research study was built upon the applied research philosophy in that it was motivated by a desire to improve the practice of screening and referring children with possible speech and language impairments. Improving a practice within a particular setting often requires the

researcher to visit and immerse herself in the setting (Creswell, 2013). Immersing the researcher within the setting and problem is a qualitative approach that is used to uncover the meaning of a phenomenon for those involved (Merriam, 2009). Qualitative research is often characterized by the following: the research takes place in a natural setting, the researcher is a main tool, multiple forms of data are collected, and reasoning is conducted through inductive and deductive logic (Creswell, 2013). Qualitative studies are often selected because the researcher needs a complex, detailed understanding of the problem. Therefore, a qualitative research approach was the best method to use for this study and provided an in-depth understanding of child health professionals' current knowledge and practice for screening and referring children with possible speech and language impairments.

### **Theoretical Framework**

Qualitative research is based on different theoretical perspectives that help provide a qualitative framework. Interpretivism is the theoretical framework that was used in this study. The central purpose of interpretivism is to further understand and interpret human behavior in a naturalistic and flexible way (Crotty, 1998). Since interpretivism is based on naturalism, adaptations in the research are permitted and often encouraged. The researcher's role in interpretivism is to experience the naturalness of life events without bias or influence, avoid strict designs while remaining flexible to new ideas, and use science along with personal experience to create a seamless, detailed research study. The researcher uses his/her prior knowledge of the research topic as the groundwork for the study and must remain open to new ideas and perspectives related to the topic (Crotty, 1998).

Interpretivism is also sometimes interchanged with constructivism, in which reality is socially constructed and therefore provides multiple interpretations of an event or phenomenon (Merriam, 2013). The goal of research built upon constructivism is to rely on participants' perceptions of the problem in order to better understand it (Creswell, 2007). Researchers that have adopted a constructivist viewpoint acknowledge that their own background shapes their interpretation and understand that their interpretation is a result of their own personal experiences. Therefore, constructivist researchers must try to put aside their personal biases and interpret what they find by trying to make sense of the meanings others experience. Constructivism allows for a new perspective and understanding of the researched experience.

Interpretivism and constructivism was appropriate for this study given that my perspectives regarding screening and referring children with possible speech and language impairments have been created from my own educational and personal experiences; and in order to gain a better understanding of the question, multiple individuals and their experiences had to be considered and interpreted.

## **Methodology**

Along with multiple theoretical frameworks, qualitative research contains multiple approaches to gathering and analyzing data. The qualitative approach that was used in this study is a basic qualitative research approach, which is grounded in constructivism. In basic qualitative studies, the overall purpose is to understand how people make sense of their lives and experiences. Researchers using basic qualitative approaches strive to understand the meaning that an event or experience has for the

individuals involved (Merriam, 2009). Basic qualitative studies involve data collection through interviews, observations, and/or document analysis.

The analysis of the collected data involves identifying recurring patterns that arise throughout the data and the reported findings *are* these recurring patterns, or themes. A basic qualitative study approach was best suited for this study in that it explored the experience and perceptions of screening and referring children with possible speech and language impairments and the meaning it contained for child health professionals. Understanding the experiences of screening and referring children as perceived by the child health professional provided insight for other professionals, such as speech-language pathologists, that may help improve the quality of the practice.

### **Participants**

In a qualitative research study, the researcher seeks to find participants that provide a representative experience, as opposed to a quantitative study where participants are ideally from a random sample. Purposeful participant selection is commonly used in qualitative research and provides the researcher with an opportunity to find an individual who may best represent the researched phenomenon (Merriam, 2009). In purposeful sampling, the researcher must determine what criteria is essential in the participants and subsequently seeks out those participants who fit the criteria. The criterion for selecting participants directly relates to the purpose of the study and provides research that is rich in information. This study employed purposeful sampling and included the following participant criteria: (1) participant is a practicing child health professional including a pediatrician, family practice physician, pediatric nurse practitioner, or pediatric physician assistant, (2) participants regularly perform well-child visits with children ages 12-60

months, (3) participants currently practice in Colorado, and (4) participants willing to participate in the study.

There are many different types of purposeful sampling, including convenience sampling. Convenience sampling was used for this research study and involved selecting participants based on time, money, location, and availability (Merriam, 2009). Along with a convenience sample, a network sampling strategy was also used. Network sampling involves locating a few participants who meet the criteria that has been established for the study. As each participant participates in the study, they may refer or suggest other individuals who may be candidates for the research study.

For this research study, participants were located by contacting personal and professional associates that either practice in child healthcare or work with child health professionals. Once potential participants were identified, I contacted the child health professional either by phone or by email. Once reached, I explained that I am a graduate student at the University of Northern Colorado who is conducting research for a graduate thesis. I explained that I am looking for child health professionals to interview regarding screening and referring children with possible speech and language impairments. Once I gave a brief overview of my research study, I asked if they were willing to be interviewed for about an hour.

The number of participants cannot be predetermined in a qualitative study. The amount of participant sampling will depend on when the data reaches saturation, which is the point where no new information is found during data collection (Merriam, 2009). When data begins to repeat itself and no new data arises, saturation is assumed and data collection ceases. Creswell (2013) indicated that phenomenology studies often require

between three and ten participants, whereas Merriam (2009) stated that a minimum sample size is based on the “reasonable coverage of the phenomenon given the purpose of the study” (p. 80). The study began with three participants; however, upon reviewing each interview it was determined that a fourth participant who primarily worked with lower socioeconomic children would provide more information for the study.

### **Institutional Review Board Approval**

An application for an expedited review from Institutional Review Board (IRB) was submitted to the University of Northern Colorado and approved (see Appendix A). Participants were not contacted and no data were collected until the application was approved. Modifications were requested and made; information was added to the informed consent form. The application was approved on December 5, 2014 by the University’s IRB.

### **Informed Consent**

Participants signed an informed consent form before each the data collection began. I informed each participant that they would receive a full description of the research study and consent form via e-mail prior to the research interview. Upon arrival for each interview, I again went over the consent form before continuing. I reassured the participants that all information would remain confidential and that pseudonyms would be used to protect their privacy. I explained that consent forms remained in a locked drawer at UNC for a period of three years, after which they will be destroyed. Participants had the opportunity to ask questions regarding the research study or their participation in the study prior to signing the consent form. A consent form was obtained from each of the four participants.

## **Data Collection**

### **Reflexivity**

In order to eliminate researcher bias that may impact the research and results, it is recommended that researchers engage in reflexivity (Moustakas, 1994). As previously mentioned, reflexivity, is described as a process of setting aside prejudgment and dispositions, allowing the researcher to be open to new ideas and focus on the experience. Researchers can employ reflexivity by acknowledging personal beliefs and expectations, consciously setting them aside before research begins. Prior to each interview, I engaged in reflexivity by journaling my expectations, experiences, and current beliefs. This journaling process allowed me to become aware of my personal biases and therefore help eliminate their impact on the research.

### **Interviews**

The main source of data were obtained through researcher-participant interviews. According to Merriam (2009), a person-to-person interview is the preferred method; therefore, I conducted each interview in person at the participants' place of employment or mutually agreed upon location. Two interviews were conducted at the participants' place of employment and two were conducted in a private residence. All interviews took place in a comfortable, quiet environment that was free of distractions and lasted no more than 50 minutes.

Creswell (2013) listed potential challenges a researcher may face when conducting interviews. One potential challenge is conducting an "asymmetrical" interview, wherein the interview is "ruled" by the interviewer. To help establish a balanced interview, the researcher is encouraged to reflect upon the relationship of the

interviewer and interviewee and create a more collaborative interview. In a collaborative interview, the researcher and participant are able to question, interpret, and report. While this study did not fully implement a collaborative interview as described by Creswell (2013), I reflected upon the researcher-participant relationship prior to each interview and allowed opportunities during each interview for the participant to ask questions and freely dialogue on the research topic. I strived to create an interview as Merriam (2009) described, “a conversation focused on questions” pertaining to the research question (p. 87).

To help guide each interview, I created an interview guide that contained questions to help answer the research questions. Following a semi-structured interview format, research questions remained open-ended and flexible depending on each individual participant and interview experience (Merriam, 2009). The interview questions included several types of questions, such as: experience/behavior questions, opinion/value questions, feeling questions, knowledge questions, and background/demographic questions. A short example of the questions include:

- What is your overall opinion on well-child visits?
- Explain your procedures for checking the child’s speech and language development.
- How do you feel about using your clinical judgment to assess the child’s speech and language skills?
- Explain your experience when referring for a possible speech and language impairment

A complete list of interview questions can be found in Appendix B.

### **Scenario Questions**

Along with interviews, each participant was asked to listen and respond to three scenario questions. Each scenario depicted a plausible instance where a child during a well-child visit may have a speech and/or language impairment (Appendix C). The scenarios were used to identify what procedures the child health professional would employ during a well-child visit. The scenarios also helped gauge the child health professional's current knowledge of typical speech and language development in young children based on the information speech-language pathologists understand to be typical speech and language development.

### **Data Analysis**

Data analysis involves organizing the data, conducting initial read-throughs of the data, coding and organizing themes, representing the data, and interpreting the data (Creswell, 2013). The data were organized by participant and participant interviews into files on a password protected computer. I recorded each interview and transcribed the information on a password protected computer within one week of the interview. Each transcript was read and re-read to gain a sense of the interview before further analysis began. Each interview transcription was sent to each participant within one week of the interview to promote member checking. Member checking allows each participant to review what was said during the interview and make edits or remove any pieces of information that they wish. Member checking is a common strategy used for internal validity and is described as essential for ruling out the possibility of misinterpreting the meaning of the participants' response (Merriam, 2009).

## **Theme Reduction**

Once the interview was transcribed and the participant reviewed and approved the transcript, the interview was coded separately by my primary research advisor and me. All data analysis was conducted without qualitative software assistance; a word-processing program was used to create codes in the margins. Coding involves collecting text into small categories of information that may be pertinent in answering the research question (Creswell, 2013; Merriam, 2009). Initial codes were marked in the margins of each interview transcript. Once the entire transcript was read and marked, the codes were grouped into similar categories. This process of grouping codes together is called analytical coding, which is a code that comes from interpreting and reflecting on the meaning of the data (Merriam, 2009).

Once the next interview took place, the data were read, re-read, and coded similarly to the last. Categories from previous sets of data were kept in mind to evaluate emerging ideas. Once categories were established, they were reanalyzed and compiled into themes that more precisely reflected the data. Identified themes should be comprehensive, responsive to the purpose of the research, mutually exclusive, sensitive, congruent, and make sense with the other themes. Initially, it is acceptable to create 25-30 categories in the preliminary stages of data analysis. The categories are then condensed down into five or six themes that truly reflect the research question (Merriam, 2009). In this study, 50 categories were initially created. To narrow down the categories, I marked the categories in which three or more participants mentioned the idea in their interview. This created a condensed list of nine categories, or emerging themes. The

emerging themes were then discussed by my primary research advisor and me and condensed into six mutually agreed upon themes that reflected the research question.

Triangulation, the use of multiple and different sources, methods, investigators, and theories, helps to support the study's validity (Creswell, 2013; Merriam, 2009). This process usually involves confirming evidence from different sources to help interpret a possible theme. Triangulation was achieved by conducting interviews, scenario questions, artifacts, and researcher journal.

### **Reliability**

Reliability in qualitative studies is established through the use of triangulation, intercoder agreement, researcher's position, and an audit trail (Merriam, 2009).

Intercoder agreement between my primary research advisor and me helped to establish reliability and involved both individuals to review the data and come to an agreement regarding the interpretation (Creswell, 2013). The audit trail is used to validate the findings based on the "trail of the researcher" (Merriam, 2009, p. 222). This strategy helps to explain how the researcher arrived at the results. I created an audit trail by logging my research process in a journal and computer files. My audit trail included information such as: researcher reflexivity, interview guides, interview transcriptions, coding within the transcriptions, and category consolidation.

### **Data Handling Procedures**

Data obtained from live interviews were recorded on a password protected iPad and transcribed within a week onto the researcher's password protected computer. Once the audio recordings were transcribed, the files were deleted from the password protected iPad. All files were saved onto a password protected computer and backed up on a

password protected flash drive. A list of the participants' names and corresponding pseudonyms along with all other data collected during the study was also stored on a password protected computer and password protected flash drive. The only individuals with access to the data were my primary research advisor and me. Consent forms containing the participant's pseudonym are kept in a locked file cabinet for three years post-research study. After that time, the forms will be destroyed.

### **Summary**

This chapter described the research methods that were used in this qualitative research study. The philosophical framework was applied research, in which the research is motivated by a desire to improve the practice of a particular event, such as screening and referring children with possible speech and/or language impairment. The theoretical framework was built upon interpretivism and constructivism, which helps to interpret human behavior in a naturalistic way by relying on participants' perceptions to better understand the problem (Crotty, 1998; Merriam, 2013). The qualitative approach used in this study was a basic approach, in which the overall purpose is to understand how people make sense of their lives and experiences (Merriam, 2013). Participants were selected based on sample convenience and a set of criteria. The research study was approved by the IRB and participants signed a consent form prior to data collection. Data were collected primarily through participant interviews. Each interview contained scripted and non-scripted questions and scenarios that provided dialogue to help answer the research questions. Each interview was transcribed and sent back to the participant for member checking. After participant approval, the data were analyzed separately by my primary research advisor and me. Data analysis involved coding each transcription to determine

emerging themes. The emerging themes were then discussed and narrowed down to the most prominent themes that addressed the research questions. Reliability was addressed through the use of triangulation, intercoder agreement, researcher's position, and an audit trail.

## **CHAPTER IV**

### **RESULTS**

#### **Introduction**

This chapter presents data to explore and help answer the following research questions:

- Q1     What are child health professionals' current practices for screening and referring children with possible speech and language impairments?
- Q2     What are child health professionals' perceptions regarding the screening and referring process for children with possible speech and language impairments?
- Q3     What are child health professionals' knowledge regarding speech and language development in children?

Results presented include data collected from participant interviews, scenarios, and artifacts collected from participants. Along with presented data, participant descriptions are provided to offer a better understanding of each participant and the information that each presented. The collected data were analyzed, as described in the methodology chapter, and grouped into themes. These themes are presented, allowing the reader to understand the knowledge, perceptions, and practices of child health professionals for screening and referring children with possible speech and/or language delay.

### **Participant Descriptions**

Four participants were included in this study, all from various locations throughout Colorado. Three participants were from suburban communities that surround a metropolitan area, and one was from a small mountain community. All participants were practicing child health professionals and met the criteria as mentioned in the methodology chapter. Out of the four participants, two were pediatricians, one was a family practice physician, and one was a pediatric nurse practitioner. The participants included two males and two females. Individual participant descriptions are provided below using pseudonyms to help readers better understand the participants.

#### **Dr. Allen**

Dr. Allen is a pediatrician with twenty-seven years of pediatric experience. The interview took place at a private residence of a mutual acquaintance. Dr. Allen has practiced in multiple states including North Carolina, Ohio, Oregon, California, and Colorado. Throughout Dr. Allen's career, she has practiced in either a private practice or group setting. Dr. Allen currently works in a group practice with four family practice physicians and two pediatricians. The primary demographic for Dr. Allen's clinic is middle- to upper-class with "98% Caucasian and a few Hispanic, African American, and Asian" ethnicities. The patients come from an affluent area in Colorado and the typical parents were described as "savvy" and have "very high expectations" for their children. The practice does not accept Medicaid, although Dr. Allen has worked in settings where Medicaid was accepted.

Dr. Allen was extremely friendly and easy to talk with. She presented information that answered the interview questions along with additional information that provided a

better understanding of well-child visits, the screening process, referrals, and intervention options.

### **Dr. Jones**

Dr. Jones has been a practicing pediatrician in a private practice setting for eleven years. The interview took place at a private residence. Dr. Jones currently works at a hospital-based pediatric office where he primarily sees younger children during well-child visits. The practice does not accept Medicaid and the primary demographic is Caucasian that was described as a “fairly comfortable socioeconomic status”. Although Dr. Jones’ current practice primarily includes middle- to upper-class patients, he completed three years of training at an inner-city clinic in Kentucky which was described as “a very different patient population.”

Dr. Jones’ answers were concise and to the point. While he provided information based on the interview questions, he did not present additional information beyond the interview questions.

### **Dr. Anderson**

Dr. Anderson is a family practice physician and was interviewed at his place of employment, a private practice in a suburban community. Dr. Anderson has worked in a family practice setting for 32 years in which he provides care to all ages from birth through adulthood. Although the average age of his patients is thirty years old, the average age for his pediatric patients is five or six years old. The primary demographic for the clinic was described as middle-class families that are “military and young professionals”. About “70% are Caucasian and the rest are Hispanic, Asian, and African

American.” Dr. Anderson’s practice accepts Medicaid and provides services to “some underprivileged children that require assistance from the state.”

Dr. Anderson was well-versed and knowledgeable during the interview. He provided information that answered the interview questions along with additional information that provided a better understanding of well-child visits, the use of parental concern, the referral process, and ideas on how to improve the referral and intervention processes.

### **Nurse Practitioner Moore**

Nurse Practitioner (NP) Moore was interviewed at her place of work, a school-based community pediatric clinic. She has been a practicing NP for twenty years and has been at her current clinic for fifteen years. NP Moore provides care for pediatrics, children ages birth through eighteen. Prior to her current position, NP Moore worked in primary care at a private practice in New Mexico. Although the setting was different, the patient population was described as “a very similar patient population” to what she works with currently. NP Moore also worked in a community health clinic in Illinois.

NP Moore’s current workplace is a school-based clinic. She described how the school-based model serves all children that go to the school in addition to any child in the community. With this model, NP Moore provides care for many siblings and families. Although the clinic is school-based, some children who attend the school choose to receive services from other providers.

NP Moore was chosen as a participant based on her experience with lower socioeconomic patients. After the first three interviews, it was determined that the study would benefit from a child health professional who primarily worked with lower

socioeconomic patients. NP Moore described the demographic for the clinic as “60% Hispanic” and “70-80% Medicaid”. There is roughly “10% [who are] uninsured primarily because they’re undocumented.” The clinic also has a small portion of patients who pay through private insurance.

NP Moore was knowledgeable and very easy to talk with during the interview. She presented information that answered the interview questions along with additional information that provided a better understanding of school-based clinics, well-child visits, use of standardized screening tools, and the referral process.

### **Scenario Questions**

Three scenario questions were presented to each participant. The scenario was read aloud and the participant stated how he or she would proceed in a well-child visit. The scenarios were written as plausible events that could be encountered during a well-child visit. Each scenario was written with a “correct” answer using developmental standards described by Paul (2007). The participants’ responses were transcribed and analyzed to determine if the participants’ responses were an appropriate action (see Appendix D for participant responses). These scenario questions and participant responses help to understand child health professionals’ current knowledge about speech and language development. Each scenario and participants’ responses are described below.

#### **Scenario One**

The first scenario question investigated child health professionals’ knowledge of the speech and language development of a two-year old. The scenario is as follows:

A twenty-four month old girl walks into your clinic and is happy and very talkative. She is interacting well with the office staff and has found a few toys to

play with on the floor. Once she enters the exam room and you begin to talk with her, you realize that you can only understand about half of the words she is saying. While she rambles off questions to you, probably regarding the toys in her hands, you are only able to make out every other word. You ask her mom how she communicates at home and she responds “Great!”

The intended answer was derived from Paul (2007) and includes:

By 24 months children should be requesting information, engaging in free play, producing 2-word utterances, and speech is about 50% intelligible. Therefore, this little girl would fall into a normal population for speech and language development and does not require a referral.

Scenario one was appropriately answered by all four participants. Two participants stated that they would find out more information from the mother, such as “What do you mean by great?” They also reported that they would ask the mother more information about the child’s communication style. For example, “Do you understand everything she says, or [have you] been around her so much that you know what she wants because she’s pointing?” and “You mentioned that she’s communicating well, does that mean verbal or pointing?” All participants’ knowledge was identified as appropriate based on their statements that the child’s speech and language development was within normal limits. Responses included “at two, they do have a lot of babbling type talking”, “at two you should only be able to understand only about half.”, “we’re not too worried”, and “she’s actually doing pretty well...I would find her to be appropriate if not actually a little advanced...I’d be happy with her speech.”

Two of the pediatricians would also see the child back in six months to reassess her speech and language, “If it doesn’t improve at all, then I would probably refer her to an organization that is run by the state.” Another participant responded “I would see her back...in six, six and a half months. And if she’s not better I would do a speech referral at that point.”

## Scenario Two

The second scenario question investigated child health professionals' knowledge of speech, language, and pragmatic development of a twenty-month old. The scenario is as follows:

A twenty-month old boy comes into your clinic and is running all over the place. He is very active and seems to be wearing his dad out. When he wants a toy car, he gestures and moans until his dad gives him the car. Once he enters the exam room, you try to engage the boy in a little conversation. He looks at you, and then continues to play with his car while making crashing noises. The dad tries to take the car away to help the boy focus on what you are asking, and the boy yells "no!" and begins to throw a tantrum. The dad gives the car back and he settles down. The boy makes a lot of sounds and seems to be content playing with his car on the ground. You ask the dad how he communicates at home, and he says "Fine, I always know what he wants."

The intended answer was derived from Paul (2007) and includes:

A child by 18 months should have a vocabulary of 50-100 words. The only evidence of any words during this visit is "no". The physician should ask whether he uses more words at home. The lack of attention and fixation on the car also raises a red flag for pragmatic language issues, such as Autism Spectrum Disorder. It is recommended that this little boy be referred for a speech and language evaluation.

Scenario two was appropriately answered for language development by three of the four participants, and only appropriately answered for both language and pragmatic language development by two participants. One participant reported that "this is pretty...normal for a 20 month old boy! They are usually much more into motor than into fine motor and speech." While the statement pertaining to the boy's motor development may be true, the participant did not seem surprised by the lack of language and joint attention skills that may indicate both a language and pragmatic language delay. This participant provided an inaccurate response to the presented scenario.

Three of the participants responded appropriately for the boy's language development. One participant would find out more information regarding the boy's language development. "[T]he verbal [language] part of that sounds like we need to be a little more clear on how his development is." Another participant stated that "his speech is delayed... [h]e should be a little bit further along than that." and "I would expect his speech to be a little more communicative. According to this, he has no verbal skills at all. Yeah, he should be talking somewhat."

Two of the participants responded appropriately for the boy's language *and* pragmatic language development. "[T]his is a kid I would be worried about autism spectrum disorder, ASD. Here's a kid who's really not interacting well with either Dad or me; he's more focused on inanimate objects. So that raises a little yellow flag." The same participant would also ask the parents more information such as "[are] there any siblings that have had similar problems? [O]r...any tendencies with dad to be anti-social when he was younger?" and would refer the child for an evaluation at the children's hospital. Another participant was also concerned about the child's pragmatic language and suspected ASD. "So depending on what his behavior is and if he hasn't had an MCHAT before, we may have him do the MCHAT." The Modified Checklist for Autism in Toddlers (MCHAT) is a parent completed screening tool used to assess the risk for ASD (Robins, Fein, & Barton, 2009). For a full example of the MCHAT (Robins, Fein, & Barton, 2009) see Appendix E (used with permission from Diana Robins, see Appendix F for permission document).

### Scenario Three

The third scenario question investigated child health professionals' knowledge of the speech and language development of a five-year old. The scenario is as follows:

A 60-month old boy comes into the clinic and is very shy and quiet. He is polite and answers the office staff when he is asked a question. The mother is very talkative and engages the boy in a big conversation. When he enters the exam room, you ask him his name and he responds "Wyan" (for Ryan). You ask how Ryan is doing at home and his mother responds "We are very concerned about his speech. He is to start kindergarten soon and we feel that he will not be able to keep up in his classmates."

The intended answer was derived from Paul (2007) and includes:

By 60 months the following phonemes may still be produced in error: /s/, /r/, /l/, and "th", therefore his error on /r/ is not a concern. While his mother is very concerned about his speech, /r/ is the only error he appears to make. His language skills appeared to be appropriate in that he responded to the clinic staff's questions and engaged in a conversation with his mom in the waiting room. Despite his mother's concerns, which usually should be taken into consideration, Ryan should not be referred for a speech and language evaluation at this time.

Scenario three was appropriately answered for speech and language development by two of the participants. The two participants that provided an inaccurate response stated that they would complete a referral for the child's speech development. One participant responded "he probably does have a little bit of a speech impediment and I would engage speech therapy." Another participant responded "this is a kid who definitely needs a speech therapy referral." The participant stated that "[t]he kids will be unmerciful if [the boy] has a little speech problem going on there." While the boy cannot correctly produce the "r" sound, this is a developmentally appropriate sound error; therefore, the two participants inaccurately responded to the scenario.

Two of the participants appropriately responded to the scenario. One participant stated that "at five he may not [produce] all the sounds correctly." The same participant

also stated that more information would be elicited from the parent. “I would look at what specific concerns she has, because a lot of parents will come in with concerns and...after talking with them their kids are fine.” The participant also stated that by age five, “strangers should be able to understand everything he says and...he should be able to carry on a conversation, tell a story, and have the sequence be right.” The other participant who appropriately answered the scenario responded “I’m not hearing the conversation, [but] from reading this scenario he’s probably on track. But again, we do developmental assessment. If he is behind in something, then I would send him on for a full evaluation.”

### **Themes**

Interview questions were developed to help guide the interview with each participant. The interviews aimed at gaining a richer understanding of the research questions: What are child health professionals’ practices and perceptions of assessing and referring children with possible speech and language delay? What are child health professionals’ knowledge about speech and language development? Responses to the interview questions and the dialogue throughout created emergent themes and subthemes. All themes and subthemes that added deeper understanding of the research questions were noted when analyzing the data. During the coding process, notes were created along the margins of the transcript and organized onto a spreadsheet to track themes and subthemes across participants.

Through this process, six themes emerged that provided a deeper understanding of the research questions. These themes include: parents and their role in early identification, impact of socioeconomics, perceptions of well-child visits and assessing,

current practices of assessing, perceptions and preferences of referring, and the referral process. While these themes emerged throughout the interviews, the practices and perceptions of each participant varied, creating data rich in participant practices and experiences. A table of all themes and subthemes is included in Appendix G.

### **Parents and Their Role in Early Identification**

Throughout the interviews, participants shared their experiences and perceptions regarding parents. Some experiences and perceptions were analogous across participants, while others were unique to that participant. Whether the information was similar or dissimilar, it all was considered to gain a better understanding of parents and their role in the assessment and referral process.

During the interviews, it was apparent that all participants viewed parents as extremely knowledgeable and experts regarding their child. One participant stated “I think parents know their kids.” Parents were described as having a “good feel” for their child and know what is going on developmentally. One participant stated “they (parents) have a pretty good feel for what’s going on”. Parents understand their child well for many reasons. One participant stated that their parents are “highly educated” and therefore academically understand a child’s development. Along with highly educated parents, the “age of the internet” provides parents with a way to learn about what their child should or should not be doing. “Parents usually come in and they’ve already been doing a lot of research...they come in usually well-armed.” Even without the use of the internet, parents conduct research by observing their child and talking with family members or friends who have or have had children. “And parents, they’re seeing the kiddo all the time. [U]sually they have siblings at home or they have cousins, nieces and

nephews...and the parents are talking. The mothers are talking. So they have a pretty good feel for what's going on."

One participant felt that sometimes parents know *too* much and can be overly concerned. The participant described, "I've had some parents come in with their kid who's like fifteen months...they were very focused and very concerned that she did not know her colors yet...at fifteen months. I'm like 'ok'. I'd be surprised if she knew them at all!" The participant then explained how to handle an "overly concerned" parent and how to educate them on the true developmental stages. "[T]alk them down a little bit...these are really the developmental phases. A lot of kids don't know their colors until three, four, [or] five sometimes..." Along with being overly concerned, some parents were described as having "very high expectations". The participant stated how it is important to inform the parents of realistic expectations and to let their child "be a kid a little bit longer."

Whether parents are overly concerned, too savvy, or have high expectations, all four participants listen to parents and use parental concern when assessing the child's speech and language development. A few participants stated that you have to rely partially on parental information and concern because the child is not talking during the well-child visit. One participant stated "A lot of kids, two, three, even four years old won't talk much to a stranger...at all." Another participant stated "[t]he younger kids, they're not saying a whole lot to me..." Child health professionals also rely on parental information when the child's development cannot be directly observed. For example, one participant stated, "I don't get a good sense of what their development is because a lot of times they're just yelling and screaming and fighting me."

Child health professionals value the parent's information by listening to what they have to say. One child health professional emphasized the importance of listening to parental concern, "you have to listen...you have to listen." Another child health professional stated "I listen very, very carefully to parents." The participant provided a story to demonstrate why it is important to listen to parents and their concerns:

When I was...probably one or two years into private practice... [a] mother comes in and she brings in her two and a half year old daughter and says "My daughter has appendicitis." I'm thinking to myself "No way, you don't see appendicitis that early! No way, it doesn't start below five." I said, "Ok, well tell me a little bit more about it." And she said "I know that she has it because I acted the same way when I was two and I had appendicitis." So my ears perked up a little and I said "Ok." So I examined the kiddo and sure enough...she did have appendicitis. So from that point on, I've always learned to listen to the parents. And if I'm not going to agree with them I better have a...good reason why I'm not agreeing with them.

Based on the information provided by the participants, parents are knowledgeable, know their child well, and ultimately play a role in assessing their child's speech and language development. Parents can also play a role in the referral process. One participant stated that if parents have a concern and want a speech-language evaluation, then a referral is made,

"I will send a referral over right away... [I]t usually takes them maybe two weeks at most. So if they haven't done it (evaluation) in two weeks, I tell the parents to call me and we will figure out why they haven't done it (evaluation) yet."

The same participant also receives parental permission before a referral is made. "I'll usually ask the parents if it's ok." The participant explains the process of the referral and evaluation process to the parents, who usually reply "great, do it."

Just how some parents aid in the referral and evaluation process, some parents hinder the process. Two participants provided information regarding the experiences they

have had with some parents and/or families. One participant stated that some parents lie during the well-child visit because “they want you to think that everything’s fine.”

Parents will deny things like smoking in the house or around the child, “but you can tell when they’re lying...[their] car smells like smoke, [they] smell like smoke, but no...[they] never ever [smoke].”

The same participant explained how it’s clear when a parent is lying, because they will start lying about everything.

I think you can tell when they’re lying because they’ll start lying about everything. The child is grossly obese and they’ll say “Oh he only eats three small meals a day” and you’re like “Yeah right...sure”. “We only do skim milk”. Mmm-hmm... So yeah, you can tell. They pretty much know what they’re supposed to say, and that’s what they’re going to say.

Some parents lie or refuse the referral and evaluation due to concerns about being reported to the state. One participant reported experiences in which they felt parents lied or refused services.

I think in some particular cultural settings or demographics, they’re worried that either you’re going to be critical of them; you’re going to get the state or government to intervene in some way that they don’t want; you’re going to take the child away, so they will lie, because they want you to think that everything’s fine.

Two participants felt that some parents confuse early intervention with child protective services and are “concerned” when anyone from an agency is included. “There’s families who are worried that protective services are going to get involved.” Some parents become “fearful” when anyone comes from “a state agency, federal agency, even county (agencies)”. They are fearful because “they are illegal and they’re going to get kicked out of the country, or their child’s going to be taken away.”

A small percentage of parents refuse early intervention services all together, which one participant described as “frustrating” because a family cannot be forced to complete the evaluation process. One participant described the experience:

I have a small percentage [of parents] that early intervention has reached out to ...and they're like “no.” And my hands are tied. I can't make them do it. But what I *can* do is every time I see them...point out and talk about what's needed. And if it's not solved, what the ramifications are for the child. It's frustrating. It's definitely frustrating because I know it could all be addressed. Especially when I look at younger kids when, for the most part, if they just had some early intervention...all these issues would be resolved. They would be ready to go when school starts. But then they have all these problems. So then it's about trying to identify what it is for the parents, why they're resistant to it. [E]very once in a while we'll have families who are Hispanic or undocumented and they're worried about that. So you know, helping to alleviate those fears that no one's really interested in that (being undocumented), we don't care...no one's going to report them or anything like that. And then there's families who are worried that protective services are going to get involved...You know, just trying to drill down and figure out what's behind them saying “no”. And every once in a while they're like “I don't see a problem, all of my kids are like this.” Well...it's probably true. But yeah, those are frustrating.

All participants shared that motivated parents are likely to receive and follow through with services for their child. Parents who have concerns and want services “are eager to get it, and they're going to get it.” One participant described a unique patient population in which parents seek out the services that they feel are best. “I have parents who are like ‘no, I don't want to use anything (services) here. I want to fly to my clinic in New York and have it (evaluation) done there.’” Another participant described the parents and patient population as “very motivated and on top of things.” The participant went on to describe “I usually don't do referrals. I just give them (parents) the number to call...I've never had anybody who didn't call...” The same participant explained how the referral process is “fine” for the patient population because they are “motivated” and “want to take care of it”. Another participant stated “usually the parents are pretty

motivated” in regards to coming to appointments and completing the referral. Motivated, educated parents were described as “those parents” who talk and read to their kids. “They have a certain level of expectations for their kids”. With these expectations, parents are more likely to follow through with services for their kids because “their kids are all going to go to kindergarten and they’re all going to be reading and know their colors and numbers...” These pieces of information support the idea that motivated parents are more likely to attend well-child visits and follow through with referrals to early intervention services.

Through information provided by the participants, parents play the following roles in assessing and referring children with possible speech and language impairments: parents are knowledgeable about their child and are used to help assess the child’s development, some parents are overly concerned and require education on normal development, child health professionals listen to parental concern during well-child visits, some parents hinder the referral process due to fear or suspicion, parents play a role in the referral process either by refusal or follow through, and motivated parents are likely to receive services for their child.

### **The Impact of Socioeconomics**

A theme that was mentioned again and again during participant interviews was socioeconomic status and how varying patient socioeconomic statuses (SES) impact the well-child visit process. The following information describes the experiences and perceptions of the participants with socioeconomic status.

Three of the four participants currently work with middle to higher SES patients; and three of the four have had experience during their professional career with lower SES

patients. Their experiences with all SES levels provided a deeper understanding of socioeconomics and the role it plays in assessing and referring children with possible speech and language impairments. One recurring theme expressed by three of the four participants involved the experience that higher SES remember well-child appointments, whereas lower SES need more reminders. In regards to providing reminders for appointments, one participant stated “I have worked in clinics that did (provide reminders) because there was a high failure rate.” The participant’s clinic does not currently provide reminders because the patient population does not require reminders. “[W]here I’m practicing now, they (patients) show up...they tend to be highly educated parents and they tend to show up. In fact, they’ll call if they’re going to be five minutes late.”

Another participant stated that the clinic’s current patient population is “very motivated and on top of things.” However, the participant has also worked in a lower SES setting, where reminders for appointments were needed. “We called and set up appointments...but that was a very different patient population. (It) was more inner city...they’d miss appointments and get fired for not missing appointments. [T]here wasn’t as good of a follow through from the parent’s side...”

Another participant felt as though it wasn’t SES that made a difference regarding reminding parents of appointments, but the family’s home life. The participant stated “usually the parents are pretty motivated, middle-class. But if I get someone...with a little bit more chaotic home life, I’ll put them in the recall and (my assistant) will make the recall and tell them it’s time to come in.” The participant’s clinic also has a

centralized call center that reminds all patients of upcoming appointments. “It doesn’t eliminate no-shows, but it at least lowers it.”

Along with potentially needing more reminders for appointments, one participant stated that less educated or lower SES do not listen to the child health professional’s advice or referral:

[I]t’s extremely frustrating. And some of the clinics that were more low-income areas, less educated parents, they really could care less what you’re telling them anyway. It’s like “you’re not in my culture...and I know what I’m going to feed my kid and do whatever” you know. Just give them the shots.

As mentioned in the previous theme of “Parents and Their Role”, all participants felt that motivated parents are likely to receive and follow through with services for their child. Three of the four participants felt that more educated and higher SES parents fall into the category of “motivated”. One participant described a high SES population in which parents not only seek services for their child, but fly on a private jet to where they feel the services are best for their child. Three of the four participants currently work in clinics that primarily serve middle to higher SES families. The participants felt that those parents, or middle to higher SES, were motivated and would receive services for their children.

Two participants described how the income level of the patient impacts the referral process and follow-through to receive services. In regards to receiving services, one participant stated “[w]here I am right now (high SES population), it’s really good...other places it’s not...[i]t depends on the volume, it depends on the education of the parents, (it) depends on the number of resources you have.” Another participant explained how patients of lower SES may have different priorities other than following through with a referral and speech-language evaluation.

I mean, there are some sad stories. You know, we (child health professionals) were trying to talk [to families] about how to be safe and [about] normal development, and they're just worried about where they're going to get their next meal...or if they had a bed to sleep in that night. I shouldn't say bed, because a lot of them just slept on the couch of family...it was kind of sad. [T]he follow-through wasn't great because the priority was more on...their primary needs.

The information provided by the participants provided a more comprehensive understanding of how socioeconomics play a role in assessing, referring, and receiving services for children with possible speech and language impairments. Participants revealed that: parents from higher SES homes keep appointments and parents from lower SES homes require more appointment reminders, parents with less education or parents from lower SES homes do not listen to child health professionals information or recommendations, parents from higher SES homes tend to be motivated individuals and are more likely to receive services, income level affects the referral and follow-through for services, and individuals from lower SES homes may have different priorities when deciding whether to follow through with an appointment, referral, or receive services.

### **Perceptions of Well-Child Visits and Assessing**

One purpose of this study was to investigate child health professional's perceptions of assessing children with speech and language impairments. During the interviews, participants provided rich information regarding their experiences, beliefs, and feelings about assessing speech and language during well-child visits. One perception that was evident through all interviews was that they, the interviewed child health professionals, currently have enough time for well-child visits.

Each participant varied in the amount of time their clinic allows for well-child visits. One participant's clinic schedules the well-child visits for a "full hour". The clinic

provides an hour because “we want to have the parents have time to ask lots of questions. We don’t necessarily spend all that time, but it’s there if they want it...we want them to feel comfortable.” The participant went on to say “I have worked in clinics where it was like fifteen minutes, and I hate that.” Fifteen minutes was described as not being enough time. “It’s barely enough time to do a quick physical exam. It’s not enough time if they have any questions or concerns...at all. It was extremely frustrating.” The clinics where the participant was not given “enough time” was described to be in lower income areas:

You’re making extremely minimal amounts [of money] on any patient visit, so they’re going to schedule 7-15 minutes at max. And you really feel like you’re not making a dent in anything...at all. [Y]ou may as well run them through and give them their shots and not even look at them. Because you’re not talking with the parents, they’re not talking to you.

The perfect amount of time was described as “at least forty-five minutes to an hour” for most well-child visits. “Where I am now...I really like it because you get a lot of time to spend with parents; teach them, answering questions, and they’re very engaged in their kids...it’s really enjoyable.”

Another participant stated that the exam time “depends”, although thirty minutes is the usual amount. The participant felt that thirty minutes was a good amount of time and stated “at our office we just take whatever time the family needs, and that can be different for lots of different things.” The participant explained how some visits take longer due to more questions or concerns from parents, but some visits are shorter. “It works out for most [of] the time.”

One participant stated “it’s probably twenty minutes for just my time” for well-child visits in the child’s first year. Including the time nurses take for them to check in and complete tasks such as check the child’s weight, the entire visit is a total of thirty

minutes. The participant went on to explain how as children get older, the visits become a little quicker. Regarding the participant's perspective on the amount of time per visit, "I think it's pretty decent. I feel that patients don't feel like they're rushed...but of course that's my perspective." The participant also explained how the amount of time for each visit is a balance, "You're always balancing seeing lots of patients [while] covering everybody's needs...so it's always a balance."

One participant is only given fifteen minutes per visit. "[I]f it's just a straightforward well-child check, no problems, developmentally on track, no nutrition needs, and just like...perfect, [it] can be done in about fifteen minutes." The participant uses a lot of handouts to provide additional information to the parents for which the fifteen minute time slot may not allow. "Anybody who has anything additional, they're not totally well, they have developmental needs, anything like that...[you need] twenty to twenty five [minutes]." The participant also explained "Every once in a while it takes longer...new patients take longer."

When asked if fifteen minutes is a good amount of time, the participant replied "I think that there are times when it would be helpful to have longer. Our system isn't amenable to it. It's just how it's set up." So while the participant feels as though fifteen minutes is an adequate amount of time, more time would be helpful during well-child visits. "It's really hard the way healthcare is these days to get a lot of time to spend with patients, unfortunately." The participant continued to explain how their clinic maintains a close relationship with their patients to ensure that the patient's needs are being met despite the short visit allotment. "[P]arents know if they have questions they can call. They can just pick up the phone and call me."

One participant explained the importance of time and being efficient during well-child visits. The child health professional stated:

Time is money, money is time. So you're always balancing those two things of doing a really good job with the least amount of time. So - how do you do that? You have to use your time efficiently. Use screens for kiddos that are falling behind.

One of the participants felt that clinical experience is important when assessing a child's development, including speech and language. "[I]t takes a while, in practice, to learn what a completely normal kid is and what an abnormal kid is. It...takes seeing lots and lots and lots of kids."

Pediatrics, including assessing development, was described as preventive health care in two of the four participants. One participant explained how pediatrics is preventive:

I think pediatrics is...very preventive. We do immunizations to keep kids from getting sick. We do well child checks...to talk about what's normal development and how to handle certain situations and to pick up on those kids. [T]here's so many different milestones that they should be meeting growth wise, and development wise. [I]t's much easier to get on things early, especially development.

Another child health professionals stated "The bottom line is...to protect the kids and lower their risk of getting preventable diseases." Both participants emphasized the importance of prevention in pediatric healthcare and well-child visits.

All participants were satisfied with the current well-child visit and enjoy conducting the visits as a part of pediatric care. One participant stated "I think well-child visits are a very important part of what we do." When asked "what would you change about well-child visits" the same participant stated "I'm pretty comfortable with how they

go.” Another participant echoed the importance of well-child visits, “I think they are definitely necessary.”

Other participants stated “[I] love them. They’re a lot of fun” and “I really like it (well-child visit). You get a lot of time to spend with parents, teaching them, answering questions, and they’re very engaged in their kids...” Another participant also described how well-child visits are enjoyable because the child health professional gets to engage the parents. “It...gives me a time to talk with parents and really find out what is going on. [Y]ou get to look at the whole picture.”

Two participants enjoy well-child visits because they provide services when the child is healthy. “For the most part they (well-child visits) are fun because [the] kids are healthier (than acute-visits).” Another participant described a rich perspective into why well-child visits are enjoyable:

You’re seeing kids that are healthy, and so...you’re seeing...their true personality, other than being in a sterile environment. So you get to interact with the kiddos more, you get to have fun with them. I try to teach them to say “stethoscope” and show them the speculum and show them their heartbeat. Just have fun with the kiddos. I had an eight-month old that came in and he was sitting up on the table, just wearing his diaper, and so I put my elbows up on the exam table and just leaned into him a little bit. And he sees me...and then he leans in towards me. And pretty soon we’re sitting with forehead to forehead. Resting there. He’s just kind of looking at me...So you can have fun with them. Just interact with them and try to take some of the fright out of coming to the doctor.

Participants were asked what could make assessing speech and language easier during well-child visits. One participant confidently stated “I’m not saying it’s difficult, for me. I would say it’s already pretty easy to assess...”

In regards to using standardized tools for assessing speech and language development, one participant prefers standardized assessment tools over relying on clinical judgment alone. When asked to describe how the participant felt about using

clinical judgment, the participant responded “Oh...just clinical judgment? Obviously that doesn’t work! You need tools. You need tools.” The participant went on to explain how standardized assessment tools have improved over the years. “I think we are way better now about assessing development, and speech...than we were twenty years ago.” When asked if there has been significant improvements in standardized assessment, the participant explained “I think we probably really started making the biggest changes in the last five [years].” The participant’s clinic started using standardized assessments years ago and reported that the assessment process has improved.

The participant feels as though standardized assessments are extremely important, and without the standardized assessments speech and language impairments would be missed. “I know for me, personally, if I relied only on personal judgment I would miss those subtleties. And I think it’s the subtleties where we can really make big changes.” The participant went on to explain how missing those subtleties can impact the child for school readiness:

[The] kids...they only need a little bit of help, but they still need help. And if they don’t get it, they they’re going to come to kindergarten and they’re not going to be school ready. [T]hey come in at a loss. And they don’t catch up.

The participant felt very strongly about the use of standardized assessments to assess speech and language impairments during well-child visits. “I would be lost without them anymore. I would be lost without them.”

Although the participant feels as though standardized assessments are important when assessing speech and language, standardized assessments could be made easier to use. The participant felt that technology would improve the assessing process. “Doing it

on an iPad without having to do all the paper and pen stuff...then have it (ASQ) go directly to my computer.” Right now the clinic uses laminated write-on/wipe-off ASQ (Squires, Potter, & Bricker, 1995) questionnaires for the parents to complete in the waiting room. “Then it has to be scored onto a paper sheet...then I have to enter that paper score for each of the domains onto our EMR (electronic medical record)...so multiple steps...” Although the participant does not feel that the current system of completing and entering the standardized assessment is cumbersome, technological advances could improve the system.

The information provided by the participants provided a more comprehensive understanding of their perceptions of well-child visits and assessing speech and language impairments. Participants’ perceptions included: time for well-child visits is adequate, experience is important when assessing development, pediatrics is preventive, participants are happy with and enjoy well-child visits, assessing needs to be efficient, assessing speech and language is easy, standardized tools are important to use and have improved over the years, subtleties in speech and language impairments can be missed without the use of standardized assessment tools, and technology would make standardized assessments easier.

### **Current Practices of Assessing**

Along with perceptions about assessing child’s speech and language, the participants provided information regarding their current practices for assessing. While the current practices for assessing differed between each participant, three of the four participants described following the AAP recommendations for scheduling the well-child visits. For example, one participant stated “The standard schedule is...four days old, two

weeks old, a month old, two months old, four months, six months, nine months, a year, fifteen [months], eighteen [months], and two [years], and then every year after that.”

During these well-child visits, all four participants reported using parental concern when assessing a child’s speech and language development. One participant stated that the clinic mostly uses clinical observation and parental report. When asked what procedures are used for assessing a child’s speech and language development, one participant reported “mostly talking with the parents.” The same participant described how the parents are used to answer questions regarding the child’s development. The participant listens to what the parents are saying and “checks” it off as they go along.

Another participant, when asked the same question, responded “That’s a big part of what I do...parents have a good feel.” The same participant described how they work with the parent and decide “ok, what are they doing...and where should they be.” The participant also stated “And a lot of times we’re on track...and sometimes we’re not.” Another participant stated “I think it’s (parental concern) helpful. I think parents know their kids...” The same participant explained how parents know their kids and “you have to listen.” For more information on how the participant’s view parental concern, refer to “Parents and Their Role”.

Three of the four participants rely on clinical judgment to assess the child’s speech and language development. One participant reported “I think it’s (clinical judgment) probably 80-90% of it actually, quite honestly...the other percent is the parent’s concerns.” When asked to describe how the participant feels about using clinical judgment to assess speech and language skills, another participant replied “That’s mostly

what I do.” In regards to the same question, another participant stated “I love it. It’s fast...just fly right through it.”

Two of the three participants who reported primarily using clinical judgment also reported not using any form of standardized assessment. One participant was hesitant when asked to describe the clinic’s use of standardized assessment; while another participant stated “I don’t use a lot of the standardized [tools].” Both participants explained how it is difficult to use standardized assessment tools given their busy schedule and “time crunch”. “I think the recommendations say that we should...but with as busy as we are it’s tough to incorporate that.” Another participant explained:

If we had an hour for each kid, you could do all these different assessments and life would be good. But you have to move these kiddos through. I have to see the next one. I have fifteen more out there in the lobby before I get to go home.

When asked to clarify if the reason standardized assessments are not being used is due to a time constraint, the participant replied “It always comes down to time. Time is money, money is time. So you’re always balancing those two things of doing a really good job with the least amount of time.”

Both participants were open to the idea of using standardized assessments, with one participant’s clinic working on using the MCHAT (Robins, Fein, & Barton, 2009) as a screener “before the patient comes in for their appointment.” The other participant was more willing to use a standardized assessment if it was a parent-completed assessment tool.

Two of the four participants currently use the MCHAT (Robins, Fein, & Barton, 2009) during all their well-child visits. One participant explained “We...give them a form

to fill out that's called MCHAT. They fill that out and we go over that with them to make sure everything's ok..."

Along with using the MCHAT (Robins, Fein, & Barton, 2009), another participant uses the ASQ (Squires, Potter, & Bricker, 1995) with all patients, both in English and Spanish. "All of our kids get the ASQ...and actually just increased the frequency of them." The participant explained how the clinic used to periodically complete the ASQ with patients, but the clinic recently decided "we need to do them at every well-child check. So now they're at every well-child check,"

One participant uses a template on the patient's electronic medical records as a type of developmental checklist. When other participants were asked if they used a developmental checklist to help assess the child's speech and language skills, only one of the four used a checklist. Although not currently using a checklist, another participant felt it was a good idea. The following is an example of how the discussion occurred regarding using a developmental checklist:

Me: How do you feel about using a developmental checklist to help assess the child's speech and language skills?

Participant: I don't think it would be a bad idea to do that before the well-child exam. So mom brings that in...it's either downloaded from our website or we sent it out with the current visits. So say it's at a four-month visit, so the MA (medical assistant) hands it to them for the six-month visit. I think it's an excellent idea...what I like about that is I don't have to mess with it. I can look at a quick check-sheet...

Me: Right.

Participant: So I think it's an excellent idea.

The participant went on to explain how a checklist would logistically work in the clinic. "It's just a matter of incorporating that into the practice and remind the MA that

they've got...another thing to do.” The participant felt it was a good idea especially for the children that the participant is concerned about. The participant felt it important to keep the checklist “short” and “relevant.” “I’d keep it to ten questions or less....one page.”

Throughout the interviews, participants provided information that is helpful in gaining a deeper understanding of the current practices child health professionals use when assessing children for speech and language. The interviews revealed that participants use the recommendations from the AAP when scheduling well-child visits, parental concern is used when assessing speech and language development, most participants rely on clinical judgment to assess speech and language development, a few use standardized assessments such as the MCHAT and/or ASQ, and developmental checklists are not typically used; however, one participant felt it was a good idea.

### **Perceptions and Preferences of Referring**

During the interview process, participants provided information that offers a more comprehensive understanding of how child health professionals perceive the referral process for speech and language impairments. The participants did not come to any generalized consensus regarding the referral process, but rather each provided their own experiences and perceptions.

Three of the participants feel their current referral system is “good” or “fine.” One participant stated “Where I am right now, it’s (referral process) really good.” Another participant stated “I think it is fine for our patient population that’s motivated to want to take care of it.”

Although three of the participants perceive the referral process as “good” or “fine”, two of the three participants have had different experiences at some point during their professional career. For example, one participant who stated “it’s really good” at the current clinic, also stated “other places it’s not [good].” The participant went on to explain that the referral process depends a lot on many different factors. “It depends on the volume, it depends on the education of the parents, [it] depends on the number of resources you have...” Another participant stated “I think it’s (referral process) pretty good. There were times where it was cumbersome.”

The participant went on to explain how the referral process can be difficult at times. “A lot of our families move a lot, so you think they live in one county but they actually live in a different county.” It can also be difficult to contact families who are constantly moving and changing their address and phone numbers. For example, sometimes the participant will hear back from the early intervention team saying “The phone number that was on the referral for the family is no longer working. Do you have something else?” The participant stated that they typically can find another phone number; however, communication difficulties can add to the “lag time” of the referral process.

Another participant prefers the older system of completing a referral on a prescription pad as opposed to the newer electronic version. The participant described it as “time consuming” and “a little more awkward” than before. “It’s not using my time valuably...I could be seeing another patient instead of doing data entry.” The participant went on to say the electronic referral system is “a little frustrating” but that it is “just one of those barriers you have to conquer to give good patient care.” When asked if the

electronic referral system was effective, the participant stated “not as good as a prescription. The prescription worked great...[it] worked really well.” The participant described how the same referral note that used to take a few short moments to complete now takes “seven to eight minutes on the computer.” The referral process was described in more detail:

It (referral) goes to central command who then looks up the numbers and gets insurance approval...then contacts the patient. And they (the patient) don't know who it is. It just adds another layer...a place for accidents to happen. Things get dropped.

Another participant described another barrier in the referral process: a lack in early intervention services. “I think the hardest part (of the referral) is...there's just not enough. I think they're (early intervention team) understaffed.” The participant explained how the early intervention team does a “really good job”, they are just understaffed and “overwhelmed.”

One participant felt that family dynamics also play a role in the referral process. For example, if there is a stressor in the family's life, the probability of following through with a referral is lessened. The participant provided types of stressors, such as “pending divorce...illness in the family...lots of children...special needs...” All of this “stress” can impact the referral process.

Although a majority of the participants feel the referral process is adequate, a few barriers were also brought up. These barriers included: contacting families, “lag time”, electronic referral system, understaffed early intervention teams, and family dynamics.

### **The Referral Process**

Along with participant perceptions of referring, participants also provided information on their current practices for referring. This information offers a closer look

at child health professionals' current practices and processes for referring children with possible speech and language impairments.

All four participants reported that they refer out if they have a concern about the child's speech and/or language development. One participant stated if there is any concern about the child's development or speech and language abilities, the clinic refers them to Child Find for a free evaluation in the child's home. "If there's any concern of any kind...motor skills or verbal skills...we usually have them evaluated by Child Find." Another participant refers the child to a branch office of Denver's Children's Hospital. All four participants had an organization that received their referrals. Three of the four participants referred children to Child Find or the community's similar organization. One of the participants referred children to a branch office of the Children's Hospital.

One participant refers out if the parent requests the referral. "If they (parent) have a concern and want a speech-therapy evaluation then I tell them I will send a referral over right away..." The participant went on to explain "Now, if they're super concerned, and we do have some parents that are that way, and they want to go to Children's Hospital, fine. I'll refer them down there."

The same participant also receives parental permission before sending the referral for a speech and language evaluation. The participant stated "Usually I'll ask the parents if it's (the referral) is ok....and usually they're like 'great, do it.'" The participant also personally calls the evaluation team to make the referral along with sending a referral letter. "I usually call...I'll also usually send a referral letter because lots of insurances require a referral letter."

Two of the four participants use an electronic referral system. One participant described the electronic referral system, “It’s called a computerized order entry system...I bring up the provider I want to do it (the referral) with and enter that electronically.” The participant went on to explain how they use the system to follow up with referrals:

A hard copy is generated and then the contact information is given to the patient...or mailed to them if it (the referral) takes a couple days. Then they’re put into the system to make sure they’ve followed up with the appointment. So if we make a referral...but they don’t show up, I get a reminder that [says] this patient didn’t show up. So then we call them and say “Hey, I see you didn’t bring Jesse in for an evaluation, what’s going on?”...”Oh, my mother had a heart attack and I had to put that off.” So then we’ll put in another referral so that we don’t drop the ball.

Another participant explained their clinic’s electronic referral system:

I just print out [the form]...it’s just the standard state form...[and] have parents sign it. We fax it over to whatever county they live in and then I send...myself a reminder so that I know the [referral] process is happening.

The same participant also follows up with referrals one month after the initial referral is made, “I send myself a reminder for about a month out...by then I should’ve gotten something back from early intervention.” The participant explained that if something is not heard back, then the clinic calls the parents or early intervention and asks “What happened? Where’s the disconnect here?” Then the participant tries to reconnect the patient to the early intervention team.

Each participant provided insight into child health professionals’ current practices for referring a possible speech and language impairment. These current practices include: referring out if there is a concern, referring out if a parent wants a referral, gaining parental permission before referring, the child health professional personally calls to

make the referral, using electronic referral systems, and following up with referrals one month after the referral is made.

### **Other Considerations**

Several themes were particular to individual experiences and provided more information in gaining a better understanding of the research questions. The following information is unique in idea or participant and therefore does not fall under any main themes discussed above.

One important data point that did not fall under any main themes is that all four participants received training for well-child visits through their medical residency, not during medical school. “Medical school is your more basic sciences and you’re rapidly going through every single surgery, pediatrics, internal medicine, geriatrics...” Another participant described the training during medical school as very little, “you get the whole gamut thrown at you...you’re getting the most out of the residency.” One participant explained the well-child visit training during residency:

We read a lot about development in our residency and learned a lot about childhood development and had tests on that. Then we worked in a clinic at least one or two days a week all through residency...[s]o we learned from our senior resident and our attendees how to do the exams. They would remind us if we forgot something...

Another participant described how during the entire three-year residency, one half-day a week was always spent in a clinic performing well-child visits. “As a part of our curriculum we had a continuity clinic that we would spend one half-day a week...no matter what rotation I was on. [T]hat’s where we would do well child checks for the whole three years.”

Although briefly mentioned in the themes above, it is important to re-present participant perception that early intervention teams are understaffed. In regards to the referral and evaluation process in a lower SES area, one participant stated “I think they (early intervention team) were so overwhelmed with the demographics it’s just crowded and busy. So trying to get any kind of intervention was really difficult.” The same participant felt it was hard to work with early intervention teams because they were so overwhelmed with caseloads. The participant described how the early intervention team would state “we can get to that (evaluation) in six months...or a year.”

When asked to describe the referral process, another participant stated “I think the hardest part is, there’s just not enough....I think they’re (early intervention team) understaffed.” The participant went on to explain “When I think about just my kids (patient caseload), and then you think about the entire county...there’s a lot of kids who need services.” The early intervention team was described as doing a great job, “they’re just overwhelmed.” The participant also stated “They could use far more therapists.”

A unique data piece that was presented by one participant is that parent-based reading programs are beneficial in developing child’s speech and language abilities. The participant explained how past clinics started a “reading to your child program” where free books were given to parents in the community. The parents were encouraged to “sit down and read” with their children. The participant felt that reading programs helped with developing the child’s speech and language and stated “[it] makes a big difference in speech and language...and vocabulary.”

One participant feels that early intervention services comes down to family cost and convenience. The participant described how a “zero co-pay for the wellness exam”

would make assessing and referring children with possible speech and language impairments easier. “So the parents aren’t having to worry about cash outlay to bring ‘Junior’ in.” The participant went on to describe how making visits more affordable would ensure that more patients would attend the visits. “You have a reasonable co-pay for those services so that...when you do need speech therapy...you can afford it.” The participant stated that along with an affordable cost, speech and/or language therapy should be convenient. “If they have to drive two hours to get to the nearest speech therapist, it’s tough for them to do that. But if they can go fifteen-thirty minutes, it’s probably doable.”

Another participant revealed that insurance and working with insurance can be “frustrating”, but the clinic does what it can to work with the insurance companies. The participant explained how most of the clinic’s current patients are private insurance, and if for some reason the child cannot receive services through the school district, the child has a “real hard time getting private speech.” The participant went on to explain “I do have a couple kids that are doing private speech, but usually insurance will pay for about twenty visits a year...which is not all that much.” The participant also explained how some children need speech services that are not appropriate through a school-setting, such as swallowing therapy following an accident. Other difficulties, such as swallowing due to a developmental problem, can be even harder for insurance companies to cover. “They won’t cover it because it’s not [from] an injury.” The participant stated “well...it doesn’t really matter [if it’s from an injury]...they need to learn how to eat.” The participant’s clinic does what it can to persuade insurance companies to pay for speech

and language services, “but with insurance, if that’s what they say, it’s not much hope of getting money out of them for it.”

One participant shared the experience of how explaining services and educating families is beneficial for assessing and referring a child with possible speech and language impairments. The participant spends a lot of time educating the parents on the results of the assessment, the process of referral, and evaluation by the early intervention team. “I explain what the process is.” The participant’s clinic is a part of the “Reach Out and Read” program, which provides free books at each well-child visit. Through this program, the participant educates and models how to read with a child in the home.

I usually start the well-child exam with their books...so we start talking about the books and tell a story. And parents watch that interaction and can kind of see how they could do that. They don’t have to be avid readers to go over a picture book. You know, make up stories. Really encouraging verbal language skills from the beginning.

The participant feels that the child and parents get more out of the reading portion of the well-child visit than any other portion of the exam. “It’s really an opportunity to help parents learn what they can do.”

The same participant described the difference between a true developmental delay versus an environmental delay. “I have some families who are not economically disadvantaged....I would say they have fewer delays due to environment.” The participant went on to describe “those parents talk to their kids...read to their kids...have a certain level of expectations for their kids...so their delays are truly developmental.” Whereas children who live in “economically disadvantaged” homes or have families who are “educationally disadvantaged” tend to have more environmental delays. Although children with “environmental delays” need intervention, “often time the intervention

is...education for parents. How do we get parents up to speed so that they can start interacting with their kids.”

### **Summary**

This chapter presented data to explore the research questions. The data were collected through participant interviews, scenario questions, and artifacts. The data were then divided into scenarios, themes and subthemes that provided a deeper understanding of the participants’ perceptions and experiences with assessing and referring children with possible speech and language impairments.

The chapter began with participant descriptions to offer a better understanding of each participant and their correlating experiences. Four participants were included in the study. All participants are practicing child health professionals from various locations in Colorado. Out of the four participants, two are pediatricians, one is a family practice physician, and one is a pediatric nurse practitioner. The participants included two males and two females.

Three scenario questions were presented to each participant. The scenario was read aloud and the participant stated how he or she would proceed in a well-child visit. The scenarios were written as plausible events that could be encountered during a well-child visit. Each scenario was written with a “correct” answer using developmental standards described by Paul (2007). The participants’ responses were transcribed and analyzed to determine if the participants’ responses were an appropriate action (see Appendix D). For scenario one, all four participants appropriately responded. Three of the participants appropriately responded to the second scenario. The final scenario was answered appropriately by only two of the four participants.

Interviews were conducted to gain a richer understanding of the research questions. Responses to the interview questions and the dialogue throughout the interviews created themes and subthemes. Six themes emerged that provided a deeper understanding of the research questions. These themes included: parents and their role in early identification, impact of socioeconomics, perceptions of well-child visits and assessing, current practices of assessing, perceptions and preferences of referring, and the referral process.

Data from the first theme, parents and their role in early identification, revealed that: parents are knowledgeable about their child and are used to helping assess the child's development, some parents are overly concerned and require education on normal development, child health professionals listen to parental concern during well-child visits, some parents hinder the referral process due to fear or suspicion, parents play a role in the referral process either by refusal or follow through, and motivated parents are likely to receive services for their child.

Data from the second theme, the impact of socioeconomics, revealed the following: parents from higher SES homes keep appointments and parents from lower SES homes require more appointment reminders, parents with less education or parents from lower SES homes do not listen to child health professionals information or recommendations, parents from higher SES homes tend to be motivated individuals and are more likely to receive services, income level affects the referral and follow-through for services, and individuals from lower SES homes may have different priorities when deciding whether to follow through with an appointment, referral, or receive services.

Data from the third theme, Perceptions of Assessing, revealed that: time for well-child visits is adequate, experience is important when assessing development, pediatrics is preventive, participants are happy with and enjoy well-child visits, assessing needs to be efficient, assessing speech and language is easy, standardized tools are important to use and have improved over the years, subtleties in speech and language impairments can be missed without the use of standardized assessment tools, and technology would make standardized assessments easier.

Data from the fourth theme, Current Practices of Assessing, revealed that: participants use the recommendations from the AAP when scheduling well-child visits, parental concern is used when assessing speech and language development, most participants rely on clinical judgment to assess speech and language development, a few use standardized assessments such as the MCHAT and/or ASQ, and developmental checklists are not typically used; however, one participant felt it was a good idea.

Data from the fifth theme, Perceptions of Referring, revealed that: although a majority of the participants feel the referral process is adequate, a few barriers were also brought up. These barriers included: contacting families, “lag time”, electronic referral system, understaffed early intervention teams, and family dynamics.

Data from the final theme, Current Practices for Referring, revealed that participants: refer out if there is a concern, refer out if a parent wants a referral, gain parental permission before referring, call to make the referral, use electronic referral systems, and follow up with referrals one month after the referral is made.

Other considerations from participant experiences and information was also provided to gain a better understanding of the research questions. The following

information is unique in idea or participant and did not fall under any other main themes: participants received training through their residency, early intervention teams are understaffed, reading programs for families are beneficial for speech and language development, working with insurance can be difficult, speech and language services are impacted by cost and convenience, educating parents on the processes for assessing, referral, and early intervention is beneficial, and participant description of true developmental delay versus environmental delay.

## **CHAPTER V**

### **DISCUSSION, IMPLICATIONS, AND FUTURE RESEARCH**

#### **Introduction**

This chapter discusses the results of the study and interprets the results to help understand and answer the research questions. The results are compared to the literature to more fully understand the current perceptions and practices of child health professionals when assessing and referring children with possible speech and language impairments. First, a short review of the research methodology and data analysis is discussed. Second, literature is then compared to the primary themes presented in the results chapter, adding to the understanding of the research questions. Results of the scenario questions are also discussed. Limitations of the study are then presented along with the implications for speech-language pathologists and pediatric child health professionals. Areas for further study are also identified.

#### **Discussion of Results**

##### **Review of Research Methodology and Data Analysis**

This qualitative research study included philosophical and theoretical frameworks. The philosophical framework was applied research, in which the research is motivated by a desire to improve the practice of a particular event. The theoretical framework was built upon interpretivism and constructivism, which helps to interpret human behavior in a naturalistic way by relying on participants' perceptions to better

understand the problem (Crotty, 1998; Merriam, 2013). This study also used a basic qualitative approach, in which the overall purpose is to understand how people make sense of their lives and experiences (Merriam, 2013).

Data were collected primarily through participant interviews. Each interview contained scripted and non-scripted questions and scenarios that provided dialogue to help answer the research questions. Each interview was transcribed and sent back to the participant for member checking. After participant approval, the data were analyzed separately by my primary research advisor and me. Data analysis involved coding each transcription to determine emerging themes. The emerging themes were then discussed and narrowed down to the most prominent themes that addressed the research questions.

### **Literature and the Primary Themes**

The literature review addressed the effectiveness of and need for developmental screening in detecting and treating speech and language impairments. Literature also presented current methods for screening young children, best practices for detecting speech and language impairments, and potential barriers that impact implementation of developmental screenings. This was reflected in this study and factors that appeared to contribute to the literature review and research questions were identified. The participants in this study represented a sample of child health professionals whose experience and expertise provide a deeper understanding of child health professionals' current knowledge, perceptions, and practices for assessing and referring children with possible speech and language impairments. Each participant had a different experience, therefore providing unique information for the research questions.

Research is presented in relationship to the themes listed in the results section: scenario questions, parents and their role, socioeconomics, perceptions of well-child visits and assessing, current practices for assessing, perceptions of referring, current practices of referring, and other considerations.

### **Scenario Questions**

According to the literature, most child health professionals rely on clinical judgment and developmental surveillance to identify potential developmental problems (Aly et al., 2010; Glascoe, 1991; Morelli et al., 2014; McGookin & D'Sa, 2011; Sand et al. 2005). One question mentioned earlier in this study is “if child health professionals rely on clinical judgment to identify speech and language impairments, what is their current knowledge of speech and language development?” This was made into one of the study’s research questions: what are child health professionals’ knowledge regarding speech and language development in children? To help gain a better understanding of this question, each participant was asked three scenario questions pertaining to speech and language development, based on speech and language developmental milestones by Paul (2007).

The first scenario aimed at determining child health professionals’ knowledge regarding speech and language milestones for a twenty-four month old girl. All four participants responded appropriately to the question, indicating that they have appropriate knowledge for speech and language development of a twenty-four month old.

The second scenario investigated child health professionals’ knowledge of speech, language, and pragmatic language development of a twenty-month old boy. Three of the four participants responded appropriately regarding the boy’s speech and language

development; however, only two of the four participants responded appropriately for the boy's speech, language, and *pragmatic* language development. This indicates that while a majority of the participants demonstrated knowledge for speech and language development in a twenty-month old boy, only half of the participants demonstrated knowledge for pragmatic language development. One of the participants who detected a problem with the boy's pragmatic language also reported the use of the MCHAT (Robins, Fein, & Barton, 2009). Using a standardized screening, such as the MCHAT, provides more accurate detection of a speech and/or language impairment (AAP, 2006b; Glascoe & Dworkin, 1995; Hix-Small et al., 2007); therefore, if child health professionals lack knowledge in a particular developmental category, the use of a standardized screening tool would aid in the detection of an impairment.

The third scenario investigated child health professionals' knowledge of the speech and language development of a five-year old boy. Only two of the four participants appropriately answered the scenario question. Both participants who inaccurately responded to the scenario stated they would send a referral for his articulation, when based on information provided by Paul (2007) a referral was unnecessary.

The scenario questions provided beneficial information regarding the current knowledge of child health professionals. Out of all three scenarios asked, only one participant appropriately answered all three. This indicates a possibility that child health professionals do not have all the appropriate knowledge required for assessing speech and language impairments using clinical judgment alone. As stated by Hix-Small et al. (2007), child health professionals should trust their clinical judgment; however, they

should realize their observational limitations and employ more standardized screening tools.

### **Parents and Their Role in Early Identification**

Throughout the interviews, each participant shared their experiences and perceptions of parents and their role in well-child visits. Regalado and Halfon (2001) stated that eliciting and assessing parent concern can reliably and accurately indicate developmental problems. This information was reflected in the experiences provided by each participant. During the interviews, it was apparent that all participants viewed parents as knowledgeable and understand their child's development. Participant statements included "I think parents know their kids" and "[parents] have a pretty good feel for what's going on".

The AAP (2006b) stated that parent concerns regarding development should be addressed during well-child; and not only should well-child visits elicit parent concerns, child health professionals must listen and recognize the concern as need for further evaluation. All four participants stated they listen to parents and use parental concern when assessing the child's speech and language development. One participant emphasized the importance of listening to parental concern and stated "you have to listen....you have to listen." Another participant stated "I listen very, very carefully to parents" and went on to describe why it is important to listen to parents and their concerns. Literature stated that not all child health professionals use parental concern when identifying speech and language impairments (Schor, 2004). This information was not reflected in the participants of this study.

Parents also play a role in the referral process. Jimenez et al. (2014) explored referral and early intervention barriers. The study revealed several potential factors including that many families do not complete the referral process. These findings from Jimenez et al. (2014) are reflected in two of the four participants. One participant stated that some parents lie during well-child visits because “they want you to think that everything is fine.” Some parents lie or refuse services due to concerns about being reported to the state. “I think some [are] worried that...you’re going to get the state or government to intervene in some way that they don’t want.”

Jimenez et al. (2012) stated that many parents confuse early intervention services with child protective services. Two of the participants’ experiences reflected this statement. “There’s families who are worried that protective services are going to get involved.” Some parents become “fearful” when anyone comes from a state, federal, or county agency. They are fearful because “they are illegal and they’re going to get kicked out of the country, or their child’s going to be taken away.”

A study by Jimenez et al. (2014) revealed that some families do not follow through with referrals. One participant reflected this statement and reported that a small percentage of parents refuse early intervention services all together. “I have a small percentage [of parents] that early intervention has reached out to...and they’re like ‘no’. And my hands are tied. I can’t make them do it.”

All four participants shared that motivated parents are likely to receive and follow through with services. “[Parents] who are eager to get it (services)...get it.” These experiences are not reflected in the literature; however, they provide valuable information regarding parents and their role in early intervention.

Through information provided by the participants, parents play the following roles in assessing and referring children with possible speech and language impairments: parents are knowledgeable about their child and help to assess the child's development, some parents are overly concerned and require education on normal development, child health professionals listen to parental concern, and some parents help or hinder the referral and/or early intervention processes.

### **The Impact of Socioeconomics**

Jimenez et al (2014) stated that factors such as minority race, young maternal age, low income, low education level, and not speaking English can negatively impact the referral and early intervention processes. This statement paralleled information provided by participant experiences. A theme that was mentioned across participants was the idea of socioeconomics and how varying SES impacts the well-child, referral, and early intervention processes.

Three of the four participants stated that parents from higher SES homes remember well-child appointments, whereas parents from lower SES homes require more reminders. One participant had experience in a clinic that primarily served patients from lower SES homes. "We called and set up appointments...they'd miss appointments and get fired for not missing appointments. There wasn't as good of a follow through..."

Another participant felt as though it wasn't SES that impacted follow through, but the family's home life. "If I get someone...with a little bit more chaotic home life, I'll put them in the recall [list]."

Reflecting the statement above by Jimenez et al (2014), one participant reported that the following negatively impacted the referral process: "...low income...less

educated parents, they really could care less about what you're telling them...It's like 'you're not in my culture...and I know what I'm going to feed my kid...just give them the shots'." Another participant stated some challenges when working with lower SES patients. "We were trying to talk about how to be safe and normal development, and they're just worried about where they're going to get their next meal...or if they had a bed to sleep in that night." The participant went on to explain how lower SES have different priorities and may not follow through with a speech and language evaluation.

The information provided by the participants helped to gain a deeper understanding of how socioeconomics play a role in assessing, referring, and receiving services for children with possible speech and language impairments. Participants revealed that: parents from higher SES homes keep appointments and parents from lower SES homes require more reminders, parents with less education or parents from lower SES homes do not listen to child health professionals, parents from higher SES homes tend to be motivated and more likely to receive services, income level affects the referral and services received, and individuals from lower SES homes may have different priorities when following through with an appointment, referral, or early intervention services.

### **Perceptions of Well-Child Visits and Assessing**

During the interviews, participants provided rich information regarding their experiences, beliefs, and feelings about assessing speech and language impairments. One perception that was evident through all interviews was that the participants currently have enough time for well-child visits. This perception does not parallel the literature, in which time for well-child visits is described as a potential barrier. Hix-Small et al. (2007) stated

that well-child visits provide an insufficient amount of time for assessing development, in providing vaccines, and discussing parental concerns. Although each participant varied in the amount of time their clinic allows for well-child visits (60, 30, 20, and 15 minutes), all stated their time was adequate. The participant who receives 15 minutes per well-child visit stated “I think that there are times when it would be helpful to have longer, [but] our system isn’t amenable to it.”

Another perception shared by two participants included the idea that pediatrics is preventive. One participant stated “The bottom line is...to protect kids and lower their risk of getting preventable diseases. Although this perception was not mentioned in the literature review, it is important to understand the participant’s perceptions regarding well-child visits.

All participants were satisfied with the current well-child visit and enjoy conducting them as a part of pediatric care. Barriers that were mentioned in the literature, such as inadequate time during well-child visits, little emphasis in pediatric training, insufficient effective and efficient screening tools, and lack of referrals and follow-up (Schor 2004; Regalado & Halfon, 2001; Radecki et al., 2011; Jimenez et al., 2014), were not mentioned during participant interviews. When asked what should be changed during well-child visits, one participant stated “I’m pretty comfortable with how they go.”

In regards to using standardized tools for assessing speech and language development, one participant prefers them over clinical judgment. When asked to describe how the participant felt about using clinical judgment, the participant responded “[J]ust clinical judgment? Obviously that doesn’t work! You need tools...” The participant went on to explain how standardized assessment tools have improved over the

years. This information is consistent with literature that describes how standardized developmental screening is effective, feasible, and can be implemented during a well-child visit (Morelli et al., 2014; Schor, 2004).

The same participant feels as though standardized assessments are extremely important and without them, speech and language impairments would be missed. “I know...if I relied on personal judgment I would miss those subtleties. And I think it’s the subtleties were we can really make big changes.” This information reflects the literature in which Aly et al. (2010) describes how standardized screening tools improve the accuracy in which children are identified.

The participant also feels that standardized assessments are feasible within a well-child visit. This information is consistent with the literature by Hix-Small et al. (2007) in which the ASQ was identified as feasible to use during well-child visits. Although the participant feels as though standardized assessments are important in assessing speech and language abilities and feasible within a well-child visit, technology could improve the process.

The information provided by participants created a deeper understanding of current perceptions of well-child visits and assessing speech and language impairments. Participants’ perceptions included: time for well-child visits is adequate, experience is important when assessing development, pediatrics is preventive, participants are satisfied with and enjoy well-child visits, assessing development needs to be efficient, assessing speech and language is easy, standardized tools are importance, feasible, and have improved over the years, subtleties in speech and language impairments can be missed

without the use of standardized assessment tools, and technology would make standardized assessments easier.

### **Current Practices of Assessing**

Along with perceptions regarding assessing child's speech and language abilities, the participants provided information regarding their current practices for assessing. Although current practices varied across participants, all participants described following the AAP recommendations for scheduling well-child visits.

During these well-child visits, all four participants reported using parental concern when assessing a child's speech and language development. This is in line with the AAP (2006b) recommendations to elicit and use parental concern during well-child visits. In contrast to the literature that stated that 40% of parents were not asked whether they had concerns regarding their child's learning, development, or behavior (Schor, 2004), all participants stated that they use parental concern during every well-child visit. When asked what procedures are used for assessing the child's speech and language development, one participant reported "mostly talking with parents."

Three of the four participants also rely on clinical judgment to assess the child's speech and language development. One participant reported "I think [clinical judgment] is probably 80-90% of [the assessment.] The other percent is the parent's concern." While this is consistent with literature that states most child health professionals rely on clinical judgment (Glascoe, 1991; Sand et al. 2005), fewer than 30% of children with intellectual impairments, language impairments, or other developmental problems were identified when clinical judgment was solely used (Glasoe & Dworkin, 1993). This can

be a major problem in accurately identifying children with speech and language impairments.

Of the participants that rely on clinical judgment, two reported not using any form of standardized assessment. This contrasts the AAP (2006b) recommendation that child health professionals provide standardized assessment at nine, eighteen, and thirty months, along with anytime developmental surveillance identifies possible concerns regarding the child's development. One participant even mentioned the AAP's recommendations, "I think the recommendations say that we should [use standardized assessments]...but with as busy as we are it's tough to incorporate that." When another participant was asked to clarify if the reason standardized assessments are not being used is due to a time constraint, the participant replied "It always comes down to time. Time is money, money is time."

During this study, 50% of participants reported not using any form of standardized assessment during well-child visits. This data is inconsistent with the literature which reports that <25% of child health professionals consistently use standardized tool (Radecki et al., 2011). This information poses a question of whether or not the participants in this study are not a good representation of the whole, or if 25-50% is a more accurate description of child health professionals who do not use a standardized screening tool. Regardless, the percentage of participants who use standardized tools on a regular basis remains an issue given that the infrequent use of developmental screening tools create missed opportunities of identifying at risk children (Aly et al., 2010). It is also interesting that while all the participants reported adequate time during well-child visits, two of the participants reported not using a standardized tool due to time

constraints. It should also be noted that the one participant who uses standardized tools during every well-child visit is the participant who reported the shortest amount of time given per visit (15 minutes).

Two of the participants reported using the MCHAT (Robins, Fein, & Barton, 2009) standardized assessment with all their patients during well-child visits. One participant also uses the ASQ (Squires, Potter, & Bricker, 1995) with all patients.

Only one of the four participants uses an informal checklist to assess development. This finding is inconsistent with the literature which reports that many child health professionals rely on informal checklists that are completed by the physician, office staff, or parents (Radecki et al., 2011, McGookin & D'Sa, 2011). Although only one uses a checklist, two participants felt it was a good idea.

Throughout the interviews, participants provided information that helps to gain a deeper understanding of the current practices child health professionals use when assessing children for speech and language. The interviews revealed that: participants use the recommendations from the AAP (2006b) when scheduling well-child visits, parental concern is used when assessing speech and language development, few participants use standardized assessments such as the MCHAT (Robins, Fein, & Barton, 2009) and/or ASQ (Squires, Potter, & Bricker, 1995), and developmental checklists are not widely used but could be helpful.

### **Perceptions and Preferences of Referring**

Throughout the study, participants provided information that offers a more comprehensive understanding of how child health professionals perceive the referral

process for speech and language impairments. The participants did not come to any generalized consensus, but rather each provided unique experiences and perceptions.

Although three of the four participants feel that their current referral system is “good” or “fine”, two of the three reported different experience throughout their career. One participant described one barrier in the referral process, contacting families due to change in address or phone number. Change in contact information can prolong the referral process.

Another barrier that can prolong the referral process is an electronic referral system. One participant described the process of entering a referral electronically, which then gets transferred to “central command”, who looks up the patient’s information and contacts the patient. The patient then answers the call, “and they don’t know who it is.” The participant described that all these steps “just adds another layer...a place for accidents to happen. Things get dropped.”

Both of these participants described a delayed or prolonged referral process, which is consistent with literature. Bailey et al. (2004) described a prolonged referral process that can impact services received. Bailey et al. (2004) reported that on average, a totally of almost eight months was required to receive appropriate services. Along with a delayed process time, Jimenez et al. (2014) reported an average of seven contacts occurred between staff and families after the initial referral to early intervention. Each contact creates an opportunity for the referral process to fail (Jimenez et al., 2014), which parallels one participant’s experience.

Another participant described a lack in early intervention services as a barrier in the referral process. “I think the hardest part is...there’s just not enough. I think [the early

intervention team] is understaffed.” The participant explained how the early intervention team does a “really good job, they are just understaffed and “overwhelmed.” Although this information is not mentioned in the literature, understaffed early intervention teams is a valid barrier and should be addressed more closely.

One participant felt that family dynamics play a role in the referral process. The participant stated that if there is a stressor in the family’s life, the probability of them following through with a referral is decreased. The participant provided types of stressors, such as “pending divorce, illness in the family, lots of children” and “special needs.”

Although a majority of the participants feel that the referral process is adequate, a few barriers were also brought up. These barriers included: contacting families, prolonged referral time, electronic referral system, understaffed early intervention teams, and family dynamics.

### **The Referral Process**

Along with participant perceptions of the referral process, participants provided information on their current practices for referring. Current practices for referring is not widely mentioned in the literature; therefore, information provided by the participants offers a deeper understanding of the referral process.

All four participants reported that they refer out if they have a concern about the child’s speech and/or language development. This is consistent with the AAP (2006b) recommendations that every child with a failed developmental screening be referred for further evaluation and is higher than the reported average of 61% of referral rates among

children who failed developmental screens (King et al., 2010). One participant also refers out if a parent requests it.

Jimenez et al. (2014) stated that family preferences, level of concern, and degree of understanding impacts the amount of children who are referred to and receive early intervention. Family preferences regarding referral can either promote or discourage referral to early intervention. One participant reflected this idea in that all parents must provide permission before the child health professional sends the referral for a speech and language evaluation.

Two of the four participants use an electronic referral system, described as “a computerized order entry system.” The electronic system also helps in providing a follow-up reminder for each referral.

Each participant provided insight into child health professionals’ current practices for referring a child to a speech and language evaluation. These current practices include: referring out if there is a concern or if a parent wants a referral, gaining parental permission before referring, using electronic referral system, and following-up with a referral.

### **Other Considerations**

Participants provided individual experiences that helped to better understand the research questions. Some of these experiences were unique in idea or participant and therefore were not categorized under any themes described above.

One important data point that did not fall under any main themes is that all four participants received training for well-child visits during their medical residency. One participant explained the well-child visit and described how they read and learned a lot

about development, had tests on development, and worked in a clinic one or two days a week throughout their residency. “We learned from our senior resident and our attendees how to do the exams. They would remind us if we forgot anything.” This information contradicts the literature which stated that well-child care receives little emphasis during academic and professional training (Schor, 2004). All participants in this study stated that they received training for well-child visits.

Although briefly mentioned as a limitation to the referral process, it is important to further discuss the participant perception that early intervention teams are understaffed. In regards to the referral and evaluation process in a lower SES area, one participant stated “I think they were so overwhelmed with demographics...so trying to get any kind of intervention was really difficult.” When asked to describe the referral process, another participant stated “I think the hardest part is...there’s just not enough. I think they are understaffed.” While this information is not mentioned in the literature, it is a valid barrier to the referral and evaluation process. As Jimenez et al. (2012) stated, many children who are referred to early intervention are never evaluated to receive services. Up to 90% of eligible children do not receive services. A lack in early intervention team members may be impacting this high number of children who are not receiving services.

Other participants provided information about the benefits of reading programs. One participant felt that reading programs helped with developing the child’s speech and language.

One participant felt that early intervention services comes down to family cost and convenience. While not mentioned in the literature, the participant provided valid

information on how making visits more affordable and convenient would create a more plausible intervention plan for patients and their families.

Another participant revealed that insurance and working with insurance companies can be “frustrating”. Although not widely mentioned in the literature, Schor, (2004) listed inadequate reimbursement for services as a barrier for children needing services. The participant explained how most of the clinic’s current patients have private insurance, but that the insurance will typically only pay for around twenty visits a year, “which is not all that much.” The clinic does what it can to persuade insurance companies for more services, unfortunately without much success.

A qualitative study by Jimenez et al. (2014) reported that family preferences regarding referral can either promote or discourage referral to early intervention. The study also revealed that parents may be unsure of the need for early intervention and decide for themselves whether to follow-through with the referral or not. To help with potential barrier, one participant described how explaining services and educating families is beneficial for referring and receiving services for speech and language. The participant shared how a lot of time is spent educating the parents of the results of the assessment, the process of the referral, and the evaluation by the early intervention team.

The same participant also described the difference between a developmental delay and an environmental delay. A true developmental delay is when a child grows up in a non-disadvantaged home, where the parents talk, read, and hold expectations for their child, yet the child continues to present with a delay. An environmental delay is when a child grows up with an economically or educationally disadvantaged home, where the parents may not understand how to talk with and teach their child developmentally.

While this information is not mentioned in the literature and does not affect the assessment or referral process for speech and language impairments, it is important to recognize the participant's experience and perception regarding speech and language development.

### **Limitations**

Throughout the process of this qualitative research study, various limitations were discovered. The first limitation is how the participants were selected. Due to participant selection based on convenience and network sampling, I feel as though a majority of the participants provided similar experiences based on their clinic location, demographic, and SES. Had there been a wider scope of locations, demographics, and SES, I feel that an even deeper understanding of the research questions would have been presented. During the study, as this limitation became evident, I purposefully sought out a participant that primarily worked with a cultural demographic and lower SES. While this did not eliminate the limitation, it provided a more comprehensive understanding of child health professionals' current practices and perceptions for assessing and referring children with possible speech and language impairments.

Another limitation of this study was an insufficient researcher's journal. A researcher's journal, as described in Chapter III, is used for reflexivity and helps eliminate bias and creates triangulation of data. While I engaged in reflexivity by completing a journal entry before and after each participant interview, a deeper researcher's reflection would have provided another layer to help describe the experiences of this qualitative research study. If another qualitative research study is employed, a more descriptive, reflective researcher's journal will be used.

In trying to understand child health professional's current knowledge for speech and language development, a qualitative approach provided an in-depth understanding of child health professionals' knowledge through responses to situational events. This information provides a bridge to further investigate child health professionals' knowledge through a quantitative study. A quantitative study, such as surveying hundreds of child health professionals, may produce a stronger picture regarding their knowledge on speech and language development. If this study was to be repeated or replicated, I would recommend a qualitative approach in conjunction with a quantitative approach to further investigate child health professionals' practices, perceptions, and their current knowledge for speech and language development.

The final limitation of this study is my novice approach to research. I feel as though my inexperience as a qualitative researcher impacted how the data were gathered, analyzed, and reported. While I feel this research study was executed academically and diligently and presents valid rationale and results, the research would benefit from a more experienced qualitative researcher.

### **Implications**

The study resulted in a number of considerations for child health professionals and speech-language pathologists in terms of assessing and referring children with possible speech and language impairments.

#### **Child Health Professionals**

Information presented in this research study provides child health professionals with a research-based understanding of the need for early identification and intervention. The literature review explains why assessing speech and language is important during

well-child visits, presents recommendations for assessing, and proposes some potential barriers in the referral and early intervention processes. The scenario questions offer plausible events and reactions of other child health professionals. It gives them an opportunity to see how their knowledge about speech and language impairments can impact whether the child is correctly being assessed and referred for services.

Experiences, perceptions, and practices of the participants provide child health professionals insight into how other child health professionals feel and respond to assessing and referring children with possible speech and language impairments. For example, information from participants regarding how standardized assessments are feasibly used to help detect “subtleties” in speech and language impairments offers other child health professionals the knowledge that the AAP (2006b) recommendations to use standardized assessments is possible during well-child visits.

The information regarding potential barriers for assessing and referring children with speech and language impairments also provides a basis for further discussion and research. If child health professionals are more aware of the successes and difficulties in appropriately assessing and referring children, then platforms for change can be subsequently created.

### **Speech-Language Pathologists**

Information in this research study provides speech-language pathologists with a comprehensive understanding of child health professionals and their role in assessing and referring children with possible speech and language impairments. The literature review explains the current need for early identification and intervention and how child health professionals are central to that process.

Experiences, perceptions, and current practices of the participants provide speech-language pathologists a deeper understanding of the role child health professionals play in assessing and referring children. Along with the current perceptions and practices, potential barriers that impede a child's access to early intervention are described. With a deeper understanding of these potential barriers, speech-language pathologists can become more involved in advocating for early identification and intervention services.

Speech-language pathologists can provide support for child health professionals such as education on speech and language development, or how to feasibly implement a standardized assessment within a well-child visit. With the information presented in this research study, speech-language pathologists can also advocate for positive change in early identification and intervention, such as requesting more speech-language pathologists for early intervention teams. More than anything, this research study provides a discussion point for future practices and research.

### **Future Research**

While this study helped to answer some questions regarding the current perceptions and practices of child health professionals for assessing and referring children with possible speech and language impairments, it also created some questions for future research. A theme that emerged during the study involved socioeconomic factors. Future research should continue to explore how socioeconomic factors impact assessment, referral, and early intervention processes. Literature states that as many as 90% of eligible children are not receiving appropriate services (Jimenez et al., 2014). Could it be related to socioeconomic factors and the potential for different priorities as one participant described?

Although each participant felt they had adequate training for assessing children during well-child visits, the scenario questions suggest that children health professionals do not carry sufficient knowledge regarding assessing speech and language development. Future research could further investigate the training child health professionals receive specifically for assessing speech and language development. Along with training for assessing speech and language development, future research could investigate the current training for assessing hearing abilities, using standardized assessment tools, and proper referral methods.

Another area of future research would be creating a feasible standardized assessment that all child health care professionals would use during well-child visits to assess the child's speech and language development. Although some standardized assessments address that need, child health professionals are still not using them as recommended by the AAP (2006b). The assessment tool should include both low- and high-technology options, based on one participant's desire for a higher-technology assessment tool.

Along with researching feasible standardized assessment tools, future research could investigate possible correlations between the child health professionals' years of experience and/or use of technology with the regular use of a standardized assessment tool. Although years of experience and/or use of technology did not influence the participants' use of standardized assessment tools in this study, these factors should be explored in future research with a larger sample of child health professionals.

Future research should also include developing an education model for parents. Participants eluded that some speech and language impairments are environmental due to

parents not knowing speech and language developmental norms, and/or not following through with early intervention services due to lack of education regarding the services. Developing a community-based model that educated new and existing parents on speech and language development, how to interact with your child to develop their speech and language, and what the assessment, referral, and early intervention process entails could potentially eliminate some barriers that impede children from receiving needed services.

### **Conclusion**

While the need for early identification and intervention is clearly defined in the literature review, and the participants provided a deeper understanding into child health professionals' role in assessing and referring children with possible speech and language delay, more research is needed. Rationale for more support is described below through the study's findings.

The study confirmed that a majority of participants rely on parental concern and clinical judgment despite the AAP (2006b) recommendations for using standardized assessment. While all participants felt they had adequate time to conduct well-child visits, two of the participants reported not using standardized assessments due to visit time-constraints. Interestingly, the one participant who reported using standardized tools during every well-child visit is also the participant who reported the least amount of time allowed per visit (15 minutes). More research is needed to determine why standardized tools are not being used and to create a method of standardized assessment that more child health professionals will use.

The study also confirmed some barriers mentioned in the literature, such as families not following-through with services due to priorities or misunderstanding early

intervention services with child protective services. More research is needed to determine all barriers that impeded children from receiving needed services and to create possible solutions to these barriers.

This study and the participants within provided a clearer understanding of child health professionals and their role in assessing and detecting possible speech and language impairments. While not all research questions were fully answered, this study provided significant information which can be used to improve the early identification and intervention for young children who need services.

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**APPENDIX A**  
**IRB APPROVAL**



*Institutional Review Board*

DATE: December 5, 2014

TO: Carissa Johnson, B.S.  
FROM: University of Northern Colorado (UNCO) IRB

PROJECT TITLE: [679761-2] Child Health Professionals and their Role in Detecting  
Speech and  
Language Impairments: Perceptions and Current Practices

SUBMISSION TYPE: Amendment/Modification

ACTION: APPROVED

APPROVAL DATE: December 2, 2014

EXPIRATION DATE: December 2, 2015

REVIEW TYPE: Expedited Review

Thank you for your submission of Amendment/Modification materials for this project. The University of Northern Colorado (UNCO) IRB has APPROVED your submission. All research must be conducted in accordance with this approved submission. This submission has received Expedited Review based on applicable federal regulations. Please remember that informed consent is a process beginning with a description of the project and insurance of participant understanding. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Federal regulations require that each participant receives a copy of the consent document.

Please note that any revision to previously approved materials must be approved by this committee prior to initiation. Please use the appropriate revision forms for this procedure. All UNANTICIPATED PROBLEMS involving risks to subjects or others and SERIOUS and UNEXPECTED adverse events must be reported promptly to this office. All NON-COMPLIANCE issues or COMPLAINTS regarding this project must be reported promptly to this office.

Based on the risks, this project requires continuing review by this committee on an annual basis. Please use the appropriate forms for this procedure. Your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date of December 2, 2015.

Please note that all research records must be retained for a minimum of three years after the completion of the project.

If you have any questions, please contact Sherry May at 970-351-1910 or [Sherry.May@unco.edu](mailto:Sherry.May@unco.edu). Please include your project title and reference number in all correspondence with this committee.

Carissa,

**I am the second reviewer on your IRB proposal. Thank you for your attention to the first reviewer's suggestions. I am approving your application. There is a minor update for the Consent that you must change. In the final paragraph and the final sentence the line beginning with "please contact" should now include Sherry May, IRB Administrator, Office of Sponsored Programs, 25 Kepner Hall, University of Northern Colorado, 970351-1910.**

**If you would please make this change on your Consent, I will go ahead and approve your application. I wish you luck with this important research.**

**Sincerely,**

**Nancy White, PhD, IRB Co-Chair**

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Northern Colorado (UNCO) IRB's records.

**APPENDIX B**  
**INTERVIEW QUESTIONS**

1. Tell me a little bit about you and your pediatric experience. (e.g. how long have you been working with children, etc.)
2. What's the typical age range of children that you see in your clinic?
  - a. Is one age range most common? (e.g. ages birth-four, etc.)
3. What's the typical demographic of children that you see in your clinic?
4. Explain what a typical well-child visit entails in your clinic.
  - a. At what ages do you schedule well-child visits?
  - b. Does your clinic call to schedule the visits or do the parents/caregivers?
  - c. Are reminders given to parents/caregivers prior to each visit?
5. How long does each well-child visit take?
  - a. What is your opinion on the amount of time typically provided for a well-child visit?
6. What type of training did you receive in conducting well-child visits?
7. What is your overall opinion on well-child visits?
8. What would you change about well-child visits?
9. Explain your procedures for checking the child's development.
10. Explain your procedures for checking the child's speech and language development.
11. How do you feel about using your clinical judgment to assess the child's speech and language skills?
12. How do you feel about using parental concern to assess the child's speech and language skills?

13. How do you feel about using checklists to assess the child's speech and language skills?
14. How do you feel about using standardized screening tools to assess the child's speech and language skills?
15. What would make it easier to assess a child's speech and language skills?
16. What do you do if you detect a possible speech and language impairment?
17. Describe your referral process when you detect a possible speech and language impairment.
18. Explain your experience when referring for a possible speech and language impairment. (e.g. what's good, bad, easy, hard, etc.)
19. How do you follow-up with a referral?
20. How do you take into consideration the family's wants and needs regarding referral? (For example: Some families do not want their child referred. How would you handle a situation like that?)
21. Explain how you select which professionals or organizations you refer to.
22. How do you feel about the referral process?

**APPENDIX C****SCENARIO QUESTIONS AND APPROPRIATE RESPONSES**

1. A twenty-four month old girl walks into your clinic and is happy and very talkative. She is interacting well with the office staff and has found a few toys to play with on the floor. Once she enters the exam room and you begin to talk with her, you realize that you can only understand about half of the words she is saying. While she rambles off questions to you, probably regarding the toys in her hands, you are only able to make out every other word. You ask her mom how she communicates at home and she responds “Great!”.

How would you proceed with this scenario?

- a. According to Paul (2007) by 24 months children should be requesting information, engaging in free play, producing two-word utterances, and producing speech that is about 50% intelligible. Therefore, the little girl in this scenario would fall into a normal population for speech and language development.
2. A twenty-month old boy comes into your clinic and is running all over the place. He is very active and seems to be wearing his dad out. When he wants a toy car, he gestures and moans until his dad gives him the car. Once he enters the exam room, you try to engage the boy in a little conversation. He looks at you, and then continues to play with his car while making crashing noises. The dad tries to take the car away to help the boy focus on what you are asking, and the boy yells “no!” and begins to throw a tantrum. The dad gives the car back and he settles down. The boy makes a lot of sounds and seems to be content playing with his car on the ground. You ask the dad how he communicates at home, and he says “Fine, I

always know what he wants.”

How would you proceed with this scenario?

- a. According to Paul (2007) a child by 18 months should have a vocabulary of 50-100 words. The only evidence of any words during this visit is “no”. The physician should ask whether he uses more words at home. The lack of attention and fixation on the car also raises a red flag for other impairments, such as ASD. It is recommended that this little boy be referred for a speech and language evaluation.

3. A 60-month old boy comes into the clinic and is very shy and quiet. He is polite and answers the office staff when he is asked a question. The mother is very talkative and engages the boy in a big conversation. When he enters the exam room, you ask him his name and he responds “Wyan” (for Ryan). You ask how Ryan is doing at home and his mother responds “We are very concerned about his speech. He is to start kindergarten soon and we feel that he will not be able to keep up in his classmates.”

How would you proceed with this scenario?

- a. According to Paul (2007), by 60 months the following phonemes may still be produced in error: /s/, /r/, /l/, and “th”, therefore his error on /r/ is not a concern. While his mother is very concerned about his speech, /r/ is the only error he makes. His language appeared to be good in that he responded to the clinic staff’s questions and engaged in a conversation with his mom in the waiting room. Despite the mother’s concerns – which

usually should be taken into consideration – Ryan should not be referred for a speech and language evaluation at this time.

**APPENDIX D**

**PARTICIPANT SCENARIO RESPONSES**

## **Participant One**

### **Scenario One**

First thing I would say is, “What do you mean by great? Do you understand everything she says? Or you’ve been around her so much that you know what she wants because she’s pointing. Do other people that come to the house, do they understand her? Or is it pretty much you and dad that understand her mainly?” And if she says “oh, it’s probably really just me and her dad” then my next thing would to make sure she is hearing ok. So I would probably either do a hearing test or send her to an audiologist in our particular area. It’s really hard to do a hearing test on a 2 year old. So we send her to a pediatric audiologist. Umm, if the hearing is great then I might watch her for another 6 months and see if her speech improves. Because at two – they do have a lot of babbling type talking. If it doesn’t improve at all, then I would probably refer her to an organization that is run by the state. In our area, umm, it’s a developmental evaluation program and they have hearing, speech, PT, OT, all sorts of things that come out and evaluate kids.

### **Scenario Two**

Well this is pretty darn normal for a 20 month old boy! (laughs) They are usually much more into motor than into fine motor and speech. Little girls are more into fine motor and speech. Umm, and running all over and throwing a tantrum is totally normal. Um, a lot of times kids this age will not communicate with a stranger, period. And will often.... I might ask him, or I will probably know, where in the family dynamics he is. Is he the first child, second, third, fourth,

cause usually second, third children get away with going ‘uh’ (made pointing gesture) ‘uh-uh’ and pointing and the older kids will give it to them. So they often talk later, cause they can get away with it. But, uh, this seems pretty normal. And he obviously hears somewhat because he’s heard the word ‘no’ before and knows how to say that (laughs). So with him I would say this is a pretty darn normal 20 month old little boy.

### **Scenario Three**

So I would probably ask mom a little bit more about his speech and try to engage Ryan a little bit more about certain things and see which words he specifically has trouble with. Does he understand what I’m saying? Again, you got to make sure he’s hearing ok, number one. If he’s hearing ok, then he probably does have a little bit of a speech impediment and I would engage speech therapy, which fortunately is free in our state under the age of kindergarten. So, yeah. Or once he’s in kindergarten they’ll do it there too...but any kid that has a speech problem we always want to check their hearing first. Make sure they’re hearing both high and low tones, and that that’s not the problem. But if his hearing is perfect, then we would send him on to speech therapy. And I would agree with mom that we want him to keep up.

## **Participant Two**

### **Scenario One**

Sounds like she's normal. I mean at two you should only be able to understand only about half. Their parents probably understand a little bit more, but probably not a lot more.

### **Scenario Two**

So a little harder to tell there. At twenty-months old, somewhere around twenty-ish words, umm, and not clear on how he does, you know, so I would ask the dad on how many words he thinks he has. And, um, how...you know sounds like motor skills he's doing fine. There's not a lot of motor skills but is sounds like he's doing ok. But the verbal part of that sounds like we need to be a little more clear on how his development is. So, that's what I would do.

### **Scenario Three**

So, you know I would find out what specific concerns she has about his speech. Um, certainly the, you know at five – I have to think in small numbers, 60 month is a little hard for me (laughs)...but I think that's a five year old....What I would look at is what specific concerns she has, because a lot of parents will come in with concerns, and you know and after talking with them their kids are fine – and a lot of times they'll come in with concerns and after talking with them they need more help with different things. And so what her specific concern was and, you know, at five he may not have all the sounds correctly. But he should...strangers should be able to understand everything he says and, um, he should be able to

carry on a conversation, tell a story, and have the sequence be right. That kind of stuff. So, that's how I would proceed in that situation.

## **Participant Three**

### **Scenario One**

...Well, I would find it a bit curious. I would ask mom if there's any other siblings that have any kind of delayed speech recognition. If any of the parents had any problems with speech early on. So I would want to see if this is something that's genetic. Um, the next question I would ask... "you mentioned that she's communicating well, does that mean verbal or pointing? And you're just doing (gestures) assuming for her - what she wants, so you're communicating nonverbally." So that's how I would approach it. Get a little bit more history and see if there's a potential for some speech and language delay. And then during the physical examination I would look make sure that she's not...doesn't have any oral lesions, big tonsils, or she's got a tight frenulum so she can't bring that tongue tip up. I'd listen to her to make sure she has good nasal patency or that there aren't big adenoids might be contributing to things. So that's kind of how I would approach it. Then after that I would say "well it looks pretty benign, we're not too worried" I would have mom concentrate with her on reading stories to her and helping her pronounce things and making sure that she's not just pointing to things but actually has to ask. And I would see her back probably in six, six and a half months, and if she's not better I would do a speech referral at that point.

### **Scenario Two**

He wants his car – that was easy...No, this is a kid I would be worried about autism spectrum disorder, ASD. Here's a kid who's really not interacting well with either Dad or me, he's more focused on inanimate objects. So that raises a

little yellow flag, could this be autism spectrum disorder? So again I 'd go into my history mode, is there any siblings that have had similar problems, or if there was any tendencies with dad to be anti-social when he was younger, and so forth and so on. So I want to get a feeling for what's at risk with this kiddo. Um, and this would be a kiddo I would probably intervene a little sooner in. So, speech is something on the side with this, but what I'm more worried about is is this autism spectrum, and then I'd want to really get a good solid diagnosis on that – so I would probably refer him to Children's if I had any suspicion. I may not even see that kiddo in a follow up...well I could because he's only 20 months and he's a boy, so they're kind of delayed a little bit. So I might if the family says "no, there's no problems there. His brother was like this and now he's the class president, of you know of eighth grade." So I may just bring him back in six months and see how he's doing. I would have worries about this kiddo.

### **Scenario Three**

Yeah, this is a kid who definitely needs a speech therapy referral. Number one so he's not getting beat-up in school, you know. The kids will be unmerciful if he has a little speech problem going on there. Again, a good physical exam, make sure everything's looking good with him. Check his history, make sure it's ok. But yeah, this is a kiddo who I'd say needs a speech therapy referral to start working with those "r"s.

## **Participant Four**

### **Scenario One**

Well umm, we actually do ASQs on all our kids - so that kind of helps. And so at 24 months, um, she's actually doing pretty well - you know. Yeah. I would find her to be appropriate if not actually a little advanced. So, yeah. I'd be happy with her speech, but mom would have already completed the ASQ. So, we do the full ASQ at each age.

### **Scenario Two**

Um, so again he would have had an ASQ, but even from the scenario his speech is delayed. He should be a little bit further along than that. So, the other things I would be concerned about...let's see he's 20 months, so we do an MCHAT at 18 months. So depending on what his behavior is and if he hasn't had an MCHAT before we may have him do the MCHAT along with the ASQ. Yeah. I mean, I would expect his speech to be a little more communicative. According to this, he has no verbal skills at all. Yeah, he should be talking somewhat. Yeah.

### **Scenario Three**

I'm not hearing the conversation, and just from reading this scenario he's probably on track. But again, we do developmental assessment. If he is behind in something, then I would send him on for a full evaluation. My other question would be if he had gone to Head Start. Because if he had been to Head Start they do an even more in-depth and then will implement speech, or OT, or whatever the kids need.

**APPENDIX E****MCHAT**

***Modified Checklist for Autism in Toddlers, Revised with Follow-Up***  
***(M-CHAT-R/F)<sup>TM</sup>***

Acknowledgement: We thank Joaquin Fuentes, M.D. for his work in developing the flow chart format used in this document.

For more information, please see [www.mchatscreen.com](http://www.mchatscreen.com)  
or contact Diana Robins at [DianaLRobins@gmail.com](mailto:DianaLRobins@gmail.com)

### Permissions for Use of the M-CHAT-R/F™

The Modified Checklist for Autism in Toddlers, Revised with Follow-Up (M-CHAT-R/F; Robins, Fein, & Barton, 2009) is a 2-stage parent-report screening tool to assess risk for Autism Spectrum Disorder (ASD). The M-CHAT-R/F is available for free download for clinical, research, and educational purposes. Download of the M-CHAT-R/F and related material is authorized from [www.mchatscreen.com](http://www.mchatscreen.com).

The M-CHAT-R/F is a copyrighted instrument, and use of the M-CHAT-R/F must follow these guidelines:

- (1) Reprints/reproductions of the M-CHAT-R must include the copyright at the bottom (© 2009 Robins, Fein, & Barton). No modifications can be made to items, instructions, or item order without permission from the authors.
- (2) The M-CHAT-R must be used in its entirety. Evidence indicates that any subsets of items do not demonstrate adequate psychometric properties.
- (3) Parties interested in reproducing the M-CHAT-R/F in print (e.g., a book or journal article) or electronically for use by others (e.g., as part of digital medical record or other software packages) must contact Diana Robins to request permission ([DianaLRobins@gmail.com](mailto:DianaLRobins@gmail.com)).
- (4) If you are part of a medical practice, and you want to incorporate the first stage M-CHAT-R questions into your own practice's electronic medical record (EMR), you are welcome to do so. However, if you ever want to distribute your EMR page outside of your practice, please contact Diana Robins to request a licensing agreement.

### Instructions for Use

The M-CHAT-R can be administered and scored as part of a well-child care visit, and also can be used by specialists or other professionals to assess risk for ASD. The primary goal of the M-CHAT-R is to maximize sensitivity, meaning to detect as many cases of ASD as possible. Therefore, there is a high false positive rate, meaning that not all children who score at risk will be diagnosed with ASD. To address this, we have developed the Follow-Up questions (M-CHAT-R/F). Users should be aware that even with the Follow-Up, a significant number of the children who screen positive on the M-CHAT-R will not be diagnosed with ASD; however, these children are at high risk for other developmental disorders or delays, and therefore, evaluation is warranted for any child who screens positive. The M-CHAT-R can be scored in less than two minutes. Scoring instructions can be downloaded from <http://www.mchatscreen.com>. Associated documents will be available for download as well.

### Scoring Algorithm

For all items except 2, 5, and 12, the response "NO" indicates ASD risk; for items 2, 5, and 12, "YES" indicates ASD risk. The following algorithm maximizes psychometric properties of the M-CHAT-R:

- LOW-RISK:** Total Score is 0-2; if child is younger than 24 months, screen again after second birthday. No further action required unless surveillance indicates risk for ASD.
- MEDIUM-RISK:** Total Score is 3-7; Administer the Follow-Up (second stage of M-CHAT-R/F) to get additional information about at-risk responses. If M-CHAT-R/F score remains at 2 or higher, the child has screened positive. Action required: refer child for diagnostic evaluation and eligibility evaluation for early intervention. If score on Follow-Up is 0-1, child has screened negative. No further action required unless surveillance indicates risk for ASD. Child should be rescreened at future well-child visits.
- HIGH-RISK:** Total Score is 8-20; It is acceptable to bypass the Follow-Up and refer immediately for diagnostic evaluation and eligibility evaluation for early intervention.


[www.m-chat.org](http://www.m-chat.org)

Child's name \_\_\_\_\_ Date \_\_\_\_\_  
 Age \_\_\_\_\_ Relationship to child \_\_\_\_\_

**M-CHAT-R™ (Modified Checklist for Autism in Toddlers Revised)**

Please answer these questions about your child. Keep in mind how your child usually behaves. If you have seen your child do the behavior a few times, but he or she does not usually do it, then please answer no. Please circle **yes** or **no** for every question. Thank you very much.

1. If you point at something across the room, does your child look at it? (FOR EXAMPLE, if you point at a toy or an animal, does your child look at the toy or animal?)	Yes	No
2. Have you ever wondered if your child might be deaf?	Yes	No
3. Does your child play pretend or make-believe? (FOR EXAMPLE, pretend to drink from an empty cup, pretend to talk on a phone, or pretend to feed a doll or stuffed animal?)	Yes	No
4. Does your child like climbing on things? (FOR EXAMPLE, furniture, playground equipment, or stairs)	Yes	No
5. Does your child make <u>unusual</u> finger movements near his or her eyes? (FOR EXAMPLE, does your child wiggle his or her fingers close to his or her eyes?)	Yes	No
6. Does your child point with one finger to ask for something or to get help? (FOR EXAMPLE, pointing to a snack or toy that is out of reach)	Yes	No
7. Does your child point with one finger to show you something interesting? (FOR EXAMPLE, pointing to an airplane in the sky or a big truck in the road)	Yes	No
8. Is your child interested in other children? (FOR EXAMPLE, does your child watch other children, smile at them, or go to them?)	Yes	No
9. Does your child show you things by bringing them to you or holding them up for you to see – not to get help, but just to share? (FOR EXAMPLE, showing you a flower, a stuffed animal, or a toy truck)	Yes	No
10. Does your child respond when you call his or her name? (FOR EXAMPLE, does he or she look up, talk or babble, or stop what he or she is doing when you call his or her name?)	Yes	No
11. When you smile at your child, does he or she smile back at you?	Yes	No
12. Does your child get upset by everyday noises? (FOR EXAMPLE, does your child scream or cry to noise such as a vacuum cleaner or loud music?)	Yes	No
13. Does your child walk?	Yes	No
14. Does your child look you in the eye when you are talking to him or her, playing with him or her, or dressing him or her?	Yes	No
15. Does your child try to copy what you do? (FOR EXAMPLE, wave bye-bye, clap, or make a funny noise when you do)	Yes	No
16. If you turn your head to look at something, does your child look around to see what you are looking at?	Yes	No
17. Does your child try to get you to watch him or her? (FOR EXAMPLE, does your child look at you for praise, or say "look" or "watch me"?)	Yes	No
18. Does your child understand when you tell him or her to do something? (FOR EXAMPLE, if you don't point, can your child understand "put the book on the chair" or "bring me the blanket"?)	Yes	No
19. If something new happens, does your child look at your face to see how you feel about it? (FOR EXAMPLE, if he or she hears a strange or funny noise, or sees a new toy, will he or she look at your face?)	Yes	No
20. Does your child like movement activities? (FOR EXAMPLE, being swung or bounced on your knee)	Yes	No

**APPENDIX F**

**MCHAT PERMISSION DOCUMENT – EMAIL**

Re: Request permission to use MCHAT - Johnson, Carissa

Page 1 of 1

## Re: Request permission to use MCHAT

Diana Robins <[REDACTED]>

Fri 1/9/2015 6:33 AM

To: Johnson, Carissa <[REDACTED]>;

You are welcome to use the M-CHAT as described. You may include it as an appendix – please use the official downloads from [www.mchatscreen.com](http://www.mchatscreen.com) and ensure you reprint in entirety, with title, instructions, items, and copyright

I would appreciate an update on your findings when your study is complete. Best, Diana

---

**From:** "Johnson, Carissa" <[REDACTED]>

**Date:** Tuesday, January 6, 2015 at 11:33 PM

**To:** Diana Robins <[REDACTED]>

**Subject:** Request permission to use MCHAT

Dr. Robins,

I am a speech-language pathology graduate student at the University of Northern Colorado. I am currently collecting data for my graduate thesis and would like permission to use your name and the MCHAT in my thesis.

I am interviewing child health professionals (family practice physicians and pediatricians) to determine their current views and practices for screening and referring children with possible speech and language impairments. One pediatrician mentioned that their clinic uses the MCHAT on a regular basis. I would like to reference the MCHAT in my thesis results section and possibly add it to my appendix.

Thank you for your help and consideration.

Best,

Carissa Johnson

**APPENDIX G**  
**THEMES AND SUBTHEMES**

<b>Theme: Parents and Their Role in Early Identification</b>
<b>Subtheme:</b> Parents are knowledgeable
<b>Subtheme:</b> Some parents are overly concerned
<b>Subtheme:</b> Some parents lie
<b>Subtheme:</b> Child health professional uses parental concern/listen to parents
<b>Subtheme:</b> Child health professional refers out if parent wants it
<b>Subtheme:</b> Some parents are suspicious about child protective services
<b>Subtheme:</b> Child health professional gets parental permission to refer
<b>Subtheme:</b> Proactive parents receive services
<b>Subtheme:</b> Small percentage refuse early intervention services

<b>Theme: The Impact of Socioeconomics</b>
<b>Subtheme:</b> Higher SES keeps appointments
<b>Subtheme:</b> Lower SES need more reminders
<b>Subtheme:</b> Less educated or lower SES don't listen to Dr.'s referral
<b>Subtheme:</b> Income level affects referral and follow-through
<b>Subtheme:</b> Lower SES has different priorities

<b>Theme: Perceptions of Well-child Visits and Assessing</b>
<b>Subtheme:</b> Enough time for well-visits
<b>Subtheme:</b> Experience important when assessing development
<b>Subtheme:</b> Developmental checklists not used
<b>Subtheme:</b> Pediatrics is preventive
<b>Subtheme:</b> Happy with current well-child visit
<b>Subtheme:</b> Child health professionals enjoy well-child visits
<b>Subtheme:</b> Important to be efficient during visit
<b>Subtheme:</b> Feels screening for speech and language is easy
<b>Subtheme:</b> Important to consider family dynamics
<b>Subtheme:</b> Standardized tools have improved recently
<b>Subtheme:</b> Prefers standardized tools to clinical judgement
<b>Subtheme:</b> Miss things if only rely on clinical judgement
<b>Subtheme:</b> Standardized tools are very important
<b>Subtheme:</b> Technology makes assessment easier
<b>Subtheme:</b> Best when ASQ filled out ahead of time

<b>Theme: Perceptions and Preferences of Referring</b>
<b>Subtheme:</b> Participant doesn't like electronic referral system/prefers paper
<b>Subtheme:</b> Important to consider family dynamics
<b>Subtheme:</b> Referrals can take a long time (moving, getting in touch with parents, etc.)
<b>Subtheme:</b> Referral process works well

<b>Theme: Current Practices of Assessing</b>
<b>Subtheme:</b> Use MCHAT
<b>Subtheme:</b> Use clinical judgment
<b>Subtheme:</b> Use parent concern
<b>Subtheme:</b> Doesn't use developmental checklist
<b>Subtheme:</b> Use template/EMR to help
<b>Subtheme:</b> Visit entails physical exam and listening to parents
<b>Subtheme:</b> No standardized tool used
<b>Subtheme:</b> Follows AAP guidelines for schedule of well-child visits
<b>Subtheme:</b> Sends reminders to all patients for appointments
<b>Subtheme:</b> Use ASQ

<b>Theme: The Referral Process</b>
<b>Subtheme:</b> Refers out if there is a concern
<b>Subtheme:</b> Refers out if a parent wants referral
<b>Subtheme:</b> Gets parental permission to refer
<b>Subtheme:</b> Child health professional calls to make the referral
<b>Subtheme:</b> Uses electronic referral system
<b>Subtheme:</b> Follows up with referrals one month post referral

<b>Other Considerations</b>
Training received through residency
Evaluation team is understaffed
Reading programs are good to promote speech and language
Insurance can be frustrating
Service comes down to cost and convenience
Small percentage of families refuse EI services
Good to explain services to families
Difference between true delay and environmental delay