Early childcare provider recognition of behaviors related to Autistic Spectrum Disorders and parent communication

Sherira Fernandes

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Reading Committee:

Janine Jones Chair

Clay Cook

Susan Spieker

Ilene Swartz

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University of Washington

Abstract

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Sherira Fernandes

Chair of the Supervisory Committee:

Janine Jones, Ph D

School Psychology

Research suggests that early identification of Autism Spectrum Disorders leads to best outcomes; however, children are regularly not being identified as early as they could be, especially children from certain populations (Mandell, et. al., 2005; 2007; 2009; Pinto-Martin, Dunkle, Earls, Fliedner, & Landes, 2005; Shonkoff & Phillips, 2000). This may be related to several barriers, including: the complexities involved in an early diagnosis, cultural barriers, parent readiness to pursue an evaluation and barriers that prevent our current systems of wide range identification from working (Filipek et. al, 1999; Harry, 2008; Mandell, et. al., 2005; 2007; 2009; Pinto-Martin et. al., 2005). Early childcare providers and centers are one possible venue to overcome several of these barriers.

However, little is known regarding the factors that contribute to an early childcare provider's (ECCP) decision to become involved when they have a concern with a child's development. Little is known as to what factors might contribute to this decision, how much

these factors might contribute to this decision, or how demographic characteristics might interact with these factors.

Given the importance of early identification and intervention and the frontline role early childcare providers can play, the purpose of this study was to explore the factors that help explain whether early childcare providers are willing to communicate with parents about their child's developmental progress when there are concerns. There was a significant interaction effect of the three main predictors, Motivational Beliefs, Context Skills, and Parent Invitations, in the internalized condition. This suggests that as an ECCP's levels of these predictors increased in combination, they were more likely to talk to parents when children are displaying internalized symptoms related to a diagnosis of ASD

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Chapter 1: Introduction

Research suggests that early identification of Autism Spectrum Disorders leads to best outcomes; unfortunately children are regularly not being identified as early as they could be, especially children from certain populations (Mandell, et. al., 2005; 2007; 2009; Pinto-Martin, Dunkle, Earls, Fliedner, & Landes, 2005; Shonkoff & Phillips, 2000). This may be related to several barriers, including: the complexities involved in an early diagnosis, cultural barriers, parent readiness to pursue an evaluation, and barriers that prevent our current systems of wide range identification from working (Filipek et. al, 1999; Harry, 2008; Mandell, et. al., 2005; 2007; 2009; Pinto-Martin et. al., 2005). Early childcare providers and centers are one possible venue to overcome several of these barriers.

Early childcare providers are often in a position that allows them to understand multiple components of a child's life. They observe and interact with the child across settings, with different people, observe and compare the child to similarly aged peers for many hours a week. In addition, as members of the larger community where the child might live, early childcare providers might have an understanding of what is expected of children within that community, and how to interact with parents in that community. Finally, as individuals who run a state regulated business they are often aware of resources that are available to families, or how to find resources. Together these factors contribute to an early childcare provider's ability to notice a difference in a child's development and have a discussion with parents if and when they have a concern with a child's development.

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Given the importance of early identification and intervention and the frontline role early childcare providers play in a child's life, the purpose of this study is to explore the factors that help explain an early childcare provider's willingness to communicate with parents about their child's developmental progress when there are concerns. This prospectus hopes to determine the factors that should be addressed to encourage early childcare providers to take an active role in communicating openly with parents. This may serve to enhance early identification and intervention efforts for children with developmental delays. This study begins with a review of the literature on ASD, early childcare as a venue for intervention, and a brief summary of the application of two decision making theories. Next, specific research questions and hypotheses are proposed, followed by the methods, statistical analyses and a discussion of the results of this study.

Chapter 2: Literature review

Autism Spectrum Disorders (ASD)

Leo Kanner was the first to formally describe the symptomology related to Autism Spectrum Disorders (ASD). He wrote about a subgroup of children who would become the basis for ASD (Wing, 1997). The children he described were socially isolated, aloof, displayed mute tendencies or idiosyncratic language, demonstrated difficulty with changes or transitions, had isolated skills in visual, spatial, and memory tasks, and a general delay in development. In 1943 Kanner defined this array of attributes as autistic tendencies, which he considered to be completely independent of other disorders (Wing, 1997). This was later expanded upon by Hans Asperger. Two years later in 1945, an Austrian pediatrician named Hans Asperger published a study documenting his work involving intelligent individuals with precocious language and poor social and regulatory skills. Asperger's subjects were older children and adolescents, whose social behaviors were often inappropriate, whose speech was well developed but not conversational, and who had restrictive and repetitive interests. Asperger gave the condition the name "autistic psychopathy".

Asperger's work was unrecognized in the United States until the early 1980's. Lorna Wing first described the symptoms in an English-language journal in 1981. Wing replaced Asperger's original term "autistic psychopathy" with Asperger's Syndrome. Wing also added observations of individuals, noting developmental delays in social interaction and in many cases, learning disabilities. Wing integrated Kanner's and Asperger's work, suggesting there was a spectrum of autistic disorders and conceptualized the disorder under three main criteria: impairments in social interaction, communication, and imagination (Hippler & Klicpera, 2003).

The term Autism Spectrum Disorder (ASD) is as an inclusive term that refers to individuals with Autism Disorder, Asperger's Disorder (often referred to as Asperger Syndrome) or Pervasive Developmental Disorder, Not Otherwise Specified (PDD-NOS) and is included in major diagnostic systems. These developmental disorders involve difficulties with social interaction and processing, social communication, as well as repetitive and restrictive behaviors or areas of interest (DSM-IV-TR, 2000).

There are differences and similarities in Autism Disorder, Asperger's Disorder, and PDD-NOS. Autism Spectrum Disorder is defined by qualitative deficits in social interactions, delay or lack of social communication, difficulty with social conversations, lack of spontaneous pretend or imaginative play, and the presence of repetitive or restrictive behaviors or areas of interest. In order to receive a diagnosis of Autism, these symptoms must be present before the age of three. Unlike Asperger's Disorder, individuals with Autism have less developed language, communication, and imagination (DSM-IV-TR, 2000). Children with PDD-NOS have some behaviors similar to those of a child with autism but do not meet the full criteria for having an Autistic Disorder. In addition, symptomology might differ from child to child with PDD-NOS. PDD-NOS symptoms can be mild, with the child exhibiting only a few symptoms while in school or at home. Other children may have a more severe form of PDD-NOS and have significant difficulties in all areas of their lives. Children with ASD present with a wide range of strengths and impairments and might display symptoms related to ASD in different ways. This complicates the diagnosis of ASD. The following section describes the complicated diagnosis of ASD, especially when considering the diagnosis of ASD with a very young child. First, the importance of early diagnosis is described. Second, the challenges associated with early diagnosis are described. Finally, factors related to a delay in diagnosis are described.

Early Diagnosis of ASD

Ample evidence shows that the early and accurate diagnosis of ASD leads to better outcomes (Shonkoff & Phillips, 2000). Shonkoff and Phillips (2000) described the importance of early childhood development in their seminal work, *From Neurons to Neighborhoods.* This report was the collaboration of major scientists in fields including child development, medicine, epidemiology, neuroscience, psychology, and education. Their report highlighted the idea that early intervention is highly cost effective, and more importantly, early intervention leads to better outcomes for children, especially those children with ASD. However, early intervention cannot occur without early and accurate diagnosis.

Early diagnosis is challenging. Children engage in rapid physical, neurological, emotional, and social development between the ages of zero and five-years-old. Countless milestones are met during these years, including: smiling, walking, talking, engaging others, eating, and playing. For all children, including those who are typically developing, there is a great deal of variation in the development of these skills making it difficult to discern typical development from atypical development. This is further complicated in a country like the United States where children are raised in diverse environments and are exposed to different opportunities to develop and demonstrate their abilities. Professionals do not have an adequate guide to detect the presence of a disability that fits all young children in our complex society because tools currently available leave certain populations predictably under identified (Mandell et al., 2007). Professionals asked to diagnose young children are therefore placed in an especially challenging situation. This is even more troubling when the importance of early diagnosis and intervention for ASD (Brisol-Power & Spinella, 1999).

These challenges in diagnosis, in addition to other challenges in our medical system, are correlated with a delay in the diagnosis of ASD. Even when competent physicians complete an evaluation, there may be a delay in diagnosis for several years after the onset of symptoms (Mandell, et al., 2009; Wiggins, Baio, & Rice, 2006). Some theorize that this delay is related to poor screening measures, delayed response to parents' concerns, difficulty of differential diagnosis, or/ and an overall lack of knowledge of early symptoms (Filipek et al., 1999; Goldstein & Schwebach, 2004; Mandell, et al., 2009; Sices, 2007). In addition, population research suggests that there is a longer, predictable delay of ASD diagnosis and even misdiagnoses among minority populations (Bhasin & Schendel, 2007; Croen, Grether, & Selvin, 2002; Yeargin-Allsopp et al., 2003).

The Screening and Diagnosis Process

The screening of ASD is well documented as a challenging but important process. Information must be gathered regarding a patient that is often unable to communicate what she is feeling or thinking. There are currently systems in place to screen children for developmental delays. Universally pediatricians are expected to monitor and track a child's development. In addition, most states have a Birth to Three early identification program that distributes information on child development and basic milestones to parents. However, certain populations of children still do not receive a timely diagnosis (Mandell, 2007). The following section will first describe current best practices in screening. Second, places where children might be identified, well child visits and through parents, are described. Finally challenges within this process will be discussed.

Best practices in screening. Filipek et al. (1999), at the request of the Child Neurology Society and American Academy of Neurology, created a document to help guide practice

parameters for the screening and evaluation of ASD. This team of nationally recognized experts put together an evidence-based multidisciplinary source for those working with children who may have ASD (Brisol-Power & Spinella, 1999). This document is the product of a literature review of over 2,500 articles, making it one of the largest literature reviews of ASD screening, diagnosis, and treatment currently available.

The results of their efforts suggest that the diagnosis of ASD requires a dual level approach: level one includes routine developmental screening by pediatricians, and level two includes the diagnosis and evaluation of ASD through a more individualized comprehensive evaluation. A multilevel approach that includes parent screening is widely appreciated as a best practice in ASD early intervention (Biard, Cass, Slonims, 2003; Baird, Charman, Cox, Baron-Cohen, Sweettenham, Wheelwright, & Drew, 2001; Levy, Mandell, & Shultz, 2009). Screening indicates a general, quick, and easy assessment process that should be completed with all children in order to determine if more information is needed to diagnose a developmental delay. Diagnosis requires a more comprehensive multi-disciplinary evaluation to avoid misdiagnosis. This level of evaluation involves a comprehensive medical examination, as well as a comprehensive examination by professionals experienced in the diagnosis of ASD as well as other developmental delays or psychological diagnoses in order to ensure an accurate diagnosis.

There is a high rate of overlap of ASD symptoms with other disorders (Cuccaro et al., 1996; Mandell, Ittenbach, Levy, & Pinto Martin, 2007). Common diagnostic traits such as speech delays, poor social responses, impulsivity, attention problems, and behavioral problems are characteristics seen in Attention Deficit/Hyperactivity Disorder (ADHD). Diagnostic complications can also occur when children present with repetitive and restrictive behaviors that may appear to some professionals as obsessive-compulsive disorder (OCD). Often children with

ASD struggle with transitions and are resistant to change. This pattern of non-compliant behavior is at times interpreted as oppositional defiant disorder or other behavioral disorders. Furthermore, ASD is frequently occurring with other developmental symptoms. It is estimated that cognitive impairment is present with 70 to 80% of children diagnosed with Autism (Mandell, et al., 2007).

Due to this complexity, only professionals with experience in ASD should screen and diagnose for ASD. The current prospectus does not suggest that anyone without appropriate training in child development, behavioral disorders, or developmental delays provides the screening or diagnosis of ASD. Working under the well-supported framework that early intervention begins with early identification, this study explores one possible venue of intervening in a way that accelerates and supports parents' decision to seek further information regarding their child's development. The current study explores the possibility of early childcare as a possible venue for parents to begin a discussion regarding a young child's development earlier than in the formal preschool or kindergarten setting.

Current identification systems and associated challenges. The current systems for ASD screening are inadequate. There are currently systems in place where children who might have a developmental delay, such as ASD, might be found and recommended for evaluation. However, these systems do not adequately find children early enough (Pinto-Martin, Dunkle, Earls, Fliedner, & Landes, 2005). Primarily physical health well child visits, such as visits to doctors or nurse practitioners, are where screenings are most likely to occur. Beyond that, screenings through community services like Birth to Three centers are the places where parents are most likely to have their children screened. Finally, parents may also be able to identify developmental variations in their own children.

Well child visits as a place of identification. Well child visits are not adequately identifying children (Pinto-Martin, Dunkle, Earls, Fliedner, & Landes, 2005). Ideally, regular screenings for developmental delays will occur in a culturally competent manner during each well child medical visit (Filipek et al. 1999). Unfortunately, this is not the case for most professional medical offices (Dearlove & Kearney, 1990; Dobos, Dworkin, & Bernstien, 1994). There are many possible reasons for why this may be the case. However, research suggests that time and ability to work with diverse populations, including neuro-diverse populations, are the most prevalent barriers (Pinto-Martin et al. 2004). The following section will explore these barriers.

Time. Time constraints in a pediatric medical professional's office are a well-documented as concern on the part of medical professionals as well as patients (Pinto-Martin et al. 2004; Zuger, 2004). In a relatively short amount of time, the child should be undressed, weighed, measured for length/height and head circumference, assessed for oxygen levels, and checked for developmental milestones. Screenings are often excluded from this very limited time slot for more acute concerns. For families that might be comfortable enough to bring up specific developmental concerns with their doctors there might not even be enough time in the appointment to discuss what next steps would be (Ploof, & Hamel, 2002; Yarnell, & Polla, 2003; Zuger, 2004).

Ability to work with all populations. Medical practitioners may have limited abilities in working with diverse populations. As previously discussed, the early diagnosis of ASD is difficult and requires specialized training even for primary care medical professionals (Filipek et. al 1999). Some physicians might not have the knowledge required to work with children with potential developmental delays, who are from neurologically diverse populations, or recognize

them (Yarnell & Polla, 2003). Furthermore, medical professionals might not have sufficient exposure to working with children from culturally, financially, and linguistically diverse backgrounds.

Racially and culturally diverse populations. Racial and cultural diversity pose a challenge to medical professional's ability to accurately identify a child for evaluation. Even when competent physicians complete a screening or an evaluation, evidence suggests that there is often a delay in diagnosis for several years after the onset of symptoms (Mandell, et al., 2009; Wiggins, Baio, & Rice, 2006). Some theorize that this delay is related to poor screening measures, delayed response to parents' concerns, difficulty of differential diagnosis, or an overall lack of knowledge of early symptoms (Filipek et al., 1999; Goldstein & Schwebach, 2004; Mandell, et al., 2009; Sices, 2007). Research does not support racial differences in the presence of ASD; however studies have found that the delay of diagnosis and misdiagnoses of ASD is highest among some minority populations (Bhasin & Schendel, 2007; Croen, Grether, & Selvin, 2002;Yeargin-Allsopp et al., 2003).

Minority status has been correlated to misdiagnosis of ASD. Research indicates there is a higher probability of children receiving different diagnoses before their ASD diagnosis or being misdiagnosed based on minority status (Cuccaro et al, 1996; Mandell, Ittenbach, Levy, & Pinto-Martin, 2007; Nguyen, Araganza, Larke, & Qinghing, 2006).

Barriers to Medical Staff- Family Communication. This discrepancy might in part be due to difficulties with communication. There are obvious surface level barriers, such as language; however, research suggests that there are more implicit barriers to easy communication between early medical providers and families. This is an important issue because a family's ability to communicate with medical professionals and work within the medical system is directly related

to their child's medical outcomes for children with ASD. Schall (2000) found that those who can self advocate by asking questions and requesting services, communicate effectively with medical professionals, and work well within the system are the most successful in getting the services for their child in a timely manner. As previously discussed, early intervention is related to best outcomes for children with ASD.

Communication is harder for those who are not from the same background as the medical professionals with whom they are working. Communication can be challenged and behaviors can be misunderstood from both the parent and the clinician. There is even variation in how professionals view families' motivations depending on class status.

> Professionals used the term unmotivated to describe families who missed appointments, refused services, or disagreed with team recommendations. Most professionals interviewed expressed frustration with families that they deemed unmotivated. However, professionals viewed unmotivated middle-income families and unmotivated low-income families differently. For examples, professionals felt that unmotivated middle- income families were resistant to services because they associated early intervention with welfare, whereas unmotivated low-income families were resistant because they were uneducated, or substance abusers (Harry, 2008, p 305)

Harry (2008) notes that professionals had a negative view of low income families when they disagreed with services or missed appointments. Rather than using a partnership-based approach professionals noted these attributes as family deficits. This finding leads to questions regarding how the child is treated with interventions, particularly because the diagnosis the child receives is strongly related to a clinicians' interpretation of behaviors. If one considers this in terms of the experience of a parent from a minority background of a child with ASD, the

situation is layered with complexities. This type of complication serves as a barrier to identifying children who might have a developmental delay. As was previously discussed regarding racially and culturally diverse populations, minority status has been correlated to misdiagnosis of ASD. Communication barriers might account for some of this variability in diagnosis.

Similarly, families sometimes sense biases from doctors and no longer trust them with concerns. Harry (2008) and Jegatheesan (2009) both found that some minority families give up on trying to convince clinicians that they are capable parents who work hard for their children. A theme of defeatism pervades these articles. Parents might feel as though clinicians have an existing or biased view of their family. When time is already stretched, why should they spend their limited emotional resources on educating a clinician they may never see again?

Parents as a place of identification. While parent education is important, there are challenges with current systems that utilize parents as a method of identifying children who might have a developmental disability. It is logical to expect that in many cases parents might notice when their child is not developing typically. Generally, parents know their children better than anyone else and are their children's greatest advocates. Public health systems support parents in their ability to monitor their child's development through awareness. There are campaigns aimed towards increasing parents' knowledge of developmental milestones. These systems include pamphlets mailed to the homes of new parents that describe developmental milestones and when to call a pediatric medical specialist. These pamphlets are often available in multiple languages and include palpable language and graphics.

While parent identification might be the method through which some children are identified, experts in the field suggest that this alone is not adequate (American Academy of Pediatrics, 2001; Filipek et al., 1999; Pinto-Martin, et al., 2005; Schor, 2004; Shonkoff &

Phillips, 2000). As previously noted, the screening of developmental delays can be quite complex, and early identification is imperative. Even when parents think their child might be developing differently from other children, they might not be able to discuss this with their medical professionals due to linguistic, cultural, or time barriers. Similarly, this communicative barrier might lead to confusion, reluctance, or defensiveness when a concern is brought up by a medical provider. In addition, even though a parent might be able to acknowledge that there might be a difference in development, this might not be enough to encourage a parent to seek help, as the parent might not be ready to seek help. Given the importance of early identification and the disparities in diagnosis, more must be done to increase early diagnosis. Early childcare would be an ideal venue to accomplish this.

Childcare as a Venue to Facilitate Early Identification

The following section describes early childcare as an appropriate venue to facilitate early identification of children with developmental delays. First, the usage of early childcare by American families is described. Second, the characteristics of early childcare programs that place them in a position to be able to assist in early identification, systems understanding, community understanding, and child understanding, are described. Third, *how* early childcare providers might be able to facilitate early identification through a conversation with parents is described. Next, a brief description of Prochaska and Di Clemente's decision making process in support for a simple conversation between early childcare providers and parents as an intervention is provided. Finally the Hoover-Dempsey model of involvement will be applied to the current prospectus.

Usage of early childcare. There has been an increase in the use of early childcare in the United States across racial and economic stratifications (Meyers & Jorden, 2006). Not only are

there currently over 11 million children under the age of five in early childcare (US Census Burus, 2010), but these children tend to spend a great deal of time at early childcare (Meyers & Jorden, 2006). On average, children of working mothers spend 35 hours a week in early childcare. Because childcare providers spend significant amounts of time with children under their care, they have ample opportunities to know each child intimately. This allows early childcare to serve as a venue to facilitate early identification, specifically for the following characteristics: system understanding, community understanding and trust, and child understanding.

Characteristics of Early Childcare that Might Facilitate Early Identification

System understanding. Working as a licensed early childcare provider involves not only an understanding of children and families, but also an understanding of how to maintain a state regulated business. In most states early childcare providers must attend trainings to maintain their license, maintain standards of quality, and understand recommended guidelines, such as staff-to-student ratios and developmentally appropriate practices. For those who run their own business, they must understand administrative procedures well enough to maintain their program. Early childcare providers are positioned in a way that allows them to become apprised of resources in the community and possibly how to access them. For example, organizations like the Department of Early Learning and Childcare Resource and Referral are heavily involved in early childcare programs, and often provide early childcare providers with informational pamphlets and information about resources like reduced cost medical insurance or information about child development. Furthermore, early childcare programs often collaborate with local elementary schools in their community through Kindergarten readiness programs that connect the schools with early childcare programs.

Having access to resources in the community is beneficial for early childcare providers who might be discussing concerns regarding a child's behavior to parents. Knowing what might be available to families, or whom to call to obtain that information, can help families take steps towards early identification of developmental delays. Also, being able to relate with parents regarding what it is like working with non-community members, such as public health nurses or licensing officials might help parents feel comfortable should they choose to take steps towards seeking an evaluation.

Community understanding and trust. Community understanding is another factor that facilitates an early childcare provider's ability to work with families. Working as an early childcare provider leads to more active community participation (Bromer, 2002). Multiple members of the community trust an early childcare provider enough to leave their children in their care, placing early childcare providers in a position of importance. In addition, early childcare providers are small business owners in a field that requires a great deal of interaction with the community. Networking might be used to increase clientele, they see many different families, and often sponsor community activities such as craft nights. In addition, early childcare providers may also have a general perception of the local school systems or what general expectations of the children within that community.

Furthermore, early childcare programs are often attached to community organizations or even neighbor's homes, as is the case in family home childcare. For example, early childcare providers might have their business through a local church, in connection with a university, or be attached to a local business as a benefit for employees. Some high schools even offer childcare programs to help train high school students to become early childcare providers or to offer

childcare for students. This deepens the connection that early childcare providers have in their community.

Early childcare providers most often live in the community where they work (Fuller & Strath, 2001), and are often racially representative of the populations they serve (Fuller & Strath, 2001; Whitebook, Sakai, Kipnis, Lee, Bellm, Speiglman, Almaraz, Stubbs, & Tran, 2006). Therefore early childcare providers are often representative of the community they serve and can facilitate communication between families and community systems, especially for minority or marginalized populations that might have barriers communicating with medical professionals. Fuller and Strath looked at the 1990 demographics of early childcare providers and found that in urban areas where more minorities lived there were more minority childcare workers. The proportion of African American and Latino childcare workers was significantly higher than national averages. Whitebook et al. (2006) did a more recent study looking at populations in California. Those authors also found that there is proportionate ethnic representation based on ethnicities in the population, except for African American and Asian populations. The researchers found an over-representation of African American groups and an under-representation of Asian groups for childcare professionals. However, the researchers did note that the under-representation of Asian childcare providers might be related to the limitations of the study because interviews were only held in Spanish and English. Furthermore, family childcare centers are located in the childcare providers' homes, necessitating that they live in the community where they work.

Since early childcare providers are generally from the same community as the families with whom they work, they may be in an advantageous position to join with families in a way that promotes a collaborative problem solving environment. Other professionals who might be

evaluating their child may not have a history of working closely with the child or understanding the parents' values. As previously noted, research suggests that medical professionals often feel ill equipped to speak with families from diverse backgrounds due to a lack of knowledge about the different cultures. If a conversation regarding concerns with a child's development is with a trusted community member, some of the initial barriers to seeking further information through an evaluation might be reduced.

Child understanding. Early childcare providers often have a strong understanding of child development. Early childcare providers often spend a great deal of time with the children for whom they care (Meyers & Jorden, 2002). They thus have the opportunity to compare each child to other children within his or her age range in similar situations, observe the child across environments, and with different people, both adults and children. This allows childcare providers to have a unique perspective on a child that even parents might not have.

In addition, research studying the discrepancy between the age of diagnosis of ASD for children from marginalized backgrounds suggests that these children are more likely to have an evaluation after concerns are brought up in school versus a pediatrician's office (Yeargin-Allsopp et al., 2003). An early childcare provider might be able to expedite this process if he or she had the confidence and resources to speak with parents when there was first a concern regarding the child's behavior. This conversation might in turn give parents the courage to discuss concerns with their pediatrician or other community specialist.

How Early Childcare Providers Might be able to Facilitate Early Identification

If early childcare providers are willing to use their knowledge regarding their community, families, and individual children to initiate a conversation with parents about their child's development, parents might begin to consider an evaluation. The following section will explore

how early childcare providers make the decision to become involved by having a conversation with parents if they have a concern regarding a child's behavior. For the purposes of this literature review, this will be referred to as a "collaborative conversation".

Given the previously described complexities involved in the screening and diagnosis of ASD, a collaborative conversation between early childcare providers and parents is all that is suggested. Early childcare providers come from various backgrounds in terms of education, length of time working in the field, and length of time working with children. Also, it would be inappropriate for early childcare providers to require an evaluation or suggest a diagnosis. A deep level of theoretical knowledge of early child development, ASD, or diagnosis is not needed for a collaborative conversation.

Appropriate support from a kind and trusted community member, such as an early childcare provider, would likely help a parent think about their child's development and move closer to taking action and seeking early intervention. As previously described, an early childcare provider has the opportunity to know the child and his or her family well, and how to access resources in the community. A conversation with an early childcare provider might help the parent confirm their own possible suspicions with someone they trust and who cares about their child or encourage the parent to pay closer attention to their child's development. In addition, the early childcare provider can help the parent transition into the preparation phase by providing resources such as Birth to Three information or contacting Public Health Nurses who may already be working with the early childcare center.

*Challenges***.** There are barriers to the initiation of the collaborative conversation between an early childcare provider and parent that must be addressed. Specifically, there is limited knowledge as to how early childcare professionals decide to have a collaborative conversation

with a parent. The factors leading up to a conversation with a parent or how the early childcare provider decides to become involved in the child's developmental context are unknown. Given the great variation across early childcare providers in terms of background, education, place of employment, and career trajectory, there is likely to be great variation in these factors based on demographic information as well as other experiences. In order to understand how early childcare providers might make this decision, the current prospectus borrows theoretical constructs from Hoover-Dempsey and Sandler's (1995, 1997, & 2005) model of parent involvement and tests its application to decision making process of early childcare providers, as will be described later in the chapter.

Collaborative Conversation

The first step to an evaluation is the point at which a parent realizes that his or her child might be developing differently from other children. This difference in development might be first realized by the parent, but not always. In some cases schools, family members, or doctors might note a difference in development (Yeargin-Allsopp et al., 2003). In these cases another person informs the parent that their child might be developing differently from other children. A gentle collaborative conversation regarding a concern might facilitate a parent's decision to seek an evaluation, by either serving as a catalyst to directly speak to a pediatric medical professional, initiate a parent's wondering, or in some cases cause a parent to react to a suggestion defensively and avoid an evaluation.

Theoretical Frameworks: Decision Making

The following section provides the theoretical framework for this project. First, an application of Prochanska and Diclimente (1982) is provided to describe the decision making process. Second, Hoover-Dempsey and Sandler's Parental Involvement Model is described to

provide context to this process. Finally, an adaptation of the model to the current prospectus is described.

Decision making: Application of Prochanska and Diclimente (1982). Suggesting that a child might be developing differently from his or her peers is an important step in a child's evaluation. Of course, this might not be enough to encourage a parent to solicit an evaluation for their child, nor should it be. This is simply a step towards a beneficial intervention for a child, and should be considered carefully and in the context of the complexities that occur within a child's life. In some ways the limits of what a childcare provider can accurately expect to accomplish within the constraints of their role is an asset. Not pushing parents, but only exploring what might be impacting their child's progress in a non-authoritative manner might promote a more collaborative discussion than would a conversation with a professional in a hierarchy or position associated with authority such as a pediatrician.

As Prochaska and DiClimente's (1982) theory of decision making suggests, the decision to take action to speak with a parent is complicated and layered. Prochenska and DiClimente's theory is commonly used when examining the decision making process of people who abuse alcohol and other drugs, but has also been applied to educational and parental decision making (Center for Substance Abuse Treatment. Enhancing Motivation for Change in Substance Abuse Treatment, March 13, 2012). There are five stages to this theory, four of which apply directly to the decision to have a collaborative conversation with a parent: Precontemplation, Contemplation, Preparation, and Action. The follow section will described these stages as is relates to a collaborative conversation between early childcare providers and parents.

Precontemplation. At this stage making a change is not being considered. As it relates to early identification, early childcare providers have not decided to speak with a parent, or may not

even know there is reason to do so. The early childcare provider might not see differences in the child's behavior, or might be thinking that the child will grow out of the concerning behavior without identification.

Contemplation. At this stage awareness of a problem begins to arise. The early childcare provider begins to concretize concerns regarding the child's development, however is not certain if she should speak with parents. Early childcare providers might begin to seek information from co-workers or other sources at this time. Early childcare providers will weigh the pros and cons of speaking with a child's parents. Social stigma, grief and loss, cultural concerns, history with medical and educational professionals will arise. This might be a time of uncertainty and confusion regarding what is best for a child in the context of his or her life.

Preparation. At this stage an early childcare provider decides that a collaborative conversation with a parent might be beneficial. The early childcare providers, ideally, will begin to prepare to have a collaborative conversation with parents.

Action. At this stage early childcare provider is ready to have a collaborative conversation with parents. For people who are dealing with addictions, this is usually the stage where behaviors are modified, and significant lifestyle changes are made. However, for early childcare providers of a child who might have an unidentified developmental disability, this stage is likely to look quite different. Here, if the early childcare provider decides to speak with parents, a change in their relationship might occur. The early childcare provider must consider how the parent will react to this conversation. Will he or she become angry or defensive, have more questions (that the early childcare provider may or may not be able to answer), or be relieved and grateful that the early childcare provider came to the parent with concerns?

As Prochaska and DiClimente (1982) note, there is great variation in how people advance through these stages. Some might spend weeks on one stage before advancing to the next, whereas others might spend days. In addition, one might not advance through these stages in a particular order, but move forward and then back, or skip stages entirely.

It is clear, however, that Prochaska and DiClimente's stages do not account heavily for the interaction of social and environmental context. For the early childcare providers of a child with a possible developmental delay, issues like financial strength, time, role construction, access to educational, psychological, and medical resources and perceived/actual support are integral to an early childcare provider's decision making process. For this reason Hoover-Dempsey and Sandler's Parental Involvement Model is also used to understand the early childcare provider's decision-making process, as is described below.

Hoover-Dempsey and Sandler's Parental Involvement Model

Hoover-Dempsey and Sandler's (1995, 1997, & 2005) model for parental involvement provides a theoretical framework based on psychological, social, and educational research from which to examine specific predictors of involvement in a similar context to that of an early childcare provider (see Figure 1). There is little information regarding how early childcare providers decide to involve themselves if they have a concerns regarding a child's development by having a collaborative conversation. A search on Google Scholar, Psych Info, and ERIC yielded no articles that explored this situation. The most closely related articles discussed inclusion of children with disabilities in childcare and early childcare perceptions of inclusion.

Hoover-Dempsey and Sandler's (1995, 1997, & 2005) model includes five levels; however, only the first two levels apply to the current prospectus. The model takes a process perspective on the three major sources of motivation for involvement (Figure 1). The first is

parent's motivational beliefs, including role construction and self-efficacy for helping the child succeed in school. Motivational beliefs is grounded in the widely accepted theory from Biddle (1986) and Bandura (1997). The second is perception of invitations to involvement, including general invitations from the school and specific invitations from teachers and children. The third is personal life context variables that influence perception of feasibility of involvement, including parents' skills and knowledge for involvement, as well as time for involvement. The authors note that all the variables included in the model are dynamic process variables, or variables that are amenable to change through intervention or life circumstances (Hoover-Dempsey & Sandler, 1997).

The following section will explore the model's constructs as they might relate to early childcare provider's decision making process when determining if they should engage in a collaborative conversation with parents. Please see Figure 2. for an application of Hoover-Dempsey and Sandler's (1995, 1997, & 2005) model to early childcare provider's decision making.

Application of the Constructs to Early Childcare Provider Decision Making

Motivational Beliefs. The Motivational beliefs scale is comprised of Role Construction and Self-Efficacy. This scale assesses the extent to which an early childcare provider believes that it is appropriate to initiate a collaborative conversation with parents. The following section will describe the subscales within this scale.

***Role construction*.** Role construction is based on role theory, or the idea that people act differently and predictably depending on their social identity and situation (Biddle 1986). Biddle (1986) relates this to a triad of concepts: patterned and characteristic social behaviors, assumed parts of identities, and expectations for behavior. This is the basis behind theories like stereotype

threat (Steele, 1997) that suggest that role construction is not always explicit, but does impact behavior. Role construction for involvement, according to Hoover-Dempsey et. al., 2004, is based upon what a person believes he or she is supposed to do in the context of their place in society. Walker et. al., (2005) expand on this idea in a way that can be applied to early childcare, suggesting that how parents choose to become involved is impacted by how individuals believe children develop, how they impact this development by their actions, and what are the expectations of others in this group (Deslandes & Bertrand, 2005; Drummond & Stipek, 2004; Gutman & McLoyd, 2000; Hoover-Dempsey et al., 2005).

Role construction is applied to the current prospectus to assess how early childcare providers view their role as both a part of a child's life and as an employee or owner of an early childcare center. What are the expectations put upon them by parents and employers? Does society think that early childcare providers have valuable input in regards to child development? Past experiences will also shape this area. This assesses the point to which early childcare providers feel as though it is appropriate for them to become involved when they have a concern regarding a child's development. Do they feel as though this is their job or responsibility, or overstepping boundaries? Do early childcare providers feel valued by society as someone who understands child development? As Hoover-Dempsey et al., (2005) describe, this is determined by past and present experiences, as well as socio-political constructs.

There are few studies directly examining how early childcare providers view themselves. Indirect indicators of societal value, such as low pay (Meyers & Jorden, 2002), suggest that early childcare providers have a relatively low social standing (Meyers & Jorden, 2002). These indicators are contradicted by the importance of early childcare providers, both for families and society (Shonkoff & Phillips, 2000). Early childcare providers, as compared to societally

esteemed experts in child development, such as medical professionals, have more opportunities to become extremely knowledgeable about the children in their care, and arguably influential, on the specific children in their care. Applied to the current study, there are many factors that might interact to determine how early childcare providers view their role after she has concerns regarding a child's behavior.

Self-efficacy. Self-efficacy is a significant determinant of a person's action (Bandura, 1997). The two main ideas behind this theory are: can one actually complete the task in question, and two, will completing that task have a desired effect? Here we focus on the latter. When people do not believe that their actions will lead to a desired effect, or will lead to an undesired effect, they have limited motivation to perform an action (Bandura, 1992, 1995, 2000). This influences not only completion, but also the quality of the end product and the process leading to the completion (Bandura, 1997).

This theory has been empirically tested with results that suggest a link between perception of efficacy and performance (Eccles & Wigfield, 2002). Hoover-Dempsey et al., (2005) found that parents who perceived their school involvement to be effective in improving outcomes for their child in school were more likely to become involved. This is influenced by personal experiences of success at the given task, success of others in similar situations, and externally motivating factors such as verbal persuasion and compensation (Bandura, 1997). Hoover-Dempsey et. al., 1995 applied this idea to their parent involvement scale. Positive personal beliefs regarding one's own efficacy for helping one's children succeed in school are associated with increased parental involvement among parents of elementary, middle, and high school students (e.g., Bandura et al., 1996; Grolnick et al., 1997; Hoover-Dempsey, Bassler, & Brissie, 1992; Seefeldt, Denton, Galper, & Younoszai, 1998; Shumow & Lomax, 2002).

Applied to early childcare provider's involvement, self-efficacy theory suggests that early childcare providers make involvement decisions based, in part, on their thinking about the intended outcomes. This might also color the way the early childcare provider perceives his or her environment, and the actions of those within it. The idea of what marks an 'effective' conversation with a parent will vary. What the early childcare provider decides is effective (e.g., a parent seeking help, a change in a child's behavior, the implantation of a seed for further thought) might depend on the early childcare provider's view of special education, medical/ psychological evaluations, availability of resources, culture, resources, and the parent's stage of change.

Perceptions of Invitations of Involvement from Others. Perceptions of invitations of involvement from others assesses how open early childcare providers feel that their involvement might be. This is measured from two perspectives: school and parents. The following section will describe these two sub scales.

General school invitations. General school invitations consider the larger school setting. Do school based contextual factors facilitate involvement? Based on the well-accepted work of Bronfennrenner's (1979), we understand that people act and work within larger social constructs. These social constructs impact the way that people act explicitly and implicitly. In previous sections this was well connected to motivational beliefs. While perceived and actual invitations were described as affecting motivational beliefs, especially role construction, it is still a separate idea. As noted in the parent involvement model, school environment influences parents' involvement (e.g., Hoover-Dempsey & Sandler, 1997).

As Hoover-Dempsey and Sandler (1995, 1997, & 2005) describe, an invited feeling is the result of a welcoming and responsive school atmosphere and school practices ensuring that

parents are well informed regarding their child's progress and the school community, as well as an interest in their thoughts and comments. Hoover- Dempsey et al. highlight that additional research supports the importance of positive school invitations and school climate that supports teacher involvement in child development (e.g., Christenson, 2004; Comer & Haynes, 1991; Griffith, 1998: Lopez,Sanchez, & Hamilton, 2000; Simon, 2004; Soodak & Erwin, 2000).

This idea applies to early childcare providers in the context of overall school support. Does the early childcare center (or family home childcare) facilitate communication between teachers and parents regarding child development? For example, do childcare programs act in a way that supports a teacher who would like to have this type of conversation with parents? This might be accomplished by providing trainings on the topic, giving early childcare providers a template around which to have this type of conversation, or building paid time into their school year to have these conversations.

This might differ based on childcare setting. In some cases, such as family care providers, the early childcare provider herself often determines the culture of climate in regards to this and might not have the resources to encourage this type of conversation. However, in other cases, such as in center based childcare programs, the director of the clinic might set the collaborative climate for the childcare center.

Specific invitations. Specific invitations are defined as implicit or explicit communications from individuals that promote a safe communicative environment. The relationships between specific invitations and parent involvement were based on teacher invitations to join the classroom, as well as from the child in Hoover-Dempsey et. al.'s (1995, 2005) model. However, the current prospectus will focus on parent invitations, as child

invitations, such as a child asking a parent to assist with homework completion, are not appropriate in this situation.

Direct invitations from teachers to become involved in the classroom have been identified as motivators of parental involvement in elementary through high school student populations (e.g., Epstein, 1986; Kohl, Lengua, & McMahon, 2002; Simon, 2004). Examples of this might include asking a parent to meet with a teacher after school, to help on a field trip, or asking a parent to teach a special lesson in the classroom. These types of invitations suggest the insitiution as a whole regards the parent's participation as important (Adams & Christenson, 2000; Kohl et al., 2002; Patrikakou & Weissberg, 2000).

This applies to the current prospectus as invitations from parents. Parents, in many respects, are the early childcare providers' employers. Without their business the early childcare home or center would not be profitable. For early childcare providers parent invitations might take the form of questions from parents regarding their child's behavior in the early childcare setting, as well as advice or insights that they might have for the parents for the home setting. Often in early childcare programs parents rush in and out of the center, and do not stop to communicate with teachers (Endsley & Minish, 1991).

Perceptions of Life Context Variables. Perceptions of life context variables accounts for factors that impact the early childcare providers' daily functioning. This includes if the early childcare provider knows how to engage in the specified activity and, if they have the time and energy to do it. The following section will describe life context variable in detail.

Skills and knowledge. Skills and knowledge include one's perception of whether or not he or she has the skills and knowledge required to complete a task given the appropriate context. One might know how to do something, but not be able to do it in an efficient manner.

Hoover-Dempsey et al., (1995, 2005) found that for parents perceptions of personal skills and knowledge shapes their ideas regarding the type of involvement they might have in a child's academic career. For example, if parents believed they were skilled in physics, they would be more likely and motivated to try and help their child with her science homework. Hoover-Dempsey et al. (2005), consistent with research in other areas, found that the inclusion of skills and knowledge in the model was appropriate because parents are more likely and motivated to engage in an activity if they feel as though they are knowledgeable of the activity (Dauber & Epstein, 1993; Delgado-Gaitan, 1992; Hoover-Dempsey et al., 1995; Kay, Fitzgerald, Paradee, & Mellencamp, 1994).

Similarly, the current prospectus will explore to what extent skills and knowledge from these theories can be applied to an early childcare provider's decision making. In this case, the content of the knowledge must include two levels: knowledge regarding children, and knowledge regarding how to have challenging conversations with parents regarding their child's development. For example, a childcare provider might feel as though they know a great deal about child development or a child in his or her classroom, but have little knowledge regarding how to make a parent listen to them without becoming defensive. In reality this type of conversation is not always productive, as it might alienate parents. A lack of understanding in basic consulting techniques, especially for a parent in the precontemplative or contemplative stages of decision making, can have undesired effects such as: alienating parents, slowing down the identification process, or even the removal of a child from a childcare setting.

Time and energy for involvement. Time and energy for involvement focuses on the constraints of an individual's day and how this impacts their involvement. After completing tasks involving the immediate care of children, is there time for talking to parents? This was

discussed as a challenge to the current system of identifying children who might have a disability in doctor's offices. Parents' decision making about involvement is also influenced by their perceptions of other demands on their time and energy, particularly in relation to other family responsibilities and varied work responsibilities or constraints (Hoover-Dempsey et al., 1995; Lareau, 1989).

Similar constructs can be applied to early childcare providers when we consider time allotment for discussing behavioral concerns with parents in a collaborative, productive manner. Early childcare providers are stretched for time; finding the appropriate time to speak with parents, who might have their own inflexible schedules, is difficult (Johnston & Brinamen, 2006). Furthermore, given the sensitive nature of this conversation, it is likely to require both time and energy. This will require the early childcare provider to be focused on the conversation with the parent, not the other children in the classroom. Logistically, ratio requirements might impede early childcare providers from speaking to parents during school hours, and require them to spend additional hours, which might be voluntary or out of pocket, to have this conversation with parents.

Based on the research with similar populations, it is likely that early childcare providers with an inflexible schedule, or more than average responsibilities in the classroom, would have less time to talk with parents than early childcare providers with more flexibility in their schedules (Hoover-Dempsey et al., 2005; Johnston & Brinamen, 2006). Little is known in regards to how this applies to high stakes situations, such as intervening when a child might have a developmental delay.

Perception of Child Behavior

The early childcare provider's perception of the child's behavior should not be overlooked. Whether or not the early childcare provider thinks that the child's behavior warrants concern, and to what extent the behavior interferes with the early childcare provider's classroom may relate to the likelihood of the early childcare provider thinking there is a need to have a collaborative conversation with parents. In addition, it is important to know what type of behaviors elicit concern from early childcare providers. There may be a difference between the level of concern elicited by internalized versus externalized behaviors or behaviors that might be associated with developmental delays such as ASD.

Summary

In summary, research suggests that early identification of ASD leads to best outcomes; however, children are regularly not being identified as early as they could be, especially children from certain populations. This may be related to several barriers, including: the complexities involved in an early diagnosis, cultural barriers, parent readiness to pursue an evaluation and barriers that prevent our current systems of wide range identification from working. Early childcare providers are one possible venue to overcome several of these barriers.

Early childcare providers are often in a position that allows them to understand multiple components of a child's life. They are able to observe and interact with the child across settings, with different people, in comparison to other children, and for many hours a week. In addition, as members of the larger community where the child might live, early childcare providers might have an understanding of what is expected of children within that community, and how to interact with parents in that community. Finally, as individuals who run a state regulated business, they are often aware of resources that are available to families, or how to explore where to find resources. Together, these factors contribute to an early childcare provider's ability to

notice a difference in a child's development and have a discussion with parents if they have a concern with their child's development.

However, little is known regarding the factors that contribute to an early childcare provider's decision to become involved when they have a concern with a child's development. Little is known as to what factors might contribute to this decision, how much these factors might contribute to this decision or how demographic characteristics might interact with these factors.

Purpose of the Study

Early childcare providers are often part of the communities they serve and have access to community resources. This places them in a position to help connect parents with important information when they are in the pre-contemplative or contemplative stages of seeking an evaluation and can possibly facilitate their movement into action stages of considering an evaluation for their child. Given the importance of early identification and the frontline role early childcare providers can play, the purpose of this study is to explore the factors that contribute to an early childcare provider's decision to communicate with parents about their child's developmental progress when there are concerns. The aim is to determine the factors that should be addressed to encourage early childcare providers to take an active role in communicating openly with parents. This may serve to enhance early identification and intervention efforts for children with developmental delays. For simplicity, this conversation will be referred to as "talk" throughout the remainder of this study, and concern for a child's development will be referred to as "concern" for the remainder of the study

Chapter III: Methods

This study uses data gathered from an original survey distributed to subjects indirectly. In this section the participants and procedures for the study will be described, followed by a description of the variables and the analyses used in the current study.

Participants and recruitment

A convenience sample was used for this project. Participants were early childcare providers (ECCP) recruited from the Child Care Resource and Referral Network (CCR). All ECCPs affiliated with CCR of King County were invited to respond to a short survey distributed through CCR. CCR sent a link to the survey to childcare providers in the greater Seattle area. In addition to the original survey sent to ECCPs, CCR distributed one thank you/ reminder email with a link two weeks after the initial survey was distributed. All participants were sent the same reminder because the surveys did not connect respondents to responses (no identifying information was collected). Two respondents were from Virginia and it is unclear how they obtained access to the survey, however their data was included in the analysis. There were no incentives provided for responding to the survey in order to keep the survey anonymous.

A total of 107 ECCPs participated in this study. The majority of respondents identified as women (n = 99; 92.5 %). Of those who reported where they worked, 43 (40.19 %) respondents worked as family home care providers, and seven (6.54 %) did not report the type of childcare program where they worked. Fifty-seven (53.27 %) respondents reported that they worked in early childcare centers. Of those who responded, half lived in the same zip code as where they worked. Ninety-six (89.7 %) of respondents had their own children, six (5.6 %) had no children, and five participants chose not to respond to this question. Ninety-two participants provided their race. Of these, seventy-two identified as Caucasian (67.3%), five identified as

Black (4.7 %), seven identified as Asian (6.5 %), two identified as Native American (1.9%) three identified as Hispanic (2.8 %). There was a wide range of respondent ages, the youngest respondent was twenty-four, and the oldest was sixty-seven years. The majority of participants reported that they have previously worked with a child who had an identified disability, (n = 83, 77.6%). Six (5.6 %) of participant's highest level of education was high school, thirty-five participants, 32.7% attended some college or had an associates degree. Thirty-four (31.8%) had a bachelor's degree. Nineteen (17.8 %) completed some graduate coursework. Twelve participants, (11.2 %) completed a Child Development Associates Degree. Forty (37%) early childcare teachers responded to the survey, 47 (43.9%) directors responded to the survey. The remainder of the participants were working in a dual administrative and teaching position (*n* = 20). Please see Table 1 for demographic information.

Procedure

Data collection. Survey data was collected through an online survey created with Catalyst. Catalyst is a web based computer survey creation tool. For the sake of this study, a survey link was created, then a link to the survey was sent out to participants through a third party. The survey was completely anonymous. No identifying information was collected, including email addresses. The survey was open to any one who had access to the link.

Design. This study used a repeated measures design. A small representative subset of early childcare providers responded to the survey. Participants were asked to report their expected response to a vignette which offered a description of a child's behavior. The presenting behaviors of the children described in the vignettes were systematically varied according to internalized, externalized, and typical behavior. The internalized behaviors were associated with an ASD diagnosis. The externalized behaviors were not related to a

developmental delay. The typical behavior vignette served as the control condition. The typical behaviors were not associated with a developmental delay or behaviors (neither internalized or externalized) that might be of concern. Each participant participated in all three conditions. The participants were then asked to rate themselves using a self perception questionnaire and provided demographic information. Participants were self selected into such as race, type of childcare program, age, and education.

Measures

Vignette Survey (VS). Dependent variables for this study were taken from the Vignette Survey included in Appendix A. The Vignette Survey was an instrument designed to elicit an ECCPs' decision to have a collaborative conversation with parents based on the behavior that they were seeing a child exhibit in the classroom. The survey includes three different descriptions of a child who might appear in an early childcare classroom.

The survey was developed through consultation with professionals and observations of students. The vignettes were designed to describe a child who presents internalized, externalized, and typical behaviors. The behaviors described in the vignettes were based on a review of case notes, files, and evaluations of children under the age of five. Specifically, the files of seven children under the age of five who were diagnosed with ASD, reviews of ten files of children who were diagnosed with behavioral or adjustment disorders were reviewed. In addition observations of typically developing children and children with behavioral concerns in an early childcare classroom were completed. Observations of naturally occurring behaviors occurred in one infant room (ages 3-18 months) with four to ten children and two to four childcare providers and one toddler room (ages 17 months through 3 years) with eight to twelve children and three to four childcare providers. Outside playtime included sixteen to twenty-four

children and four to six early childcare providers. There were no children with diagnosed special needs present during the observations. Therefore the data collected from these observations was compared with the record review.

In the first vignette the child was described as displaying more internalized and less obtrusive externalized behaviors that are associated with a child who might have an Autism Spectrum Disorder. The second vignette described a child who displays externalized behaviors in the classroom that are not associated with ASD, but are obtrusive in a classroom setting. The third vignette described the behaviors of a typically developing child. All children were presented as females. Race and ethnicity were not identified in the vignettes.

After each vignette respondents were asked the following questions:

How concerned are you about (Child's) development?

Not at all *A little* *Quite a Bit* *A Great Deal*

How likely would you have a special conversation with (Child's) parents regarding her development?

Not at all likely *Somewhat Likely* *Likely* *Very likely*

Validity. Striener and Norman (2008) suggest that construct validity, or the operational definitions of the concepts being measured should be well defined before initiating a survey. The vignettes were developed based on face validity. To determine if the present study measures what it proposes to measure, people working with children as childcare providers ($n = 2$), in leadership roles in the early childcare field ($n = 2$), doctoral level interns in clinical psychology specializing in the treatment and assessment of children and adults from neuro-diverse backgrounds ($n = 4$) and experts in the field of mental health ($n = 4$) were asked to give comments on the vignette during the planning phases of this project. The original survey and vignette were revised based on the feedback from these expert reviewers.

Child Care Provider Scale (CCPS). Independent variables for the current study came from the Child Care Provider Scale and Demographic Questionnaire included in Appendix A. The Child Care Provider Scale included the following subscales: Role Beliefs, Self-Efficacy, Knowledge and Skills, Parents Invitations, General School Invitations, and Time and Energy. Each question on the 16 item scale is rated on a six point Likert scale, from Disagree very strongly; Disagree; Disagree just a little; Agree just a little; Agree; Agree very strongly. Please see Appendix A for a complete list of the questions.

Validity. The survey items were developed based on face validity, construct validity, and Hoover-Dempsey's model of involvement. Similar to the vignettes, expert reviewers were used to developed the survey. People working with children as childcare providers ($n = 3$), in leadership roles in the early childcare field ($n = 4$), and as experts in the field of mental health ($n = 4$) were asked to give comments on the questions in the survey during the planning phases of this project. Several items were reworded or deleted as a result of this feedback. The following are the major scales are assessed using the Child Care Provider Survey.

Motivational Beliefs Scale. The motivational beliefs scale measured the early childcare provider's belief that in their role, they should communicate with parents when they have a concern regarding a child's development. It includes two subscales: Role Beliefs and Self-Efficacy. The Role Beliefs subscale has three items:

1. I believe it is my responsibility to talk to parents when I have a concern regarding their child's development.
2. I am an important source of information for parents about their child's development.
3. I should be involved if a parent has concerns regarding their child's development.

The Self-Efficacy subscale has four items:

1. I feel good about communicating with families when I have concerns about a child's development.
2. I feel uncomfortable working with parents. (Reversed)
3. I can make a significant difference in children's development.
4. I am good at helping children learn in my classroom.

Invitation Scales. The Invitation Scales measured the early childcare providers' perception that parents solicit their involvement, and the school promotes early childcare and teacher involvement. There were two subscales, Parent Invitations and General School Invitations.

Parent Invitations

1. Most parents at this school want to discuss their children with me.
2. Most parents make time to meet with me about their children.
3. Most parents ask me my opinions on child behaviors/ issues.
4. Most parents tell me that they are happy with my classroom.
5. Most parents open up to me.

General School Invitations

1. I feel supported in handling issues related to talking to parents about concerns about their child's development.

Life Context Scale. The Life Context scale assessed early childcare provider's perception of the factors in their life that might relate to communicating with parents when they have a concern regarding a child's development. There were two subscales: Time and Energy and Knowledge and Skills.

Time and Energy

1. I have enough time and energy to talk with parents when I have a concern about a child's behavior.

Knowledge/ Skills

1. I know what to say to most parents when I have concerns about a child's development.
2. I know what most children I work with need to be their best.

External Validity. In order to assess the extent to which the data from this study are generalizable type of child care center (family home childcare providers versus center childcare providers) was explored in the data analysis.

Demographic Questionnaire. Demographic variables included the following participant information: place of work (early childcare center, family home care), general demographic information, type of position, educational degree, years of experience working in the field, and ethnicity. These variables were chosen to help assess the generalizability of the study. Please see Appendix A for a complete list of demographic questions.

Data Analysis

Analyses were conducted using Statistical Package for the Social Sciences (SPSS) version 20.0, using two-tailed significance tests and a family-wise significance level of .05. In order to address the research questions, relevant variables from the Vignette Scale, the Child Care Provider Questionnaire, and the demographic questionnaire were used. The following will describe these methods. First, a description of the measurement validation process is provided. The dependent and independent variables are described second, followed by a description of the methods of analysis that were used in this study.

Measurement validation. An exploratory factor analysis was performed for the Child Care Provider Scale, which will be discussed in the results chapter. As previously described above, in order to assess content validity professionals in the field of early childhood development were consulted. Analyses were conducted using SPSS 20.0 in order to answer the research questions described above. In the preliminary phase of the analyses the validity of the

Child Care Provider Survey is explored through correlations and an exploratory factor analysis. This also assisted in the creation of the predictor variables. Based on this analysis some of the hypothesized compositions of the constructs required redefining. These redefinitions are described after the factor analysis. The means, standard deviations, and Pearson correlations were obtained for each of the variables.

Variables. The variables described in this section will be used to answer the research questions.

Independent Variables. The independent variables were taken from the Child Care Provider Scale, as well as the demographic questionnaire. All items on the Child Care Provider Scale are continuous interval variables, responses are as follows: *Disagree very strongly; Disagree; Disagree just a little; Agree just a little; Agree; Agree very strongly*. The items on the demographic questionnaire that were used in this questionnaire are categorical or continuous. *What best describes your childcare program (*ECEAP, Step Ahead, Childcare Center, Early Head Start, Family Home Childcare, Other) and *What is your position at your early childcare program (* Lead teacher, Only teacher, Director, Assistant teacher, or Other).

Dependent Variables. The Vignette Survey items served as the dependent variables. See Appendix A for the survey items and the related vignettes. All items on the Vignette Survey were categorical variables. There are two questions that served as the dependent variables that were asked after each vignette (a total of three vignettes) is asked. The questions are as follows:

How concerned are you about (Child's) development?

Not at all *A little* *Quite a Bit* *A Great Deal*

How likely would you have a special conversation with (Child's) parents regarding her development?

Not at all likely *Somewhat Likely* *Likely* *Very likely*

General Data Analysis. Two methods of analysis were used for this project: logistic regression, and Analysis of Variance (ANOVA). The following section will briefly describe those methods as they related to each research question guiding this study. For simplicity of this explanation, the first outcome variable will be referred to as "Talk," the second will be referred to as "Concern."

Research Question #1. To what extent will motivational beliefs, life context, and perceived invitations scores account for variability in the decision to talk with that child's parents equally?

Hypothesis #1. Motivational beliefs will account for more variation than life context and perceived invitations. Research from Bandura (1997) suggests that whether a person believes that he or she should do something, and can do something, are the factors most related to likelihood of action.

Regression. Forced entry regression was the selected method of analysis because the outcome variable is categorical and the predictor variables are continuous or categorical. This analysis allowed us to predict to which of four categories (not likely to very likely) an early childcare provider belongs. The regression equation from which the probability of Y is predicted is given by:

$$P(Y) = \frac{1}{1 + e^{-(b_0 + b_1 X_{1i} + b_2 X_{2i} + b_n X_{ni})}}$$

In which P(Y) is the probability of Y occurring, e is the base of natural logarithms, and the other coefficients form a linear combination. In this study, Y= Talk, b_0 is a constant, $X_1$is a predictor variable ($X_1 = Motivational\ Beliefs, X_2 = General\ Invitations, X_3 = Life\ Context$) and $b_1$is the weight attached to that variable, or the regression co-efficient.

$$P(Conversation) = \frac{1}{1 + e^{-(b_0 + b_1\ Motivational\ Beliefs_{1i} + b_2\ XGeneral\ Invitations_{2i} + b_n\ Life\ Context_{ni})}}$$

This analysis resulted in an odds ratio. An odds ratio is a measure of effect size that measures the dependence of variables. In the case of multiple categories this would assess the probability of membership to one category over another.

Research Question #2. Is there a difference between how likely early childcare providers are to speak with parents of children based on presence of externalized, internalized, or typical behaviors as presented through a vignette?

Hypothesis #2. It is hypothesized that early childcare providers will be equally likely to discuss a child's behavior with her parents based on the three categories of behaviors as presented through a vignette.

Analysis of Variance (ANOVA). An ANOVA was used to respond to Research Question 2. An ANOVA is a method of explaining the ratio of systematic variance to unsystematic variance. Using a ratio statistic, ANOVA tests the overall fit of a linear model that examines whether group means differ. In this study, the difference between the mean scores for talking based on vignette was assessed for significance.

Research Question #3. Will there be a difference in the level of concern based on the presence of internalized behaviors or externalized behaviors?

Hypothesis #3. It is hypothesized that early childcare providers will have equal levels of concern based on internalizing or externalizing behaviors as presented through a vignette.

Analysis of Variance (ANOVA). An ANOVA was used to respond to the question.

Research Question 4. Does level of concern predict the decision to talk with that child's parents?

Hypothesis #4. It is hypothesized that concern will positively predict the decision to talk with that child's parents.

Regression. Forced entry regression was the selected method of analysis because both variables are categorical.

Chapter IV: Results

Preliminary Analysis: Measurement Validation

During the measurement validation phase of the study, the CCPS was analyzed through correlation analyses and exploratory factor analysis. This process was used to redefine variables and create predictor variables for the subsequent analyses.

Data screening. The data was screened for outliers and missing data. A list-wise method of data reduction was chosen; therefore participants who had missing responses where not in included in the analysis. There were not any significant patterns of missingness in the data. However, most of the missing data was due to a participant skipping one or two items. Generally, it was not the case that the participant began the survey then stopped after completing one or two items.

Exploratory factor analysis. An exploratory factor analysis (EFA) was performed in order to assess the validity of the Childcare Provider Survey and to create the predictor variables. Please see Table 10 for descriptive statistics of the Child Care Provider Survey according to type of childcare program. A principal component analysis (PCA) was conducted on the 16 items with an oblique rotation (Direct Oblimin rotation) to determine the best factor loadings of each item.

Several well recognized criteria for the factorability of a correlation were used. First, it was observed that all of the items significantly correlated with at least one other item suggesting a reasonable factorability. The Kaiser-Meyer-Olkin (KMO) measure verified the sampling adequacy for the analysis, KMO = .80, as it was above the recommended value of .6 (Field, 2009). All diagonals of the original anti-image correlation matrix were over .5, supporting the inclusion of each item in the original factor analysis. Finally, the communalities were all above .50, further confirming that each item shared some common variance with other items. Values

for individual items were greater than .61, which is above the acceptable limit of .50 (Field, 2009). Bartlett's test of sphericity x^2 (120) = 590.55, p < .00, indicated that correlations between items were sufficiently large for a PCA. Given these overall indicators, an exploratory factor analysis was conducted on all 16 items. Please see Table 2 for item means and correlations.

An initial analysis was performed to obtain eigenvalues for each component in the data. Five components had eigenvalues over Kaiser's criterion of one and, in combination, explained 68.17 % of the variance. Table 3 shows the factor loadings after rotation for those over .40. The items that cluster on the same components suggested that there should be five components. Component one represents 34.23 % of the variance, component two represents 10.73 % of the variance, component three represents 8.89 % of variance, component four represents 8.89 % of variance, component five represents 6.33 % of variance.

As the result of several steps, a total of six items were eliminated because they did not contribute to a simple factor structure and failed to meet a minimum criteria of a primary loading factor of .40 or above and no cross-loading of .30 or above. The items *I am uncomfortable working with parents* and *I have enough time and energy to talk with parents when I have a concern about a child's development* were first removed because their correlations were the least significant, and they created additional components that did not significantly add to the model. *I know what most children I work with need* and *I am good at helping children learn in my classroom* were removed following further analysis due to cross-loadings over .40. Finally, *I believe it is my responsibility to talk to parents (either through a formal conference or conversation) when I have a concern about their child's development* and *Most parents make time to meet with me about their children* were eliminated due to cross-loadings over .30. It is

important to note that items with a high cross loading required deletion in order to preserve the integrity of a regression. High levels of correlation amongst predictor variables in a regression reduce the validity of the results derived from the analysis.

A PCA of the remaining 10 items using oblique rotations was conducted with the three components explaining 68.16 % of the variance, which is very close to the 68.17% of variance explained by all 16 items. All items had preliminary factor loadings over .71 and none of the items had cross loadings above .30. The final factor loading matrix for this solution is presented in Table 4.

For the final factor loading, component one represents Parent Invitations, component two represents Motivational Beliefs, and component three represents Context Skills. There was some redefining to the model based on the exploratory factor analysis, as is discussed below.

Reliability. The parent invitations, motivational beliefs, and knowledge, subscales of the Child Care Provider Survey all had high reliabilities, Cronbach's α = 78, .72, and .83 respectively. The entire scale had a high reliability, Cronbach's α =.84.

Subscales. Based on the analysis above, the following subscales were created: Motivational Beliefs, Parent Invitations, and Context Skills. Mean scores were computed from the subscales, which were then be used for further analysis throughout the remainder of the study. Higher mean scores reflect more positive attitudes.

Motivational Beliefs. There were significant changes to the Motivational Beliefs scale. The scale originally comprised of seven items and two subscales, Role Construction and Self Efficacy. The EFA reduced this to a total of only three items*: I am an important source of information for parents about their child's development, I should be involved if a parent has concerns about their child's development,* and *I can make a significant difference in children's*

development. This scale had the most items eliminated. Three of the items that were eliminated or moved were from the self-efficacy subscale. The other item that was eliminated, *I believe it is my responsibility to talk to parents (either through a formal conference or conversation) when I have a concern about their child's development,* was eliminated for significant cross-loadings in the last round of factor analyses. The removal of this item was done with extreme caution. There was minimal variation in participant responses to the item. Ninety-eight percent of respondents agreed with this item; over 95% of respondents agreed strongly. Inclusion of the item led to an errors of multi-collinearity in the analysis. None of the items were moved to a different scale due to a more substantial loading.

Parent Invitations. The Parent Invitations subscale was originally comprised of two subscales: Parent Invitations and School Invitations. However, the general school invitations subscale, which only included one item, *"I feel supported in handling issues related to talking to parents about concerns about their child's development",* was moved from the general school invitations subscale into the Context Skills subscale. There were several reasons for this change. Primarily, a large number of childcare directors and family home care providers responded to this survey, therefore the respondent is the representative of the school, and would therefore be responsible(at least in part) for providing or not providing support. For those who are teachers in a center, it might be assumed that 'support' in this case would come from center administration or colleagues, instead of a more general idea of support. This was mathematically supported by a stronger loading of the variable onto the Context Skills component. One item was eliminated from the parent invitations items*: Most parents make time to meet with me about their children.* This item was deleted because of significant cross-loading.

Context Skills. This subscale was originally called *Life Context*. Two of the three items in the original subscale were eliminated. The items were replaced with items previously from the Self Efficacy subscale and the Parent Invitations subscale. The Time subscale was completely eliminated, as it only contained one item. *I know what most children I work with need* was eliminated due to a negative correlation with another item. The only item that remained was related to child interactions and development: *I can make a significant difference in children's development.*

Creation of the Predictor Variables. Each of the components from the Child Care Provider Survey were then transformed into predictor variables to be used in the analysis. Since the outcome variable is categorical an *Ordinal Regression* was the chosen methods of analysis. The predictor variables were transformed into rounded means. These variables correspond to the titles of the subscales: Motivational Beliefs, Parent Invitations, and Context Skills. First the mean of each of the three subscales was calculated to create new variables. Next, in order to limit the number of categories in the ordinal regression and reduce error rates, each of the means were rounded to one decimal point in the analysis. This rounding did not lead to significantly different results in the regressions, but did significantly reduce the error rates due to limited the number of empty cells in the regressions.

Assumptions. Data was tested for normalcy and variance. Based on a Kolmogorov-Smirnov value D (99) = .24, .42, and .29 respectively, ($p < .00$), the data is significantly non-normal and the assumptions of normality are violated by these data. Context Skills, Motivational Beliefs, and Parent Invitations had no significant differences in variances F (2, 94) = .25, 1.70, 2.27. Bootstrapping was used to correct for normalcy. All statistics reported will be based on

bootstrapping techniques where normalcy is assumed. For this reason, any case with missing data was excluded from the analysis (list wise exclusions).

Data Analysis for the Study

Descriptive Statistics

Outcome Variables. Means and standard deviations were obtained for the outcome variables, Talk and Concern. These results are summarized in Table 5. ECCPs who worked in childcare centers (CCCs) had a mean Concern score of 2.98 (*SD* = .68) for the internalized vignette, and a mean Talk score of 3.35 (*SD* = .74) for the internalized vignette. ECCPs who worked in Family Home Care centers (FHCs) had a mean Concern score of 3.28 (*SD* = .63) for the internalized vignette, a mean Talk score of 3.58 (*SD* = .63) for the internalized vignette. ECCPs who worked in CCCs had a mean Concern score of 2.07 (*SD* = .80) for the externalized vignette, a mean Talk score of 2.60 (*SD* = 1.02) for the externalized vignette. ECCPs who worked in FHCs had a mean Concern score of 2.49 (*SD* = .86) for the externalized vignette, a mean Talk score of 3.10 (*SD* = 1.02) for the externalized vignette. ECCPs who worked in CCCs had a mean Concern score of 1.11 (*SD* = .31) for the typical vignette, a mean Talk score of 1.44 (*SD* = .67) for the typical vignette. ECCPs who worked in FHCs had a mean Concern score of 1.28 (*SD* = .67) for the typical vignette, and a mean Talk score of 1.74 (*SD* = 1.05) for the typical vignette.

Independent Variables. Means and standard deviations were obtained for the survey subscales: Motivational Beliefs, Context Skills, and Parent Invitations. Theses results are summarized in Table 5. ECCPs who worked in CCCs had a mean Motivational Beliefs score of 5.49 (*SD* = .53), a mean Parent Invitations score of 5.28 (*SD* = .54) , and a mean Life Context score of 5.01 (*SD* = .80). ECCPS who worked in FHC's had a mean Motivational Beliefs score

of 5.63 (*SD* = .42), a mean Parent Invitations score of 5.32 (*SD* = .74) , and a mean Context Skills score of 5.04 (*SD* = .96). Please see Appendix XXX for the mean scores and standard deviations of each of the items in the in the survey.

Dependent Variables. There were six dependent variables used in this study: Internalized Talk, Internalized Concern, Externalized Talk, Externalized Concern, and Typical Talk, and Typical Concern. Internalized Talk and Internalized Concern represent the participant's perceived willingness to have a conversation with a parent regarding the child's development and level of concern for a child's development based on a presentation of symptoms that is mostly internalized. Externalized Talk and Externalized Concern represent the participant's perceived willingness to have a conversation with a parent regarding the child's development and level of concern for a child's development based on a presentation of symptoms that is mostly externalized. Finally, Typical Talk, and Typical Concern represent the participant's perceived willingness to have a conversation with a parent regarding the child's development and level of concern for a child's development based on a presentation of symptoms that are within a typical range of development.

Correlations. Spearman's correlation coefficients were analyzed in order to determine the strength and direction of the linear relationships among the variables because this coefficient does not require normality. Motivational Beliefs was significantly correlated with Parent Invitations ($r = .66$, $p < .05$), Context Skills ($r = .42$, $p < .05$), Internalized Concern ($r = .39$, $p < .05$). Parent Invitations was also significantly correlated with Context Skills ($r = .52$, $p < .05$).

Research Question 1: To what extent will motivational beliefs, life context, and perceived invitations scores account for variability in the decision to talk with that child's parents

equally? The first research question asked to what extent will Motivational Beliefs, Context Skills, and Parent Invitations scores account for variability in the decision to speak with a child's parents in each of the three conditions: Internalized, Externalized, and Typical. An Ordinal Logistic Regression was used in this analysis. This type of regression requires that only a minimal number of the possible cell conditions are empty. The first category or responses, *not at all* received extremely limited endorsements which could lead to singularity errors in the data for the Internalized and Externalized conditions. As is common practice when there are these types of concerns in regressions, categories one and two, *not at all* and *a little,* were combined only for this analysis for the Internalized Talk and Externalized Talk conditions. This resulted in three response categories: *not at all/ a little likely, quite a bit likely, and very likely.* The third condition, or the typical condition, which describes the typically developing child, did not require the combination of any response categories because there was a sufficient number of responses in all cells. Also, based on the data gathered through the factor analysis, the Life Context category was changed to Context Skills. This label was used through out the remainder study.

The following section will describe the modeling process for each of the three response conditions: Internalized Talk, Externalized Talk, and Typical Talk. First, each model was evaluated using only the three predictor variables in the original research question, Motivational Beliefs, Context Skills, and Parent Invitations and how likely an early childcare provider's likelihood to have a collaborative conversation with an early childcare provider (Talk), was created. This model is titled Model 1. Second, the process of choosing the descriptive independent variables to include in the analysis is described for each condition in Model 2. This process included a univariate analysis in order to identify variables for inclusion into the ordinal

regression models from the Child Care Provider Scale. Any independent variable whose univariate Wald test had a *p* value <.25 was a candidate for Model 2. Next the process of creating the best fitting model, Model 3, is described. The final model, Model 3, will account for interactions as well as control variables.

Control Variables. The following variables will be used as controls in each of the three conditions: race, type of early childcare program, age, education, position in early childcare program and previous experience with a child who has a known disability. These control variables will be used in the third model. Therefore, it can be assumed that all significant findings for the third model of each condition controls for these variables.

Internalized Condition.

Internalized Model 1. The first model was built to analyze the relationship between Motivational Beliefs, Context Skills, and Parent Invitations and an early childcare provider's likelihood to have a conversation with an early childcare provider (Talk) when a child is displaying symptoms that are related to ASD. Overall, the model was a significant improvement over the baseline $x^2\ (3) = 12.27, p < .01$, and was a significant fit for the data $r^2\ (151) = 155.62\ p > .05$. A test of parallel lines confirmed the use of an ordinal separation of the coefficients $x^2\ (3\ ) = 2.46, p = .48$. Therefore, for this model, the proportional odds assumption appears to have held.

The results of the regression indicated the three predictors explained 17.20% of the variance. Context Skills did not significantly predict likelihood of talking to a parent $\beta = .15$, Wald $X^2\ (1) = .22, p > .05$. Parent Invitations did significantly predict the odds of talking to a parent $\beta = .87$, Wald $X^2\ (1) = 4.00, p < .05$. For each unit increase in Parent Invitations an ECCP was 238.69% more likely to talk to a parent. Motivational Beliefs did not

significantly predict the odds of talking to a parent β = .39, Wald X^2 (1) = 1.14, $p >$ .05. Please see Table 6 for the three regression models for the internalized condition.

Internalized Model 2.

Univariate Analysis. The results of the fitting the simple linear regression are as follows. Six variables met the inclusion criteria: *type of childcare center* β= .22, *t* (96) = 1.34, *p* = .09; *age* β= .01, *t* (102) = 1.90, *p* = .06; *race* β= .07, *t* (102) = 1.49, *p* = .17; *same zip* β= .27, *t* (96) = 1.90, *p* = .07; *Context Skills* β= .15, *t* (103) = 1.86, *p* = .07; *Parent Invitations* β= .17, *t* (100) = 1.85, *p* = .07.

However, *same zip* was not included in the model due to high levels of correlations with other independent variables. *Same zip was* correlated with *type of childcare center* (*r = .69, p<.01).* Therefore only 5 variables were included in the second model: *age*, *type of childcare center, race, Context Skills, and Parent Invitation.*.

Overall, the model was a significant improvement over the baseline x^2 (8) = 24.47, $p <$ .01, and was a significant fit for the data r^2 (146) = 132.83 *p >.05.* A test of parallel lines confirmed the use of an ordinal separation of the coefficients x^2 (8) = 11.41, p = .18. Therefore, for this model, the proportional odds assumption appears to have held.

The results of the regression indicated the predictors explained 31.80% of the variance. Context Skills did not significantly predict likelihood of talking to a parent β = .21, Wald X^2 (1) = .38, $p >$ .05. But, parent Invitations significantly predicted the odds of talking to a parent β = .89, Wald X^2 (1) = 4.00, $p <$ .05. For each unit increase in Parent Invitations an ECCP was 243.51% more likely to talk to a parent controlling for age , type of childcare center, race, and Context Skills. Age did not significantly predict the odds of talking to a parent β = .02, Wald X^2 (1) = .94, $p >$ .05. Type of childcare program did not

significantly predict the odds of talking to a parent β = -.85, Wald X^2 (1) = .21, $p >$ .05. Within the race variables only one group significantly predicted the odd of talking to a parent β = -2.31, Wald X^2 (1) = 7.44, $p <$ .01. This data suggested that Asian ECCPs were 9.92% less likely to talk to a parent in this condition. However, due to a significant *SE*, this finding should be interpreted with caution.

Internalized Model 3. Overall, the third model was a significant improvement over the baseline x^2 (17) = 32.68, $p <$ .01, and was a significant fit for the data r^2 (127) = 118.84 $p >.05$. A test of parallel lines confirmed the use of an ordinal separation of the coefficients x^2 (17) = 21.91, $p =$ .19. Therefore, for our model, the proportional odds assumption appears to have held.

The results of the regression indicated the predictors explained 43% of the variance. An interaction of the Motivational Beliefs, Context Skills, and Parent Invitations was significant, β = 1.73, Wald X^2 (1) = 3.86, $p <$ .05. This suggests that as all three variables increased one unit change, ECCPs were 564.07% more likely to talk to parents. Given this interaction, the main effects of each predictor are not reported here. Age did not significantly predict the odds of talking to a parent β = .04, Wald X^2 (1) = 2.04, $p >$ .05. Similarly, the type of childcare program did not significantly predict the odds of talking to a parent β = -.48, Wald X^2 (1) = .30, $p >$ .05. However, within the race variables, one group significantly predicted the odd of talking to a parent β = -2.20, Wald X^2 (1) = 4.59, $p <$ .05. These data suggest that Asian ECCPs were 11.08% less likely to talk to a parent in this condition. However, due to a significant *SE*, this finding should be interpreted with caution. Education did not significantly predict the odds of talking to a parent, nor did working with a child who had an identified developmental disability in the past β = .44, Wald X^2 (1) = .22, $p >$ .05.

Externalized Condition.

Externalized Model 1. This model was built to analyze the relationship between Motivational Beliefs, Context Skills, and Parent Invitations and an early childcare provider's likelihood of having a conversation with a parent (talk) when a child is displaying externalized behaviors that are generally not primarily related to ASD. Overall, the model was a not significant improvement over the baseline $x^2\ (3) = .63, p > .05$, but was a significant fit for the data r^2 (149) = 168.06 *p >.05.* A test of parallel lines confirmed the use of an ordinal separation of the coefficients $x^2\ (3\ ) = 6.45, p = .09$. Therefore, for our model, the proportional odds assumption appears to have held.

However, the results of the regression indicated the three predictors explained less than 1 % of the variance. Context Skills, Parent Invitations, and Motivational Beliefs did not significantly predict likelihood of talking to a parent

β = .08, Wald $X^2\ (1) = .35, p > .05$; β = -.43, Wald $X^2\ (1) = .01, p > .05$; β = .18, Wald $X^2\ (1) = .05,\ p > .05$ respectively. Please see Table 7 for a description of the externalized models.

Externalized Model 2.

Univariate Analysis. The results of the fitting the simple linear regression models to the data set are as follows Four variables met this criteria: *type of childcare center* β= .41, *t* (100) = -2.51, *p* = .01; *years worked at an early childcare center* β= -.02, *t* (101) = -2.50, *p* = .01; *Context Skills* β= .11, *t* (102) = 1.17, *p* = .25; *and Parent Invitations* β= .15, *t* (98) = 1.47, *p* = .15.

Overall, the model was a significant improvement over the baseline $x^2\ (4) = 11.52, p < .05$, and was a significant fit for the data r^2 (148) = 157.17 *p >.05.* A test of parallel lines did

not confirm the use of an ordinal separation of the coefficients $x^2\ (4) = 9.83, p = .04$. However, since given the other parameters of the model are adequate, an ordinal regression will still be used.

The results of the regression indicated the predictors (Context Skills, Parent Invitations, Motivational Beliefs, years worked in the field, and type of program explained 15.6% of the variance. Context Skills did not significantly predict likelihood of talking to a parent β = .43, Wald $X^2\ (1) = 1.80, p > .05$. Parent Invitations significantly predicted the odds of talking to a parent, holding family childcare program constant, β =-.15, Wald $X^2\ (1) = .14, p < .05$. For each unit increase in Parent Invitations an ECCPs became 86.07% more likely to talk to parents. Type of childcare program also significantly predicted the odds of talking to a parent β = -.07., Wald $X^2\ (1) = 4.59,\ p < .05$. Early childcare providers who worked in a center were 93% less likely to talk to parents. How long an ECCP has worked in the field also significantly predicted the odds of talking to a parents, β =-.07, Wald $X^2\ (1) = 6.00, p < .01$. For each year increase an ECCP worked in early childcare they became 93.24% less likely to talk to parents.

Externalized Model 3. Overall, the model was a significant improvement over the baseline $x^2\ (17) = 31.06\ p < .05$, and was a significant fit for the data r^2 (127) = 153.17 p *>.05.* A test of parallel lines confirmed the use of an ordinal separation of the coefficients $x^2\ (17) = 26.70, p = .06$. Therefore for this model the proportional odds assumption appears to have held.

The results of the regression indicated that the predictors explained 39% of the variance. Context Skills significantly predicted likelihood of talking to a parent β = .88, Wald $X^2\ (1) = 4.13, p < .05$. For each unit increase in Context Skills an ECCP became 241.09% more likely to talk with a parent. But, Motivational Beliefs (β =.55,

Wald X^2 $(1) = 1.52, p >$ .05), Parent Invitations (β =-.87, Wald X^2 $(1) = 2.57, p >$ .05), and Type of childcare program did not significantly predict the odds of talking to a parent, β =-.91, Wald X^2 $(1) = 1.76, p >$ .05. However, how long an ECCP has worked in the field significantly predicted the odds of talking to a parents, β =-.16, Wald X^2 $(1) = 11.69, p <$ .01. As in model 2 (but smaller in magnitude), for each year increase in the length of time an ECCP worked as an early childcare provider they became 31.35% less likely to talk to a parent. Race did not significantly predict the odds of talking to a parent. Position in a childcare program did not significantly predict the odds of talking to a parent. Education did not significantly predict the odds of talking to a parent. Age did not significantly predict the odds of talking to a parent, β = .04, Wald X^2 $(1) = 1.52, p >$ .05.

Typical Condition

Typical Model 1. The model was built to analyze the relationship between Motivational Beliefs, Context Skills, and Parent Invitations and how likely an early childcare provider's likelihood to have a conversation with an early childcare provider (talk) when a child is displaying behaviors that are consistent with typical development. Overall, the model was a not significant improvement over the baseline x^2 $(3) = 4.39, p >$ .05, and was not a significant fit for the data r^2 (270) = 184.39 *p >.05.* A test of parallel lines confirmed the use of an ordinal separation of the coefficients x^2 $(3) = 6.45, p =$ .09. Therefore, for our model, the proportional odds assumption appears to have held.

The results of the regression indicated that the three predictors explained 5% of the variance. Context Skills significantly predicted the likelihood of talking to a parent β = .64, Wald X^2 $(1) = 3.82, p <$ .05. For each unit increase in Context Skills ECCPs were 189.00% more likely to talk to parents. Neither Parent Invitations (β = -.30, Wald X^2 $(1) =$

$.66, p > .05.)$, *nor* Motivational Beliefs predicted the odds of talking to a parent β =- .08, Wald $X^2\ (1) = .06,\ p > .05$. Please see Table 8 for the Typical regression models.

Typical Model 2.

Univariate Analysis. The significant results of the fitting the simple linear regression models to the data set are below. Five variables met the criteria to be included in the analysis: *Worked with children who have had a disability,* β= -.50, *t* (98) = -2.25, *p* = .03; *type of childcare center* β= .31, *t* (100) = -2.51, *p* = .01; *years worked at an early childcare center* β= -.01, *t* (105) = -1.20, *p* = .17; *position at the early childcare center* β= -.19, *t* (105) = -2.19, *p* = .03 and *Context* β= .12, *t* (105) = 1.25, *p* = .21.

Overall, the model was a significant improvement over the baseline $x^2\ (5) = 11.67, p < .05$, and was a significant fit for the data r^2 (247) = 266.03 *p* >.*05.* A test of parallel lines confirmed the use of an ordinal separation of the coefficients $x^2\ (10) = 6.24, p = .80$. Therefore, for our model, the proportional odds assumption appears to have held.

The results of the regression indicated the three predictors explained 13.8% of the variance. Context Skills significantly predicted the likelihood of talking to a parent β = .58, Wald $X^2\ (1) = 4.50, p < .05$. For each unit increase in Context Skills an ECCP became 178.60% more likely to talk to parents. However, the type of childcare program did not significantly predict the odds of talking to a parent β = -.03, Wald $X^2\ (1) = .00,\ p > .05$. Similarly, how long an ECCP has worked in the field did not significantly predict the odds of talking to a parent, β = -.04, Wald $X^2\ (1) = 2.26, p > .05$. The professional role was predictive, however. Being a teacher in a childcare program significantly predicted the odds of talking to a parent, β = 1.16., Wald $X^2\ (1) = 4.23\ p < .05$. Also, ECCPs who worked as a director/ administrator were 318.99% more likely to talk to parents than those who worked as a teacher.

Typical Model 3. Overall, the model was a significant improvement over the baseline $x^2\ (17) = 24.47, p < .05$, and was a significant fit for the data r^2 (199) = 191.37 $p > .05$. A test of parallel lines confirmed the use of an ordinal separation of the coefficients $x^2\ (34) = 7.60, p = 1.00$. Therefore, for our model, the proportional odds assumption appears to have held.

The results of the regression indicated the three predictors explained 33.5% of the variance. An interaction of the Motivational Beliefs, Context Skills, and Parent Invitations variables was significant, β = 2.18, Wald $X^2\ (1) = 4.85,\ p < .05$. This suggests that for each unit increase in Motivational Beliefs, Context Skills, and Parent Invitations ECCPs were 884.63% more likely to talk to parents. Given this, the main effects of each predictor are not reported. Race, position in an early childcare program, and education did not significantly predict the odds of talking with parents. Similarly, type of childcare program and experience with children who had a developmental disability, did not significantly predict the odds of talking to a parent β = -.26., Wald $X^2\ (1) = .12,\ p > .05$ and β =.35, Wald $X^2\ (1) = 1.23, p > .05$ respectively.

The findings of the first research question differ according to the presentation of the child's behaviors. In the internalized condition and the typical condition the interaction of Motivational Beliefs, Context Skills, and Parent Invitations significantly predicted the likelihood of talking to a parent. However, in the externalized condition, only Context Skills (not Parent Invitations or Motivational Beliefs) predicted the likelihood of talking with a parent. Thus, the hypothesis that Motivational Beliefs would account for more variability than Context Skills or Parent Invitations was not supported in any condition.

Research Question 2: Is there a difference between how likely early childcare providers are to speak with parents of children based on presence of externalized, internalized, or typical behaviors as presented through a vignette? The same participants were asked to respond to all three conditions; therefore, a Repeated-Measures One Way ANOVA was used.

A simple contrast analysis was used with the typical condition as the comparison group. A Tukey LSD *post hoc* test was selected because a Mauchly test indicated that the assumption of sphericity had not been violated, $x^2\ (2) = 3.82, p > .05$. The results show that the likelihood of speaking with parents was significantly affected by the internalized, externalized, or typical presentations of symptoms, $F\ (1.92, 194.71) = 169.28, p < .05$. For example, Tukey LSD *post hoc* revealed that the likelihood to talking to parents was significantly greater in the internalized condition (*M* = 3.38, *SD* = .08; *p <.00*) than the externalized condition (*M* = 2.77, *SD* = .10; *p <.00*) and the typical condition (*M* = 3.53, *SD* = .08; *p <.00*). Additionally, the likelihood of talking to parents was greater in the externalized condition than the typical condition (*p <.00).*

Thus, there was a significant difference in an ECCP's likelihood of talking to a parent based on the on presence of internalized, externalized, or typical behaviors. ECCPs were most likely to talk to parents in the internalized condition, followed by the externalized condition, and least likely to talk to parents in the typical condition. Thus, they hypothesis that ECCPs will be equally likely to talk to parents in each of the three condition was rejected.

Research Question 3: Will there be a difference in the level of concern based on the presence of internalized behaviors or externalized behaviors? The same participants were asked to respond to all three conditions, therefore a Repeated-Measures One Way ANOVA was used.

In this analysis a simple contrast was used with the typical condition as the comparison group. A Tukey LSD *post hoc* test was selected because a Mauchly test indicated that the assumption of sphericity had not been violated, $x^2\ (2) = 3.60, p > .05$. The results show that the level of concern was significantly affected by the presentation of symptoms, $F\ (1.93, 194.71) = 219.50, p < .05$. The Tukey LSD *post hoc* revealed that concern was significantly greater in the internalized condition (*M* = 3.08, *SD* = .73; *p <.00*) than the externalized condition (*M* = 2.24, *SD* = .85; *p <.00*) and the typical condition (*M* = 1.20, *SD* = .56; *p <.00*). The concern was greater in the externalized condition than the typical condition (*p <.00).*

To summarize, there was a significant difference between an ECCP's level of concern based on the presence of internalized behaviors and externalized behaviors when compared to the typical condition. The findings from this analysis suggest that there is a significant difference in the level of concern expressed by ECCPs. ECCPs were most concerned in the internalizing condition, followed by the externalizing condition, and least concerned in the typical condition. Thus, the hypothesis that ECCP's would have equal levels of concern across all three conditions was rejected.

Research Question 4: Does level of concern predict the decision to talk with that child's parents? A regression was the intended statistical analysis for this research question. However, the data collected through the surveys violated the assumptions required for a logistic regression, yielding the results of this analysis misleading. In order to correct for this, a chi-squared analysis was attempted. Unfortunately, the data did not meet the assumptions of a chi-squared test. As a result, an ANOVA was used to analyze these data. The following section will first describe the logistic regressions followed by the ANOVA.

Collapsing of Variables. Both logistic regression and a chi-square analyses require a minimal frequency in each cell. In the case of this data, the first category of responses *not at all* received extremely limited endorsements and lead to singularity errors in the data in the internalized and externalized conditions for both predictor variables: Talk and Concern. As is common practice when there are these types of errors in data, categories one and two, *not at all* and *a little,* were combined only for this analysis for the Internalized Talk and Externalized Talk conditions. The categories became *not at all/ a little, quite a bit, and a great deal* for the internalized concern variables. This also resulted in three response categories: *not at all/ a little likely, quite a bit likely, and very likely.* Similarly, in the third condition, or Typical Talk, the final two categories were combined. This resulted in three categories: *not at all, a little likely and, quite a bit/ great deal.*

Statistical Analysis.

Regression.

Internalized Condition. Overall, the model was a significant improvement over the baseline $x^2\ (2) = 21.48\ p < .01$, but was not a significant fit for the data r^2 (4) = 9.78 *p <.05.* A test of parallel lines did not confirm the use of an ordinal separation of the coefficients $x^2\ (4) = 11.03, p = .03$. Therefore, for our model, the proportional odds assumption appears to have been violated. In addition, there were concerns of multi-collinearly and perfect separation. Data from this analysis is likely invalid. Please see Table 9 for a description of this analysis.

Externalized Condition. Overall, the model was a significant improvement over the baseline $x^2\ (3) = 66.99\ p < .01$, but was not a significant fit for the data r^2 (6) = 23.55 *p <.01.* A test of parallel lines did not confirm the use of an ordinal separation of the coefficients

$x^2\ (6) = 43.61, p = .00$. In addition, there are concerns of multicollinearity and perfect separation. Data from this analysis is likely invalid and should be interpreted with caution.

Typical Condition. Overall, the model was a significant improvement over the baseline $x^2\ (3) = 15.15\ p < .00$, but was not a significant fit for the data r^2 (6) = 12.40 p <.05. A test of parallel lines did not confirm the use of an ordinal separation of the coefficients $x^2\ (6) = 14.16, p = .03$. Therefore, for our model, the proportional odds assumption appears to have not held. In addition, there are concerns of multi-collinearly and perfect separation. Data from this analysis is likely invalid.

ANOVA. Finally an ANOVA was used to respond to the fourth research question. While this does not allow for the prediction of the outcome variable, an ANOVA determined if there is a significant difference in the likelihood of Talk based on the ECCP's level of Concern in each condition.

$$Talk_I = \overline{b_o + b_2}\ not\ at\ all_i + b_i\ a\ little + e_{i\ldots}$$

In this analysis a simple contrast analysis was used with the lowest level of concern, *not at all*, used as the comparison group.

Internalized condition. There was a significant effect of level of Concern on Talk in the internalizing condition *F* (2, 104) = 11.64, $p < .05$, $\omega = .41$. *Post hoc* contrasts revealed that there was a significant difference between the likelihood of talking to parents for those who were *a little (M = 2.83, SD = .92)* concerned and those who were *quite a bit* concerned *(M = 3.40, SD = .64)* well as those who were *a great deal* concerned *(M = 3.73, SD= .57).* There was also a significant difference between the likelihood of talking to parents for those who were *quite a bit concerned* and *a great deal concerned*.

Externalized. There was a significant affect of level of concern of likelihood to talk to parents in the externalized condition, F (3 ,101) = 32.38 , $p < .05$, $\omega = .68$. *Post hoc* contrasts revealed that there was a significant difference between the likelihood of talking to parents for those who were *not at all concerned* (*M = 1.37, SD= .83 versus, a little (M = 2.82, SD = .87)* concerned, *not at all concerned* versus *quite a bit* concerned *(M = 3.33, SD = .48)* and *not at all concerned* versus those who were *a great deal* concerned *(M = 3.78, SD= .57).* There was a significant difference in the likelihood of talking to a parent for the ECCPs who were *a little concerned* versus those who were *quite a bit* concerned and *a little concerned* vs *a great deal* concerned. There was not a significant difference between those who were *quite a bit* concerned versus *a great deal concerned.*

Typical. There was a significant effect of level of concern of likelihood to talk to parents in the typical condition, F (3, 103) = 3.67 , $p < .05$, $\omega = .07$. There was one significant *post hoc* finding for this condition, ECCPs who were *not at all* concerned were less likely than those who were *a little* concerned to talk to parents. However, this finding should be interpreted with caution due to the extremely limited number of people in the final two categories, *quite a bit* concerned and *a great deal* concerned.

To summarize the findings of the fourth research question, while the data did not allow for the prediction of the extent to which concern predicted an ECCP's likelihood of talking to parent, this analysis did have important findings in terms of the relationship between concern for a child's behavior and likelihood of talking with a parent. For the internalized condition, as concern increased, so did the likelihood of talking to parents. There was more variability in the externalized condition. There was not a significant difference in the likelihood of talking to parents when ECCPs were *quite a bit* or *a great deal* concerned. However, there were

significant increases in likelihood to talk to parents between the other levels of concern. There were significant differences in the likelihood of talking to parents in relation to concern scores in the typical condition between those who were *not at all* concerned and *a little* concerned. Thus, the hypothesis that concern will positively relate the decision to talk with that child's parents is supported in the internalized condition, partially supported in the externalized condition and in the typical condition.

Chapter V: Discussion

This discussion section begins with a summary of the findings from the data analysis and their implications. Next, limitations are discussed. Finally, the chapter ends with a discussion of future directions for research and practice.

Summary and Implications of Findings

Scale Development.

Exploratory Factor Analysis. An exploratory factor analysis was included in the preliminary analysis. The exploratory factor analysis did not support the unaltered use of all the items from the Hoover-Dempsey model of involvement. This could be for multiple reasons, such as differences between early childcare providers and parents, and/or the nature of early childcare as a business. The difference in sample size is certainly related. This study had a much smaller sample size than the Hoover-Dempsey studies; therefore the same level of specificity in this model could not be created. Many of the items detracted from the current model instead of adding strength. Thus, new subscales were developed for the remainder of the analyses.

There were variations in the level of alterations in each of the scales. The Motivational Beliefs scale had the most significant reduction of items. Particularly, the Self Efficacy subscale had the most items removed due to significant cross-loadings. This suggests that to some extent there is a component of self-efficacy across all three major predictors. The Perceived Invitations subscale also encountered a significant transformation. This is logical given the large number of FHCs and respondents that have both administrative and teaching roles who responded to this survey. Those who have an administrative role, such as directors or ECCPs who run FHCs are often responsible for providing or not providing support. Or for these ECCPs support might be seen as coming from government organizations of Child care Resources and Referral. For those

who are teachers in a center, it might be assumed that 'support' in this case would come from center administration or colleagues, instead of a more general idea of support. This complicated the school invitations subscale. Finally, the Context Skills scale was also reduced. It was interesting to see that the item that addressed time to work with parents did not load onto the scale. Lack of time is often seen as a barrier that prevents communication in pediatrician's offices, where we would expect early identification to take place. It is possible that ECCPs see talking to parents as such an important part of their jobs that they are committed to making time for these conversations.

The relatively high number of reduced items may have limited the relationships between the dependent variables and the independent variables. Specifically, the removal of the item *I believe it is my responsibility to talk to parents (either through a formal conference or conversation) when I have a concern about their child's development* might have been a predictor of a decision to talk to parents. However, given the type of analyses completed in this study and the limited number of participants in the study, the data could not tolerate the high level of errors that keeping the item would have caused. Participant responses to this question were extremely positively skewed. A larger sample size might have allowed for a greater variability in responses and for the retention of this question.

Overall the Hoover- Dempsey Model of Involvement was the theoretical foundation for this study. The findings from this study begin to identify these areas of difference, building a basis to further understand the factors that contribute to an ECCP's decision to talk to a parent.

Descriptive statistics. Overall the descriptive statistics are encouraging. In general ECCPs had a high likelihood of talking to parents. This is especially so for the internalizing condition. These findings suggest that even though the behaviors described in this condition are

not those that are typically obtrusive in an early childcare setting, ECCPs are taking note of the behaviors, and in most cases, see themselves as likely to talk to parents about these concerns. This is of primary importance for the behaviors that are associated with an early ASD diagnosis, given the importance of early identification. Similarly, for the externalized condition, it is encouraging to see that ECCPs who work in a FHC are more likely to talk to parents than not suggesting that they see talking to parents as a step to managing a child's behavior when they have a concern.

There were some interesting findings for the control variables. In the internalized condition, Asian ECCPs were significantly less likely to talk to parents, however, given the limits of this study's sample size, this should be considered with extreme caution. This could be due to various reasons, including cultural tendencies towards communication styles or expectancies, or behavioral expectancies for a child.

The descriptive statistics for Motivational Beliefs, Parents Invitations, and Context Skills also suggest positive findings. The average scores across all three predictors for ECCPs, was about a five on a six point scale with six being the highest endorsement. This suggests that overall, ECCPs feel as though talking with parents is something they are willing to do, that parents want to engage with them, and that they know how to talk to parents.

It was interesting to note the similarities and differences between type of childcare program for the outcomes variables. In the internalized condition the ECCPs who worked in a center were significantly less concerned regarding the child's behavior than those who worked in a FHC. However, there was not a significant difference in likelihood of talking with a parent in the internalized condition based on working in a center or FHC. In the externalized condition ECCPs who worked in a center were significantly less likely to be concerned about the child's

behavior and significantly less likely to talk to parents. In the final condition, the typical condition, there was no significant relationship between levels of concern and likelihood of talking with parents.

Analysis.

Internalized Condition. There was a significant interaction affect of the three main predictors, Motivational Beliefs, Context Skills, and Parent Invitations, in the internalized condition. This suggests that as an ECCP's levels of these predictors increased, they were more likely to talk to parents when children are displaying internalized symptoms related to a diagnosis of ASD.

This might be related to the lack of knowledge that ECCPs might have about ASD. While prevalence rates of ASD are quite high, as previously described, diagnosis and screening is quite complicated. The cause of these behaviors might be unclear, as would whether these observed warrant concern. In addition, these behaviors are generally less apparent than externalized behaviors and do not interrupt the classroom in the same way that externalized behavior might. They are often harder to substantiate or to observe in a way that allows for data collection. This finding might suggest that an ECCP is more likely to talk to parents when he or she has a perception that parents want to have a conversation, that he or she knows how to have a this conversation, and it is his or her job to have a conversation with parents regarding their child's development when the etiology of the behavior is unclear.

Externalized Condition. The predictors did not have the same affect when a child displayed externalized behaviors. Unlike the behaviors described in the internalized vignette, these behaviors might be obtrusive to a classroom, but not necessarily related to a developmental delay. In this case only Context Skills was a significant predictor of likelihood of having a

conversation with a parent. This suggests that when behaviors are externalized, perception of an ECCP's own comfort, knowledge, and support plays a significant role in the decision to communicate.

For the externalized condition, how long an ECCP has worked in the field was also significantly related to how likely he or she is to have a conversation with parents. The longer an ECCP worked in an early childcare setting, the less likely they were to have a conversation with parents. This might be for many reasons, including the ECCP's confidence in his or her own ability to address the behavior without parent involvement, a negative outcome from previous conversations with parents regarding externalized behaviors, or possibly a views that early intervention is not always best for all children (e.g. waiting to see what happens or letting kids work it out on their own might be considered better than making a fuss).

Typical Condition. The significant interaction affect of the three main predictors, Motivational Beliefs, Context Skills, and Parent Invitations typical conditions suggests that as an ECCP's levels of these predictors increased, they were more likely to talk to parents when children are displaying some of the more internalized symptoms related to ASD. Even when ECCP's are relatively unconcerned or minimally concerned in regards to a child's behavior, as was the case of the child who presented typical behaviors, as confidence in their own role as a person who understands child development, invitations to communicate from parents, and comfort in terms of how to communicate with parents increases an ECCP's likelihood of talking to a parent.

Similar to the internalized condition, these findings suggest that when behaviors are not obtrusive or do not show an observable behavior upon which one might focus an intervention, ECCPs need extra bolstering (e.g. confidence in their own role as a person who understands

child development, invitations to communicate from parents, and comfort in their ability to communicate with parents). Best practices suggest that communication between parents and teachers is imperative not only when there are concerns regarding a child's behavior, but also when a child's development and behavior meets expectations. Promoting the aforementioned skills might help to increase the occurrence of this important practice.

Policy and Practice Implications

This study has interesting implications for policy and practice involving the early identification of developmental delays such as ASD. Primarily, in cases of children who are displaying internalized behaviors that are consistent with an ASD diagnosis, ECCP's are more likely to talk to parents if they have higher levels feelings that they are knowledgeable about child development, perceive parents to value their opinions, and feel confident in talking to parents about concerns regarding a child's development. When considering how to increase the identification of ASD for our youngest children, it may be valuable to consider increase ECCP competence or confidence in these areas.

As previously described, it is not appropriate to teach ECCPs to diagnose ASD or suggest to parents that their child might have ASD. However, the findings from this study suggest that a low technology but high impact intervention, such as brief trainings, should attempt to achieve the following: support early childcare providers in how to talk to parents when they are concerned about a child's behavior, to promote a culture of communication between parents and teachers, and to help both parents and ECCPs understand that ECCPs are professionals can be valuable sources of information for parents.

Limitations

While the study presents important findings for the field of early childhood education and psychology, there are also some significant limitations to the study. These limitations include sample size and the text of the survey.

There were several concerns regarding the sample from which these data were collected. First, this was an extremely limited sample. The majority of the sample was drawn from the same county and was predominantly white. The relatively small number of participants limited the ability to perform an analysis that thoughtfully accounted for issues of race and ethnicity. Further, the sample only included ECCPs that had access to a computer, were members of Child Care Resources and Referral, and those who spoke English. In addition, there was not a great deal of variability in responses due in part to the small sample size. Greater variability in responses would have allowed for more specificity, as well as a deeper exploration of the similarities and differences between ECCPs who worked in homes versus those who worked in centers.

In addition, the text of the email that was delivered to ECCPs requesting their participation in the study could have altered the results. The email highlighted that ECCPs were important to child development, and were in the unique position of helping us understand more about children. Further, the email took note of the significant number of demands that are made on an ECCPs very limited time. Several questions in the survey specifically asked about these areas. The text in the beginning of the email and survey could have primed the ECCP's responses, thus reducing the validity of data gathered through the scale. In addition, this text could have increased social desirability while completing the questionnaire.

The text of the survey also held some additional challenges. It should be noted that the vignettes were designed based on early childcare observations, clinical judgment, expert review, and a review of case files. However, the clinic from which the cases were reviewed does not bill insurance and clients pay at the time of service. This might have limited the sample of files that were reviewed to a higher SES sample. Similarly, the early childcare program where the observations took place was affiliated with a major research university. The majority of the children in the classrooms were the sons and daughters of faculty and students. Again, this very limited population could have altered the observations, and therefore limited the scope of the vignettes.

Future Research

This study lays a good foundation for future research. Specifically, a foundation for further exploration of the influence of the type of childcare programs, perception of efficacy of conversations, and parent perceptions of interactions was laid.

There were a few significant findings in relation to type of childcare program and ECCP's concern for different types of behavior (internalized, externalized, and typical) and likelihood of having a conversation with parents. For example, this analysis suggested that in general, ECCPs who worked in FHCs had a higher likelihood of talking to parents in the externalized condition. Future studies might want to further examine the differences between centers and FHCs to determine why this is the case. Are there systemic factors that prevent ECCPs from speaking with parents? Is it difficult to know whose job it is to actually talk with parents in a center verses a FHC? Is this related to rates of staff turn over or depression? Future research in this area might help centers promote communicate with parents.

Future research might also explore the content, quality, and outcome of the conversations that ECCPs have with parents as well as the latency between first noting a concern and talking with parents. Data regarding the specifics of the conversation, parent perception, and teacher perception should be collected. It might be the case that while ECCPs perceive themselves as likely to have a conversation with parents, the actual conversation might vary in terms of efficacy. When an ECCP actually has the conversation, is the appropriate idea is communicated? At what point in recognizing the behavior, does an ECCP have a conversation with a parent? For example, they might wait until behavior has become more intense or more disruptive. Outcome data will also be important to collect. Are there positive outcomes from these conversation? What dictates a positive or negative outcome?

Future research should also examine how parents perceive an early childcare provider's role in this situation. This study did not identify if parents want to talk to early childcare providers regarding their child's development. Would parents perceive this as a positive experience? What would parents need to make this a positive experience? Future research should also consider what factors would motivate parents to support communication between themselves and ECCPs. Are there factors that are consistent in conversations that may have gone well versus those that may have gone badly?

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Appendix A. Data Collection Instruments

The following is an example of the survey. It will be computerized, so format and numbering will appear differently.

Dear Member of the Early Learning Community,

This short survey will help us learn more about your experience as an early childcare provider. Please take a few minutes of your time to share some of your views. We know children are different and we need to think of them in terms of their own experiences, culture, and family. We are going to tell you about three children so that we can learn about these behaviors and what early childcare providers think about them. This anonymous survey should take about 15 minutes to complete. Thank you for your time and important work.

Imagine each of these children are in your classroom and that you are the lead teacher.

Child 1:

Lila is an easy going 2 year old. She likes to play all day alone with the light up toys or stare at the fan while other kids are playing games like peek-a-boo or hide and seek with the other kids or teachers. If someone changes her routine she gets upset and it takes her a long time to calm down. She keeps to herself more than the other kids, and doesn't pay attention when other people talk to her. She likes to do her own thing, like pacing around the room and making some strange movements with her hands over and over. She's quirky! She seems very smart, and is great with early letter and number skills. She can say some of the alphabet and counts higher than the other kids.

How concerned are you about Lila's development?

Not at all *A little* *Quite a Bit* *A Great Deal*

How likely would you have a special conversation with Lila's parent's regarding her development?

Not at all likely *Somewhat Likely* *Likely* *Very likely*

Child 2:

Janet is an engaging and active 2 year old. She likes to run around the room, constantly touching, and moving everything instead of keeping quiet or playing alone. She throws her food and other objects in the room more than the other kids. Sometimes, when she is really frustrated, she'll grab other kids and squeeze them pretty hard. Other than that, she likes to play row your boat and peek-a-boo with the other kids and teachers. She doesn't stay in circle time or nap. She's a handful! She seems very smart, and is great with early letter and number skills. She can say some of the alphabet and counts higher than the other kids.

How concerned are you about Janet's development?

Not at all *A little* *Quite a Bit* *A Great Deal*

How likely would you have a special conversation with Janet's parent's regarding her development?

Not at all likely *Somewhat Likely* *Likely* *Very likely*

Child 3:

Maya is a calm and happy 2 year old. She likes to play with the other children but she likes to play with trucks instead of with dolls. She likes snack time, and will sit at the table with the other children, but wants to return to play. Sometimes she puts toys in her mouth more than the other kids. She doesn't like it when you call her a baby, she yells "Stop it!" She can say as much of the alphabet and counts as high as the other kids.

How concerned are you about Maya's development?

Not at all *A little* *Quite a Bit* *A Great Deal*

How likely would you have a special conversation with Maya's parent's regarding her development?

Not at all likely *Somewhat Likely* *Likely* *Very likely*

Instructions : Please indicate how much you AGREE or DISAGREE with each of the following statements.

Response format : Disagree very strongly; Disagree; Disagree just a little; Agree just a little; Agree; Agree very strongly.

Role Beliefs

1. I believe it is my responsibility to talk to parents (either through a formal conference or conversation) when I have a concern about their child's development.
2. I am an important source of information for parents about their child's development.
3. I should be involved if a parent has concerns about their child's development.

Self-Efficacy

4. I am uncomfortable working with parents. (Reversed)
5. I am uncomfortable work with kids. (Reversed)
6. I can make a significant difference in children's development.
7. I am good at helping children learn in my classroom.

Parent invitations

8. Most parents in my class want to discuss their children with me.
9. Most parents make time to meet with me about their children.
10. Most parents ask me my opinions on child development/ issues.
11. Most parents tell me that they are happy with my class.
12. Most parents open up to me.

General School Invitations

13. I feel supported in handling issues related to talking to parents about concerns about their child's development.

Time and Energy

14. I have enough time and energy to talk with parents when I have a concern about a child's development.

Knowledge/ Skills

15. I know what to say to most parents when I have concerns about a child's development.
16. I know what most children I work with need.

Demographic Questionnaire

1. Have you worked with children with who had a known developmental disability (known by parents and teachers) in the past 12 months? (Please write a number)

_____

2. What is your position at your early childcare program?

- ☐ Lead teacher
- ☐ Only teacher
- ☐ Director
- ☐ Assistant teacher
- ☐ Other_____

3. How many years have you worked in the field of early education/child care? (do not include caring for your own children unless they attended your childcare program)

Years: _____ *Months:* _____

4. What best describes your childcare program?

□ ECEAP □ Step Ahead
□ Childcare Center □ Early Head Start
□ Family Home Childcare □ Other _____

5. How long have you worked at your current center or family childcare home?

Years: _____ *Months:* _____ *Other* _____

6. What is your level of education (please check highest level)

____ Some high school ____ Some college (1 year or more)
____ Associate's degree ____ High school degree
____ Bachelor's degree ____ Some graduate coursework
____ Master's degree ____ Early Childhood Certificate
____ CDA

7. What ages are you most familiar with?

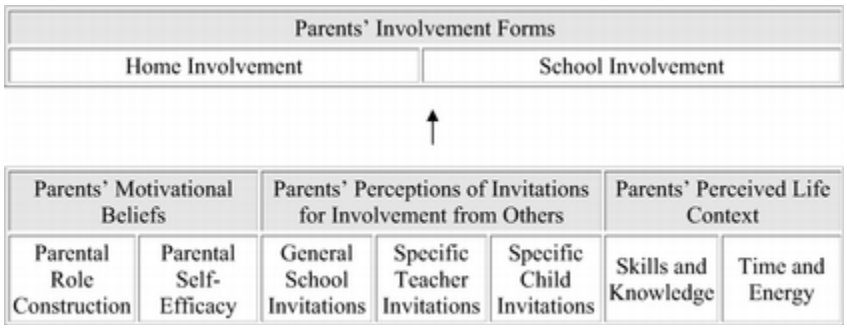
- ☐ 0-6 months
- ☐ 7-12 months
- ☐ Between 1 year and 2 years
- ☐ Between 2 and 3 years

☐ Between 3 year and 5 years

☐ Older than 5 years

8. What is your age? _____
9. What is your gender? _____
10. What is your ethnicity : _____
11. Do you have your own children? _____ How many?_____ Ages? _____
12. What is your home zip code? _____ What is the zip code you work?_____

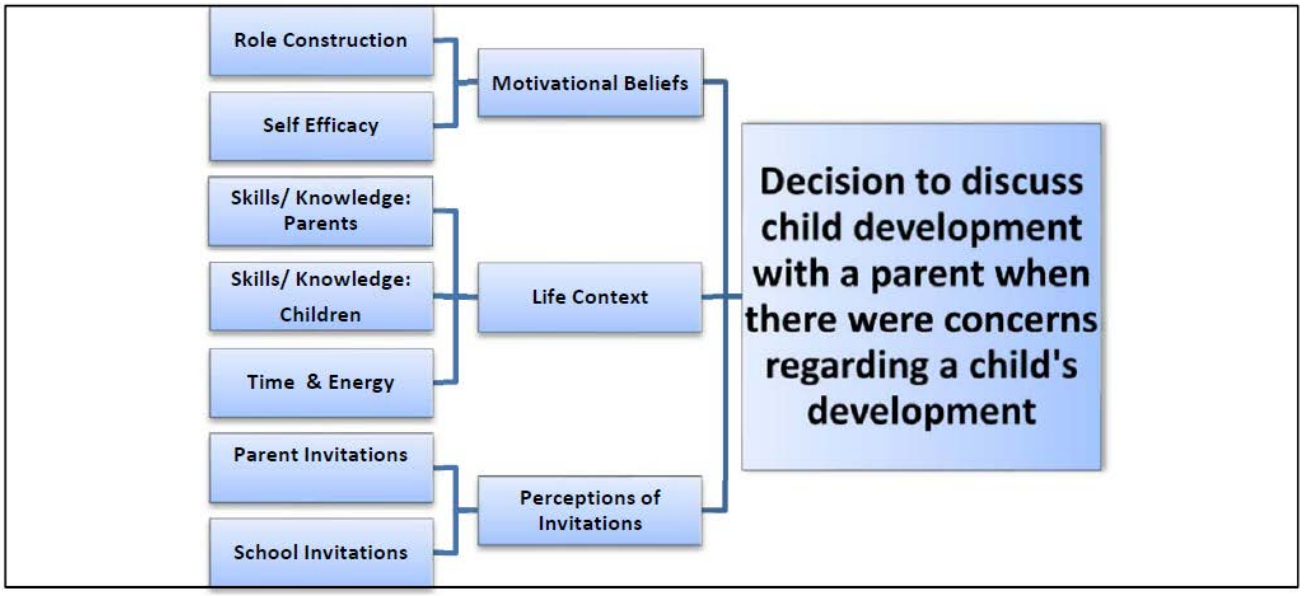
Figure 1.



Parental Involvement Model

Note. This is only the first and second levels of Hoover-Dempsey and Sandler's (2005) revised theoretical model of the parental involvement process (Walker, Wilkins, Dallaire, Sandler, & Hoover-Dempsey, 2005).

Figure 2



Early Child Care Involvement Model

Table 1
Demographic information for the Child Care Provider Survey (N = 107)

Item	Demographic Data	
	N	*Percent*
Position		
Teacher	40	37.4
Dual Role, Teacher and Administration/ Director	20	18.7
Administration / Director	47	23.9
Education		
High School	6	5.6
Associates Degree/ Some College	35	32.7
Bachelors Degree	34	31.8
Some Graduate Course Work	19	17.8
Certificate of Child Development (CDA)	12	11.2
Age	(Mean) 38	
Females	99	92.5
Race		
Latina	3	2.8
Asian	7	4.7
Black	5	3.8
Mixed Race	3	2.8
White	72	67.3
Native American	2	1.9
Have own children (yes)	96	99.7
Length of time working as an ECCP	(Mean) 19	
Type of Program		
Center	57	53.3
Family	43	40.2

Worked with a child who has an identified disability in the past (yes)	83	77.6
Work and live in same zip code (yes)	49	50.0

Note. The majority of participants were from WA state n = 105, 2 participants were from VA

Table 2

Correlations and means for the Child Care Provider Survey

Item	Correlation															
	1	*2*	*3*	*4*	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*
1. I have enough time and energy to talk with parents when I have a concern about a child's development.	1	.30*	-.01	.01	.24*	.03	.14	.15	.14	.14	.07	.02	.15	.05	-.09	.08
2. I know what to say to most parents when I have concerns about a child's development.	.30*	1	.23*	.18	.46*	.10	.24*	.27*	.22*	.61*	.27*	.30*	.48*	.23*	.35*	.19
3. I believe it is my responsibility to talk to parents (either through a formal conference or conversation) when I have a concern about their child's development	.01	.23	1	.40*	.34*	.23*	.21*	.28*	.22*	.38*	.34*	.27*	.35*	-.07	.19	.24*
4. I am an important source of information for parents about their child's development.	.01	.18	.40*	1	.38*	.38*	.44*	.33*	.43*	.31*	.37*	.39*	.29*	.21*	.18	.12
5. Most parents make time to meet with me about their children.	.24*	.46*	.34*	.38*	1	.31*	.35*	.47*	.26*	.44*	.35*	.38*	.38*	.15	.27*	.11
6. I can make a significant difference in children's development	.03	.10	.23*	.38*	.31*	1	.48*	.19	.38*	.24*	.38*	.29*	.06	.16	.14	.13
7. I am good at helping children learn in my classroom.	.14	.24*	.21*	.44*	.35*	.48*	1	.58*	.41*	.26*	.64*	.48*	.26*	.22*	.39*	.01
8. Most parents in my class want to discuss their children with me.	.15	.27*	.28*	.33*	.47*	0.19	.58*	1.00	.28*	.38*	.57*	.64*	.38*	.15	.53*	.15
9. I should be involved if a parent has concerns about their child's development.	.14	.22*	.22*	.43*	.26*	.38*	.41*	.28*	1.00	.14	.25*	.29*	.20*	.32*	.03	.14
10. I feel comfortable communicating with families when I have concerns about a	.14	.61*	.38*	.31*	.44*	.24*	.264	.38*	.14	1.00	.31*	.49*	.68*	.15	.51*	.14

child's development.																
12. Most parents tell me that they are happy with my class.	.07	.27*	.34*	.37*	.35*	.38*	.64*	.57*	.25*	.31*	1.00	.65*	.31*	.15	.45*	.07
13. Most parents open up to me about their children.	.02	.30*	.27*	.39*	.38*	.29*	.48*	.64*	.29*	.49*	.65*	1.00	.46*	.13	.63*	.02
14. I feel supported in handling issues related to talking to parents about concerns about their child's development	.15	.48*	.35*	.29*	.38*	.06	.26*	.38*	.21*	.68*	.31*	.46*	1.00	.19	.48*	.15
15. I know what most children I work with need	.05	.28*	-.07	.21*	.14	.16	.22*	.15	.32*	.15	.15	.13	.19	1.00	.23*	.05
16. I know what most children I work with need	-.09	.35*	.19	.18	.27*	.14	.39*	.53*	.03	.51*	.45*	.63*	.48*	.23*	1.00	-.09
17. I am uncomfortable working with parents. R	.08	.19	.24*	.12	.11	.13	.01	.12	-.04	.29*	.07	.06	.15	-.22*	.05	.08
M	5.66	5.62	5.60	5.53	5.57	5.04	5.03	5.05	4.84	5.17	5.33	5.08	5.21	5.06	5.27	.75
SD	.68	.51	.51	.60	.54	1.10	.95	5.05	1.48	.61	.93	1.04	.87	.85	5.54	.52

Note. * Indicates significance at the .05 leve

Table 3

Summary of EFA results for the Child Care Provider Survey Original (N = 104)

Item	Rotated Factor Loadings				
	1	*2*	*3*	*4*	*5*
I believe it is my responsibility to talk to parents (either through a formal conference or conversation) when I have a concern about their child's development		.43	.52	-.47	
I am an important source of information for parents about their child's development			.76		
I should be involved if a parent has concerns about their child's development			.74		
I can make a significant difference in children's development			.73		
I am good at helping children learn in my classroom	.76		.56		
I feel comfortable communicating with families when I have concerns about a child's development	.43	.87			
I know what to say to most parents when I have concerns about a child's development		.79			
I feel supported in handling issues related to talking to parents about concerns about their child's development	.45	.82			
I am uncomfortable working with parents				-.72	
I know what most children I work with need				.74	
I have enough time and energy to talk with parents when I have a concern about a child's development					.91
Most parents make time to meet with me about their children	.45	.53	.45		
Most parents in my class want to discuss their children with me	.83				
Most parents ask me my opinions on child development/ issues	.72				
Most parents open up to me about their children	.84				
Most parents tell me that they are happy with my class	.83				
Eigenvalues	5.49	1.70	1.40	1.38	1.01
% of Variance	34.23	10.73	8.89	8.56	6.33
α	.80	.81	.72	-.18	n/a

Note. Factor loadings below .40 are suppressed.

Table 4

Summary of EFA results for the Child Care Provider Survey (N = 99) New Model

	Rotated Factor Loadings			
Item	*Parent Invitations*	*Motivational Beliefs*	*Context Skills*	Communality
I am an important source of information for parents about their child's development		.69		.59
I should be involved if a parent has concerns about their child's development		.83		.67
I can make a significant difference in children's development		.72		.58
I feel comfortable communicating with families when I have concerns about a child's development			.83	.74
I know what to say to most parents when I have concerns about a child's development			.81	.64
I feel supported in handling issues related to talking to parents about concerns about their child's development			.78	.72
Most parents ask me my opinions on child development/ issues	.75			.71
Most parents open up to me about their children	.82			.79
Most parents tell me that they are happy with my class	.79			.69
Most parents in my class want to discuss their children with me	.81			.69
Eigenvalues	4.26	1.48	1.08	
% of Variance	42.58	14.80	10.79	
α	.83	.72	.78	

Note. Factor loadings below .30 are suppressed.

Table 5

Descriptive statistics for Center Based Childcare and Family Home Childcare by Vignette and Survey responses.

	Child Care Center			Family Home Care		
Variables	*M*	*SD*	σ	*M*	*SD*	σ
Internalized						
Concern	2.98*	.68	.46	3.28*	.63	.39
Talk	3.35	.74	.55	3.58	.63	.39
Externalized						
Concern	2.07*	.80	.64	2.49*	.86	.73
Talk	2.60*	1.02	1.03	3.10*	1.02	1.04
Typical						
Concern	1.11	.31	.10	1.28	.67	.44
Talk	1.44	.66	.43	1.74	1.05	1.10
Motivational Beliefs	5.49	.53	.28	5.63	.42	.18
Parent Invitations	5.28	.54	.29	5.32	.74	.55
Context Skills	5.01	.80	.64	5.04	.96	.92

Note. * significant difference at the .05 level between CCC and FHC ECCPs.

Table 6
Regression Models for the Internalized Condition

	Model 1			Model 2			Model 3		
Variables	β	SE	or	β	SE	Or	β	se	or
not at all/ a little likely, VS very likely,	-2.44	.47	.09	-2.30	1.73	.10	-1.50	8.60	.22
quite a bit likely ,VS very likely	-.20	.26	.82	.29	1.77	1.34	1.19	8.65	3.29
Motivational Beliefs	.39	.45	1.48	-	-	-	-.22	1.68	.80
Parent Invitations	.87*	.56	2.39	.89*	.64	2.44	1.06	2.05	2.89
Context Skills	.15	.50	1.16	.21	.57	1.23	.18	1.47	1.20
Race									
Latina				-.91	1.01	.40	.31	2.05	1.36
Asian				-2.31*	5.12	.10	-2.20*	7.91	.11
Black				1.48	9	4.39	1.39	9.55	4.01
Mixed Race**				-	-	-	-	-	-
Native American				-.53	6.10	.59	-.38	13.38	.68
White				0	0	0	0	0	0
Type of ECCP									
Center				-.85	.68	.43	-.48	2.01	.62
Family Friend Care				0	0	0	0	0	0
Age				.02	.04	1.02	.04	.11	1.04
Experience w/ DD									
Yes							.44	.38	1.55
No							0	0	0
Education									
High School							2.20	10.80	9.03

	Associates Degree/ Some College			-.68	8.15	.51
	Bachelors Degree			-.20	1.97	.82
	Some Graduate Course Work			.80	9.22	2.23
	Certificate of Child Development (CDA)			0	0	0
Position						
	Teacher			-.33	2.93	0.72
	Dual Role, Teacher and Administration/ Director			.89	5.79	2.44
	Administration / Director			0	0	0
Motivation*Context*				1.73*	3.27	5.64
Parent Invitations		$x^2\ (3) = .63, p > .05$	$x^2\ (8) = 24.47,$ $p < .01,$	$x^2\ (17) = 32.68,$ $p < .01$		
Nagelkerke R^2		.17	.32	.43		

Note. * indicates *p*< .05; **There were an insufficient number of responses in the Mixed Race category for analysis

Table 7
Regressions for the Externalized condition

Variables	Model 1			Model 2			Model 3		
	β	*se*	*or*	*β*	*se*	*Or*	*β*	*se*	*Or*
not at all/ a little likely, VS very likely,	-.69	.28	.50	-2.62	.70	.07	-3.01	5.23	.05
quite a bit likely ,VS very likely	.84	.27	2.32	-.90	.68	.41	-1.02	5.26	.36
Motivational Beliefs	.18	.34	1.20	-	-	-	.55	.87	1.73
Parent Invitations	-.43	.43	.65	-.15*	.46	.86	-.87	.94	.42
Context Skills	.08	.42	1.08	.43	.35	1.54	0.88*	.72	2.41
Years worked in ECC				-.07*	.03	.93	-.16*	6.91	.85
Type of ECCP									
Center				-.07*	.93	.93	-.91	1.22	.40
Family Friend Care				0	0	0	0	0	0
Race									
Latina							.55	1.37	1.73
Asian							-.09	5.78	.91
Black							.92	7.44	2.51
Mixed Race**							-	-	-
Native American							1.44	8.88	4.22
White							0	0	0
Age							.04	1.45	1.04
Education									
High School							1.07	8.80	2.92
Associates Degree/ Some College							-.66	4.58	.51
Bachelors Degree							-.78	4.60	.46
Some Graduate Course Work							-.2	4.66	.81

Certificate of Child Development (CDA)			0	0	0
Experience w/ DD					
No			-2.62	6.91	.07
Yes			0	0	0
Position					
Teacher			1.05	1.22	2.86
Dual Role, Teacher and Administration / Director			.31	1.88	1.36
Administration / Director			0	0	0
	$x^2\ (3) = .63, p > .05$	$x^2\ (4) = 11.52, p < .05$	$x^2\ (17) = 31.06\ p < .05$		
Nagelkerke R^2	.17	.16	.39		

Note. * indicates $p < .05$; **There were an insufficient number of responses in the Mixed Race category for analysis

Table 8
Regression Models for the Typical Condition

	Model 1			Model 2			Model 3		
Variables	*β*	*se*	*Or*	*β*	*se*	*Or*	*β*	*se*	*Or*
not at all VS very likely,	.39	.22	1.48	.09	.02	1.09	.68	7.22	1.97
a little likely VS very likely	1.98	.32	7.24	1.81	.14	6.11	3.13	7.33	22.87
quite a bit likely VS very likely	2.75	.43	15.64	2.61	.21	13.60	3.60	7.40	36.60
Motivational Beliefs	-.08	.40	.92	-	-	-	-.67	1.79	.51
Parent Invitations	-.30	.44	.74	-	-	-	-1.05	1.59	.35
Context Skills	.64*	.34	1.47	.58*	.35	1.79	.96	1.79	2.61
Type of ECCP									
Center				-.03	.59	.97	-.26	1.84	.77
Family Friend Care				0	0	0	0	0	0
Position									
Teacher				1.16	1.28	3.19	1.58	0.50	4.82
Dual Role, Teacher and Administration/ Director				.38	1.28	-.75	5.48	-.89	239.85
Administration / Director				0	0	0	0	0	0
Years Worked				-.04	.03	.96	.35	2.74	1.42
Race									
Latina							1.69	2.14	5.42
Asian							-.70	5.89	0.50
Black							.33	7.06	1.39
Mixed Race**							-	-	-
Native American							2.56	6.15	12.94
White							0	0	0
Age							.01	.04	1.01
Experience w/ DD									
No							.35	.13	1.42
Yes							0	0	0
Education									
High School							-	1.46	.53

			1.35		
Associates Degree/ Some College			-.63	.94	.57
Bachelors Degree			-.57	.94	.78
Some Graduate Course Work			-.25	1.11	1
Certificate of Child Development (CDA)			0	0	0
Motivation*Context* Parent Invitations			2.18*	.99	8.85
	$x^2\ (3) = 4.39,$ $p > .05$	$x^2\ (5) = 11.67,$ $p < .05$	$x^2\ (17) = 24.47,$ $p < .05$		
Nagelkerke R^2	.05	.14	.34		

Note. * indicates $p < .05$; **There were an insufficient number of responses in the Mixed Race category for analysis

Table 9
Regression Models

Variables	Internalized			Externalized			Typical		
	β	*SE*	*Or*	β	*SE*	*Or*	β	*SE*	*Or*
*not at all/ a little concerned, VS very concerned**	-2.67	1.02	.07	-6.71	7.12	.00	-.61	8.94	.54
*quite a bit concerned ,VS very concerned**	-1.29	.84	.28	-2.70	6.00	.07	1.39	8.93	4.01
	$x^2\ (2) = 21.48\ p < .01$			$x^2\ (3) = 66.99\ p < .01$			$x^2\ (3) = 15.15\ p < .00$		
Nagelkerke R^2	.21			.50			.15		

Note. * indicates $p < .05$

Table 10

Mean Child Care Provider Survey Scores aggregated by type of childcare program

Item	Mean Responses					
	Center			*Home*		
	n	*m*	*SD*	*n*	*M*	*SD*
I believe it is my responsibility to talk to parents (either through a formal conference or conversation) when I have a concern about their child's development	57	5.63	.62	43	*5.63*	*.79*
I am an important source of information for parents about their child's development	56	5.54	.57	43	5.60	.58
I should be involved if a parent has concerns about their child's development	57	5.49	.71	42	5.19	1.04
I can make a significant difference in children's development	57	5.42	.65	43	5.63	.54
I am good at helping children learn in my classroom	54	5.54	.50	43	5.63	.54
I feel comfortable communicating with families when I have concerns about a child's development	57	4.95	1.14	42	5.12	1.15
I know what to say to most parents when I have concerns about a child's development	57	5.02	.01	43	5.09	.81
I feel supported in handling issues related to talking to parents about concerns about their child's development	57	5.07	.88	43	4.93	1.20
I am uncomfortable working with parents	57	4.81	1.22	41	5.20	.90
I know what most children I work with need	57	5.04	.63	43	5.19	.70
I have enough time and energy to talk with parents when I have a concern about a child's development	57	5.16	1.12	43	5.40	.82
Most parents make time to meet with	57	4.84	1.22	41	5.20	.90

me about their children						
Most parents in my class want to discuss their children with me	54	5.28	.74	42	5.19	1.04
Most parents ask me my opinions on child development/ issues	54	5.05	.81	42	5.17	.99
Most parents open up to me about their children	56	5.27	.67	43	4.93	1.20
Most parents tell me that they are happy with my class	54	5.46	.50	43	5.58	.55

Note. * indicates $p < .05$

Table 11

ANOVA for ECCP concern by behavior type

Internalized			*Externalized*			*Typical*		
F	*(df)*	ω	*F*	*(df)*	ω	*F*	*(df)*	ω
11.64	2, 104	0.41	32.38	3,101	0.68	3.67	3.103	0.07

Note. There were significant affects of level of concern in all three conditions.