

EXAMINING PARENT–TEACHER RELATIONSHIP QUALITY AND FAMILY
INVOLVEMENT FOR CHILDREN WITH AUTISM SPECTRUM DISORDER

by

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DISSERTATION ABSTRACT

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Title: Examining Parent–Teacher Relationship Quality and Family Involvement for Children with Autism Spectrum Disorder

Strong parent–teacher relationships are crucial for promoting positive outcomes and serving as a protective factor for at-risk children (Glueck & Reschly, 2014). This may be particularly important for children with autism spectrum disorder (ASD), who are at increased developmental risk related to ASD symptoms (Garbacz, Santiago, & McIntyre, 2016). However, little research has examined variables that influence relationships for parents and teachers of children with ASD. The present study examined (a) parent–teacher relationship variables in relation to developmental risk and child and family variables and (b) parent–teacher relationship perceptions among a sample of parents and teachers of children with ASD. Data were collected across two waves within a longitudinal study ($N = 68$ and $N = 22$, respectively). Results suggest that parents of children with mild ASD symptoms reported better parent–teacher relationship quality relative to parents of children with more ASD symptoms, child adaptive behavior had a significant effect on family involvement, perceived social status had a significant effect on family involvement after controlling for child ASD symptoms, and parent-reported relationship quality and family involvement had a significant effect on positive and consistent ratings of parent–teacher relationship quality by both parents and teachers

approximately two years later. Study limitations, future research directions, and clinical implications are discussed.

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CHAPTER I

INTRODUCTION

Children with autism spectrum disorder (ASD) are at increased risk for adverse outcomes related to social skills (National Research Council, 2001), problem behavior (Schieve, Blumberg, Rice, Visser, & Boyle, 2007), and adaptive functioning (Blacher & McIntyre, 2006). Risk refers to the likelihood of certain outcomes under certain conditions, rather than asserting a causal process (Pianta & Walsh, 1996). General research supports the role of parent–teacher relationships in supporting child outcomes, although this research is limited among children with ASD (Garbacz, McIntyre, & Santiago, 2016). Thus, an examination of developmental risk associated with an ASD diagnosis and variables related to parent–teacher relationships may shed light on factors that influence outcomes for children with ASD.

This study aimed to address this literature gap by examining the role of child variables, family variables, parent perceptions and behaviors, and teacher perceptions among children with ASD and their parents and teachers, as well as how ASD symptomology influences parent perceptions and behaviors. The present chapter will discuss the key constructs relevant to this study. In particular, the chapter will discuss the population of interest (including the relevance of examining ASD symptom severity, externalizing behavior, and adaptive functioning), experiences of parents and teachers, services and supports for children with ASD, the theoretical framework used with this study, the role of parent–teacher relationships in supporting child outcomes, parent variables related to parent–teacher relationships, child and family variables which may be

related to those parent engagement domains, and the research questions and hypotheses that guided this study.

ASD and Symptom Severity

ASD is a neurodevelopmental disorder affecting approximately 1 in 59 children in the United States (Baio et al., 2018). ASD is characterized by impairments in social interaction and communication, as well as restricted and/or repetitive behaviors, activities, or interests (American Psychiatric Association, 2013). ASD is a spectrum disorder; symptom severity and adaptive functioning can vary widely (Chang, Lung, Yen, & Yang, 2013).

Children with ASD may benefit from supports individualized to unique needs and strengths (National Research Council, 2001). In particular, interventions that focus on improving children's social and communication skills and overall behavioral functioning are especially relevant for children with ASD. Challenging behavior may interfere with students' ability to function in inclusive educational settings, even if they are otherwise able to access the general education curriculum. Strategies that are based on functional behavioral assessment and behavior intervention planning have strong empirical support (Iovannone, Dunlap, Huber, & Kincaid, 2003) and may involve teaching adaptive skills to replace the challenging behavior. Issues faced by students in educational contexts are often echoed by parents. For example, a study by Azad and Mandell suggested that parents of children with ASD report concerns with social skills and problem behavior (Azad & Mandell, 2016).

Social skills. Social skills—a set of interpersonal skills including emotional self-regulation, social cognition, and positive communication (Bornstein, Hahn, & Haynes,

2010)—are associated with positive outcomes with regard to peer relationships and behavioral adjustment (Bornstein et al., 2010; Garbacz, Sheridan, Koziol, Kwon, & Holmes, 2015). Children with ASD are at an increased risk for social skills difficulties due to the characteristics of an ASD diagnosis. Children with ASD are more likely to experience difficulties with language and communication skills that impact social interactions and peer relationships, and they are less likely to engage in imitation of motor and verbal behaviors of other people (National Research Council, 2001).

Compared to children with other developmental disabilities, children with ASD are more likely to experience difficulties in play activities with peers (Barton & Wolery, 2010).

Given the importance of social skills supports for promoting desired outcomes such as peer relationships, appropriate behavior, and academic performance (Garbacz et al., 2015) and the enhanced risk for social interaction impacts and long-term outcomes (National Research Council, 2001), children with ASD may particularly benefit from social skill supports.

Problem behavior. In general, higher levels of problem behavior, especially externalizing behavior, are associated with adverse outcomes among the general population. Externalizing behavior is behavior marked by difficulties with attention, self-regulation, and noncompliance (Bornstein et al., 2010). Short-term risks of externalizing behavior problems include difficulties engaging in classroom activities (Reinke, Herman, Petras, & Ialongo, 2008) and reduced access to academic activities and instruction (Shinn, Ramsey, Walker, Stieber, & O'Neill, 1987) which can, in turn, affect performance on academic tasks (Carnine, 1976). Children with externalizing behavior are also at risk for adverse long-term outcomes, including a higher risk of school dropout (Jenson,

Olympia, Farley, & Clark, 2004) and internalizing and externalizing difficulties in adulthood (Reef, Diamantopoulou, van Meurs, Verhulst, & van Der Ende, 2011).

Children with ASD are at increased risk for externalizing behavior (Schieve et al., 2007). These behaviors can include hyperactivity (Konst, Matson, Goldin, & Rieske, 2014) and aggressive behavior (Hill et al., 2014) and can be disruptive to a classroom environment and affect a student's ability to engage with academic activities (McCurdy & Cole, 2014). Aggressive behavior is more prevalent among individuals with ASD compared to individuals with other developmental disabilities or who are typically developing (J. L. Matson & Rivet, 2008). Given their disruptive nature, externalizing behaviors can have a negative impact on not only the child, but those in the immediate environment, such as the family, teachers, and peers. Furthermore, the long-term persistence of challenging behavior can interfere with a variety of later outcomes, including postsecondary employment, education, and community living (Hendricks & Wehman, 2009). Supports specifically designed to address externalizing behavior are needed to support desired academic and behavioral outcomes for children with ASD both in school and beyond.

Adaptive functioning. Children with ASD demonstrate variation in adaptive functioning skills, which are skills people use to engage in everyday activities and care for themselves (McDonald et al., 2017). Adaptive functioning difficulties influence one's ability to carry out home living tasks, engage in activities in their community, communicate, and socialize with others (Kraepel, Kenworthy, Popal, Martin, & Wallace, 2017). Adaptive functioning is distinct from cognitive ability and is not a marker of an ASD phenotype (Kraepel et al., 2017). Compared to health conditions, functional

difficulties more strongly predict use of health services, limitations in daily activities, and strength of impact on an individual's family (Lollar, Hartzell, & Evans, 2012). A range in adaptive functioning skills has a differential impact for individuals with ASD compared to those with intellectual disability, cerebral palsy, and Down syndrome (Blacher & McIntyre, 2006). Adaptive functioning skills also have an impact on individuals' families. For example, deficits in social and communication skills have been consistently associated with parenting stress (e.g., Davis & Carter, 2008). Parents of children with ASD are at a higher risk for parenting-related and psychological stress compared to parents of children with other developmental disabilities and children who are typically developing (Estes et al., 2013). Given the impacts of child adaptive skills on families and the potential for life-long effects, supports are needed to facilitate adaptive skills for at-risk populations, such as children with ASD and their families.

ASD Symptoms, School, and Parent and Teacher Experiences

ASD reflects a diagnosis-specific combination of child difficulties (Centers for Disease Control and Prevention, 2014), suggesting a unique aspect of developmental risk related to an ASD diagnosis. Among a sample of parents of elementary-school children with ASD, the most commonly-reported concern was their child's social interaction skills, followed by problem behavior and academics (Azad & Mandell, 2016). Across cultural groups, parents of children with ASD report higher levels of behavior problems (e.g., compared to parents of children with intellectual disability, cerebral palsy, or Down syndrome; Blacher & McIntyre, 2006).

Child difficulties related to ASD affect the experiences of both parents and teachers (Garbacz & McIntyre, 2016). Compared to parents of children who are typically

developing and children with other disabilities, parents of children with ASD may experience higher levels of parenting stress (Hayes & Watson, 2013; Hodgetts, Nicholas, & Zwaigenbaum, 2013) and lower levels of psychological well-being (e.g., compared to parents of children with Down syndrome or fragile X syndrome; Abbeduto et al., 2004). Parent mental health also has important implications for school-based influences for children with ASD. Increased parenting stress among parents of children with ASD has been associated with decreased parent–teacher alliance strength (Krakovich, McGrew, Yu, & Ruble, 2016) and decreased family educational involvement (Semke, Garbacz, Kwon, Sheridan, & Woods, 2010). Given these associations, it is plausible that chronic stress may also interfere with productive and collaborative parent–teacher communication. In addition, parent mental health interventions improve outcomes for children at school (Lewallen & Neece, 2015). These findings suggest that parents of children with ASD have different experiences than parents of children with other developmental disabilities and that they may be at enhanced risk for mental health problems (e.g., stress), which may affect parent–teacher relationships, family educational involvement, and school-based outcomes for children.

Although relatively little research has examined the experiences of teachers of children with ASD in particular (Lecavalier, Leone, & Wiltz, 2006), a study by Azad and Mandell revealed that the most commonly-reported concern of teachers of elementary-school children with ASD was problem behavior, followed by social interaction skills and restricted, repetitive behaviors (2016). In addition, research suggests that teachers report more concerns regarding children with ASD compared to children with other developmental disabilities (Quintero & McIntyre, 2011).

Taken together, these findings suggest that parents and teachers report different experiences with children with ASD compared to children who are typically developing or children with other developmental disabilities. Although parent and teacher stress and well-being are not a main focus of the present study, these study findings contextualize parent and teacher reports of their experiences with children with ASD and underscore the importance of examining factors that contribute to positive outcomes for children with ASD.

Services and Support for Children With ASD

Children with ASD receive services such as intensive home-based support, vocational and rehabilitative services, educational services, and family-level supports (Mandell, Walrath, Manteuffel, Sgro, & Pinto-Martin, 2005). These services are delivered across a range of settings, including home and school (M. L. Matson, Mahan, & Matson, 2009). School-based services are likely to include special education and related services (Garbacz et al., 2016). Many children with ASD begin to receive services early in life, often younger than 3 years old (Friend, 2014). In addition, school-age children with ASD are four times as likely to receive services compared to peers with non-ASD diagnoses (Mandell et al., 2005), and they are at a high risk for having unmet service needs compared to children with other developmental disabilities (Casagrande & Ingersoll, 2017; Chiri & Warfield, 2012).

Given the range of settings for services and potential for lifelong service receipt (Colver et al., 2013), family involvement is critical for service delivery for children with ASD (National Research Council, 2001; MacDonald, Parry-Cruwys, Dupere, & Ahearn, 2014). Parents of children with ASD frequently consider themselves to be their child's

primary care coordinator, which includes responsibilities such as delivering interventions at home and collaborating with service providers, including teachers (Garbacz et al., 2016). Despite the prevalence of cross-setting service delivery and family involvement in the process, relatively little research has examined how educational services for children with ASD relate to various aspects of parent–teacher relationships (Garbacz et al., 2016). One study found that parent satisfaction with child services was positively associated with parent-reported family educational involvement and parent–teacher relationship quality (Garbacz et al., 2016). Although this area of research shows promise, more research is needed to identify relations between educational services received by children with ASD and aspects of parent–teacher relationships, which form a critical context for cross-setting supports.

Current and recommended practices. There are myriad service and intervention implications for parents and teachers of children with ASD based on the extant literature. Practices that are currently recommended for supporting children with ASD at home include parent training (McIntyre, 2008) and treatments involving families (Lovaas, 1987). In school contexts, research supports the utility of interventions utilizing visual schedules (Dooley, Wilczenski, & Torem, 2001) and self-monitoring strategies (Koegel, Matos-Freden, Lang, & Koegel, 2012).

Supports across settings are recommended for meeting the needs of children with ASD (National Research Council, 2001). Research on parent–teacher alliances among parents and teachers of children with ASD suggests that school-based resources can reduce stress for parents of children with ASD (Krakovich et al., 2016). Although interventions that support children through adult use of behavioral strategies are

recommended (Rogers, 1998), there is limited evidence supporting comprehensive cross-setting approaches that bring parents and teachers together in a partnership framework (Garbacz & McIntyre, 2016). Although the current investigation does not evaluate interventions per se, the intervention context is important to consider when understanding factors relevant to families and schools.

Theoretical framework. Cross-setting approaches to supporting children can be viewed in the framework of ecological systems theory (Bronfenbrenner, 1977), a model that emphasizes the interactions between an individual and various systems of their environment. This framework incorporates nested systems at several levels (e.g., microsystems, mesosystems, exosystems, and macrosystems). Microsystems are embedded within mesosystems, which are embedded within exosystems, all of which are embedded within macrosystems. Individuals come into contact with a range of systems throughout their lifetimes.

Microsystems consist of immediate environmental influences with which individuals interact directly (Thijs & Eilbracht, 2012). Prominent microsystems for children include the child's home environment, classroom environment, and the family with whom they live. Mesosystems consist of interactions among microsystems. A parent-teacher relationship is a prominent mesosystem (i.e., interactions between the child's family and school environments) that influence children's lives. Exosystems consist of formal and informal social structures. Although young children do not interact directly with exosystems, the exosystems influence micro- and mesosystems. Exosystems which may influence children include health insurance structures and government agencies. Macrosystems are broad cultural and subcultural patterns (e.g., social and

economic systems). Macrosystems are the overarching structures under which micro-, meso-, and exosystems nest and interact.

Ecological systems theory emphasizes the influence of environmental factors on children's success with various outcomes, including socially (Sheridan, Kratochwill, & Elliott, 1990) and behaviorally (McWayne, Hampton, Fantuzzo, Cohen, & Sekino, 2004). Interactions among microsystems (i.e., mesosystems) affect these outcomes (Iruka, Winn, Kingsley, & Orthodoxou, 2011). Specifically, ecological systems theory suggests that aspects of home and school environments and the interactions among those environments (including parent–teacher relationships) can support positive outcomes for children (Garbacz & McIntyre, 2016). Since risk is distributed across systems (Pianta & Walsh, 1996), it is critical to examine multiple systems and their interactions.

Ecologically-rooted examinations of factors that support student success should incorporate an understanding of not only the effects of microsystems on children, but on the mesosystemic interactions of those microsystems—particularly dyadic parent–teacher relationships (Glueck & Reschly, 2014). Home environments, school environments, and interactions between the two can support positive outcomes for children. This is particularly relevant for children with ASD, for whom cross-setting supports are recommended for supporting a range of outcomes (National Research Council, 2001). More research is needed to examine how these systems and interactions can contextualize the experiences of children with ASD.

Parent–Teacher Relationships

Relationships between families and schools are part of a student's learning environment and can serve as a protective factor for students at risk for adverse

academic, behavioral, and emotional outcomes (Glueck & Reschly, 2014; Iruka et al., 2011). Positive parent–teacher relationships—connections involving shared responsibility for child growth and development (Clarke, Sheridan, & Woods, 2009)—are associated with positive academic and behavioral outcomes for children (Garbacz et al., 2015; Hughes & Kwok, 2007; Iruka et al., 2011; Minke, Sheridan, Kim, Ryoo, & Koziol, 2014), as well as teacher perceptions of child academic competence (Hauser-Cram, Sirin, & Stipek, 2003). The parent–teacher relationship is a mesosystemic influence which consists of interactions between two prominent microsystems: a child’s home and school environments. Parent–teacher relationships are always present due to the connection between schools and families (Pianta & Walsh, 1996), but parent–teacher partnerships—relationships marked by collaboration and collective responsibility for outcomes (Reschly & Christenson, 2012)—are a particular type of relationship which require specific action to achieve (Glueck & Reschly, 2014). Relationships are characterized by joining, communication, and cohesion (Vickers & Minke, 1995), whereas partnerships are characterized by shared responsibility and collaboration (Reschly & Christenson, 2012). Recently, researchers have called for the examination of factors that facilitate collaborative family–school partnerships, rather than examining only protective factors (Glueck & Reschly, 2014). This research must begin by examining factors related to relationships, then delving into partnerships.

Parent–teacher relationships provide a supportive base for implementing academic and behavioral supports for children (Christenson & Sheridan, 2001). For example, bidirectional communication and mutual awareness of concerns can contribute to the development of effective strategies for supporting children (Iruka et al., 2011).

Home–school collaborative interventions have been most effective when parents and teachers utilize bidirectional communication between home and school (Cox, 2005). In addition, among efficacy evaluations of Conjoint Behavioral Consultation (CBC)—a family–school partnership intervention—teacher perceptions of the parent–teacher relationship partially mediated the effects of CBC on teacher-reported student adaptive skills and social skills (Sheridan et al., 2012) and partially mediated the effects of CBC on student school problems, including learning problems and attention (Sheridan, Witte, Holmes, Coutts, et al., 2017).

Developmental risk in the form of ASD symptomatology may influence family–school relationships (Garbacz et al., 2016) and, by extension, partnerships. In addition, little research has examined components of parent–teacher relationships among parents and teachers of children with ASD, much less child and family factors that influence those relationship components. This study will explore three main areas related to parent–teacher relationships: parent–teacher relationship quality, family educational involvement, and parental problem-solving competence. These factors will be explored in two ways: (a) through relative developmental risk (in the form of ASD symptomatology), and (b) as outcomes related to child and family variables.

Parent–teacher relationship quality. Parent–teacher relationship interactions are characterized by a quality separate from the interactions alone, with quality developing over time as the relationship progresses (Pianta & Walsh, 1996). High-quality parent–teacher relationships are characterized by a high degree of cohesion (how close two members of a dyad feel), adaptability (the extent to which members of a dyad change to meet situational needs), joining (shared expectations, support, and dependability), and

communication to the other member of the dyad (Vickers & Minke, 1995). Joining is a particularly important part of high-quality parent–teacher relationships and includes mutual trust, availability for problem-solving, and cooperation. In describing parent–teacher relationship quality, Minke and colleagues (2014) discussed how to conceptualize “healthy” parent–teacher relationships. Minke and colleagues suggested that healthy parent–teacher relationships can be influenced by beliefs about the importance of the relationship, commitment to maintaining a positive relationship, continuity across systems, and effectiveness of communication (Clarke et al., 2009), as well as trust (Clarke et al., 2009; Dinnebeil, Hale, & Rule, 1996) and connectedness (Minke et al., 2014).

Quality parent–teacher relationships are an important foundation for facilitating collaborative partnerships and promoting child outcomes (Christenson & Sheridan, 2001). However, relationship quality goes beyond the combination of the factors that comprise the relationship (Downer & Myers, 2009). For example, the quality of the relationship is distinct from relational components of communication (Minke et al., 2014). Compared to the frequency of parent–teacher contact, relationship quality can be more predictive of child outcomes (Fan & Chen, 2001).

High-quality mesosystemic influences, including high-quality parent–teacher relationships, are crucial for supporting at-risk children, as these influences can protect against risk factors (Glueck & Reschly, 2014) and increase the effectiveness of treatments (Clarke et al., 2009). Among parents and teachers of children with ASD—who face enhanced risk in social skills, behavior and academics—perceptions of parent–teacher relationship quality may have particular relevance for child outcomes. In line

with the call for a shift from focusing on the “why” of parent–teacher relationships to the “how” of the relational mechanisms (Glueck & Reschly, 2014), more work is needed to examine how parent–teacher relationship quality perceptions affect children with ASD.

Shared and independent perceptions of relationship quality. Perceptions of parent–teacher relationships can have an impact on observable behaviors (Thijs & Eilbracht, 2012). Parents and teachers may view the quality of their relationship with each other similarly or differently. Examining perceptions independently and in conjunction with each other may yield different types of information that can support development of effective approaches and practices. Parent perceptions, teacher perceptions, and the degree to which parent and teacher perceptions are shared can be conceptualized as separate variables that may have differential effects on child outcomes.

Independent perceptions. For parent–teacher dyads in which parents and teachers do not share perceptions of their relationship quality, a teacher’s perception may predict a child outcome, whereas the parent’s perception would not, suggesting that different perceptions may be guiding adult behavior (Minke et al., 2014). Understanding independent perceptions may, for example, shed light on parent or teacher expectations for the other party which may help clarify ways to collaborate on behalf of a child. Given the potential for differing perspectives of parents and teachers of children with ASD regarding other variables (e.g., related to child behavior; Azad, Reisinger, Xie, & Mandell, 2016), considering independent perceptions of parents and teachers of children with ASD could yield information regarding areas for future support, collaboration, or intervention.

Shared perceptions. The extent to which parents and teachers of children share perceptions of the quality of their relationship (i.e., relational congruence) may relate to child outcomes, particularly when both members of a parent–teacher dyad have positive perceptions of their relationship (Minke et al., 2014). Historically, the degree of parent–teacher congruence has been considered a factor in the success of parent–teacher relationships (Glueck & Reschly, 2014). In 1986, Pryzwansky indicated that little was known regarding (a) the extent of congruence needed in order to reach targeted consultation outcomes and (b) how to reach that level of agreement. Several decades later, most support for the importance of congruence in family–school relationship domains is theoretical rather than empirical (Glueck & Reschly, 2014). Clarke and colleagues (2009) cited congruence as one of the three core principles essential to positive, successful partnerships between families and schools. Congruence may facilitate positive student outcomes and can also be considered an outcome of positive parent–teacher collaboration; an understanding of shared perceptions may yield information on areas for parent–teacher relationships supports and interventions.

Examining relationship perceptions and agreement among parents and teachers of children with ASD. Most parent–teacher relationship literature examines perceptions of only one member of the dyad (Minke et al., 2014). Although these studies contribute to the parent–teacher relationship literature and can inform practices, an understanding of perceptions of both members of a dyad as well as the extent to which those perceptions are shared may facilitate a deeper understanding of how parent–teacher relationships function (Minke et al., 2014).

In addition, research on relational congruence in parent–teacher dyads has been limited to children with externalizing behavior concerns (Garbacz et al., 2015; Minke et al., 2014) and children from low-income families (Iruka et al., 2011). Although these findings have been promising and contribute to the literature base on the importance of shared perceptions in parent–teacher dyads, little overall dyadic research has examined parents and teachers of children with ASD (Azad, Kim, Marcus, Sheridan, & Mandell, 2016), who are at an increased risk for behavior difficulties and are likely to benefit from cross-setting supports which draw upon parent and teacher resources (M. L. Matson et al., 2009). More work is needed to examine independent relationship perceptions in both members of a parent–teacher dyad, as well as the extent to which both members of a dyad share their relationship perception, among parents and teachers of children with ASD and how these relationships change or remain static over time. There is virtually no work on the extent to which parent–teacher perceptions change over time. Thus, additional research is needed to examine longitudinal changes.

Family educational involvement. Family educational involvement—defined as “a multidimensional construct that encompasses parenting behaviors that support children’s learning” (Minke et al., 2014, p. 528) and hereafter referred to as family involvement—is a mesosystemic influence supported by ecological systems theory. Family involvement is composed of three domains: home-based involvement, school-based involvement, and home–school communication (Fantuzzo, Tighe, & Childs, 2000). Home-based involvement is characterized by activities parents engage in with their child at home. These activities can be academic (e.g., working on academic skills) or non-academic (e.g., keeping regular morning and bedtime routines). School-based

involvement is characterized by activities parents engage in at the school (e.g., volunteering in the classroom) or at school events (e.g., attending class trips). Home–school communication consists of direct interactions between the parent and the child’s teacher. Compared to school-based involvement and home–school communication, home-based involvement is likely to be less visible to teachers (Wilder, 2014).

Family involvement has been identified as a valuable protective factor influencing child outcomes (Shumow, Vandell, & Posner, 1999; Wang, Deng, & Yang, 2016).

Among children without ASD, family involvement has been associated with higher levels of academic achievement (Fan & Chen, 2001; Jeynes, 2011; Kohl, Lengua, & McMahon, 2000; Manz, Fantuzzo, & Power, 2004) and lower levels of problem behavior (Domina, 2005). Research suggests that family involvement may be a malleable construct; in other words, it can be changed through intervention (Stormshak, Dishion, Light, & Yasui, 2005). In a study examining the effects of CBC among parents and teachers of children with disruptive behaviors, intervention contributed to significant increases in home–school communication (Sheridan, Ryoo, Garbacz, Kunz, & Chumney, 2013).

Family involvement is a promising construct with regard to children with ASD. For example, family involvement is likely to enhance treatment effectiveness for children with ASD (M. L. Matson et al., 2009), for whom cross-setting supports are recommended. In addition, developmental risk among children with ASD has been negatively associated with family involvement and parent–teacher relationship quality perceptions (Garbacz et al., 2016). Although research supports the relation between family involvement and desired outcomes for children with ASD (e.g., Garbacz et al., 2016), this work is limited. Given the unique risks and needs for children with ASD,

particularly in the area of cross-setting supports, more work is needed to examine the relative risk of ASD symptomatology for family involvement, as well as which child and family variables may influence family involvement for parents of children with ASD. These findings may yield information to support educators in meeting the needs of children with ASD (e.g., through universal and targeted supports).

Parental competence in problem-solving. Self-efficacy is defined as one's thoughts related to their role and potential for influence in a given situation, which in turn affects one's behavior in that situation (Bandura, 1977). Strong self-efficacy is linked to higher goals and commitment to meeting goals (e.g., Bandura, 1989; Locke, Frederick, Lee, & Bobko, 1984). Parent self-efficacy has been linked with child adjustment, socioemotional skills, and academic achievement (Jones & Prinz, 2005). In the area of education, Hoover-Dempsey and Sandler (1997) connected self-efficacy to parental involvement, suggesting that parent self-efficacy affects how and when a parent engages in educational involvement activities.

Research suggests that parent self-efficacy affects child functioning indirectly through parenting behaviors (Jones & Prinz, 2005). One important area of parent self-efficacy in relation to child functioning is parental competence in problem solving, which is the extent to which parents believe in their ability to solve problems related to their child's education (Sheridan et al., 2013). Problem solving can be viewed as a form of communication (Amatea, Daniels, Bringman, & Vandiver, 2004) and is marked by specific skills (Sheridan, Witte, Holmes, Wu, et al., 2017). Problem solving involves process components (a four-step process in which the partners identify the problem, identify why it is occurring, make and implement a plan to solve the problem, and

evaluate if the plan worked) and relational components (clear communication and understanding how the process impacts the other person; Azad, Kim, et al., 2016; Bergan, 1977; Bergan & Kratochwill, 1990). In addition to a sense of self-efficacy, parental problem-solving competence requires a degree of parental knowledge about the problem-solving process. In a study of parent–teacher dyads, researchers found that parents and teachers of children with ASD demonstrated the use of relatively few elements of the problem-solving process, that teachers demonstrated a higher level of problem-solving behaviors compared to parents, and that both parents and teachers demonstrated fewer problem-solving behaviors than they reported demonstrating (Azad, Kim, et al., 2016).

Research suggests that problem-solving competence is malleable through collaborative interventions such as CBC. Studies using group and single-case designs found that when parents participated in intervention, they reported increases in problem-solving competence (Garbacz & McIntyre, 2016; Sheridan et al., 2013; Sheridan, Witte, Holmes, Wu, et al., 2017). In one study, the relation between parental competence in problem-solving and child outcomes was family risk (Sheridan et al., 2013). The findings suggest that parent problem-solving competence can be changed through parent–teacher partnership interventions, that it has implications for child outcomes, and that family risk can influence the strength of those outcomes.

For children with disabilities, including ASD, collaborative approaches to problem-solving are a critical form of communication for addressing and identifying strategies to resolve issues at home and school (Azad, Kim, et al., 2016). For parents and children with ASD, parent–teacher problem-solving processes can have an impact similar to that of a direct intervention. It can be intervened upon and, when improved, can

positively generalize to problem-solving for that child and their siblings. This suggests that parental competence in problem-solving holds particular importance for children with ASD. However, little research has examined problem solving for this population (Azad, Kim, et al., 2016). One study examining the efficacy of CBC for parents and teachers of children with ASD found that parental problem-solving competence increased from pre- to post-intervention (Garbacz & McIntyre, 2016). Given the limited literature on parental problem-solving competence among parents of children with ASD and the potential for this construct as both a risk and malleable factor, more work is needed to examine the relative developmental risk related to ASD, as well as how parental problem-solving competence for these families relates to other child and family variables. These findings may yield information on risk indicators and malleable factors for enhancing parent–teacher relationships and cross-setting supports for children with ASD.

Family socioeconomic status. Given the sparse literature examining parent–teacher relationships among parents and teachers of children with ASD, more work is needed to examine family variables which may serve as risk factors for poor parent–teacher relationship outcomes (Casagrande & Ingersoll, 2017). One possible factor area is economic hardship. Children with disabilities are more likely than their peers without disabilities to live in economic hardship, which impacts opportunities related to education, occupation, and resources, and can have a negative impact on development (Murray, Doren, Gau, Zvoch, & Seeley, 2015). Three family demographic variables which may be particularly important are parental education, parental occupation, and family income—the three variables which are commonly measured together to comprise socioeconomic status (SES; Kohl et al., 2000).

Parental education. In prior research, parental education has been examined extensively in relation to family involvement. Parental education has been associated with higher educational involvement at school and home (Dauber & Epstein, 1989; Eccles & Harold, 1996). Parental level of educational attainment may influence the type and extent of educational involvement (Lareau, 1987). Research suggests that higher maternal educational attainment might reflect a higher degree of knowledge about educational systems (Stevenson & Baker, 1987) or a stronger commitment to ensuring child educational attainment (Baker & Stevenson, 1986).

However, findings regarding significance in relation to specific domains of involvement are equivocal. For example, Manz et al. (2004) found that caregiver educational attainment was positively associated with home-based involvement and home-school communication, whereas Fantuzzo et al. (2000) found that caregiver educational attainment was positively associated with school-based involvement. Regardless of underlying cause, higher parental education has consistently been linked to family involvement in children's education (Fantuzzo et al., 2000), and it has implications for service delivery outcomes for children with ASD (Casagrande & Ingersoll, 2017). Although parental education has been linked to important family involvement domains, a comprehensive review of several databases (e.g., Web of Science) yielded little research that addressed questions regarding how parental education relates to family involvement and other aspects of parent-teacher relationships (e.g., parent-teacher relationship quality perceptions and parent problem-solving competence) in families of children with ASD. One study identified in this search found that among

parents of elementary-school children with ASD, higher developmental risk (i.e., ASD symptoms) was negatively associated with family involvement (Garbacz et al., 2016).

Parental occupation. Parental employment is a key factor in SES. Research suggests that parental occupation is associated with parental expectations for children's educational futures (Koustourakis, Asimaki, & Spiliopoulou, 2016). In addition, aspects of parental occupation affect opportunities to be involved in children's education. For example, families with little flexibility in their work hours face a time-based barrier to involvement in school and learning activities (Haley-Lock & Posey-Maddox, 2016). Although this literature generally supports associations between parental occupation and educational involvement, little is known regarding how parental occupation as a particular socioeconomic construct relates to specific aspects of parent-teacher relationships (e.g., parent-teacher relationship quality perceptions and parent problem-solving competence), and much less so for families of children with ASD. More work is needed to examine these relations in order to identify risk factors for family engagement supports.

Family income level. Across a range of populations, family income level has been linked to family involvement (Camacho-Thompson, Gillen-O'Neel, Gonzales, & Fuligni, 2016; Fantuzzo et al., 2000; Kelly, 2004; Manz et al., 2004). For example, among a sample of parents of Mexican-American adolescents, financial strain predicted lower levels of family involvement at school (Camacho-Thompson et al., 2016). In particular, family income is thought to be associated with parental involvement (Eccles & Harold, 1996; Grolnick, Benjet, Kurowski, & Apostoleris, 1997). Higher family income may be associated with access to a range of influences linked to SES, such as time and energy for

educational involvement (Hoover-Dempsey et al., 2005), economic stress (Stevenson & Baker, 1987), and disposable income that can be used to supplement child care needs and enhance involvement activities (e.g., transportation arrangements, educational purchases, hiring tutors; Lareau, 1987). Lower-income families face increasing difficulties related to time constraints associated with work schedules (Waanders, Mendez, & Downer, 2007), which may affect flexibility in work hours and access to opportunities to engage in school- and home-based involvement activities (e.g., attending school meetings, assisting with home-based learning activities). Although research supports associations among family income level, parent–teacher relationships, and child outcomes in various combinations, what is missing from this literature is an exploration of the role of other aspects of parent–teacher relationships (e.g., parent–teacher relationship quality perceptions and parental problem-solving competence) and how family income relates to family involvement for children with ASD.

Examining factors separately. Historically, the three components of SES (parental education, family income level, and parent occupation) have frequently been examined together (Kohl et al., 2000). Although these examinations have yielded important findings, researchers have called for separate examinations of these variables (Greenberg, Lengua, Coie, Pinderhughes, & The Conduct Problems Prevention Research Group, 1999; Kohl et al., 2000), suggesting important unique contributions of these variables associated with SES. Given the paucity of research related to these variables among families of children with ASD, more work is needed to examine these relations.

Perceived social status. Beyond the three external components of SES, perceived social status—an individual’s “sense of their position in the socioeconomic hierarchy” (E.

Goodman, Maxwell, Malspeis, & Adler, 2015, p. e633)—is a key component of socioeconomic experience. Perceived social status has been predominantly examined in relation to health variables and has been linked to increased health risk (Seeman, Stein Merkin, Karlamangla, Koretz, & Seeman, 2014) and can be considered an indicator of social risk, with risk varying depending on the outcome and ethnic identity. For example, perceived social status has been demonstrated to have a stronger association for non-Hispanic/Latino White adolescents than Black adolescents, and for depressive symptoms rather than body mass index (E. Goodman et al., 2015).

There is a dearth of research examining perceived social status among families of children with disabilities. Much of the extant literature focuses on perceived stigma (e.g., Green, 2003), which is one aspect within the broader construct of perceived social status. One study examining families of children with ASD found that higher perceived social status has been associated with more positive family functioning and lower levels of parenting stress (Manning, Wainwright, & Bennett, 2011). This association was also influenced by ethnic identity: On average, European-American parents rated their social status higher than Latino parents rated their social status. Although the present study did not examine race as a variable, these findings suggest that perceived social status is influenced by race, which provides important context for contextualizing these perceptions among parents of children with ASD.

Despite the documented importance of perceived social status as a socioeconomic risk indicator with implications for various health outcomes, research has not examined it in relation to parent–teacher relationship variables, much less for parents and teachers of children with ASD, who are at increased developmental risk. More work is needed to

examine how perceived social status relates to parent–teacher relationships in this population. Findings may help inform practices for identifying at-risk families for family engagement efforts in schools.

Study Purpose, Research Questions, and Hypotheses

Children with ASD can present with social skill and problem behavior concerns that are challenging for parents (Hodgetts et al., 2013) and teachers (Quintero & McIntyre, 2011), and general research supports the role of collaborative parent–teacher relationships in improving service delivery and child outcomes for at-risk students using cross-setting supports (e.g., Sheridan et al., 2013). However, limited research has examined relationship variables for parents and teachers of children with ASD (Azad, Kim, et al., 2016; Garbacz et al., 2016). Thus, exploratory research examining parent–teacher relationship factors in relation to developmental risk, child and family variables, and dyadic perceptions may yield an understanding of how these relations influence children with ASD, their parents, and their teachers. Specifically, examining how (a) developmental risk related to ASD symptomatology relates to parent–teacher relationship components, (b) child and family variables relate to parent–teacher relationship components, and (c) parents and teachers view their relationship with each other may provide useful information for understanding how ASD symptoms relate to parent–teacher relationship variables and for identifying ways to support child outcomes.

The present study examined (a) developmental risk and (b) child, family, and service variables in relation to perceptions of parent–teacher relationship variables, as well as (c) dyadic perceptions of relationship quality. The study was exploratory in nature and aimed to examine relations among various combinations of child, family, and teacher

variables. The study addressed the following research questions and proposed the following hypotheses (based on the previously reviewed literature and conceptual framework):

1. Among parents of elementary-aged children with ASD, does engagement vary as a function of ASD symptom severity (mild vs. moderately-severe symptoms)?

a. Does parent-reported parent–teacher relationship quality vary depending on level of child ASD symptom severity?

It was hypothesized that parent–teacher relationship quality would be lower for families of children with higher ASD symptoms (i.e., lower relationship quality reports for families of children with moderately-severe ASD symptoms; Garbacz et al., 2016).

b. Does parent-reported family educational involvement vary depending on level of child ASD symptom severity?

It was hypothesized that family educational involvement would be lower for families of children with higher ASD symptoms (i.e., lower family involvement reports for families of children with moderately-severe ASD symptoms; Garbacz et al., 2016).

c. Does parent-reported competence in problem-solving vary depending on level of child ASD symptom severity?

Due to the paucity of research examining parental problem-solving competence and child ASD symptom severity, the following exploratory hypothesis was created: Based on parent–teacher relationship intervention research focusing on children with externalizing behavior (Sheridan et al.,

2013), it was hypothesized that parental problem-solving competence would be lower for families of children with higher ASD symptoms (i.e., lower parental problem-solving competence for families of children with higher ASD symptoms).

2. What child, family, and educational service variables predict parent perceptions of parent–teacher relationship beliefs and behaviors?

a. Which child variables (adaptive functioning, ASD, problem behavior) predict parent perceptions of parent–teacher relationship beliefs and behaviors (parent–teacher relationship quality, family educational involvement, parent problem-solving competence)?

It was hypothesized that child risk variables would be negatively associated with parent–teacher relationship quality and family involvement (e.g., Garbacz et al., 2016). Given a dearth of research on parent problem-solving competence in relation to ASD symptoms, this outcome variable was exploratory.

b. After controlling for child ASD severity, which family variables (family income, parent education, parent occupation, and perceived social status) predict parent perceptions of parent–teacher relationship beliefs and behaviors (parent–teacher relationship quality, family educational involvement, parent problem-solving competence)?

Extant literature is equivocal about associations between family variables and parent–teacher relationships for children with ASD. For example, parental education has been positively associated with involvement

(Eccles & Harold, 1996), yet prior ASD research findings were not consistent with that prior result (Garbacz et al., 2016). Given these inconsistent findings, this research question was exploratory.

- c. After controlling for child ASD severity, do children’s educational services predict parent–teacher relationship beliefs and behaviors (parent–teacher relationship quality, family educational involvement, parent problem-solving competence)?

Due to the paucity of research examining educational services in relation to parent–teacher relationship beliefs and behaviors, the following exploratory hypothesis was created based on the study conceptual framework: Families of children with a higher degree of service receipt would report a higher degree of parent–teacher relationship behaviors (e.g., more involvement).

- d. Based on 2A–2C, which predictors remain significant? After considering the findings from the previous models, identify the most parsimonious model predicting parent–teacher relationship beliefs and behaviors.

As this was a data-driven question, there was no hypothesis.

3. Using follow-up data gathered from a subsample of families approximately 2 years after Wave 2 (Wave 3), how do parents and teachers of children with ASD report their perceptions of parent–teacher relationship quality?
 - a. How do parents of children with ASD report the quality of their relationship with their child’s teacher?

Based on research examining parents of children with ASD (Garbacz &

McIntyre, 2016) and children with externalizing behavior (Minke et al., 2014), it was hypothesized that parents of children with ASD would report generally positive relationships with their child's teacher.

- b. How do teachers of children with ASD report the quality of their relationship with their student's parent?

Based on research examining teachers of children with externalizing behavior (Minke et al., 2014), it was hypothesized that teachers of children with ASD would report generally positive relationships with their student's parent.

- c. Among parent-teacher dyads of children with ASD, to what extent do parents and teachers share their perceptions of relationship quality?

Based on prior literature examining other populations (Garbacz et al., 2015; Minke et al., 2014), it was hypothesized that parents and teachers would generally report high levels of agreement in perceptions of their relationships with each other.

- d. How do Wave 2 parent relationship beliefs and behaviors relate to Wave 3 shared and independent perceptions of parent-teacher relationship quality?

As this was an exploratory question, there was no hypothesis.

CHAPTER II

METHOD

This project consisted of the second and third waves of the Oregon Early Autism Project (OEAP; L. L. McIntyre, PI), a longitudinal descriptive study designed to examine child, family, and community variables associated with early identification and treatment of ASD in the Northwestern United States (McIntyre & Barton, 2010). The first two research questions focused on Wave 2 data only (OEAP-2). The third research question focused on both Wave 2 and Wave 3 (OEAP-3) data. Wave 2 participants included (a) families who participated in Wave 1 (OEAP-1), (b) families who participated in Wave 2 only, and (c) children of these families. Wave 3 participants included (a) families who participated in Wave 2, (b) teachers of Wave 2 children, and (c) Wave 2 children.

Wave 2

Participants

Participants included primary caregivers (i.e., parents) of children previously identified as having a special education eligibility of autism. Children did not provide assent or complete measures. Parents were the primary participants referencing target children with ASD.

Screening and recruitment. To meet eligibility criteria at Wave 1, children were 6 years old or younger (M age = 4.5 years), had a prior diagnosis of ASD, and lived with their parent for at least one year. Families were recruited through early intervention and early childhood education programs. Interested parents contacted the research office in response to invitation letters and were screened for eligibility. Approximately three years after Wave 1 data collection, families were re-contacted and invited to participate in

Wave 2 data collection (see Appendix A for recruitment and scheduling materials). The researchers successfully reached 60% of the Wave 1 sample; 86% of re-contacted caregivers agreed to participate in Wave 2 data collection. In addition to the Wave 1 caregivers who agreed to participate in Wave 2 ($n = 40$), an additional 35 caregivers were recruited through local school districts and screened using the Wave 1 criteria. Seven families were removed from the project sample due to homeschooling, resulting in a final Wave 2 sample of 68 families for the present study (M child age = 7.72 years).

Parents. Among Wave 2 caregivers ($N = 68$), the majority were the child's biological mother ($n = 59$; 86.80%); remaining parents were the child's biological father ($n = 6$; 8.80%), adoptive mother ($n = 2$; 2.90%), or foster mother ($n = 1$; 1.50%). The majority of parents identified as White/Caucasian ($n = 56$; 82.40%); the remaining parents identified as Hispanic/Latino ($n = 4$; 5.90%), Asian/Asian American ($n = 1$; 1.50%), Native American/Alaska Native ($n = 1$; 1.50%), Pacific Islander/Hawaiian ($n = 1$; 1.50%), or more than one race or ethnicity ($n = 4$; 5.90%), or they reported they did not know their race or ethnicity ($n = 1$; 1.50%). See Table 1 for full parent participant demographics.

Children. At Wave 2, children were an average of 7.72 years old ($SD = 1.59$) and were in elementary school (Kindergarten through fifth grade). The majority of children were boys ($n = 56$; 82.40%). Approximately 75% of parents ($n = 51$) identified their child as White/Caucasian, with the remaining children identified as Hispanic/Latino ($n = 3$; 4.40%), Asian/Asian American ($n = 1$; 1.50%), Native American/Alaska Native ($n = 1$; 1.50%), or more than one race or ethnicity ($n = 12$; 17.60%). See Table 2 for full child participant demographics.

Table 1

Demographic Information for Wave 2 and Wave 3 Parent Participants

	Wave 2 (N = 68)		Wave 3 (N = 22)	
	<i>n</i>	%	<i>n</i>	%
Age in years – <i>M</i> (<i>SD</i>)	38.12 (6.48)		40.64 (6.06)	
Gender (female)	61	89.70	19	86.40
Race/ethnicity (White/Caucasian)	56	82.40	21	95.50
Employment status (employed)	39	57.35	15	68.20
Education level				
Less than high school/GED	1	1.50	1	4.50
High school/GED	13	19.10	2	9.10
Some college	31	45.59	8	36.30
Bachelor's degree	16	23.50	7	31.80
Graduate/professional	7	10.30	4	18.20
Family income in thousands of \$ – <i>M</i> (<i>SD</i>)	52.20 (41.00)		70.90 (38.25)	

Table 2

Demographic Information for Wave 2 and Wave 3 Child Participants

	Wave 2 (N = 68)		Wave 3 (N = 22)	
	<i>n</i>	%	<i>n</i>	%
Child age in years – <i>M (SD)</i>	7.72 (1.59)		9.45 (1.99)	
Child gender (male)	56	82.40	20	90.90
Child race/ethnicity (White/Caucasian)	51	75.00	17	77.30
Currently receive special education	66	97.10	21	95.50
Educational setting				
Regular class, no special education	2	2.90	2	9.10
80% or more in general education	27	39.70	10	45.50
40–79% in general education	10	14.70	4	18.20
Less than 40% in general education	24	35.30	5	22.70
Private school	2	2.90	4	4.50
Parentally placed home school	3	4.40	0	0.00
Adaptive behavior ^a – <i>M (SD)</i>	75.12 (13.88)		74.82 (19.41)	

Table 2 continued

Demographic Information for Wave 2 and Wave 3 Child Participants

	Wave 2 (N = 68)		Wave 3 (N = 22)	
	<i>n</i>	%	<i>n</i>	%
ASD symptoms ^b – <i>M</i> (<i>SD</i>)	34.04 (6.63)		32.32 (8.15)	

^aVineland-II Adaptive Behavior composite score, Standard Score (*M* = 100, *SD* = 15). ^bCARS 2 total score, total possible score range of 15–60.

Procedure

Parents completed a mail-home packet of questionnaires in advance of an in-person interview. The packet included a consent form (see Appendix B) and questionnaires covering the parent's relationship with their child's teacher, the family's educational involvement, the parent's perception of their problem-solving competence, and their child's externalizing behavior. Parent packets took approximately 1 hr to complete. Parents handed their completed packets to the interviewer during the in-person interviews. In-person interviews were scheduled at a day and time that was convenient for a parent, and each interview was conducted by two trained research assistants. Interviews took place in the family's home or in a clinic room in the project office space. The interview included a demographics and services questionnaire (Appendices C and D, respectively), adaptive behavior assessment, and ASD symptomatology assessment. Interviews took approximately 1.5–2 hr to complete. Parent participants received \$50 upon completion of both the packet and interview.

Parent-Report Measures

The mail-home packets included measures assessing parent perception of parent–teacher relationship quality (Appendix E), family involvement (Appendix F), parent problem-solving competence (Appendix G), and child externalizing behavior (Appendix H). The in-person interviews were conducted by trained research assistants and included measures assessing family variables, child adaptive functioning, child ASD symptomatology, and educational services delivered to the child. Child and family demographic variables were collected through the in-person interview for the purposes of describing the study sample.

Child and family demographic variables. Child and family demographic variables were assessed using a questionnaire, administered by a research assistant to parent participants during in-person interviews. Demographic variables assessed for descriptive purposes included child variables (age, gender, race/ethnicity, special education eligibility, special education services received, current grade level in school), parent variables (age, gender, race/ethnicity, employment status, parental education level, family income level), and one child–parent variable (relationship between the child and the parent).

Family variables. Family variables of interest included parental education, parental occupation, family income level, perceived social status, perception of parent–teacher relationship quality, family involvement, and parent problem-solving competence.

Parental education. Parental education was assessed using an item on the demographic questionnaire. Research assistants asked parents to report on the total number of years of education they completed. Higher scores indicated a higher level of educational attainment. The total number of years of education was included in analyses as a continuous variable. Information on the last level of formal education the child’s parent completed (i.e., highest degree obtained; 1 = *No formal schooling*; 2 = *7th grade or less*; 3 = *Junior high completed*; 4 = *Partial high school [at least 1 year]*; 5 = *High school graduate/GED certificate*; 6 = *Partial college [at least 1 year]*; 7 = *Specialized training*; 8 = *Junior college/Associates degree [2 years]*; 9 = *Standard college or university graduation [4 years]*; 10 = *Graduate professional training, graduate degree*) was collected for descriptive purposes and included in analyses as a categorical variable.

Parental occupation. Parental occupation was assessed using an item in the demographic section of the in-person interview. Research assistants asked parents to report on the average number of hours per week they worked in the month leading up to the interview. Higher scores indicated more work hours. The average number of hours worked per week in the previous month was included in analyses as a continuous variable. Information on parents' current employment status (1 = *Self-employed*; 2 = *Full time employment*, 3 = *Part time employment*, 4 = *Seasonal*, 5 = *Unemployed*, 6 = *Disabled*, 7 = *Temporary layoff*, 8 = *Full time homemaker*, 9 = *Retired*, 10 = *Student [not working]*, 11 = *Other [describe: ____]*) and the number of current jobs they currently held were collected for descriptive purposes and included in analyses as categorical and continuous variables, respectively.

Family income level. Family income level was assessed using an item in the demographic section of the in-person interview. Research assistants asked parents to indicate their household income. Parents had the choice to report on their weekly, bi-weekly, monthly, or annual income. An annualized income for each family was calculated by research assistants. Higher scores indicated a higher income level. Annual income was included in analyses as a continuous variable. For the purposes of describing the sample, annual income coupled with the number of adults and children living in the household were used to calculate whether the family's income level was at, under, or over the poverty threshold and met Medicaid eligibility.

Perceived family social status. Perceived family social status was assessed using an item in the demographic section of the in-person interview. This item was developed for another research project being conducted at the Prevention Science Institute and

adapted from the MacCarther Scales of Subjective Social Status (E. Goodman et al., 2001). Research assistants asked parents to indicate their perception of how much money their family had (1 = *Not enough to get by*, 2 = *Just enough to get by*, 3 = *We only have to worry about money for fun or extras*, 4 = *We never have to worry about money*). Higher scores reflected a higher perceived social status. The item score was included in analyses as a categorical variable.

Parent perception of parent–teacher relationship quality. Parent perception of parent–teacher relationship quality was assessed using parent version of the Parent–Teacher Relationship Scale-II (PTRS-II; Vickers & Minke, 1995). Parents completed the paper-and-pencil scale in the mail-home packet. Parents rated 24 items (e.g., “We understand each other.”) using a 5-point scale indicating the frequency of certain components of the parent–teacher relationship (1 = *Almost Never* to 5 = *Almost Always*). The total PTRS-II score was comprised of two subscales: Joining and Communication. Higher scores reflected perception of a higher-quality relationship. The total score (i.e., the sum of all 24 items) was included in analyses as a continuous variable. Strong evidence supports the internal consistency reliability of the parent version of the PTRS-II (e.g., $\alpha = .93$; Minke et al., 2014). The PTRS-II has largely been used with parents and teachers of elementary-school children with behavioral concerns (Kim, Sheridan, Kwon, & Koziol, 2013; Minke et al., 2014), often in CBC intervention studies (Garbacz et al., 2015; Sheridan et al., 2012). The PTRS-II has been adapted for use in studies examining academic achievement among elementary-school students (Hughes & Kwok, 2007; Hughes, Gleason, & Zhang, 2005). In the present sample, $\alpha = .95$.

Family involvement. Parent report of their involvement in their child’s education was assessed using the Family Involvement Questionnaire-Elementary version (FIQ-E; Manz et al., 2004). Parents completed the paper-and-pencil scale in the mail-home packet. Parents rated 46 items (e.g., “I volunteer in my child’s classroom.”) using a 4-point scale indicating the frequency with which parents engage in each involvement behavior or activity (1 = *Rarely* to 4 = *Always*). The total FIQ-E score was comprised of three subscales: Home-Based Involvement, School-Based Involvement, and Home–School Communication. Higher scores reflected a greater degree of involvement. The total score (i.e., sum of all 46 items) was included in analyses as a continuous variable. Strong evidence supports the internal consistency reliability of each FIQ-E subscale (Home-Based Involvement $\alpha = .88$; School-Based Involvement $\alpha = .84$; Home–School Communication $\alpha = .91$; Manz et al., 2004). The FIQ-E has been used in studies examining elementary school children with externalizing behavior (McCormick, Cappella, Connor, & McClowry, 2013; Minke et al., 2014; Sheridan et al., 2013), including disruptive behavior (Semke et al., 2010). The FIQ-E was also used in a study examining children with ASD (Garbacz et al., 2016). In the present sample, $\alpha = .94$.

Parental competence in problem-solving. Parent perception of their problem-solving competence was assessed using the Parent Competence in Problem-Solving Scale (PCPS; Sheridan, 2004). Parents completed the paper-and-pencil scale in the mail-home packet. Parents rated eight items (e.g., “I have identified specific things that can be changed to help my child’s learning and behavior”) using a Likert-type scale indicating their agreement with various statements regarding their problem-solving skills (1 = *Disagree Very Strongly* to 6 = *Agree Very Strongly*). Although the measure was designed

with a 6-point scale, due to an error in creating the teleform, one response option (5 = *Agree*) was omitted from the packet. The project data manager created a Statistical Package for the Social Sciences (SPSS) syntax to average values on the 5-point scale. PCPS mean scores were dichotomized to create a categorical variable (0 = *disagree*, 1 = *agree*); due to the teleform error resulting in a 5-point scale rather than the intended 6-point scale, the resulting categorical variable was included in analyses. Evidence supports the internal consistency reliability of the PCPS (e.g., $\alpha = .88$; Sheridan et al., 2013); however, given the response option error, the version of the scale used in this study does not have published psychometric evidence. The PCPS has been used in CBC intervention studies, including studies examining parents and teachers of children with ASD (Garbacz & McIntyre, 2016) and children with disruptive behavior concerns (Sheridan et al., 2012; Sheridan, Witte, Holmes, Wu, et al., 2017).

Child variables. Child variables of interest included adaptive functioning, externalizing behavior, ASD symptomatology, and educational services received.

Adaptive functioning. Child level of adaptive functioning was assessed using the Survey Interview Form of the Vineland Adaptive Behavior Scales 2nd Edition, a norm-referenced individual interview measure of adaptive behavior (Vineland-II; Sparrow, Cicchetti, & Balla, 2005a). Research assistants administered the Vineland-II during the in-person interview as a semi-structured interview (i.e., assessors used items in the protocol to ask questions and obtain a basal and ceiling within a category). Parents reported on whether their child never, sometimes, or usually performed certain behaviors without help or prompting. These response options mapped onto a three-point scale in the interviewer protocol (0 = *Never*, 1 = *Sometimes or Partially*, 2 = *Usually*). A total of 383

items rated child adaptive functioning in three domains: Communication (e.g., “Says at least 50 recognizable words”), Daily Living Skills (e.g., “Puts shoes on correct feet; does not need to tie laces”), and Socialization (e.g., “Shows preference for certain people and objects [for example, smiles, reaches for or moves toward person or object, etc.]”).

Scores from the domains were combined to comprise the Adaptive Behavior Composite, which was reported as a standard score ($M = 100$, $SD = 15$). Higher scores reflected a higher level of adaptive functioning. The Adaptive Behavior Composite was included in analyses as a continuous variable. Strong evidence supports the internal consistency reliability of the Vineland-II (all age-based Adaptive Behavior Composite α values equal to or greater than .86; Sparrow, Cicchetti, & Balla, 2005b). The Vineland-II was normed on a sample of 3,695 individuals between the ages of birth from 90 years. The Vineland-II was developed for use with a range of populations and has been recommended for use as an adaptive behavior measure for children with ASD (McConachie et al., 2015).

Externalizing behavior. Child level of externalizing behavior was assessed using the Strengths and Difficulties Questionnaire (SDQ; R. Goodman, 2001). Parents completed the paper-and-pencil scale in the mail-home packet. Parents rated the extent to which various behavior were true of their child on 25 items across five factors: emotional symptoms (e.g., “Many fears, easily scared”), conduct problems (e.g., “Often loses temper”), hyperactivity-inattention (e.g., “Constantly fidgeting or squirming”), peer problems (e.g., “Rather solitary, prefers to play alone”), and prosocial behavior (e.g., “Considerate of other people’s feelings”). Responses were provided on a 3-point scale (1 = *Not True* to 3 = *Certainly True*). At the time of teleform scoring (i.e., before creating factor and combined scores), several items were reverse-scored such that higher scores

for all items and factors always reflected a greater degree of difficulty (Youth in Mind, 2016). Factor scores for emotional symptoms, conduct problems, hyperactivity-inattention, and peer problems were summed to create the Total Difficulties score (R. Goodman, 1997, 2001), which was included in analyses as a continuous variable. Psychometric work (R. Goodman, 2001) supports satisfactory internal consistency of the Total Difficulties score ($\alpha = .73$) and each factor individually (emotional symptoms $\alpha = .67$; conduct problems $\alpha = .63$; hyperactivity-inattention $\alpha = .77$; peer problems $\alpha = .57$). The SDQ has been used in a range of studies, including studies examining children with autism (Charman, Ricketts, Dockrell, Lindsay, & Palikara, 2015; Findon et al., 2016; Reed & Osborne, 2013), children with language impairments (Charman et al., 2015), and children at risk for social (pragmatic) communication disorder (Mandy, Wang, Lee, & Skuse, 2017). In this sample, α values for Total Problem subscales ranged from .50–.70.

ASD symptomatology. Child ASD symptomatology was assessed using the Childhood Autism Rating Scale – 2nd edition, a behavior rating scale of ASD symptoms (CARS 2; Schloper, Van Bourgondien, Wellman, & Love, 2010). This study utilized the parent report option for recording responses. Research assistants administered the scale during the in-person interview with parents. The scale was delivered as a semi-structured interview; assessors asked questions based on the protocol and obtain a rating for each item. Based on parent report, research assistants rated a child’s ASD symptoms on 15 items (e.g., “Taste, Smell, and Touch Response and Use”). Scores indicated the extent to which a child’s behavior compares to that of a same-age, typically developing child. Item ratings were provided on a 7-point scale (exact anchor labels vary by item; in general, 1 = *Within normal limits for that age* and 4 = *Severely abnormal for that age*). Higher scores

reflected stronger symptom severity. Item scores were summed to comprise an overall score (range = 15–60). For this study, scores were dichotomized based on publisher-reported cutoffs for scores in order to create a *mild symptoms* group and a *moderately-severe symptoms* group. This variable was included in several analyses as a categorical variable; the total sum score was included in remaining analyses as a continuous variable. The CARS 2 has strong internal consistency reliability ($\alpha = .93$; Vaughan, 2011). The CARS 2 was developed for use with children with ASD or who are at risk for ASD, and is a measure recommended for examining ASD symptom severity (McConachie et al., 2015). In the present sample, $\alpha = .83$.

Educational services. Educational services received by children was assessed using items to address two aspects of service receipt: total types of educational services received and monthly service dosage. Research assistants administered the items during the in-person interview with parents. Research assistants asked parents to report on whether their child received any services from a particular list and, if so, an average of the number of monthly sessions the child received for that service in the six months leading up to the interview. Variables were calculated after the interview. The total service type variable was calculated by summing the number of “yes” responses for the service list; a higher number reflected more types of services received. The service dosage variable was measured by summing the number of sessions reported across all “yes” responses; a higher number reflected greater dosage. Both variables were included in analyses as continuous variables.

Data Collection

Mail-home packets. Upon receipt of completed mail-home packets, materials were processed using teleform technology and electronically scanned into SPSS.

In-person interviews. Trained graduate students from the University of Oregon (i.e., the aforementioned research assistants) conducted in-person interviews with parent participants and were supervised by the overall study PI (Laura Lee McIntyre). Before beginning data collection, assessors received training on the protocols for administering the demographics and services questionnaires, the Vineland-II, and the CARS 2. Training took approximately 8 hr and included didactic training on protocol administration, observation of model administrations, and peer practice. Training included opportunities for feedback from the trainer. Before beginning data collection, assessors were required to accurately administer all protocols based on PI review of a live or video-recorded administration. Assessors received weekly group supervision during data collection. All assessors were mandatory reporters and were required to complete Collaborative Institutional Training Initiative research compliance training.

Wave 3

Participants

Participants were drawn from the Wave 2 sample and included parents of children previously identified as having a special education eligibility of autism and the teacher with whom the child spent the most time. Children did not provide assent or complete measures. Parents and teachers were the primary participants referencing target children with ASD. From the total Wave 3 sample, there were 22 parent–teacher dyads with completed measures. This sample was used for the present analyses and is hereafter referred to as the Wave 3 sample.

Screening and recruitment. This study comprises a third wave of data collection. For Wave 3 participation, Wave 2 parents who provided prior consent for re-contacting were contacted by OEAP-3 project staff using contact information provided at Wave 2. The recruiter provided parents with an overview of OEAP-3 activities using the OEAP Phone Recruitment and Scheduling Script (Appendix I). The recruiter checked for understanding, then asked parents if they would like to participate in Wave 3. If parents agreed, the recruiter scheduled a telephone interview and sent the family the mail-home packet of questionnaires and a consent form (see Appendix J for the parent consent materials).

Parents. Among caregivers who participated in Wave 3 ($N = 22$), the majority were the child's biological mother ($n = 17$; 77.30%); remaining parents were the child's biological father ($n = 3$; 13.60%) or the child's adoptive mother ($n = 1$; 4.50%). The majority of parents identified as White/Caucasian ($n = 21$; 95.50%); the remaining parent identified as Hispanic/Latino ($n = 1$; 4.50%). See Table 1 for full parent participant demographic information.

Children. At Wave 3, children were an average age of 9.45 years old ($SD = 1.99$) and were in elementary through middle school grades (Kindergarten through eighth grade). The majority of children were boys ($n = 20$; 90.90%). Seventeen parents identified their child as White/Caucasian (77.30%), with the remaining children identified as Hispanic/Latino ($n = 1$; 4.50%) or multiethnic ($n = 4$; 18.20%). See Table 2 for full child participant demographics.

Teachers. Parents were asked to sign a consent form (included in the mail-home packet) allowing the researcher to contact their child's primary teacher (i.e., the teacher

with whom the child spent the most time). If the parent consented, a packet including consent documents and questionnaires were mailed to the child's teacher (see Appendix K for teacher consent materials). Teacher ages were relatively evenly spread across age ranges between 26 and 65 years. The majority of teachers identified as White/Caucasian ($n = 19$; 86.40%); the remaining teachers identified as Native American/Alaska Native ($n = 2$; 9.10%) or they reported they did not know their race or ethnicity ($n = 1$; 4.50%). See Table 3 for full teacher participant demographic information.

Procedure

Parents completed a mail-home packet of questionnaires in advance of a telephone interview. The packet included a questionnaire covering the parent's relationship with their child's teacher. Parent packets took approximately 1 hr to complete. Parents mailed back their packet to the researchers using a pre-stamped envelope (provided with the questionnaire packet). Telephone interviews were scheduled at a day and time that was convenient for a parent and were conducted by a trained research assistant. The interview included a demographics and services questionnaire, adaptive behavior assessment, and ASD symptomatology assessment. Interviews took approximately 1.5–2 hr to complete. Parent participants received \$75 upon completion of the packet and telephone interview.

Teachers received a packet of questionnaires along with their consent materials. The packet included a demographics and services questionnaire, as well as questionnaires that covered the teacher's relationship with that child's parent. The teacher packet took approximately 45 min to complete. Teachers mailed back their packet to the researchers using a pre-stamped envelope (provided with the questionnaire packet). Teachers

Table 3

Demographic Information for Wave 3 Teacher Participants (N = 22)

Demographic variable	<i>n</i>	%
Age in years		
26–35	6	27.30
36–45	6	27.30
46–55	5	22.70
56–65	4	18.20
Gender (female)	19	86.40
Race/ethnicity (White/Caucasian)	19	86.40
Education level		
Bachelor's degree/4-year college	4	18.20
Master's degree	17	77.30
Years of teaching experience – <i>M (SD)</i>	14.14 (9.08)	
Education license ^a		
General education	18	81.80
Special education	9	40.90

^aTeachers could select both license types if they held a dual license.

received a \$25 or \$50 check by mail upon receipt of the completed packet. The check amount increased partway through the project as an effort to increase the response rate.

Parent-Report Measures

The mail-home packets included a measure assessing parent perception of parent–teacher relationship quality. The telephone interviews were conducted by trained research assistants and included measures assessing child and family demographic variables (Appendix L), child adaptive functioning, and child ASD symptomatology for the purposes of describing the study sample.

Child and family demographic variables. Child and family demographic variables were assessed using a demographics questionnaire, administered by a research assistant to parent participants during telephone interviews. Demographic variables assessed for descriptive purposes included child variables (age, gender, race/ethnicity, special education eligibility, special education services received, current grade level in school), parent variables (age, gender, race/ethnicity, employment status, parental education level, family income level), and one child–parent variable (relationship between the child and the parent). Child adaptive functioning and ASD symptomatology were also assessed for the purposes of describing the Wave 3 sample.

Child adaptive functioning. Child level of adaptive functioning was assessed using the Comprehensive Interview Form of the Vineland Adaptive Behavior Scales 3rd Edition, a norm-referenced individual interview measure of adaptive behavior (Vineland-3; Sparrow, Cicchetti, & Saulnier, 2016a). Research assistants administered the Vineland-3 during the telephone interview as a semi-structured interview (i.e., assessors used items in the protocol to ask questions and obtain a basal and ceiling within a category). There

are three main differences between the Vineland-II and Vineland-3 which are relevant to this study: (a) item content was updated, (b) the item scoring scale was changed (0 = *Never*, 1 = *Partially*, 2 = *Usually*), and (c) the “Don’t Know” and “No Opportunity” response options were removed. Domains, scoring, normative age ranges, and the Adaptive Behavior Composite remained the same. Higher scores reflected a higher level of adaptive functioning. For the purposes of describing the Wave 3 study sample, the Adaptive Behavior Composite was included as a continuous variable. Strong evidence supports the internal consistency reliability of the Vineland-3 Comprehensive Interview Form (Communication $\alpha = .95$; Daily Living Skills $\alpha = .94$; Socialization $\alpha = .96$; Adaptive Behavior Composite $\alpha = .98$; Sparrow et al., 2016). This edition of the Vineland was developed for use with individuals with developmental delay, intellectual disability, and ASD; due to the recent publication of this edition of the Vineland, relatively few research studies have utilized it (Sparrow, Cicchetti, & Saulnier, 2016b).

Child ASD symptomatology. ASD symptomatology was assessed using the CARS 2. See Wave 2 measures for a description of the CARS 2.

Parent perception of parent–teacher relationship quality. Parent perception of parent–teacher relationship quality was assessed using the parent version of the PTRS-II. See Wave 2 measures for a description of the parent version of the PTRS-II. In the present sample, $\alpha = .95$.

Teacher-Report Measures

All measures were collected in the mailed packet, which included a measure of teacher perception of parent–teacher relationship quality (Appendix M). Teacher

demographic variables and teacher report of child services (Appendix N) were collected through the packet for the purposes of describing the study sample.

Teacher demographic variables and child services. For the purposes of describing the study sample, teacher demographics (e.g., age, gender, number of years teaching) and teacher report of student educational services were obtained through a paper-and-pencil questionnaire developed for this study.

Teacher perception of parent–teacher relationship quality. Teacher perception of parent–teacher relationship quality was assessed using teacher version of the PTRS-II (Vickers & Minke, 1995). The teacher version was parallel to the parent version; see Wave 2 measures for the parent version description. Strong evidence supports the internal consistency reliability of the teacher version of the PTRS-II, primarily for elementary school teachers (e.g., $\alpha = .95$; Minke et al., 2014). In the present sample, $\alpha = .95$.

Data Collection

Mail-home packets. Upon receipt of completed parent and teacher mailed packets, materials were processed using teleform technology and electronically scanned into SPSS.

Telephone interviews. Trained graduate students from the University of Oregon (i.e., the aforementioned research assistants) conducted telephone interviews with parent participants and were supervised by the overall study PI (Laura Lee McIntyre). Before beginning data collection, assessors received training on the protocols for administering the demographics and services questionnaires, the Vineland-3, and the CARS 2. Training took approximately 8 hr and included didactic training on protocol administration, observation of model administrations, and peer practice. Training included opportunities

for feedback from the trainer. Before beginning data collection, assessors were required to accurately administer all protocols based on PI review of a live or video-recorded administration. Assessors received weekly group supervision during data collection. All assessors were mandatory reporters and were required to complete Collaborative Institutional Training Initiative research compliance training.

CHAPTER III

RESULTS

Preliminary Analyses

Missing Variable Approach

Wave 2. Data were analyzed visually to determine missing data among study variables. Seven participants did not have a FIQ-E score; six of these participants did not have a PTRS-II score. These families had children who received their education in a homeschool setting and were removed from analyses. This left a sample of 68 families. Four families did not have a Vineland composite variable score; these missing data were addressed by averaging scores across the Communication, Daily Living Skills, and Socialization standard scores. Seven items were missing from educational service sessions (i.e., for parents who indicated their child received a service but did not know how many monthly sessions their child received for that service); missing data for these variables were addressed using single imputation in SPSS. Prior to dataset imputation, all data in the dataset were tested to determine whether all data met the assumption of being missing completely at random (MCAR). The assumption of MCAR remained tenable based on the non-significant outcome of Little's MCAR test ($\chi^2[373] = 353.20, p = .761$; Little, 1988).

Wave 3. Data were analyzed visually to determine missing data among study variables. From the overall Wave 3 sample, 14 dyads were removed due to incomplete dyads ($n = 3$ children who were homeschooled; $n = 11$ dyads in which teachers did not participate). This left a sample of 22 complete parent–teacher dyads. In this sample, no variables had missing data.

Variable Computation and Transformation

Wave 2. Five variables were computed from Wave 2 data sources to be used as study variables in analyses. PCPS scores were dichotomized to create a categorical variable ($0 = disagree$, $1 = agree$) due to a teleform error resulting in a 5-point scale rather than the intended 6-point scale. CARS 2 scores were dichotomized based on publisher-reported cutoffs for scores. The SDQ Total Difficulties score was computed by summing four factor scores (emotional symptoms, conduct problems, hyperactivity-inattention, and peer problems) based on developer instructions (R. Goodman, 2001). Educational service types and sessions were summed to compute two new variables: total service types and total monthly sessions.

Wave 3. One variable was computed from Wave 3 data sources to be used as a study variable in analyses for Research Question 3D. Parent–teacher congruence in relationship quality ratings was calculated using a distance formula (Cronbach & Gleser, 1953; Garbacz et al., 2015; Kenny, Kashy, & Cook, 2006; Osgood & Suci, 1952). Specifically, congruence was calculated as the square root of the sum of squared differences between parent and teacher responses to the 24 PTRS-II items at Wave 3:

$$Distance_d = \sqrt{\sum_{i=1}^{24} (Parent_{di} - Teacher_{di})^2}$$

The distance formula yields a continuous variable with higher scores reflecting a greater degree of incongruence (i.e., disagreement). This method has been used in other parent–teacher congruence research (Garbacz et al., 2015).

Descriptive Statistics for Wave 2

Sample. See Tables 1 and 2 for full sample descriptive statistics. Children were relatively evenly spread across Kindergarten through fifth grade. Most children received special education. Parents most commonly reported their employment as being full time homemakers. The majority of children were boys and approximately 8 years old. Families reported a range of socioeconomic backgrounds and education levels. Income for 15 children's families (22.10% of sample) fell below the 2017 federal poverty line, and income for 30 children's families (44.10% of sample) indicated eligibility for Medicaid (i.e., 138% of the federal poverty line). These descriptions were calculated by computing the number of people residing in the home for each family, visually comparing income levels to federal guidelines for the poverty line and Medicaid eligibility based on family size, and creating a dichotomized variable (0 = *did not meet criteria*, 1 = *met criteria*). Please refer to Tables 1 and 2 for additional information.

Study variables. See Table 4 for full study variable descriptive statistics and Appendix O for variable histograms. Overall, parents reported positive relationships with their children's teachers ($M = 101.75$, $SD = 17.15$, total possible range = 24–120) and high levels of family involvement ($M = 122.13$, $SD = 23.36$, total possible range = 46–184). The average annual family income was \$52,197.01. The average adaptive behavior score fell in the moderately low range (reported as standard score; $M = 75.12$, $SD = 13.88$). Children received an average of approximately 2 types of educational services across an average of approximately 17 monthly sessions. The most commonly-received services were speech therapy, occupational therapy, and support from a 1:1 aide or

Table 4

Descriptive Statistics of Wave 2 Study Variables (N = 68)

Variable	Total – <i>M</i> (<i>SD</i>)
Parent–teacher relationship quality ^a	101.75 (17.15)
Family involvement ^b	122.13 (23.36)
Parental competence in problem-solving ^c – <i>n</i> (%)	
Agree	63 (92.60%)
ASD symptoms ^d	34.04 (6.63)
Adaptive behavior ^e	75.12 (13.88)
Externalizing behavior ^f	3.16 (0.96)
Family income level in \$ ^g	52,197.01 (39,024.18)
Parental education ^h	15.04 (2.67)
Parent occupation ⁱ	17.68 (21.08)
Perceived social status ^j – <i>n</i> (%)	
Not enough to get by	7 (10.30%)
Just enough to get by	24 (35.30%)
We only have to worry for fun or extras	35 (51.50%)
We never have to worry about money	2 (2.90%)
Types of educational services ^k	2.47 (1.83)

^aPTRS-II sum score, total possible score range of 24–120. ^bFIQ-E sum score, total possible score range of 46–184. ^cPCPS sum score, dichotomized into disagree/agree with competency statements. ^dCARS 2 total score, total possible score range of 15–60. ^eVineland-II Adaptive Behavior composite score, Standard Score ($M = 100$, $SD = 15$). ^fSDQ Total Difficulties composite score, total possible score range of 0–40. ^gAnnual family income. ^hTotal number of years of parents' education. ⁱAverage number of hours parents worked per week in the previous month. ^jPerception of how much money the family has. ^kTotal number of types of educational services within the previous six months.

instructional assistant. Preliminary analyses indicated that there was limited variability in PCPS scores ($n = 63$ agreed with competence statements, $n = 5$ disagreed with competence statements). As a result, the parental competence in problem-solving variable was removed from research question analyses. Please refer to Table 4 for additional information.

Descriptive Statistics for Wave 3

Sample. See Tables 1, 2, and 3 for full sample descriptive statistics. Child grade levels ranged from Kindergarten to eighth grade, with most children in Kindergarten through third grade. Most children received special education. Parents most commonly reported their employment as full time. The majority of children were boys and were approximately 9 years old. Families had a range of socioeconomic backgrounds and education levels. Income for three children's families (13.60% of sample) fell below the 2017 federal poverty line, and income for six children's families (27.30% of sample) indicated eligibility for Medicaid (i.e., 138% of the federal poverty line). These descriptions were calculated in the same manner as they were for Wave 2. The majority of teachers had a Master's degree and a license in general education, and nearly half of teachers had a license in special education. Please refer to Tables 1, 2, and 3 for additional information.

Study variables. See Table 5 for full study variable descriptive statistics and Appendix P for variable histograms. Overall, parents and teachers reported positive relationships with each other (parent $M = 104.59$, $SD = 15.83$; teacher $M = 102.36$, $SD = 16.84$; total possible range = 24–120). Congruence scores ranged from 0 to 10.63 (total

Table 5

Descriptive Statistics of Wave 3 Study Variables (N = 22)

Variable	Total – <i>M</i> (<i>SD</i>)
Parent-reported parent–teacher relationship quality	104.59 (15.83)
Teacher-reported parent–teacher relationship quality	102.36 (16.84)
Shared parent–teacher relationship perceptions	5.58 (2.47)

possible range = 0.00–19.60), with higher scores reflecting a greater degree of incongruence. The average was 5.58 ($SD = 2.47$). The median congruence score was 5.34.

Sample Comparison

Independent samples *t*-tests were run to determine if there were significant differences between families who participated in both waves of the study and families who participated in only Wave 2. Attrition status (0 = *no attrition*, 1 = *attrition*) served as the independent variable in each analysis. Dependent variables included Wave 2 household income, hours worked per week in the previous month, years of parental education, perceived social status, parent–teacher relationship quality, child adaptive behavior, and child ASD symptoms. Families who participated in both waves were significantly more likely to have a higher household income compared to families who participated in only Wave 2, $t(66) = 2.18, p = .033$. The analyses did not indicate any other significant differences. Although these analyses provide context for the cross-setting analysis conducted in Research Question 3, they do not utilize the Wave 1 context

and therefore cannot address questions related to potential bias between Wave 1 and subsequent waves of the study.

Data Analytic Approach

Research Question 1 was examined using independent samples *t*-test analyses in order to determine the relative effects of ASD symptom severity on aspects of parent-reported engagement. Research Question 2 was examined using simple and hierarchical multiple regression analyses in order to identify child, family, and educational service variables which predicted parent-reported parent-teacher relationship quality, family involvement, and parental problem-solving competence after holding child ASD symptoms constant. Research Question 3 was examined using distributions, intraclass correlation (ICC), Pearson correlation, and hierarchical multiple regression analyses in order to descriptively examine parent and teacher reports of relationship quality, identify associations among reports, and identify Wave 2 parent-reported predictors of Wave 3 parent- and teacher-reported relationship quality outcomes.

For all research questions, $p < .05$ was used as the criterion for statistical significance. Posthoc power analyses indicated that with two-tailed α set to .05, the present study had sufficient power ($> .80$) to detect an effect of $d = .70$ for Wave 2 *t*-tests, $r = .34$ for Wave 2 bivariate correlations, and $r = .56$ for Wave 3 bivariate correlations. For Research Question 3D, effect size was used as an indicator of a clinically meaningful effect, rather than statistical significance. This was determined based on insufficient statistical power for the research question. Four levels were used for interpretation: .01 was a small effect, .04 was a clinically meaningful effect, .09 was a medium effect, and .25 was a large effect (Cohen, 1988).

Research Question 1

Data were analyzed with independent samples *t*-test analyses. The independent variable in both analyses was ASD symptomatology with two levels: mild and moderately-severe. See Table 6 for full Question 1 results.

Table 6

Results of Independent Samples t-tests Comparing Mild and Moderately-Severe ASD

Symptoms

	Symptom Group – M (SD)		<i>t</i>
	Mild	Moderately-Severe	
P–T relationship quality	106.97 (11.24)	97.87 (19.72)	2.40*
Family involvement	125.41 (20.83)	119.69 (25.07)	1.00

Note. “P–T” refers to “parent–teacher”.

* $p < .05$.

Question 1A: Does parent-reported parent–teacher relationship quality vary depending on level of child ASD symptom severity?

One independent samples *t*-test was run to examine the hypothesis that parents of children with mild ASD symptoms would report higher parent–teacher relationship quality relative to parents of children with moderately-severe ASD symptoms. Levene’s Test of Equality of Variances indicated that group variances cannot be treated as equal, $F(66) = 19.16, p < .001$. When adjusting degrees of freedom using the Welch-Satterthwaite method, parent–teacher relationship quality scores for children with mild

ASD symptoms were significantly different compared to those with moderately-severe ASD symptoms, $t(62.30) = 2.40, p = .019$. In other words, children with mild ASD symptoms were more likely to have parents who reported higher parent–teacher relationship quality compared to children with moderately-severe ASD symptoms.

Question 1B: Does parent-reported family educational involvement vary depending on level of child ASD symptom severity?

One independent samples *t*-test was run to examine the hypothesis that parents of children with mild ASD symptoms would report higher family involvement relative to parents of children with moderately-severe ASD symptoms. The analysis was not significant, $t(66) = 1.00, p = .322$. In other words, there were no differences in family involvement between children with mild and moderately-severe ASD symptoms.

Question 1C: Does parent-reported competence in problem-solving vary depending on level of child ASD symptom severity?

This question was removed due to limited variability in PCPS scores.

Research Question 2

Data were analyzed using simple and hierarchical multiple regression analyses. First, a Pearson correlation analysis was conducted as a preliminary analysis to examine bivariate correlations among Wave 2 variables. Parent–teacher relationship quality was positively associated with family involvement and child adaptive behavior, and negatively associated with ASD symptoms and externalizing behavior. Family involvement was positively associated with adaptive behavior and perceived social status. See Tables 7, 8, 9, 10, 11, 12, and 13 for full results for Research Question 2.

Table 7

Correlations Among Wave 2 Study Variables

	1	2	3	4	5	6	7	8	9	10	11
1. P–T relationship quality	--										
2. Family involvement	.31*	--									
3. Adaptive behavior	.29*	.28*	--								
4. ASD symptoms	-.29*	-.11	-.53**	--							
5. Externalizing behavior	-.33**	-.12	-.31*	.51**	--						
6. Education	.03	.12	.13	.03	-.07	--					
7. Occupation	.11	-.10	.18	.08	-.01	.29*	--				
8. Income	.12	-.03	.19	.05	-.04	.51**	.32**	--			
9. Perceived social status	.16	.38**	.05	-.04	-.04	.28*	-.14	.29*	--		
10. Service types	-.13	-.01	-.39**	.18	-.01	-.02	-.14	-.13	-.05	--	
11. Service dosage	-.20	-.05	-.38**	.20	-.08	-.04	-.08	-.09	-.10	.74**	--

Note. “P–T” refers to “parent–teacher”.

* $p < .05$. ** $p < .01$.

Table 8

Results of the Multiple Regression of Child Variables Predicting Parent–Teacher Relationship Quality

	<i>B</i>	<i>SE B</i>	β	Semipartial <i>r</i>	<i>t</i>
ASD symptoms	-0.18	0.39	-.07	-.05	-0.47
Adaptive behavior	0.23	0.17	.18	.16	1.34
Externalizing behavior	-4.29	2.39	-.24	-.21	-1.79

Note. Model $R^2 = 0.15$.

Table 9

Results of the Multiple Regression of Child Variables Predicting Family Involvement

	<i>B</i>	<i>SE B</i>	β	Semipartial <i>r</i>	<i>t</i>
ASD symptoms	0.30	0.55	.09	.07	0.55
Adaptive behavior	0.50	0.24	.30	.25	2.11*
Externalizing behavior	-1.82	3.40	-.08	-.06	-0.53

Note. Model $R^2 = 0.08$.

* $p < .05$.

Table 10

Results of the Hierarchical Multiple Regression of Family Variables Predicting Parent–Teacher Relationship Quality

	Model 1					Model 2				
	<i>B</i>	<i>SE B</i>	β	Semipartial <i>r</i>	<i>t</i>	<i>B</i>	<i>SE B</i>	β	Semipartial <i>r</i>	<i>t</i>
ASD symptoms	-0.75	0.31	-.29	-.29	-2.47*	-0.77	0.31	-.30	-.30	-2.50*
Education						-0.61	0.91	-.09	-.08	-0.67
Occupation						0.13	0.11	.16	.14	1.19
Income						0.00	0.00	.08	.07	0.57
Perceived social status						4.03	3.09	.17	.15	1.31

Note. Model 1 $R^2 = 0.08$. Model 2 $R^2 = 0.17$.

* $p < .05$.

Table 11

Results of the Hierarchical Multiple Regression of Family Variables Predicting Family Involvement

	Model 1					Model 2				
	<i>B</i>	<i>SE B</i>	β	Semipartial <i>r</i>	<i>t</i>	<i>B</i>	<i>SE B</i>	β	Semipartial <i>r</i>	<i>t</i>
ASD symptoms	-0.39	0.43	-.11	-.11	-0.91	-0.30	0.41	-.09	-.09	-0.75
Education						1.05	1.20	.12	.10	0.87
Occupation						-0.01	0.14	-.01	-.01	-0.09
Income						0.00	0.00	-.20	-.16	-1.40
Perceived social status						12.77	4.10	.40	.36	3.11*

Note. Model 1 $R^2 = 0.01$. Model 2 $R^2 = 0.18$.

* $p < .05$.

Table 12

Results of the Hierarchical Multiple Regression of Educational Service Variables Predicting Parent–Teacher Relationship Quality

	Model 1					Model 2				
	<i>B</i>	<i>SE B</i>	β	Semipartial <i>r</i>	<i>t</i>	<i>B</i>	<i>SE B</i>	β	Semipartial <i>r</i>	<i>t</i>
ASD symptoms	-0.75	0.31	-.29	-.29	-2.47*	-0.68	0.31	-.26	-.26	-2.18*
Types of services						0.73	1.65	.08	.05	0.44
Dosage of services						-0.17	0.14	-.21	-.14	-1.19

Note. Model 1 $R^2 = 0.08$. Model 2 $R^2 = 0.11$.

* $p < .05$.

Table 13

Results of the Hierarchical Multiple Regression of Educational Service Variables Predicting Family Involvement

	Model 1					Model 2				
	<i>B</i>	<i>SE B</i>	β	Semipartial <i>r</i>	<i>t</i>	<i>B</i>	<i>SE B</i>	β	Semipartial <i>r</i>	<i>t</i>
ASD symptoms	-0.39	0.43	-.11	-.11	-0.91	-0.38	0.45	-.11	-.11	-0.86
Types of services						0.81	2.37	.06	.04	0.34
Dosage of services						-0.08	0.20	-.07	-.05	-0.38

Note. Model 1 $R^2 = 0.01$. Model 2 $R^2 = 0.02$.

Question 2A: Which child variables (adaptive functioning, ASD, problem behavior) predict parent perceptions of parent–teacher relationship beliefs and behaviors (parent–teacher relationship quality, family educational involvement, parent problem-solving competence)?

Two simple multiple regression analyses were run: (a) child variables regressed on parent–teacher relationship quality and (b) child variables regressed on family involvement. No analyses examined parent problem-solving competence.

Parent–teacher relationship quality. The analysis did not identify significant variables among any of the predictors: child ASD symptoms (semipartial correlation of $r = -.05$, $\beta = -.07$, $SE B = 0.39$, $t = -0.47$, $p = .643$), adaptive behavior (semipartial correlation of $r = .16$, $\beta = .18$, $SE B = 0.17$, $t = 1.34$, $p = .184$), and externalizing behavior (semipartial correlation of $r = -.21$, $\beta = -.24$, $SE B = 2.39$, $t = -1.79$, $p = .078$). The overall model explained significant variance in parent–teacher relationship quality ($R^2 = .15$; $F[3, 64] = 3.89$, $p = .013$). Although this result was statistically significant, the clinical significance is limited—the finding is not interpretable because no single child variable emerged as a significant predictor. See Table 8 for full results.

Family involvement. The analysis identified child adaptive behavior as a significant predictor of family involvement (semipartial correlation of $r = .25$, $\beta = .30$, $SE B = 0.24$, $t = 2.11$, $p = 0.39$). Therefore, child adaptive behavior accounted for approximately 7% of the variance in family involvement. In addition, a one-unit increase in child adaptive behavior was significantly related to a .30 standardized unit increase in family involvement. Therefore, every one standardized unit increase in child adaptive behavior resulted in a .30 standardized unit increase in family involvement. The R^2

statistic was .08. This indicated that the independent variables in this model accounted for 8% of the total variance in a given parent's family involvement, $F(3, 64) = 1.90, p = .138$.

The other predictors in the model were not significant: child ASD symptoms (semipartial correlation of $r = .07, \beta = .09, SE B = 0.55, t = 0.55, p = .586$) and externalizing behavior (semipartial correlation of $r = -.06, \beta = -.08, SE B = 3.40, t = -0.53, p = .595$). In other words, these two child variables did not predict family involvement. See Table 9 for full results.

Question 2B: After controlling for child ASD severity, which family variables (family income, parent education, parent occupation, and perceived social status) predict parent perceptions of parent–teacher relationship beliefs and behaviors (parent–teacher relationship quality, family educational involvement, parent problem-solving competence)?

Two hierarchical multiple regression analyses were run: (a) family variables regressed on parent–teacher relationship quality and (b) family variables regressed on family involvement. Child ASD severity was controlled for in Block 1, and family variables were entered into Block 2. See Tables 10 and 11 for full results.

Parent–teacher relationship quality. Although ASD symptoms were a significant predictor of parent–teacher relationship quality alone (semipartial correlation of $r = -.30, \beta = -.30, SE B = 0.31, t = -2.50, p = .015$), family variables in the full model did not predict parent–teacher relationship quality across all predictors after controlling for ASD symptoms: parent education (semipartial correlation of $r = -.08, \beta = -.09, SE B = 0.91, t = -0.67, p = .506$), parent occupation (semipartial correlation of $r = .14, \beta = .16, SE B = 0.11, t = 1.19, p = .238$), household income (semipartial correlation of $r = .07, \beta =$

.08, $SE B = 0.00$, $t = 0.57$, $p = .569$), and perceived social status (semipartial correlation of $r = .15$, $\beta = .17$, $SE B = 3.09$, $t = 1.31$, $p = .197$). The overall model did not explain a significant amount of variance in parent–teacher relationship quality after accounting for ASD symptoms ($R^2 = .17$; $F[5, 62] = 1.98$, $p = .095$). In other words, family variables did not predict parent–teacher relationship quality after holding child ASD symptoms constant. See Table 10 for full results.

Family involvement. The results of the hierarchical multiple regression analyses indicated that when controlling for ASD symptoms, perceived social status significantly predicted family involvement (semipartial correlation of $r = .36$, $p = .003$). Therefore, after holding ASD symptoms constant, perceived social status accounted for 13% of the variance in family involvement. In addition, a one-unit increase in perceived social status was significantly related to a .40 standardized unit increase in family involvement ($\beta = .40$, $SE B = 4.10$, $t = 3.11$, $p = .003$). Therefore, every one standardized unit increase in perceived social status resulted in a 0.40 standardized unit increase in family involvement. The R^2 statistic was 0.18. This indicated that the independent variables in this model accounted for 18% of the total variance in a given parent’s family involvement, $F(5, 62) = 2.73$, $p = .027$.

The other predictors in the model were not significant: parent education (semipartial correlation of $r = .10$, $\beta = .12$, $SE B = 1.20$, $t = 0.87$, $p = .388$), parent occupation (semipartial correlation of $r = -.01$, $\beta = -.01$, $SE B = 0.14$, $t = 0.09$, $p = .926$), and household income (semipartial correlation of $r = -.16$, $\beta = -.20$, $SE B = 0.00$, $t = -1.40$, $p = .166$). See Table 11 for full results.

Question 2C: After controlling for child ASD severity, do children's educational services predict parent-teacher relationship beliefs and behaviors (parent-teacher relationship quality, family educational involvement, parent problem-solving competence)?

Two hierarchical multiple regression analyses were run: (a) educational service variables regressed on parent-teacher relationship quality and (b) educational service variables regressed on family involvement. Child ASD severity was controlled for in Block 1, and educational service variables were entered into Block 2. No analyses examined parent problem-solving competence. See Tables 12 and 13 for full results.

Parent-teacher relationship quality. Although ASD symptoms were a significant predictor of parent-teacher relationship quality alone (semipartial correlation of $r = -.26$, $\beta = -.26$, $SE B = 0.31$, $t = 2.18$, $p = .033$), educational service variables in the full model did not predict parent-teacher relationship quality across both predictors after controlling for ASD symptoms: types of services (semipartial correlation of $r = .05$, $\beta = .08$, $SE B = 1.65$, $t = 0.44$, $p = .659$) and service dosage (semipartial correlation of $r = -.14$, $\beta = -.21$, $SE B = 0.14$, $t = -1.19$, $p = .239$). The overall model did not explain a significant amount of variance in parent-teacher relationship quality after accounting for child ASD symptoms ($R^2 = .11$; $F[3, 64] = 2.63$, $p = .058$). In other words, service variables did not predict parent-teacher relationship quality after holding child ASD symptoms constant. See Table 12 for full results.

Family involvement. After controlling for child ASD symptoms, the analysis did not identify significant predictors across both service-related predictor variables: types of services (semipartial correlation of $r = .04$, $\beta = .06$, $SE B = 2.37$, $t = 0.34$, $p = .732$) and service dosage (semipartial correlation of $r = -.05$, $\beta = -.07$, $SE B = 0.20$, $t = -0.38$, $p =$

.706). The overall model did not explain a significant amount of variance in family involvement after accounting for child ASD symptoms ($R^2 = .02$; $F[3, 64] = 0.32$, $p = .812$). In other words, service variables did not predict family involvement after holding child ASD symptoms constant. See Table 13 for full results.

Question 2D: Based on 2A–2C, which predictors remain significant? After considering the findings from the previous models, identify the most parsimonious model predicting parent–teacher relationship beliefs and behaviors.

Since only one predictor was significant for each dependent variable across Questions 2A, 2B, and 2C, no analyses were run for Question 2D.

Research Question 3

Data were analyzed using descriptive methods, ICC, Pearson correlations, and hierarchical multiple regression analyses. See Tables 5 and 14 for relevant results for full results for Research Question 3.

Question 3A: How do parents of children with ASD report the quality of their relationship with their child’s teacher?

This question was examined using descriptive statistics (see Table 5) and distributions. Possible scores ranged from 24 to 120, with higher scores reflecting perception of a higher-quality relationship. Overall, parents reported positive relationships with teachers, with an average score of 104.59 ($SD = 15.83$) and a median score of 109.50. The lowest-reported score was 55, and the highest-reported score was 120. The distribution of scores had acceptable skewness (-1.82; West, Finch, & Curran, 1996). In addition, the distribution had a positive excess in kurtosis (3.65), indicating a leptokurtic distribution (i.e., fat-tailed distribution). Visual analysis of the histogram (see

Table 14

Correlations Among Wave 3 Study Variables

	1	2	3	4
1. Wave 3 parent-reported P–T relationship quality	--			
2. Wave 3 teacher-reported P–T relationship quality	.48*	--		
3. Wave 3 relationship quality congruence	-.38	-.56**	--	
4. Wave 2 P–T relationship quality	.60**	.35	-.37	--
5. Wave 2 family involvement	.53*	.22	-.04	.22

Note. “P–T” refers to “parent–teacher”.

* $p < .05$. ** $p < .01$.

Appendix P) suggested that the distribution was not normal. This was supported by a significant outcome on the Shapiro-Wilk test of normality ($p = .001$). This indicates that in the present sample, there is an increased likelihood of obtaining higher or lower reports of relationship quality compared to a normally-distributed sample (i.e., that the present sample has a greater number of outlier results).

Question 3B: How do teachers of children with ASD report the quality of their relationship with their student's parent?

This question was examined using descriptive statistics (see Table 5) and distributions. Possible scores ranged from 24 to 120, with higher scores reflecting perception of a higher-quality relationship. Overall, teachers reported positive relationships with parents, with an average score of 102.36 ($SD = 16.84$) and a median score of 109.00. The lowest-reported score was 65, and the highest-reported score was 120. The distribution of scores had acceptable skewness (-0.89) and kurtosis (-0.37). Visual analysis of the histogram (see Appendix P) suggested that the distribution was not normal, although skewness was in the acceptable range.

Question 3C: Among parent-teacher dyads of children with ASD, to what extent do parents and teachers share their perceptions of relationship quality?

This question was examined using an ICC(3, 1) analysis (i.e., a two-way mixed ICC analysis examining average measure ratings using an absolute agreement approach; Shrout & Fleiss, 1979). Wave 3 parent and teacher relationship quality reports were correlated at .66, $p = .010$. This ICC result falls within the “good agreement” range (Cicchetti, 1994). Confidence interval lower and upper bounds indicated 95% confidence that agreement falls between .17 and .86.

Question 3D: How do Wave 2 parent relationship beliefs and behaviors relate to Wave 3 shared and independent perceptions of parent–teacher relationship quality?

This question was examined using a Pearson correlation analysis (see Table 14) and hierarchical multiple regression analyses. First, a Pearson correlation analysis was conducted as a preliminary analysis to examine bivariate correlations among research question variables in order to establish associations among variables before proceeding with regression analyses. See Table 14 for full correlation outcomes. Wave 2 parent-reported parent–teacher relationship quality was positively associated with most other variables (Wave 3 teacher-reported parent–teacher relationship quality, $r = .48, p = .023$; Wave 2 parent–teacher relationship quality, $r = .60, p = .004$; Wave 2 family involvement, $r = .53, p = .012$), but not Wave 3 congruence in relationship quality ratings. In addition, Wave 3 teacher-reported parent–teacher relationship quality was negatively associated with Wave 3 congruence in relationship quality ratings ($r = -.56, p = .007$). In other words, as distance between parent and teacher reports increased, teacher reports of relationship quality decreased. All significant correlations indicated associations in the hypothesized directions. In addition, several associations were not statistically significant but were clinically meaningful: Wave 3 congruence was positively associated with Wave 3 parent-reported relationship quality, and Wave 2 parent–teacher relationship quality with Wave 3 teacher-reported relationship quality and Wave 3 congruence.

Three hierarchical multiple regression analyses were run, with Wave 2 parent–teacher relationship quality and family involvement regressed on (a) Wave 3 parent-reported parent–teacher relationship quality, (b) Wave 3 teacher-reported parent–teacher

relationship quality, and (c) Wave 3 congruence in parent–teacher relationship quality perceptions. Wave 2 parent-reported parent–teacher relationship quality was entered in Block 1 (followed by family involvement in Block 2) to control for potential stability paths in the first regression; this was maintained in subsequent regression analyses for consistency. Due to the small sample size, results were interpreted in terms of effect sizes. Effect sizes are interpreted as the overall model R^2 after adding family involvement, as well as an R^2 -changed value and semipartial R^2 to identify the unique variance of family involvement and parent–teacher relationship quality in the models.

Wave 3 parent-reported relationship quality. Results indicated a large effect of the Wave 2 variables on Wave 3 parent-reported relationship quality, explaining 64% of the variance ($R^2 = .64$). The R^2 -change value was .28 ($p = .002$), indicating that family involvement explained 28% of the variance in Wave 3 parent-reported relationship quality after holding Wave 2 relationship quality constant, which is a large effect. The semipartial R^2 of Wave 2 relationship quality (semipartial $R^2 = .22$, $p = .004$) suggests that the variable uniquely explained 22% of the variance after holding family involvement constant, which is a medium to large effect.

Wave 3 teacher-reported relationship quality. Results indicated a medium to large effect of the Wave 2 variables on Wave 3 teacher-reported relationship quality, explaining 20% of the variance ($R^2 = .20$). The R^2 -change value was .08 ($p = .196$), indicating that family involvement explained 8% of the variance in Wave 3 teacher-reported relationship quality after holding Wave 2 relationship quality constant, which is approaching a medium effect. The semipartial R^2 of Wave 2 relationship quality (semipartial $R^2 = .08$, $p = .203$) suggests that the variable explains 8% of the variance

after holding family involvement constant, which is a small (yet meaningful) effect approaching a medium effect.

Wave 3 congruence in relationship quality ratings. Results indicated a medium effect of the Wave 2 variables on Wave 3 congruence in relationship quality ratings, explaining 14% of the variance ($R^2 = .14$). The R^2 -change value was .001 ($p = .877$), indicating that family involvement explained less than 1% of the variance in Wave 3 congruence in relationship quality ratings after holding Wave 2 relationship quality constant, which does not indicate a meaningful effect. The semipartial R^2 of Wave 2 relationship quality (semipartial $R^2 = .13$, $p = .123$) suggests that the variable explains 13% of the variance after holding family involvement constant, which is a medium effect.

CHAPTER IV

DISCUSSION

This study aimed to explore variables that influence relationships for parents and teachers of children with ASD. Specifically, this study examined (a) parent–teacher relationship variables in relation to developmental risk and child and family variables and (b) parent–teacher relationship perceptions among a sample of parents and teachers of children with ASD. Study hypotheses anticipated (a) negative associations between ASD symptoms and parent–teacher relationship variables, (b) significant child, family, and educational service variables as predictors of parent–teacher relationship variables, and (c) high agreement in perceptions of parent–teacher relationship quality between members of parent–teacher dyads. Due to limited prior research examining parental competence in problem-solving, family variables, educational services, and dyadic investigations of parent–teacher relationships (as well as a small sample size for Wave 3), several research questions were exploratory without an explicit hypothesis, or had an exploratory hypothesis based on the study’s conceptual framework.

Prior research has generally not examined parents and teachers of children with ASD, who have unique needs and different experiences compared to parents and teachers of children with other disabilities or who are typically developing. Although this study is limited and fairly exploratory, the findings yield novel information on parent–teacher relationships in this population and build upon prior literature.

Findings

Results of Research Question #1 suggested that ASD symptomatology had a significant effect on parent-reported parent–teacher relationship quality. ASD

symptomatology did not have a significant effect on parent-reported family involvement. Results of Research Question #2 suggested that adaptive behavior had a significant effect on parent-reported family involvement, and that perceived social status had a significant effect on parent-reported family involvement after holding ASD symptoms constant. Other child variables, other family variables, and educational service variables did not have a significant effect on either parent–teacher relationship quality or family involvement. Results of Research Question #3 suggested that parents and teachers reported positive relationships with each other, relationship ratings were in high agreement, and that parent perceptions of relationship variables at one point in time influenced parent and teacher perceptions and agreement approximately two years later. Parental problem–solving competence was removed from analyses and subsequent interpretation of findings due to limited deviation from the positive score range. Overall, findings are consistent with the study’s theoretical framework (i.e., ecological systems theory); students with ASD appear to be influenced by both their home and school environments, as well as interactions between those environments. Although this study’s exploratory nature does not contribute to proposing changes in the model, findings provide support for the model’s application to an understudied population (i.e., children with ASD).

Research Question #1

Question 1A: Does parent-reported parent–teacher relationship quality vary depending on level of child ASD symptom severity?

It was hypothesized that parent–teacher relationship quality would be lower for families of children with higher ASD symptoms. ASD symptomatology had a significant

effect on parent-reported parent–teacher relationship quality. Specifically, children with mild ASD symptoms were more likely to have parents who reported higher parent–teacher relationship quality compared to children with moderately-severe ASD symptoms. Thus, the finding supported the hypothesis in the anticipated direction.

This finding is consistent with prior literature on children with ASD (Garbacz et al., 2016) and children with externalizing behavior (Kim et al., 2013), which found that symptom severity was negatively associated with relationship quality. Findings were also consistent with CBC intervention literature for children with externalizing behavior. For example, one CBC study found that teacher ratings of child social skills were positively associated with congruent perceptions of parent–teacher communication (i.e., as child social skills increased, so did communication congruence; Garbacz et al., 2015). Another study identified parent–teacher relationship quality as a malleable construct that increased when intervention was delivered and child externalizing behavior decreased (Sheridan, Witte, Holmes, Wu, et al., 2017).

Question 1B: Does parent-reported family educational involvement vary depending on level of child ASD symptom severity?

It was hypothesized that family involvement would be lower for families of children with higher ASD symptoms. ASD symptoms did not have a significant effect on family involvement. Specifically, children with mild ASD symptoms were neither more nor less likely to have parents who reported higher parent–teacher relationship quality compared to children with moderately-severe ASD symptoms. Thus, the hypothesis was not supported.

This finding is not consistent with prior literature on children with ASD (Garbacz et al., 2016) and children with disruptive behavior (Semke et al., 2010). In addition, the finding is not consistent with intervention literature examining children with externalizing behavior (e.g., one study's findings indicating that parents in the intervention group demonstrated greater home–school communication gains compared to parents in the control group; Sheridan et al., 2013). Differences between current and prior findings could be due to differences in sample characteristics and size, as well as the limited number of datasets from which these samples were drawn. The Garbacz et al. (2016) study used a subsample of the Wave 2 sample used in the present study; although the samples are similar in child behavior and ASD symptoms, other differences between the subsample and overall Wave 2 sample may have contributed to differences in findings. In addition, the Semke et al. (2010) and Sheridan et al. (2013) studies drew data from the same overall study of children with disruptive behavior. Disruptive behavior was an inclusionary criterion for these studies, whereas the samples for the current study and the Garbacz et al. study are not marked by high levels of disruptive behavior. It is possible that this difference in child characteristics could contribute to inconsistency in family involvement findings.

Question 1C: Does parent-reported competence in problem-solving vary depending on level of child ASD symptom severity?

It was hypothesized that parent problem-solving competence would be lower for families of children with higher ASD symptoms. Given the paucity of research examining parental problem-solving competence and child ASD symptom severity, this hypothesis was exploratory. Due to limited variability in the parent problem-solving

competence variable (as identified by preliminary descriptive statistics), this variable was removed from analyses. As a result, no analyses were run for Question 1C. However, in the absence of analyses for the present study, the generally positive parent reports of their problem-solving competence and limited deviation from the positive score range suggests that there may be other contextual factors or latent constructs which influence problem-solving competence among parents of children with ASD. Based on prior intervention research examining children with ASD (Garbacz & McIntyre, 2016) and children with disruptive behavior (Sheridan et al., 2013), possible factors include the malleable nature of the construct in the context of family–school partnership interventions, motivation to change, social support in and out of school settings, and opportunities to deliver interventions and get feedback on intervention skills. Based on other descriptive research examining families of children with ASD (Garbacz et al., 2016), experience in school systems may play a role; satisfaction with early intervention services have been shown to predict later partnering activities, including family involvement and communication (Azad & Mandell, 2016).

Question #1 summary. Findings suggested that ASD symptoms had a significant effect on parent perceptions of relationship quality with their child’s teacher, but not their involvement in their child’s education. These findings are consistent with prior literature of parent–teacher relationship quality for parents of children with ASD and with externalizing behavior (e.g., Garbacz et al., 2016; Kim et al., 2013), highlighting the role of child behavior in examining parent-reported parent–teacher relationship quality. However, these findings are inconsistent with prior literature on family involvement (e.g., Garbacz et al., 2016; Sheridan et al., 2013), potentially due to factors related to

differences in study samples. Overall, this outcome suggests that there may be a latent difference between these two variables that explains why ASD symptoms would influence different perceptions of parent–teacher relationship domains, and that examining study designs is an important piece of interpreting and generalizing findings.

Research Question #2

Question 2A: Which child variables (adaptive functioning, ASD, problem behavior) predict parent perceptions of parent–teacher relationship beliefs and behaviors (parent–teacher relationship quality, family educational involvement, parent problem-solving competence)?

It was hypothesized that child variables (adaptive functioning, ASD symptoms, and problem behavior) would have significant, negative associations with parent–teacher relationship quality and family involvement. There was no hypothesis for associations with parent problem-solving competence. Results indicated that child adaptive behavior had a significant effect on family involvement. Specifically, children with higher levels of adaptive behavior were more likely to have parents who reported higher family involvement compared to children with lower adaptive levels of behavior. Thus, the findings supported the hypothesis in the anticipated direction (i.e., statistical association was positive, indicating a relationship in the hypothesized direction, with greater symptom impact associated with lower involvement). Other child variables did not have a significant effect on family involvement; no child variables had a significant effect on parent–teacher relationship quality, and as a result this aspect of the hypothesis was not supported.

The adaptive behavior finding is consistent with prior literature on children with ASD (Garbacz et al., 2016). However, the other findings are inconsistent with prior research on parent–teacher relationship quality and family involvement for parents of children with ASD (Garbacz et al., 2016) and children with externalizing behavior (Kim et al., 2013; Semke et al., 2010). Similar to the findings for Question 1B, differences between the current study and these prior studies could be due to differences in sample characteristics and size (e.g., size differences between the present study and Garbacz et al., 2016; behavioral differences between children in the current study and in Kim et al., 2013 and Semke et al., 2010). These differences could contribute to inconsistencies in findings related to the influence of child behavior.

Question 2B: After controlling for child ASD severity, which family variables (family income, parent education, parent occupation, and perceived social status) predict parent perceptions of parent–teacher relationship beliefs and behaviors (parent–teacher relationship quality, family educational involvement, parent problem-solving competence)?

Given inconsistent prior literature on family variables and parent–teacher relationships for children with ASD, this question was exploratory and there was no a priori hypothesis. Results indicated that perceived social status had a significant effect on family involvement after controlling for ASD symptoms. Other family variables (family income, parent education, and parent occupation) did not have significant effects on family involvement after controlling for ASD symptoms, nor did any family variables have significant effects on parent–teacher relationship quality after controlling for ASD symptoms.

These findings provide novel information to contribute to the literature. Specifically, these findings suggest that within this population (i.e., parents of elementary-school aged children with ASD), parents' subjective appraisals of SES factors are more related to family involvement than objective criteria of SES. It is possible that parent perceptions of their SES influence their involvement activities, potentially through parenting stress and family functioning (Manning et al., 2011).

This finding adds nuance to prior work on factors that influence family involvement. Work by Hoover-Dempsey and colleagues (2005) has identified parent life context as an important factor that influences the knowledge, skills, and resources that parents bring to educational involvement. SES does not always explain why parents become involved or why parents of similar SES vary in terms of their involvement behavior (e.g., Lareau, 1989), and that resources which accompany SES may influence involvement patterns (Hoover-Dempsey et al., 2005). Findings from this study suggest that parent appraisal of social status may be a type of resource. This could be examined in future research using samples with more racial/ethnic and socioeconomic diversity.

Question 2C: After controlling for child ASD severity, do children's educational services predict parent-teacher relationship beliefs and behaviors (parent-teacher relationship quality, family educational involvement, parent problem-solving competence)?

It was hypothesized that families of children with a higher degree of service receipt would report a higher level of parent-teacher relationship quality and family involvement. Given the limited literature in this area, this hypothesis was based on the study's conceptual framework (i.e., microsystems and mesosystemic interactions rooted in ecological systems theory; Bronfenbrenner, 1977) and was exploratory. Results

indicated that educational service variables did not have a significant effect on parent–teacher relationship quality or family involvement.

Since this research question had an exploratory, conceptual framework-based hypothesis, these findings provide novel information to contribute to the literature. Specifically, these findings suggest that within this population (i.e., parents of elementary-school aged children with ASD), the number of types of educational services and the overall dosage of educational services received by children are not related to parent perceptions of parent–teacher relationship quality or family involvement. There is not sufficient evidence to propose a change in the conceptual framework used in this study based on the exploratory nature of the research question and the study sample (i.e., a group of children who receive a relatively high level of services). Connecting educational service receipt and parent–teacher relationship beliefs within the general population is an empirical question that requires further research. However, these findings are promising and provide support for applications of the conceptual framework to this population.

Question 2D: Based on 2A–2C, which predictors remain significant? After considering the findings from the previous models, identify the most parsimonious model predicting parent–teacher relationship beliefs and behaviors.

Since only one predictor variable (perceived social status) was significant in each of the analysis types for Research Questions #2A–2C, no analyses were conducted for Research Question #2D.

Question #2 summary. Findings suggest that child adaptive behavior had a significant effect on family involvement, and that perceived social status had a significant

effect on family involvement after controlling for child ASD symptoms. Other child- and family-level predictors did not have significant effects on family involvement, and no variables had significant effects on parent–teacher relationship quality. These findings suggest that child adaptive behavior is related to family involvement activities and behaviors, and that parental appraisals of socioeconomic factors are more related to family involvement than objective criteria of SES. The lack of support for most hypothesized predictors is inconsistent with prior literature (e.g., Eccles & Harold, 1996; Garbacz et al., 2016), suggesting that further research is needed in order to determine the influences of child variables, parent variables (including objective indicators of family SES), and educational service variables. The significance of perceived social status provides nuance to prior family involvement research and highlights an area for further research on parental appraisals in relation to family involvement for parents of children with ASD.

Research Question #3

Question 3A: How do parents of children with ASD report the quality of their relationship with their child's teacher?

It was hypothesized that parents would report generally positive relationships with teachers. The parent score distribution, range, and mean ($M = 104.59$, $SD = 15.83$, sample range = 55–120, total possible range = 24–120) reflected general reports of positive relationships; thus, results supported this hypothesis. This finding is consistent with research examining parents of children with ASD (e.g., pretest mean in “frequently” to “almost always” range of agreement with quality statements; Garbacz & McIntyre, 2016) and with externalizing behavior (e.g., mean in “frequently” to “almost always” range of

agreement with quality statements; Minke et al., 2014). Benefits of high-quality relationships with teachers include relational cohesion, adaptability, joining, and communication with teachers (Vickers & Minke, 1995).

Question 3B: How do teachers of children with ASD report the quality of their relationship with their student's parent?

It was hypothesized that teachers would report generally positive relationships with parents. The teacher score distribution, range, and mean ($M = 102.36$, $SD = 16.84$, sample range = 65–120, total possible range = 24–120) reflected general reports of positive relationships; thus, results supported this hypothesis. This finding is consistent with research examining teachers of students with externalizing behavior (e.g., mean in “sometimes” to “frequently” range of agreement with quality statements; Minke et al., 2014). Similar to the finding for parent perceptions, benefits for high-quality relationships with parents include relational cohesion, adaptability, joining, and communication with parents.

Question 3C: Among parent–teacher dyads of children with ASD, to what extent do parents and teachers share their perceptions of relationship quality?

It was hypothesized that parents and teachers would generally report high levels of agreement in perceptions of their relationships with each other. Results indicated that parent and teacher ratings were generally in good agreement with each other: The ICC value was .66 ($p = .010$), which falls in the “good agreement” range and therefore supported the hypothesis. In addition, since parent and teacher reports of relationship quality were generally positive, these findings suggest that parents and teachers shared positive views of their relationships with each other.

These findings are consistent with prior literature on parents and teachers of children with externalizing behavior, in the context of reports for parent–teacher relationship quality (e.g., positive, congruent views of the relationship; Minke et al., 2014) and communication (e.g., low levels of incongruence in communication perceptions, Time 1 $M = 2.54$, Time 2 $M = 2.51$; Garbacz et al., 2015). This finding extends the literature to include a new population of children and parent–teacher dyads—specifically, children with ASD, their parents, and their teachers. In doing so, the present study contributes to parent–teacher consultation (Pryzwansky, 1986) and family–school partnerships (Glueck & Reschly, 2014) for parents and teachers of children with ASD.

Question 3D: How do Wave 2 parent relationship beliefs and behaviors relate to Wave 3 shared and independent perceptions of parent–teacher relationship quality?

This question was exploratory, and there was no a priori hypothesis. Results indicated that Wave 2 reports of parent–teacher relationship quality and family involvement had a large effect on Wave 3 parent-reported parent–teacher relationship quality, a medium to large effect on Wave 3 teacher-reported parent–teacher relationship quality, and a medium effect on Wave 3 congruence in relationship quality ratings. When examining parent- and teacher-reported relationship quality ratings, Wave 2 relationship quality and family involvement explained a comparable amount of variance to each other (22% and 28% of parent report variance, respectively; 8% and 8% of teacher report variance). Wave 2 relationship quality explained almost all of the variance in Wave 3 relationship quality congruence compared to family involvement (13% of variance compared to 1%, respectively).

Although this research question was exploratory, the findings are consistent with previous work examining parent–teacher relationship factors for children with externalizing behavior at a single time point. In a study examining relationship quality congruence, parents who reported higher levels of home–school conferencing were more likely to be in positive, congruent relationships with teachers (Minke et al., 2014). These findings suggested that parent and child factors held constant over time have a meaningful effect on parent and teacher reports approximately two years later.

Question #3 summary. Findings suggest that parents and teachers of children with ASD generally report positive relationships with each other, these reports are in good agreement with each other, and parent-reported relationship quality and family involvement at one time had a significant effect on parent and teacher reports approximately two years later. These findings suggest that a family’s history with their child’s education has a significant effect on outcomes over time, regardless of changes in other variables (e.g., yearly teacher changes). Family and child variables continue to be meaningful factors for families and how they collaborate with schools, and findings suggest a degree of consistency in how families approach schools over time.

Study Limitations

Although this study provides unique contributions to the literature on parent–teacher relationships for children with ASD, several limitations reduce the inferences that can be made based on the results. First, some Wave 2 variables (e.g., parent–teacher relationship quality, service dosage) were not normally distributed. Although choosing to not transform the dataset was an appropriate choice given the small Wave 2 sample size, this decision influences the generalizability of results. Second, this study utilized a cross-

sectional dataset of a relatively small sample for most of the analyses, and the two-time point research question utilized a smaller sample. Although cross-sectional data can yield important findings, longitudinal datasets are better-positioned to identify causality between variables, as well as relations over time (Cole & Maxwell, 2003). Third, the study sample had limited ethnic diversity. Although this is a pervasive problem in parent–teacher research (e.g., Minke et al., 2014), including parent–teacher research examining children with ASD (e.g., Garbacz & McIntyre, 2016), this remains a limitation of the current study and affects generalizability of findings to children, parents, and teachers from culturally and linguistically diverse backgrounds, and it is important to interpret the findings of this study in the context of the sample demographics (i.e., a predominantly White/Caucasian sample). Fourth, the parent problem-solving competence variable was removed from analyses due to limited variance in the variable. Although it is promising that parents predominantly reported positive views of their problem-solving competence, the questions regarding relations between parent problem-solving competence and parent–teacher relationship variables remain unaddressed. Fifth, this study relied on parent and teacher self-report. Although self-report is a valuable tool in studies examining dyadic relationships, direct observations can yield a wider range of information on parent–teacher interactions and child behavior (Garbacz & McIntyre, 2016). This is particularly important in the context of relationship quality; perception reports measure certain aspects of relationship quality, but not all aspects.

Sixth, there are limitations associated with measuring parent–teacher relationship quality and family involvement. The measures used in the present study use relatively narrow dimensions of relationships and involvement. Further work to examine cultural

influences on measurement of dimensions of relationships and involvement would enhance measurement and the internal and external validity of findings. In addition, the distance formula used to compute congruence is a relatively new method developed for a prior congruence study (Garbacz et al., 2015) based on other distance formula resources (e.g., Kenny et al., 2006). Although this specific formula has a shorter research history compared to other dyadic indices (e.g., discrepancy models, correlations), it was an appropriate choice based on sensitivity in differences in levels and increased interpretability (Garbacz et al. 2015; Kenny et al., 2006). However, it is worth considering the formula's history when interpreting and generalizing study findings.

Future Research Directions

Based on study limitations, there are five primary directions for future research. First, future studies should utilize a larger, more diverse sample to look at both cross-sectional and longitudinal relations. This would address regression assumption issues and generalization issues (e.g., related to ethnic diversity), and would increase opportunities to examine cross-cultural implications of parent–teacher pairs (Ishimaru & Takahashi, 2017; Lasky, 2000; Miller, Robinson, Valentine, & Fish, 2016). Second, future studies should use a broader measure of parent self-efficacy to address parent problem-solving competence and other aspects of self-efficacy. This would address questions related to parent problem-solving competence in relation to parent–teacher relationship variables. Third, future studies could include reports from parents, teachers, and children, as well as direct observations of behavior. In alignment with the multitrait-multimethod framework (i.e., an approach to measuring multiple aspects of a particular construct in multiple ways in order to establish convergent and divergent validation; Campbell & Fiske, 1959), this

would reduce the risk of monomethod bias that comes with using few informants, increase the representation of domains of interest, expand measurement of relationship quality to reach beyond dyadic perceptions, and enhance both external and internal validity of the study. This is a particularly important direction for enhancing cultural influence in psychometric research (i.e., conceptualizing and measuring parent–teacher relationship quality and family involvement). Fourth, future studies could examine the distance formula in larger samples, and compare outcomes related to other dyadic indices in parent–teacher relationship research. This would enhance understanding of dyadic measurement of relational variables. Fifth, future research could examine subjective appraisals of social status in order to identify mechanisms through which subjective appraisals impact parent–teacher relationship quality, family involvement, and parental problem-solving competence.

Clinical Implications

This study aimed to (a) examine child variables, family variables, parent perceptions and behaviors, and teacher perceptions among children with ASD and their parents and teachers, and (b) how ASD symptomology influences parent perceptions and behaviors. Findings from this study identified risk (child ASD severity, perceived social status) and malleable (parent–teacher relationship quality, family involvement) factors that influence parent–teacher relationships for parents and teachers of children with ASD. These findings have implications for practice, particularly for home–school support and intervention efforts. Given the potential for comprehensive wraparound needs for children with ASD, interventions with home and school involvement which target communication, collaborative implementation, and relationship quality are ideal. Parent–

teacher relationship quality is of particular interest for these approaches. Findings from the present study indicate that in the absence of intervention, relationship quality alone has a robust effect on a range of outcomes. Three potential areas for impact include (a) family–school partnership interventions such as CBC, (b) developing and implementing the universal tier of schoolwide positive behavior interventions and support (PBIS), and (c) identifying appropriate evidence-based practices to promote adaptive functioning in children with ASD.

First, findings have implications for relationship quality components in family–school partnership interventions such as CBC. CBC holds promise for children with ASD, their parents, and their teachers, particularly due to the range of potential child support needs and the importance of cross-setting supports involving parents and teachers as stakeholders (Garbacz & McIntyre, 2016; NRC, 2001). Findings from the present study highlight areas for future CBC work. For example, future CBC studies could examine parent–teacher relationship quality as an outcome variable when working with parents and teachers of children with ASD. This work could examine relationship quality in relation to child variables which parents and teachers of children with ASD have been document to perceive similarly (e.g., externalizing behavior; Azad & Mandell, 2006) and differently (e.g., child mannerisms; Azad, Reisinger et al., 2016) in order to identify nuances in how congruence relates to domains of child behavior.

Second, findings may be beneficial for developing and implementing the universal tier of schoolwide PBIS, with a particular focus on relationship quality factors and tools for families to use in partnering with schools over time. Family–school partnership initiatives can be aligned with schoolwide frameworks. By using the school

as the level of analysis, school teams can consider various factors that influence systems-wide organization and support for families. McIntyre and Garbacz (2014) identified several key factors for these efforts, including resource allocation, policies and procedures, and multicultural competence. Resource allocation refers to decisions about how to dedicate time-, skill-, and money-based resources within schools and districts. In combination with policies and procedures (guidelines for approaching family engagement), district and school teams can integrate school and family interventions at the universal, selected, and indicated tiers to support child outcomes (Dishion, 2011). Multicultural competence in schoolwide PBIS means using communication, proactive strategies, and culturally inclusive school community development to meet the needs of all children and families. Horner and Sugai (2015) identified three ways to approach multicultural competence in schoolwide PBIS: culturally valid decision-making, culturally relevant practices, and culturally knowledgeable systems.

Within the context of schoolwide supports, findings from the present study highlight factors for framework teams to consider when identifying at-risk families. For example, the findings related to child ASD severity's influence on parent-teacher relationship quality suggest that screening criteria for symptom-related risk may be beneficial for identifying families at risk for adverse parent-teacher relationship quality outcomes in order to provide early and appropriate supports.

Third, the risk and malleable factors identified in this study have implications for identifying appropriate evidence-based practices to promote adaptive functioning in children with ASD. For example, findings suggest that parent appraisals of SES are a risk factor for lower levels of family involvement. Incorporating an understanding of these

appraisals may be beneficial for understanding the life context of parents demonstrating lower levels of educational involvement. In addition, study findings suggest that parent–teacher relationship quality is a relevant area for growth through intervention, particularly for parents of children with a higher level of ASD symptoms. Teams working to identify appropriate practices to support children with ASD may wish to pay particular attention to child symptoms and ways to enhance parent–teacher relationship quality for families.

Taken together, study findings have implications for enhancing family–school partnership interventions, promoting systems and practices in PBIS, and identifying appropriate practices to support adaptive functioning for children with ASD. Overall, these implications trend toward a common theme of reducing barriers for parents and teachers of children with ASD to communicate, establish relationships, and support child outcomes. Future research may be useful for examining additional variables not examined here (e.g., parent mental health and stress; Montes & Halterman, 2007) to more fully expand on the application of the present study’s findings.

Conclusions

Limitations notwithstanding, this study examined important relationship-based variables in an understudied population (i.e., children with ASD, their parents, and their teachers) and identified risk and malleable factors that influence relationships and outcomes in this population. Findings highlight areas for future research and practical applications for children with ASD, their parents, and their teachers.

APPENDIX A

WAVE 2 RECRUITMENT AND SCHEDULING SCRIPT

Early Autism Project – Detailed Phone Screen

FAMILY ID: OE _____

Hello, my name is _____ from the University of Oregon, Oregon Early Autism Project. This is a research project begin conducted by Dr. Laura Lee McIntyre and our research team at the Child and Family Center and College of Education. I'm calling you today because you completed an interview for (insert child's name) a couple of years ago. You completed a mail home packet of questionnaires, a phone interview, and an in-home interview. We asked you questions about (insert child's name) Autism Spectrum Disorder diagnosis and services, and also questions about your family. We have completed that piece of the project and are calling you today to invite you to do a second interview with us. I would like to see if you might be eligible to participate in the second interview, and if so, I would like to give you some more information to see if you might be interested in participating. Is this a good time to talk? (If not, when would be a better time?).

Great, before I read the description of the project, does (child's name) still live with you? Has (child's name) always lived you with since he/she received their diagnosis or qualified for special education services for Autism Spectrum Disorder?

*If No on either question say: Unfortunately, to complete some of our questions, (child's name) needs to be living with you uninterrupted since their diagnosis or eligibility. Thank you for your continued interest in our project. Have a good day!

*If Yes, Continue:

The Oregon Early Autism Project is a study funded by the Office of Research Innovation and Graduate Education at the University of Oregon. Dr. McIntyre is the principal investigator. She is a child psychologist and professor and director of the school psychology graduate training program at the University of Oregon. Our research team is interested in family experiences, parenting, and services for elementary school age children who have been diagnosed with or have received special education services for an autism spectrum disorder.

We are contacting all of the families who participated in the first interview for the Oregon Early Autism Project (OEAP) and we're inviting them to participate in a second interview. Just like in the first interview, we would mail you a packet of questionnaires to complete and also conduct a home visit (or other location of your choice) to complete an in-person interview. We will be asking you questions about your child, your family, parenting, and your child's education. Your child does not need to be present during the interview. The mail home packet will take about 90 minutes to complete and the home visit will also take about 90 minutes to complete for a total of about 3 hours. We will compensate you \$50 for your time.

Participation in this study is voluntary, so you can choose to participate or not. Additionally, everything that we talk about is confidential. This means that we cannot disclose what you've shared with us. We can't share what you've discussed with us with your child's teachers, service coordinators, therapists, or doctors. Your confidentiality is protected. Should you decide to participate in the study, we will go over an Informed Consent Form which describes everything in more detail. We'll also make sure that you get a chance to have any of your questions answered.

The findings from our study will be summarized and will be available to families who participate in the project, as well as professionals in the field. We will remove all identifying information from the results so individual families will not be identified.

Do you have questions at this time?

Would you like to participate in this project?

*If No say: Thank you for your time and if you have any questions, please feel free to call me. Have good day!

*If Yes say: Great! I would like to make sure I have correct information and then I can schedule you for your home visit.

(Only complete if eligible and caregiver wishes to participate in interview)

Caregiver's Name: _____

Child's Name: _____ Child's DOB ____/____/____

Phone #: (Home) _____ (Work) _____

Cell# or Other: _____ Email _____

Home Address: _____

Mailing Address: (if different) _____

Interview Scheduled:

Assessor 1 _____ Assessor 2 _____

Day _____ Date ____/____/____ Time: _____

Special Instructions? _____

Location if not in home _____

Internal Info:

Date packet mailed: ____/____/____ Who Mailed it: _____

In-Home Interview Packet Prepped _____ Check Written _____

Family Information Entered into Database _____

~~Mapquest~~ Directions Printed _____

APPENDIX B

WAVE 2 PARENTAL INFORMED CONSENT FORM



University of Oregon
Child and Family Center & College of Education

Informed Consent for Participation as a Subject in the Oregon Early Autism Project

Investigator: Laura Lee McIntyre, Ph.D.

Adult Consent Form

Introduction

- You are being asked to be in a research study of families with children with autism spectrum disorder (ASD).
- You are being invited to participate in this project because you participated in an interview for the Oregon Early Autism Project in the past. We are contacting all of the families that previously participated in the Oregon Early Autism Project to conduct a follow up interview now that the children are elementary-school aged.
- We ask that you read this form and ask any questions that you may have before agreeing to be in the study.

Purpose of Study:

- The purpose of this study is to see how child development and family well-being changes over time during the early childhood years for families with young children who have previously identified with autism or autism spectrum disorder. We are interested in learning more about your child's development, services your child receives family well-being, and home-school partnerships.
- Participants in this study are from Oregon and the expected total number of participants is 60.
- This study is funded by the Office of Research Innovation and Graduate Education at the University of Oregon.

Description of the Study Procedures:

- The Oregon Early Autism Project (OEAP) second interview includes a mail home packet of questionnaires for you to complete and a home visit. The packet of questionnaires includes questions about your child, your family, family stress, parenting, and your child's education. The mail home packet will take about 1 hour to complete. During the home visit we will ask you some more questions about your family and your child. The home visit will also take about 2 hours to complete. It is estimated that your total completion time for this study is 3 hours (1 hour packet + 2 hour interview). You will be paid \$50 as a compensation for your time.

Risks/Discomforts of Being in the Study:

- Potential risks are minimal and include possible psychological or emotional risks and information risks involving breach of confidentiality.



- **Psychological or emotional risk.** You may feel some discomfort completing questionnaires that ask questions about your child's development and family stress and well-being. Some participants may view the home visits as minimally intrusive.
- **Breach of confidentiality.** Although project staff members go to great lengths to protect your confidentiality, there is a small risk that your name may be associated with your study participation. We minimize the risk of breach of confidentiality by coding all information you provide us in questionnaires and during the home visit, so that it cannot be associated with any individual or family. We assign a participant identification number to all of your responses. Identifying information needed for participant contact, such as names, addresses, and telephone numbers, will be kept in locked file cabinets in locked offices. Only designated project staff will have access to this information.

Benefits of Being in the Study:

- The purpose of this study is to see how child development and family well-being changes over time for families who have a child with an ASD diagnosis. We are interested in your experiences, the services your child may be receiving, and parenting stress and how these factors may affect those other families.
- The benefits of participation may include: psychological or emotional benefits, learning benefits, and benefits to the scientific community.
 - **Psychological benefits.** You may find it interesting and rewarding to contribute to scientific research and advance knowledge about child development and family well-being.
 - **Learning benefits.** Parents who participate in this interview will be given a summary of what other families who are participating are experiencing.
 - **Benefits to the scientific community.** Knowledge gained from this study may assist in the development of more effective, family-friendly supports to promote positive child and family outcomes in families with children with an ASD diagnosis.

Costs:

- There is no cost to you to participate in this research study.

Confidentiality:

- The records of this study will be kept private. In any sort of report we may publish, we will not include any information that will make it possible to identify a participant. Research records will be kept in a locked file.
- All electronic information will be coded and secured using a password protected file and a secure server.
- Access to the records will be limited to the researchers; however, please note that the Institutional Review Board and internal University of Oregon auditors may review the research records.



- Under Oregon state law, research staff are required to report suspected or known abuse of children or elderly individuals, or if an individual discloses an intent to harm him/herself or others. If any member of the research staff has or is given such information, we are required to report it to authorities.

Voluntary Participation/Withdrawal:

- Your participation is voluntary. If you choose not to participate, it will not affect your current or future relations with the University of Oregon, Child and Family Center or other education program that you may be affiliated with.
- You are free to withdraw at any time, for whatever reason.
- There is no penalty or loss of benefits for not taking part or for stopping your participation.

Contacts and Questions:

- The researcher conducting this study is Laura Lee McIntyre, PhD, BCBA-D. For questions or more information concerning this research you may contact her at (541-346-5123) or llmcinty@uoregon.edu (e-mail).
- If you believe you may have suffered a research related injury, contact Dr. McIntyre at 541-346-5123 who will give you further instructions.
- If you have any questions about your rights as a research subject, you may contact: the Research Compliance Services Office, University of Oregon at (541-346-2510) or ResearchCompliance@uoregon.edu (e-mail)

Copy of Consent Form:

- You will be given a copy of this form to keep for your records and future reference.

Statement of Consent:

- I have read (or have had read to me) the contents of this consent form and have been encouraged to ask questions. I have received answers to my questions. I give my consent to participate in this project. I have received (or will receive) a copy of this form.

Signatures/Dates

Printed Name of Primary Caregiver

Relationship to Child

Primary Caregiver Signature

Date



Verification of Explanation:

I certify that I have carefully explained the purpose and nature of this research to: _____
in appropriate language. She/he has had an opportunity to discuss it with me in detail. I have answered
all her/his questions and she/he provided affirmative agreement to participate in this research study.

Researcher's Signature

Date

Request to Contact for Other Research Studies:

Sometimes other projects are conducted at the Child and Family Center and/or at the Department of Education which you or your child may be eligible to participate in. When this happens, can someone from our project staff call you to tell you about the project? We will not give out your phone number or name until we have talked to you on the phone and you have agreed that we can pass along your information to a staff member on the other project.

Please initial and sign one of the following:

___ Yes, you may contact me to see if I might be interested in participating in a other projects a the Child and Family Center and/or the Department of Education.

___ No, you may not contact me to tell me about other projects.

APPENDIX C

WAVE 2 PARENT DEMOGRAPHICS QUESTIONNAIRE

Revised: 02/01/2016

TELEFORM: OE2DEMO

Oregon Early Autism Project: Demographics

DEMO (QB) Page 1 of 13

Family ID: O E Date: / / Time: ● 2

Directions: I'm going to start by asking you some questions about you, your child, and your family to get an idea of who lives here and what your family demographics look like.

A Little About Your Child

1a. What is your child's name? _____
(first) (middle) (last)

1b. What is your child's date of birth? / / Age: (years)

2. What is your child's height and weight? ft. in. lbs.

3. What is your child's gender? Male Female

4. (CARD) What is your child's race/ethnicity? (Check all that apply)

White/Caucasian Native American
 Black/African American Pacific Islander
 Hispanic/Latino Other: _____
 Asian

5. Has your child lived with you her/his entire life?

Yes

No - How long has your child lived with you? (years) & (months)

6. What is your relationship to your child participating in this project? _____ (relationship code)

Birth parent Foster parent Other relative
 Step parent Grandparent Live-in partner of his/her parent
 Adoptive parent Sibling Other (describe): _____

7. Does your child currently have special education services?

No (skip to #10) Yes, Please specify: Autism Intellectual Disability
 Communication Disorder Other Health Impairment
 Learning Disability Other: _____

8. If yes, does your child have special education eligibility under the category of Autism?

Yes
 No

56040



Family ID:

<input type="radio"/>	E				
-----------------------	---	--	--	--	--

Time: ● 2

9. When was your child identified with education eligibility for autism?

- | | |
|---|--|
| <input type="radio"/> At birth or infancy (0-11 months) | <input type="radio"/> 8 years old |
| <input type="radio"/> One-year old (12-23 months) | <input type="radio"/> 9 years old |
| <input type="radio"/> Two-years old (24-35 months) | <input type="radio"/> 10 years old |
| <input type="radio"/> Three-years old (36-47 months) | <input type="radio"/> 11 years old |
| <input type="radio"/> Four-years old (48-59 months) | <input type="radio"/> 12 years old |
| <input type="radio"/> Five-years old (60-71 months) | <input type="radio"/> Unknown |
| <input type="radio"/> Six-years old (72-83 months) | <input type="radio"/> N/A (No primary diagnosis) |
| <input type="radio"/> Seven-years old (84-95 months) | |

10. Does your child have a medical diagnosis of an autism spectrum disorder? Yes No

a. What is your child's medical diagnosis? _____

- | | |
|--|--|
| <input type="radio"/> Autism (Autistic Disorder) | <input type="radio"/> Other: _____ |
| <input type="radio"/> ASD (Autism Spectrum Disorder) | <input type="radio"/> Multiple: _____ |
| <input type="radio"/> PDD or PDD-NOS | <input type="radio"/> Unknown |
| <input type="radio"/> Asperger's Syndrome | <input type="radio"/> None (no medical diagnosis of ASD) |

b. When was your child diagnosed with this condition?

- | | |
|---|--|
| <input type="radio"/> At birth or infancy (0-11 months) | <input type="radio"/> 8 years old |
| <input type="radio"/> One-year old (12-23 months) | <input type="radio"/> 9 years old |
| <input type="radio"/> Two-years old (24-35 months) | <input type="radio"/> 10 years old |
| <input type="radio"/> Three-years old (36-47 months) | <input type="radio"/> 11 years old |
| <input type="radio"/> Four-years old (48-59 months) | <input type="radio"/> 12 years old |
| <input type="radio"/> Five-years old (60-71 months) | <input type="radio"/> Unknown |
| <input type="radio"/> Six-years old (72-83 months) | <input type="radio"/> N/A (No primary diagnosis) |
| <input type="radio"/> Seven-years old (84-95 months) | |



Family ID:

Time: ● 2

c. Who diagnosed your child with this condition?

- Primary Care Physician/Pediatrician
 Other Physician/Specialist (e.g., neurologist, psychiatrist, other specialist)
 Psychologist (e.g., school psychologist)
 Social Worker
 Other: _____
 Unknown
 N/A (No primary medical diagnosis)

11. Does your child have a secondary condition? Yes No (skip to #12)

a. Secondary condition:

- ADHD Other: _____
 Disruptive behavior disorder
 Seizure disorder

b. When was (child) diagnosed with this condition?

- | | |
|---|--|
| <input type="radio"/> At birth or infancy (0-11 months) | <input type="radio"/> 8 years old |
| <input type="radio"/> One-year old (12-23 months) | <input type="radio"/> 9 years old |
| <input type="radio"/> Two-years old (24-35 months) | <input type="radio"/> 10 years old |
| <input type="radio"/> Three-years old (36-47 months) | <input type="radio"/> 11 years old |
| <input type="radio"/> Four-years old (48-59 months) | <input type="radio"/> 12 years old |
| <input type="radio"/> Five-years old (60-71 months) | <input type="radio"/> Unknown |
| <input type="radio"/> Six-years old (72-83 months) | <input type="radio"/> N/A (No primary diagnosis) |
| <input type="radio"/> Seven-years old (84-95 months) | |



Family ID:

<input type="radio"/>	E				
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Time: ● 2

c. Who diagnosed (child) with this secondary condition?

- Primary Care Physician/Pediatrician
 Other Physician/Specialist (e.g., neurologist, psychiatrist, other specialist)
 Psychologist (e.g., school psychologist)
 Social Worker
 Other: _____
 Unknown

12. Does your child have any medical/health problems? Don't know No Yes: _____

13. Is your child seen regularly by a physician? Yes No

14. Is your child currently taking any medications? Yes (list below) No

Medication: _____ Reason: _____

Medication: _____ Reason: _____

Medication: _____ Reason: _____



Family ID:

<input type="radio"/>	E				
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Time: ● 2

15. Now we'd like to ask you some questions about your child's school.

a. Is your child currently enrolled in a school program?

No Yes, name of school: _____

b. At school, what level/grade is s/he in?

Kindergarten 1st 2nd 3rd 4th 5th Other: _____

c. What is the setting where your child receives education services?

- Regular class with no special education or related services provided
- 80% or more of day - Regular class
- 40 to 79% of day - Regular Class (previously known as Resource Room)
- Less than 40% of day - Regular Class (previously known as Separate Class or self-contained)
- Public separate school for children with disabilities
- Private separate school for children with disabilities (e.g., Bridgeway House)
- Public residential facility
- Private residential facility
- Correctional facility
- Homebound
- Parentally placed home school
- Parentally placed private school

d. How many years (total) of education has your child completed?
(include daycare, preschool, pre-kindergarten)

--	--

56040



Family ID:

 0 E

Time: ● 2

The following questions are about your education and employment.

25. (CARD) What is the last level of formal education you completed?

- | | |
|--|--|
| <input type="radio"/> a. No formal schooling | <input type="radio"/> f. Partial college (at least one year) |
| <input type="radio"/> b. 7th grade or less | <input type="radio"/> g. Specialized training |
| <input type="radio"/> c. Junior high completed | <input type="radio"/> h. Junior college/Associates degree (2 years) |
| <input type="radio"/> d. Partial high school (at least one year) | <input type="radio"/> i. Standard college or university graduation (4 years) |
| <input type="radio"/> e. High school graduate/GED certificate | <input type="radio"/> j. Graduate professional training, graduate degree |

26. How many years (total) of education have you completed?

27. What is your current employment status?

- | | |
|--|---|
| <input type="radio"/> Self-employed | <input type="radio"/> Temporary layoff |
| <input type="radio"/> Full time employment | <input type="radio"/> Full time homemaker |
| <input type="radio"/> Part time employment | <input type="radio"/> Retired |
| <input type="radio"/> Seasonal | <input type="radio"/> Student (not working) |
| <input type="radio"/> Unemployed | <input type="radio"/> Other (describe): _____ |
| <input type="radio"/> Disabled | |

NOTE: If it is clear that the caregiver doesn't work at all, fill in 0 for 28 and 29.

28. How many jobs do you currently have? 0 1 2 3 4 5 or more

29. On average, how many hour per week did you work in the last month?

NOTE: If caregiver is not employed, skip questions 30 and 31, and go to next page.

30. What is your current job? Please be as specific as possible: (if more than one job, refer to primary or main job)

(title/organization)

31. How long have you been at this primary or main job?

 &
 (years) (months)


Family ID:

<input type="radio"/>	E				
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Time: ● 2

A Little About Your Spouse/Partner (living in the home):
(if you do not have a spouse/partner, please skip to the page 10)

32. What is your partner's name? _____
(first) (middle) (last)

33. What is your partner's date of birth? / / Age:
(years)

34. What is your partner's gender? Male Female

35. **(CARD)** What is your partner's race/ethnicity? *(Check all that apply)*

- White/Caucasian
 Black/African American
 Hispanic/Latino
 Asian
 Native American
 Pacific Islander
 Other: _____

36. How is your partner related to your child? _____
(relationship code)

- Birth parent Foster parent Other relative
 Step parent Grandparent Live-in partner of his/her parent
 Adoptive parent Sibling Other (describe): _____

37. How long has your child lived with your partner?

- Child's entire life
 Other length of time: &
(years) (months)



Family ID:

Time: ● 2

The following questions are about your partner's education and employment.

38. (CARD) What is the last level of formal education your partner completed?

- | | |
|--|--|
| <input type="radio"/> a. No formal schooling | <input type="radio"/> f. Partial college (at least one year) |
| <input type="radio"/> b. 7th grade or less | <input type="radio"/> g. Specialized training |
| <input type="radio"/> c. Junior high completed | <input type="radio"/> h. Junior college/Associates degree (2 years) |
| <input type="radio"/> d. Partial high school (at least one year) | <input type="radio"/> i. Standard college or university graduation (4 years) |
| <input type="radio"/> e. High school graduate/GED certificate | <input type="radio"/> j. Graduate professional training, graduate degree |

39. How many years (total) of education has your partner completed?

40. What is your partner's current employment status?

- | | |
|--|---|
| <input type="radio"/> Self-employed | <input type="radio"/> Temporary layoff |
| <input type="radio"/> Full time employment | <input type="radio"/> Full time homemaker |
| <input type="radio"/> Part time employment | <input type="radio"/> Retired |
| <input type="radio"/> Seasonal | <input type="radio"/> Student (not working) |
| <input type="radio"/> Unemployed | <input type="radio"/> Other (describe): _____ |
| <input type="radio"/> Disabled | |

NOTE: If it is clear that the caregiver's partner doesn't work at all, fill in 0 for questions 41 and 42.

41. How many jobs does your partner currently have? 0 1 2 3 4 5 or more

42. On average, how many hours per week did your partner work in the last month?

NOTE: If caregiver is not employed, skip questions 43 and 44, and go to next page.

43. What is your partner's current job? Please be as specific as possible: (if more than one job, refer to primary or main job)

(title/organization)

44. How long has your partner been at this primary or main job?

 &

(years) (months)



Family ID:

<input type="radio"/>	E				
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Time: ● 2

49. What is your type of housing?

- Apartment/Duplex
 Single family home
 Mobile home
 Motel/Hotel
 Mission, emergency housing, group shelter, camping
 Homeless (skip to question #55)
 Other (describe): _____

50. Do you...

- Own your home?
 Rent your home?
 Live with a friend?
 Live with a relative?
 Other (describe): _____

51. How many rooms are in your home (not including bathrooms or hallways)?

--	--

52. How many adults live in your home?

--	--

53. How many children live in your home?

--	--

54. How many siblings of your child are living in the home?

--	--

(If "00" skip to page 13)

Family ID:

Time: ● 2

55. Sibling Information:

1. Sibling's Name: _____
- Sibling's date of birth: / / Sibling's Age:
- Sibling's gender: Male Female
- Sibling's Relationship to TC: _____ (relationship code)
- Do they have a learning problem? No Yes, list: _____
- Do they have a behavior problem? No Yes, list: _____
- Do they have an autism spectrum disorder? No Yes
2. Sibling's Name: _____
- Sibling's date of birth: / / Sibling's Age:
- Sibling's gender: Male Female
- Sibling's Relationship to TC: _____ (relationship code)
- Do they have a learning problem? No Yes, list: _____
- Do they have a behavior problem? No Yes, list: _____
- Do they have an autism spectrum disorder? No Yes
3. Sibling's Name: _____
- Sibling's date of birth: / / Sibling's Age:
- Sibling's gender: Male Female
- Sibling's Relationship to TC: _____ (relationship code)
- Do they have a learning problem? No Yes, list: _____
- Do they have a behavior problem? No Yes, list: _____
- Do they have an autism spectrum disorder? No Yes
4. Sibling's Name: _____
- Sibling's date of birth: / / Sibling's Age:
- Sibling's gender: Male Female
- Sibling's Relationship to TC: _____ (relationship code)
- Do they have a learning problem? No Yes, list: _____
- Do they have a behavior problem? No Yes, list: _____
- Do they have an autism spectrum disorder? No Yes

56040



Family ID:

<input type="radio"/>	E				
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Time: ● 2

56. Do any of the siblings have learning problems?

 No Yes NA - No siblings

57. Do any of the siblings have behavior problems or mental health problems?

 No Yes NA - No siblings

58. Does anyone in your family have a history of a learning problem? (Record parents/caregiver(s) only)

 No Yes, who & what: _____

59. Does anyone in your family have a history of mental health problems? (Record parents/caregiver(s) only)

 No Yes, who & what: _____

60. Do any of your child's immediate family members have an autism spectrum disorder?

 No Yes, who: _____

APPENDIX D

WAVE 2 SERVICES QUESTIONNAIRE

Family ID: Date: / / Time: ● 2

Directions:

A. Within the last year, has any household member received:

	Household Member?	Your Child's Sibling?	Your Child?
1. Mental health or counseling services?	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes
2. Treatment for Chemical Dependency?	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes
3. Been hospitalized?	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes
4. Support from a religious group?	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes
5. Support from other parents or relatives?	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes
6. Special Education Services?	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes
7. Help from agencies serving children? (Relief Nursery, United Way, Youth Services, etc.)	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes

B. Within the last year, has any household member:

	Household Member?	Your Child's Sibling?	Your Child?
1. Gone to an informal after-school care setting (e.g., with relative, other person's home).	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes
2. Gone to a formal day care program after school.	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes
3. Taken extra reading or math classes or formal tutoring.	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes
4. Taken lessons in music, art, dance, karate, etc.	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes
5. Gone to religious classes or services.	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes
6. Played on an organized sports team.	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes
7. Gone to Girl Scouts, Boy Scouts, Girls Inc., 4-H, YMCA, or YWCA.	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes
8. Gone to a Boys and Girls Club after school.	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes
9. Done something with someone from the Big Brothers/Big Sisters program.	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes
10. Gone to a different club/organization we didn't ask about. Please list: _____	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes

Family ID:

<input type="radio"/>	E					
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Time: ● 2

C. Since starting elementary school, has there been an increase or decrease in your child's services?

- Yes, decrease
 Stayed the same
 Yes, increase

D. (CARD) Next I have a few questions about supplements, vitamins, and therapies your child may be receiving.

1. In the last years, has your child used/taken any of the following:

- No Yes a. Melatonin?
 No Yes b. B6/Magnesium?
 No Yes c. B12?
 No Yes d. Multivitamins/Mineral supplements?
 No Yes e. Folic acid?
 No Yes f. Omega 3 fatty acids?
 No Yes g. Probiotics or GI medications?
 No Yes h. Casein or Gluten-free diet?
 No Yes i. Chelation?
 No Yes j. Other: _____

2. In the last year, has your child participated in any of the following:

- No Yes a. Massage?
 No Yes b. Yoga?
 No Yes c. Acupuncture?
 No Yes d. Exercise?
 If yes, how many times? Less than once a week
 1 or 2 times a week
 3 or 4 times a week
 5 or more times a week
 No Yes e. Animal-assisted therapy?
 No Yes f. Other: _____

3. Do any of these related services/therapies cost you money (out-of-pocket)? No (skip to #5) Yes

13248



Family ID:

<input type="radio"/>	E				
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Time: ● 2

In the last 6 months:

11. In the last 6 months has your child received any of the following services?

- a. **Speech Therapy** Yes No Number of sessions per month:

--	--
- b. **Occupational Therapy** Yes No Number of sessions per month:

--	--
- c. **Sensory Integration** Yes No Number of sessions per month:

--	--

 combined with OT or with other therapy
 (e.g., use of weighted vests, brushing, swinging, body
 sock, joint compression, sensory table, sensory diet, etc.)
- d. **Physical Therapy** Yes No Number of sessions per month:

--	--
- e. **Behavioral programming** Yes No Number of sessions per month:

--	--

 (e.g., ABA)
- f. **Adaptive P.E.** Yes No Number of sessions per month:

--	--
- g. **Play Therapy** Yes No Number of sessions per month:

--	--
- h. **Music Therapy** Yes No Number of sessions per month:

--	--
- i. **Therapeutic Listening** Yes No Number of sessions per month:

--	--
- j. **1:1 aide, instructional
assistant, or shadow** Yes No Number of hours per day:

--	--
- k. **Other: _____** Yes No Number of sessions per month:

--	--
- l. **Other: _____** Yes No Number of sessions per month:

--	--

12. How satisfied are you with your child's current services?

- Dissatisfied Somewhat dissatisfied Neutral Satisfied Very satisfied

13248



APPENDIX E

PTRS-II PARENT VERSION AT WAVES 2 AND 3

Revised:
09/18/2014

TELEFORM: OE2PTRS-II

Oregon Early Autism Project

PTRS-II(T4)

Page 1 of 2

Family ID:	<input type="text" value="0"/> <input type="text" value="E"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/> <input style="width: 20px; height: 20px;" type="text"/>	Time: ● 2
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Directions: The following statements concern your experiences with your child's primary teacher. Please read each item and use the following 5-point scale to indicate the degree to which you feel the statement is true about your experiences with the teacher.

This teacher is my child's:

- General Education/Homeroom Teacher
- Special Education Teacher
- Other: _____

	<u>Almost Never</u>	<u>Once in a While</u>	<u>Sometimes</u>	<u>Frequently</u>	<u>Almost Always</u>
1. We trust each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. It is difficult for us to work together.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. We cooperate with each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Communication is difficult between us.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. I respect this teacher.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. This teacher respects me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. We are sensitive to each other's feelings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. We have different views of right and wrong.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<u>Almost Never</u>	<u>Once in a While</u>	<u>Sometimes</u>	<u>Frequently</u>	<u>Almost Always</u>
9. When there is a problem with this child, this teacher is all talk and no action.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. This teacher keeps his/her promises to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. When there is a behavior problem, I have to solve it without getting help from this teacher.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. When things aren't going well it takes too long to work them out.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. We understand each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. We see this child differently.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. We agree about who should do what regarding this child.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. I expect more from this teacher than I get.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

48510



Family ID:

<input type="radio"/>	E				
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Time: ● 2

	<u>Almost Never</u>	<u>Once in a While</u>	<u>Sometimes</u>	<u>Frequently</u>	<u>Almost Always</u>
17. We have similar expectations of this child.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. This teacher tells me when s/he is pleased.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. I don't like the way this teacher talks to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. I tell this teacher when I am pleased.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. I tell this teacher when I am concerned.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. I tell this teacher when I am worried.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. I ask this teacher's opinion about my child's progress.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. I ask this teacher for suggestions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

APPENDIX F

FIQ-E USED AT WAVE 2

	Revised: 08/27/2014	TELEFORM: OE2FIQ-E	Oregon Early Autism Project	FIQ-E(F6)	Page 1 of 3
Family ID:	<input type="text" value="0"/>	<input type="text" value="E"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
					Time: ● 2

Directions: Mark how frequently you do the following:

	<u>Rarely</u>	<u>Sometimes</u>	<u>Often</u>	<u>Always</u>
1. I attend conferences with the teacher to talk about my child's learning or behavior.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. I contact the teacher or principal to get information.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. I talk to my child's teacher about his/her daily school routine.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. I limit my child's TV and video watching.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. I review my child's school work.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. I take my child to the public library.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. I suggest classroom activities and school trips to the teacher.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. I attend parent workshops or training offered by my child's school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<u>Rarely</u>	<u>Sometimes</u>	<u>Often</u>	<u>Always</u>
9. I talk to my child's teacher about the classroom rules.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. I take my child to school in the morning.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. I keep a regular morning and bedtime schedule for my child.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. I praise my child for his/her school work in front of the teacher.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. I share stories with my child about when I was in school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. I take my child to places in the community to learn special things (museum, church).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. I call the teacher if I am concerned about things that my child tells me about school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. I talk to the teacher about how my child gets along with his/her classmates in school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Family ID:

<input type="radio"/>	E				
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Time: ● 2

	<u>Rarely</u>	<u>Sometimes</u>	<u>Often</u>	<u>Always</u>
17. I check to see that my child has a place at home where books or school materials are kept.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. I volunteer in my child's classroom.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. I participate in fundraising activities at my child's school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. The teacher and I write notes to each other about my child or school activities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. I talk to the teacher about my child's accomplishments.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. I read with my child.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. I bring home learning materials for my child (tapes, videos, books).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. I go on class trips with my child.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<u>Rarely</u>	<u>Sometimes</u>	<u>Often</u>	<u>Always</u>
25. I participate in parent and family social activities at my child's school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. I maintain clear rules at home that my child should obey.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. I talk to my child's teacher about his/her difficulties at school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. I ask my child how his or her day was at school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. I arrange times at home when my child's classmates can come and play.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. I talk with other parents about school meetings and events.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31. I pick my child up from school in the afternoon.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. I talk with people at my child's school about training or career development opportunities for myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Family ID:

<input type="radio"/>	E				
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Time: ● 2

	<u>Rarely</u>	<u>Sometimes</u>	<u>Often</u>	<u>Always</u>
33. I talk with my child's teacher about school work he or she is expected to practice at home.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. I talk with my child's teacher about our personal and family matters if it affects my child's work at school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35. My child has chores to do at home.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36. I feel that teachers and principal encourage parents to be involved at school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
37. I feel that parents in my child's school support each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
38. I do creative activities with my child (like singing, drawing, and story telling).	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
39. I spend time with my child working on math skills.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
40. I attend organized family-school associations at my child's school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	<u>Rarely</u>	<u>Sometimes</u>	<u>Often</u>	<u>Always</u>
41. I talk with my child's teacher or principal about disciplinary problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
42. I help my child with homework.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
43. I talk with my child's teacher on the telephone.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
44. I talk about how my child is doing in school to family and friends.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
45. I talk to my child about how school has helped me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
46. I meet with other families from my child's classroom outside of school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



APPENDIX G

PCPS USED AT WAVE 2

In this section, please indicate how much you agree or disagree with each statement.

	<u>Disagree Very Strongly</u>	<u>Disagree</u>	<u>Disagree Just a Little Bit</u>	<u>Agree Just a Little Bit</u>	<u>Agree Very Strongly</u>
25. I have identified a specific concern I have for my child.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26. I have gathered specific information (e.g., homework finished, number of tantrums, etc.) to help me understand how my child is doing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27. I have set goals for my child.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
28. I have identified specific things that can be changed to help my child's learning and behavior.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29. I have developed and used specific strategies to help my child with a problem.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30. I have gathered specific information to measure my child's progress.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31. I have figured out what helps my child and what does not.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32. I have determined how to continue helping my child make progress at home and school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



APPENDIX H

SDQ USED AT WAVE 2

Revised:
08/27/2014

TELEFORM: OE2SDQ

Oregon Early Autism Project

SDQ(8R)

Page 1 of 1

Family ID:	<input type="text" value="0"/>	<input type="text" value="E"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Time: ● 2
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Directions: For each item, please mark the bubble for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain. Please give your answers on the basis of the child's behavior over the last six months or this school year.

How true is this statement for your child:	Not True	Somewhat True	Certainly True
1. Considerate of other people's feelings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Restless, overactive, cannot stay still for long	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Often complains of headaches, stomach-aches or sickness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Shares readily with other children, for example toys, treats, pencils	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Often loses temper	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Rather solitary, prefers to play alone	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Generally well behaved, usually does what adults request	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Many worries or often seems worried	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Helpful if someone is hurt, upset or feeling ill	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Constantly fidgeting or squirming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Has at least one good friend	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Often fights with other children or bullies them	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Often unhappy, depressed or tearful	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Generally liked by other children	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Easily distracted, concentration wanders	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Nervous or clingy in new situations, easily loses confidence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Kind to younger children	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. Often lies or cheats	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19. Picked on or bullied by other children	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. Often offers to help others (parents, teachers, other children)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. Thinks things out before acting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22. Steals from home, school or elsewhere	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. Gets along better with adults than with other children	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. Many fears, easily scared	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25. Good attention span, sees work through to the end	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

51198



APPENDIX I

WAVE 3 RECRUITMENT AND SCHEDULING SCRIPT

Early Autism Project – Wave 3 Recruitment and Scheduling Script

Hi this is Angie calling from the University of Oregon, Oregon Early Autism Project. I'm calling you today to see if you might be interested in participating in another interview with our project. Do you have a few minutes to talk? (If yes, continue) (If no, ask for a good time to call back).

Great, I'm going to give you a bit of information about this interview to see if this is something you would like to participate in again. As you know, this is a research project that is being conducted by Dr. Laura Lee McIntyre and our research team at the Child and Family Center and College of Education. I'm calling you today because you completed an interview for (insert child's name) in the past is that correct? (*wait for parent confirmation of child's name before proceeding*). Thank you for confirming this information for me. For that interview, you completed a mail home packet of questionnaires, a phone interview, and an in-home interview. We asked you questions about (insert child's name) Autism Spectrum Disorder diagnosis and services, and also questions about your family.

Does (child's name) still live with you?

*If No, Unfortunately, to complete some of our questions, (child's name) needs to be living with you. Thank you for your continued interest in our project. Have a good day!

*If Yes, Continue:

The Oregon Early Autism Project is a study funded by the Office of Research Innovation and Graduate Education at the University of Oregon. Our research team is interested in family experiences, parenting, and services for elementary school age children who have been diagnosed with or have received special education services for an autism spectrum disorder.

We are contacting all of the families who participated previously in the Oregon Early Autism Project (OEAP) and we're inviting them to participate in another interview to see how the children are doing in home and in school now that they're getting older.

Just like in the first interview, we would mail you a packet of questionnaires to complete and also conduct a phone interview with you. We will be asking you questions about your child, your family, parenting, and your child's education. The mail home packet will take about 1 hour to complete and the phone interview will take about 1 and ½ hours to complete for a total of about 2 ½ hours. We will compensate you \$75 for your time.

We will also ask your permission to contact your child's teacher and invite him or her to complete a short packet by mail.

Participation in this study is voluntary, so you can choose to participate or not. Additionally, everything that we talk about is confidential. This means that we cannot disclose what you've shared with us. We can't share what you've discussed with us with your child's teachers, service coordinators, therapists, or doctors. Your confidentiality is protected. Should you decide to participate in the study, you will receive a consent form in your mail home packet which we will ask that you read, sign, and send back in your mail home packet. We will also ask that you sign a consent form so that we can invite your child's teacher to complete a packet of questionnaires and

Version 7.5.17

we would require your child's teacher to sign a consent form if he or she agrees to participate as well. We'll also make sure that you get a chance to have any of your questions answered.

You may choose to not answer some questions that may make you uncomfortable or you may choose not to answer for any reason. You will receive \$75 for participating in any part of the phone interview and completing any portion of the mail home packet.

Under Oregon state law, research staff are required to report suspected or known abuse of children or elderly individuals, or if an individual discloses an intent to harm him/herself or others. If any member of the research staff has or is given such information, we are required to report it to authorities

The findings from our study will be summarized and will be available to families who participate in the project, as well as professionals in the field. We will remove all identifying information from the results so individual families will not be identified.

Do you have questions at this time?

Would you like to participate in this project?

*If No say: Thank you for your time and if you have any questions, please feel free to call me. Have good day!

*If Yes say: Great! I would like to make sure I have correct information and then I can schedule you for your home visit.

- - - - -
(Only complete if eligible and caregiver wishes to participate in interview)

Caregiver's Name: _____

Child's Name: _____ Child's DOB ____/____/____

Phone #: (Home) _____ (Work) _____

Cell# or Other: _____ Email _____

Mailing Address: (if different) _____

Interview Scheduled:

Assessor 1 _____

Day _____ Date ____/____/____ Time: _____

APPENDIX J

WAVE 3 PARENTAL INFORMED CONSENT FORM



UNIVERSITY OF OREGON

**University of Oregon Child and Family Center
Oregon Early Autism Project Wave 3
Investigator: Laura Lee McIntyre, Ph.D.**

Adult Informed Consent

Introduction

- You are being asked to be in a research study of families with children with autism spectrum disorder (ASD).
- You are being invited to participate in this project because you participated in an interview for the Oregon Early Autism Project in the past. We are contacting all of the families that previously participated in the Oregon Early Autism Project to conduct a follow up interview to see how the children are doing in home and school as they're getting older.
- We ask that you read this form and ask any questions that you may have before agreeing to be in the study.

Purpose of Study:

- The purpose of this study is to see how child development and family well-being changes over time for families who have a child previously identified with autism or autism spectrum disorder. We are interested in learning more about your child's development, services your child receives, family well-being, your child's relationship with his/her teacher and how they're doing in school.
- Participants in this study are from Oregon and the expected total number of participants is 75.
- This study is funded by the Office of Research Innovation and Graduate Education at the University of Oregon.

Description of the Study Procedures:

- The Oregon Early Autism Project (OEAP) Wave 3 interview includes a mail home packet of questionnaires for you to complete and a phone interview. The packet of questionnaires includes questions about your child, your family, family stress, parenting, and your child's education. We will include a consent form and a copy of the consent form for you to keep in your mail home packet along with a postage paid return envelope. The mail home packet will take about 30 - 45 minutes to complete. During the phone interview we will ask you some more questions about your family and your child. The phone interview will take about 1 ½ hours to complete. It is estimated that your total completion time for this interview is 2 ½ hours. You will be paid \$75 as a compensation for your time for completing the phone interview and the mail home packet.
- We will also ask you to sign a separate consent form allowing us to invite your child's teacher to complete a short packet of questionnaires.



Risks/Discomforts of Being in the Study:

- Potential risks are minimal and include possible psychological or emotional risks and information risks involving breach of confidentiality.
 - **Psychological or emotional risk.** You may feel some discomfort completing questionnaires that ask questions about your child's development and family stress and well-being, **Breach of confidentiality.** Although project staff members go to great lengths to protect your confidentiality, there is a small risk that your name may be associated with your study participation. We minimize the risk of breach of confidentiality by coding all information you provide us. We assign a participant identification number to all of your responses. Identifying information needed for participant contact, such as names, addresses, and telephone numbers, will be kept in locked file cabinets in locked offices. Only designated project staff will have access to this information.

Benefits of Being in the Study:

- The benefits of participation may include: psychological or emotional benefits, learning benefits, and benefits to the scientific community.
 - **Psychological benefits.** You may find it interesting and rewarding to contribute to scientific research and advance knowledge about child development and family well-being.
 - **Learning benefits.** Parents who participate in this interview will be given a summary of what other families who are participating are experiencing.
 - **Benefits to the scientific community.** Knowledge gained from this study may assist in the development of more effective, family-friendly supports to promote positive child and family outcomes in families with children with an ASD diagnosis.

Costs:

- There is no cost to you to participate in this research study.

Confidentiality:

- The records of this study will be kept private. In any sort of report we may publish, we will not include any information that will make it possible to identify a participant. Research records will be kept in a locked file.
- All electronic information will be coded and secured using a password protected file and a secure server.
- Access to the records will be limited to the researchers; however, please note that the Institutional Review Board and internal University of Oregon auditors may review the research records.
- Under Oregon state law, research staff are required to report suspected or known abuse of children or elderly individuals, or if an individual discloses an intent to harm him/herself or



others. If any member of the research staff has or is given such information, we are required to report it to authorities.

Voluntary Participation/Withdrawal:

- Your participation is voluntary. If you choose not to participate, it will not affect your current or future relations with the University of Oregon, Child and Family Center or other education program that you may be affiliated with.

You may choose to not answer some questions that may make you uncomfortable or you may choose not to answer for any reason. You will receive \$75 for participating in any part of the phone interview and completing any portion of the mail home packet.

- You are free to withdraw at any time, for whatever reason.
- There is no penalty or loss of benefits for not taking part or for stopping your participation.

Contacts and Questions:

- The researcher conducting this study is Laura Lee McIntyre, PhD, BCBA-D. For questions or more information concerning this research you may contact her at (541-346-5123) or llmcinty@uoregon.edu (e-mail).
- If you believe you may have suffered a research related injury, contact Dr. McIntyre at 541-346-5123 who will give you further instructions.
- If you have any questions about your rights as a research subject, you may contact: the Research Compliance Services Office, University of Oregon at (541-346-2510) or ResearchCompliance@uoregon.edu (e-mail)

Copy of Consent Form:

- You will be given a copy of this form to keep for your records and future reference.

Statement of Consent:

- I have read (or have had read to me) the contents of this consent form and have been encouraged to ask questions. I have received answers to my questions. I give my consent to participate in this project. I have received a copy of this form.

Signatures/Dates

Printed Name of Primary Caregiver

Relationship to Child

Primary Caregiver Signature

Date

Request to Contact for Other Research Studies:



Sometimes other projects are conducted at the Child and Family Center and/or at the Department of Education which you or your child may be eligible to participate in. When this happens, can someone from our project staff call you to tell you about the project? We will not give out your phone number or name until we have talked to you on the phone and you have agreed that we can pass along your information to a staff member on the other project.

Please initial and sign one of the following:

Yes, you may contact me to see if I might be interested in participating in a other projects a the Child and Family Center and/or the Department of Education.

No, you may not contact me to tell me about other projects.

Verification of Explanation:

I certify that I have carefully explained the purpose and nature of this research to: _____ in appropriate language. She/he has had an opportunity to discuss it with me in detail. I have answered all her/his questions and she/he provided affirmative agreement to participate in this research study.

Researcher's Signature

Date

APPENDIX K

WAVE 3 TEACHER INFORMED CONSENT FORM



UNIVERSITY OF OREGON

**University of Oregon Child and Family Center
Oregon Early Autism Project Wave 3
Investigator: Laura Lee McIntyre, Ph.D.**

Teacher Informed Consent

Introduction

- You are being asked to be in a research study of families with a child who has been diagnosed or has received services for an autism spectrum disorder in the past.
- You are being invited to participate in this study because a student of yours and his/her family is participating in this project.
- The participating child's parents have given their permission for our research staff to contact you. The parent's consent form allowing us to contact you is included in this packet.
- We ask that you read this form and ask any questions that you may have before agreeing to participate in the study.

Purpose of Study:

- The purpose of this study is to see how child development and family well-being changes over time for families who have a child previously identified with autism or autism spectrum disorder. We are interested in learning more about children's development, services the family is receiving, and how the children are doing in school.
- Participants in this study are from Oregon and the expected total number of participants is 75.
- This study is funded by the Office of Research Innovation and Graduate Education at the University of Oregon.

Description of Study Participation for Teachers:

- Teacher participation in this project involves completing one packet of 3 short questionnaires about the participating student's social and behavioral adjustment as well as your relationship with the child's parents. The packet also contains 1 short questionnaire about yourself. The estimated completion time for teacher questionnaires is 30-45 minutes. Teacher participation is a separate component of the study and will not influence the child and family's participation. If you choose to participate in the study, please complete the consent form and the questionnaires to the best of your ability and return them in the postage paid return envelope that is provided to you in this packet.

Risks/Discomforts of Being in the Study:

- Potential risks are minimal and include possible psychological or emotional risks and information risks involving breach of confidentiality.



- **Psychological or emotional risk.** You may feel some discomfort completing questionnaires that ask questions about the social and behavioral development of one of your students in your classroom.
- **Breach of confidentiality.** Although project staff go to great lengths to protect your confidentiality and the confidentiality of our participating families and children, there is a small risk that your name may be associated with your study participation. We assign a participant identification number to all of your responses. Identifying information needed for participant contact, such as names, addresses, and telephone numbers, will be kept in locked file cabinets in locked offices. Only designated project staff will have access to this information.

Benefits of Being in the Study:

- The benefits of participation may include: psychological or emotional benefits, learning benefits, and benefits to the scientific community.
 - **Psychological benefits.** You may find it interesting and rewarding to contribute to scientific research and advance knowledge about child development and family well-being.
 - **Learning benefits.** Elementary and Middle school are an important time for children and their families. Parents/caregivers and teacher participation in this project provides us with valuable information on how children are doing in classroom settings.
 - **Benefits to the scientific community.** According to the Centers for Disease Control and Prevention, autism spectrum disorder is the fastest growing pediatric developmental disorder in the U.S. Research that addresses how to better support families may help bring awareness to the broader community and may help professionals and family members be more sensitive to the needs of this growing population.

Payments:

- You will receive \$25 for your time to complete and return the questionnaire packet.

Costs:

- There is no cost to you to participate in this research study.

Confidentiality:

- The records of this study will be kept private. In any sort of report we may publish, we will not include any information that will make it possible to identify a participant. Research records will be kept in a locked file.
- All electronic information will be coded and secured using a password protected file and a secure server.



- Access to the records will be limited to the researchers; however, please note that National Institutes of Health regulatory agencies, and the Institutional Review Board and internal University of Oregon auditors may review the research records.
- Under Oregon state law, research staff are required to report suspected or known abuse of children or elderly individuals, or if an individual discloses an intent to harm him/herself or others. If any member of the research staff has or is given such information, we are required to report it to authorities.

Voluntary Participation/Withdrawal:

- Your participation is voluntary. If you choose not to participate, it will not affect your current or future relations with the University of Oregon, Child and Family Center, other education program or school that you may be affiliated with.
- You may choose not to answer any questions for any reason, you will still receive \$25 for returning the survey, even if there are questions you do not wish to answer.
- You are free to withdraw at any time, for whatever reason.
- There is no penalty or loss of benefits for not taking part or for stopping your participation.

Contacts and Questions:

- The researcher conducting this study is Laura Lee McIntyre, PhD, BCBA-D. For questions or more information concerning this research you may contact her at (541-346-5123) or llmcinty@uoregon.edu (e-mail).
- If you believe you may have suffered a research related injury, contact Dr. McIntyre at 541-346-5123 who will give you further instructions.
- If you have any questions about your rights as a research subject, you may contact: the Research Compliance Services Office, University of Oregon at (541-346-2510) or ResearchCompliance@uoregon.edu (e-mail).

Copy of Consent Form:

- You will be given a copy of this form to keep for your records and future reference.

Statement of Consent:

- I have read (or have had read to me) the contents of this consent form and have been encouraged to ask questions. I have received answers to my questions. I give my consent to participate in this study. I have received (or will receive) a copy of this form.

Signatures/Dates

Printed Name of Teacher

Teacher Signature

Date

APPENDIX L

WAVE 3 PARENT DEMOGRAPHICS QUESTIONNAIRE

Revised:
04/14/2017

TELEFORM: OE3DEMO

Oregon Early Autism Project: Demographics

DEMO (QB) Page 1 of 13

Family ID:	<input type="text" value="O"/> <input type="text" value="E"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	Date:	<input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	Wave: ● 3
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Directions: I'm going to start by asking you some questions about you, your child, and your family to get an idea of who lives here and what your family demographics look like.

A Little About Your Child

1a. What is your child's name? _____	
<i>(first)</i>	<i>(middle)</i>
<i>(last)</i>	
1b. What is your child's date of birth? <input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	Age: <input type="text"/> <input type="text"/> (years)

2. What is your child's height and weight? ft. in. lbs.

3. What is your child's gender? <input type="radio"/> Male <input type="radio"/> Female	
4. (CARD) What is your child's race/ethnicity? (Check all that apply)	
<input type="checkbox"/> White/Caucasian	<input type="checkbox"/> Native American
<input type="checkbox"/> Black/African American	<input type="checkbox"/> Pacific Islander
<input type="checkbox"/> Hispanic/Latino	<input type="checkbox"/> Other: _____
<input type="checkbox"/> Asian	

5. Has your child lived with you her/his entire life?

Yes

No - How long has your child lived with you? (years) & (months)

6. What is your relationship to your child participating in this project? _____ (relationship code)

Birth parent

Foster parent

Other relative

Step parent

Grandparent

Live-in partner of his/her parent

Adoptive parent

Sibling

Other (describe): _____

7. Does your child currently have special education services?

No (skip to #10)

Yes, Please specify: Autism

Intellectual Disability

Communication Disorder

Other Health Impairment

Learning Disability

Other: _____

8. If yes, does your child have special education eligibility under the category of Autism?

Yes

No

41670



Family ID:

O	E				
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Wave: ● 3

9. When was your child identified with education eligibility for autism?

- | | |
|---|--|
| <input type="radio"/> At birth or infancy (0-11 months) | <input type="radio"/> 8 years old |
| <input type="radio"/> One-year old (12-23 months) | <input type="radio"/> 9 years old |
| <input type="radio"/> Two-years old (24-35 months) | <input type="radio"/> 10 years old |
| <input type="radio"/> Three-years old (36-47 months) | <input type="radio"/> 11 years old |
| <input type="radio"/> Four-years old (48-59 months) | <input type="radio"/> 12 years old |
| <input type="radio"/> Five-years old (60-71 months) | <input type="radio"/> Unknown |
| <input type="radio"/> Six-years old (72-83 months) | <input type="radio"/> N/A (No primary diagnosis) |
| <input type="radio"/> Seven-years old (84-95 months) | |

10. Does your child have a medical diagnosis of an autism spectrum disorder? Yes No

a. What is your child's medical diagnosis? _____

- | | |
|--|--|
| <input type="radio"/> Autism (Autistic Disorder) | <input type="radio"/> Other: _____ |
| <input type="radio"/> ASD (Autism Spectrum Disorder) | <input type="radio"/> Multiple: _____ |
| <input type="radio"/> PDD or PDD-NOS | <input type="radio"/> Unknown |
| <input type="radio"/> Asperger's Syndrome | <input type="radio"/> None (no medical diagnosis of ASD) |

b. When was your child diagnosed with this condition?

- | | |
|---|--|
| <input type="radio"/> At birth or infancy (0-11 months) | <input type="radio"/> 8 years old |
| <input type="radio"/> One-year old (12-23 months) | <input type="radio"/> 9 years old |
| <input type="radio"/> Two-years old (24-35 months) | <input type="radio"/> 10 years old |
| <input type="radio"/> Three-years old (36-47 months) | <input type="radio"/> 11 years old |
| <input type="radio"/> Four-years old (48-59 months) | <input type="radio"/> 12 years old |
| <input type="radio"/> Five-years old (60-71 months) | <input type="radio"/> Unknown |
| <input type="radio"/> Six-years old (72-83 months) | <input type="radio"/> N/A (No primary diagnosis) |
| <input type="radio"/> Seven-years old (84-95 months) | |



Family ID:

O	E				
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Wave: ● 3

c. Who diagnosed your child with this condition?

- Primary Care Physician/Pediatrician
 Other Physician/Specialist (e.g., neurologist, psychiatrist, other specialist)
 Psychologist (e.g., school psychologist)
 Social Worker
 Other: _____
 Unknown
 N/A (No primary medical diagnosis)

11. Does your child have a secondary condition? Yes No (skip to #12)

a. Secondary condition:

- ADHD
 Disruptive behavior disorder
 Seizure disorder

 Other: _____

b. When was (child) diagnosed with this condition?

- | | |
|---|--|
| <input type="radio"/> At birth or infancy (0-11 months) | <input type="radio"/> 8 years old |
| <input type="radio"/> One-year old (12-23 months) | <input type="radio"/> 9 years old |
| <input type="radio"/> Two-years old (24-35 months) | <input type="radio"/> 10 years old |
| <input type="radio"/> Three-years old (36-47 months) | <input type="radio"/> 11 years old |
| <input type="radio"/> Four-years old (48-59 months) | <input type="radio"/> 12 years old |
| <input type="radio"/> Five-years old (60-71 months) | <input type="radio"/> Unknown |
| <input type="radio"/> Six-years old (72-83 months) | <input type="radio"/> N/A (No primary diagnosis) |
| <input type="radio"/> Seven-years old (84-95 months) | |



Family ID:

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Wave: ● 3

c. Who diagnosed (child) with this secondary condition?

- Primary Care Physician/Pediatrician
- Other Physician/Specialist (e.g., neurologist, psychiatrist, other specialist)
- Psychologist (e.g., school psychologist)
- Social Worker
- Other: _____
- Unknown

12. Does your child have any medical/health problems? Don't know No Yes: _____

13. Is your child seen regularly by a physician? Yes No

14. Is your child currently taking any medications? Yes (list below) No

Medication: _____ Reason: _____

Medication: _____ Reason: _____

Medication: _____ Reason: _____



Family ID:

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Wave: ● 3

15. Now we'd like to ask you some questions about your child's school.

a. Is your child currently enrolled in a school program?

No Yes, name of school: _____

b. At school, what level/grade is s/he in?

2nd 3rd 4th 5th 6th 7th 8th Other: _____

c. What is the setting where your child receives education services?

- Regular class with no special education or related services provided
- 80% or more of day - Regular class
- 40 to 79% of day - Regular Class (previously known as Resource Room)
- Less than 40% of day - Regular Class (previously known as Separate Class or self-contained)
- Public separate school for children with disabilities
- Private separate school for children with disabilities (e.g., Bridgeway House)
- Public residential facility
- Private residential facility
- Correctional facility
- Homebound
- Parentally placed home school
- Parentally placed private school

d. How many years (total) of education has your child completed?
(include daycare, preschool, pre-kindergarten)

--	--



Family ID:

Wave: ● 3

A Little About You:16. What is your name? _____
(first) (middle) (last)17. What is your date of birth? / / Age:
(years)18. What is your gender? Male Female

19. (CARD) What is your race/ethnicity? (Check all that apply)

- White/Caucasian
 Black/African American
 Hispanic/Latino
 Asian
 Native American
 Pacific Islander
 Other: _____

20. What is your place of birth? In the USA In another country: _____21. What is your native language? _____ (language code)22. Do you live with a spouse or partner? No Yes23. Are you currently married? No Yes**The following are about religious or spiritual beliefs**24. Do you have religious or spiritual beliefs? Yes No (if No, skip to 25 on the next page)

a. How would you describe your religious or spiritual orientation?

- Protestant Christian Other organized religion (specify): _____
 Jewish Eastern (Buddhist or Hindu) Personal spiritual (unorganized) (specify): _____
 Catholic Muslim _____
 Mormon Jehovah's Witness _____

b. How important are these beliefs in your life?

- Very important Important Somewhat important Slightly important Not at all important

c. In general, how often do you practice your religion or spirituality? For example, attending services, individual prayer, meditation, inspirational reading, or Bible study?

- Daily Several times a week Weekly Less than weekly Holidays Not at all

41670



Family ID:

O	E				
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Wave: ● 3

The following questions are about your education and employment.

25. (CARD) What is the last level of formal education you completed?

- | | |
|--|--|
| <input type="radio"/> a. No formal schooling | <input type="radio"/> f. Partial college (at least one year) |
| <input type="radio"/> b. 7th grade or less | <input type="radio"/> g. Specialized training |
| <input type="radio"/> c. Junior high completed | <input type="radio"/> h. Junior college/Associates degree (2 years) |
| <input type="radio"/> d. Partial high school (at least one year) | <input type="radio"/> i. Standard college or university graduation (4 years) |
| <input type="radio"/> e. High school graduate/GED certificate | <input type="radio"/> j. Graduate professional training, graduate degree |

26. How many years (total) of education have you completed?

--	--

27. What is your current employment status?

- | | |
|--|---|
| <input type="radio"/> Self-employed | <input type="radio"/> Temporary layoff |
| <input type="radio"/> Full time employment | <input type="radio"/> Full time homemaker |
| <input type="radio"/> Part time employment | <input type="radio"/> Retired |
| <input type="radio"/> Seasonal | <input type="radio"/> Student (not working) |
| <input type="radio"/> Unemployed | <input type="radio"/> Other (describe): _____ |
| <input type="radio"/> Disabled | |

NOTE: If it is clear that the caregiver doesn't work at all, fill in 0 for 28 and 29.

28. How many jobs do you currently have? 0 1 2 3 4 5 or more

29. On average, how many hour per week did you work in the last month?

--	--

NOTE: If caregiver is not employed, skip questions 30 and 31, and go to next page.

30. What is your current job? Please be as specific as possible: (if more than one job, refer to primary or main job)

(title/organization)

31. How long have you been at this primary or main job?

		&		
(years)			(months)	

Family ID:

O	E				
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Wave: ● 3

The following questions are about your partner's education and employment.

38. (CARD) What is the last level of formal education your partner completed?

- | | |
|--|--|
| <input type="radio"/> a. No formal schooling | <input type="radio"/> f. Partial college (at least one year) |
| <input type="radio"/> b. 7th grade or less | <input type="radio"/> g. Specialized training |
| <input type="radio"/> c. Junior high completed | <input type="radio"/> h. Junior college/Associates degree (2 years) |
| <input type="radio"/> d. Partial high school (at least one year) | <input type="radio"/> i. Standard college or university graduation (4 years) |
| <input type="radio"/> e. High school graduate/GED certificate | <input type="radio"/> j. Graduate professional training, graduate degree |

39. How many years (total) of education has your partner completed?

--	--

40. What is your partner's current employment status?

- | | |
|--|---|
| <input type="radio"/> Self-employed | <input type="radio"/> Temporary layoff |
| <input type="radio"/> Full time employment | <input type="radio"/> Full time homemaker |
| <input type="radio"/> Part time employment | <input type="radio"/> Retired |
| <input type="radio"/> Seasonal | <input type="radio"/> Student (not working) |
| <input type="radio"/> Unemployed | <input type="radio"/> Other (describe): _____ |
| <input type="radio"/> Disabled | |

NOTE: If it is clear that the caregiver's partner doesn't work at all, fill in 0 for questions 41 and 42.

41. How many jobs does your partner currently have? 0 1 2 3 4 5 or more

42. On average, how many hours per week did your partner work in the last month?

--	--

NOTE: If caregiver is not employed, skip questions 43 and 44, and go to next page.

43. What is your partner's current job? Please be as specific as possible: (if more than one job, refer to primary or main job)

(title/organization)

44. How long has your partner been at this primary or main job?

		&		
(years)			(months)	



Family ID:

Wave: ● 3

The following questions are about your household income and your home

45. What is your annual household income: \$,

(CARD)

- a. \$4,999 or less e. \$20,000 to \$24,999 i. \$50,000 to \$59,999 m. \$90,000 or more
 b. \$5,000 to \$9,999 f. \$25,000 to \$29,999 j. \$60,000 to \$69,999
 c. \$10,000 to \$14,999 g. \$30,000 to \$39,999 k. \$70,000 to \$79,999
 d. \$15,000 to \$19,999 h. \$40,000 to \$49,999 l. \$80,000 to \$89,999

46. How much money does your family have?

- Not enough to get by
 Just enough to get by
 We only have to worry about money for fun or extras
 We never worry about money

47. How many children are you supporting?

48. (CARD) Do you receive any of the following (check all that apply)?

- a. Temporary Assistance for Needy Families (TANF)/Welfare
 b. Social Security
 c. SSI (Supplemental Security Income)
 d. Medicaid
 e. Food Stamps
 f. Heating and Electric bill assistance
 g. Unemployment
 h. Child support
 i. Oregon Health Plan (OHP)
 j. WIC (Women, Infants, and Children)
 k. Food for Lane County
 l. Developmental Disability Services
 m. Tribal Insurance
 n. Respite Services



Family ID:

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Wave: ● 3

49. What is your type of housing?

- Apartment/Duplex
- Single family home
- Mobile home
- Motel/Hotel
- Mission, emergency housing, group shelter, camping
- Homeless (skip to question #55)
- Other (describe): _____

50. Do you...

- Own your home?
- Rent your home?
- Live with a friend?
- Live with a relative?
- Other (describe): _____

51. How many rooms are in your home (not including bathrooms or hallways)?

--	--

52. How many adults live in your home?

--	--

53. How many children live in your home?

--	--

54. How many siblings of your child are living in the home?

--	--

(If "00" skip to page 13)

Family ID:

O	E				
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Wave: ● 3

55. Sibling Information:

1. Sibling's Name: _____
- Sibling's date of birth: / / Sibling's Age:
- Sibling's gender: Male Female
- Sibling's Relationship to TC: _____ (relationship code)
- Do they have a learning problem? No Yes, list: _____
- Do they have a behavior problem? No Yes, list: _____
- Do they have an autism spectrum disorder? No Yes
2. Sibling's Name: _____
- Sibling's date of birth: / / Sibling's Age:
- Sibling's gender: Male Female
- Sibling's Relationship to TC: _____ (relationship code)
- Do they have a learning problem? No Yes, list: _____
- Do they have a behavior problem? No Yes, list: _____
- Do they have an autism spectrum disorder? No Yes
3. Sibling's Name: _____
- Sibling's date of birth: / / Sibling's Age:
- Sibling's gender: Male Female
- Sibling's Relationship to TC: _____ (relationship code)
- Do they have a learning problem? No Yes, list: _____
- Do they have a behavior problem? No Yes, list: _____
- Do they have an autism spectrum disorder? No Yes
4. Sibling's Name: _____
- Sibling's date of birth: / / Sibling's Age:
- Sibling's gender: Male Female
- Sibling's Relationship to TC: _____ (relationship code)
- Do they have a learning problem? No Yes, list: _____
- Do they have a behavior problem? No Yes, list: _____
- Do they have an autism spectrum disorder? No Yes



Family ID:

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Wave: ● 3

56. Do any of the siblings have learning problems?

 No Yes NA - No siblings

57. Do any of the siblings have behavior problems or mental health problems?

 No Yes NA - No siblings

58. Does anyone in your family have a history of a learning problem? (Record parents/caregiver(s) only)

 No Yes, who & what: _____

59. Does anyone in your family have a history of mental health problems? (Record parents/caregiver(s) only)

 No Yes, who & what: _____

60. Do any of your child's immediate family members have an autism spectrum disorder?

 No Yes, who: _____

APPENDIX M

PTRS-II TEACHER VERSION USED AT WAVE 3

Revised:
04/14/2017

TELEFORM: OE3TPTRS

OEAP: Parent Teacher Relationship Survey - II TPTRS(TI) Page 1 of 2

Family ID:	<input type="text" value="0"/>	<input type="text" value="E"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	Teacher ID:	<input type="text" value="0"/>	<input type="text" value="E"/>	<input type="text"/>	<input type="text"/>	Wave: ● 3
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Directions: The following statements concern your experiences with this child's parent. Please read each item and use the following 5-point scale to indicate the degree to which you feel the statement is true about your experiences with the parent.

	<u>Almost never</u>	<u>Once in a while</u>	<u>Sometimes</u>	<u>Frequently</u>	<u>Almost always</u>
1. We trust each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. It is difficult for us to work together.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. We cooperate with each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Communication is difficult between us.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. I respect this parent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. This parent respects me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. We are sensitive to each other's feelings.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. We have different views of right and wrong.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. When there is a problem with this child, this parent is all talk and no action.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. This parent keeps his/her promises to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. When there is a behavior problem, I have to solve it without getting help from this parent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. When things aren't going well it takes too long to work them out.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. We understand each other.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. We see this child differently.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. We agree about who should do what regarding this child.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. I expect more from this parent than I get.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. We have similar expectations of this child.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. This parent tells me when s/he is pleased.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

31582



Family ID:

O	E				
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Teacher ID:

O	E				
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Wave: ● 3

	<u>Almost never</u>	<u>Once in a while</u>	<u>Sometimes</u>	<u>Frequently</u>	<u>Almost always</u>
19. I don't like the way this parent talks to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20. I tell this parent when I am pleased.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21. I tell this parent when I am concerned.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<hr/>					
22. I tell this parent when I am worried.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23. I ask this parent's opinion about this child's progress.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24. I ask this parent for suggestions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

31582



APPENDIX N

WAVE 3 TEACHER DEMOGRAPHICS QUESTIONNAIRE

Revised:
04/14/2017

TELEFORM: OE3TDEMO

OEAP: Demographics-Teacher

TDEMO (TP)

Page 1 of 2

Family ID: <input type="text" value="O"/> <input type="text" value="E"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	Teacher ID: <input type="text" value="O"/> <input type="text" value="E"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	Wave: ● 3
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Today's Date: / /

1. What is your gender? Male Female
2. What is your age range? 18-25 26-35 36-45 46-55 56-65 66 and older
3. What race would do you identify yourself with? (Check all that apply)
 White/ Caucasian Native American
 Black/ African American Pacific Islander
 Hispanic/ Latino/a Other: _____
 Asian
4. What is the last level of formal education you completed?
 High School Diploma or GED
 Associate's Degree or Vocational Training/2-year College
 Bachelor's Degree/4-year College or University
 Master's Degree
 Doctoral Degree or Other: _____
5. Are you a licensed/certified teacher?
 No
 Yes → a. What type? Special Education License General Education License
6. How many years of experience do you have teaching? years
7. How many years have you been teaching in this classroom? years
8. What grade do you currently teach? (Check all that apply)
 2nd Grade 6th Grade
 3rd Grade 7th Grade
 4th Grade 8th Grade
 5th Grade Other (explain) _____

1247



Family ID: Teacher ID:

Wave: ● 3

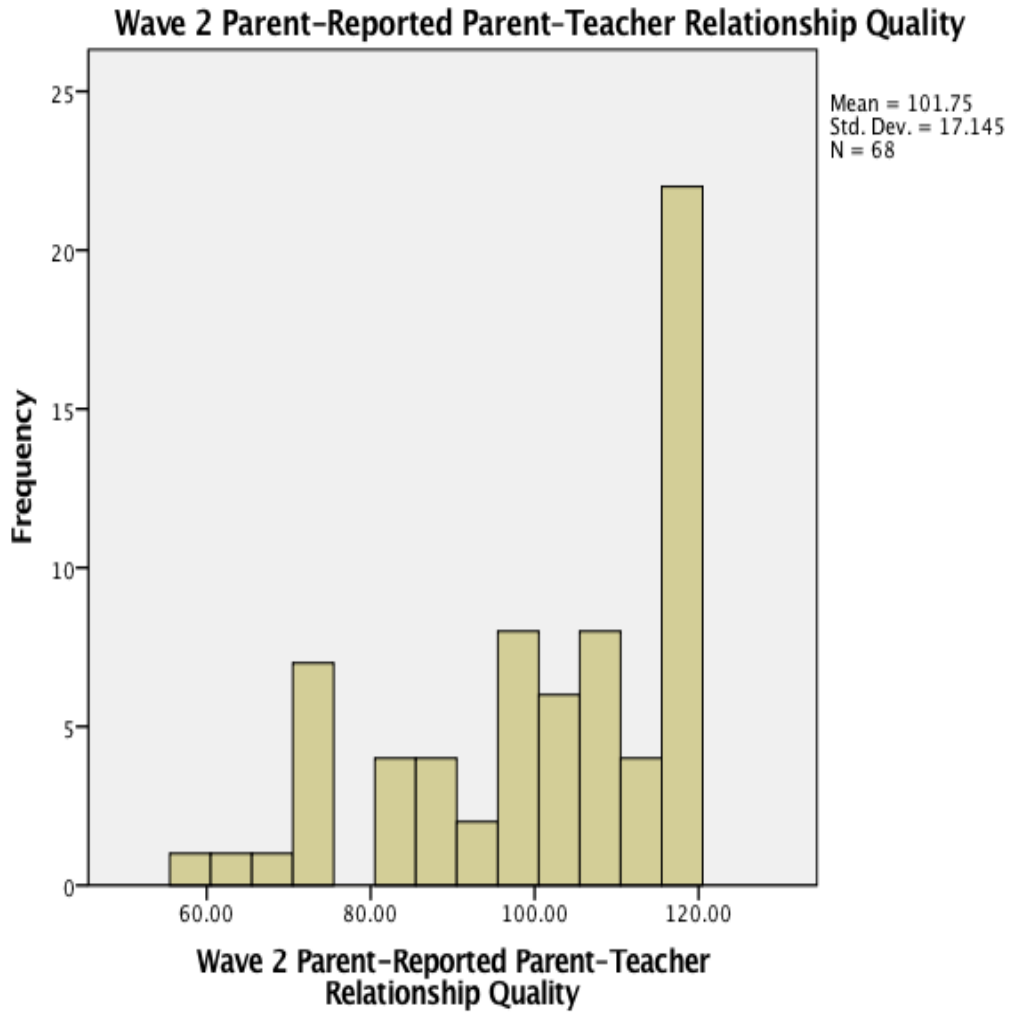
School and Classroom Information9. How many years of experience do you have teaching children in this age group? years10. Type of setting: Self-Contained Special Education Inclusion/Mainstream General Education11. Type of school/classroom: Private school (tuition)
 Public School/School District
 Home School
 Other: _____12. How many students are in your classroom this year? students13. How many students in your classroom currently have an IEP? students**Student Information**14. How long have you known _____ (student)? months15. How many hours per week do you spend with _____ (student)? hours16. Approximately how many times have you met with _____ (student's) parent(s), including talking with them over the phone? times

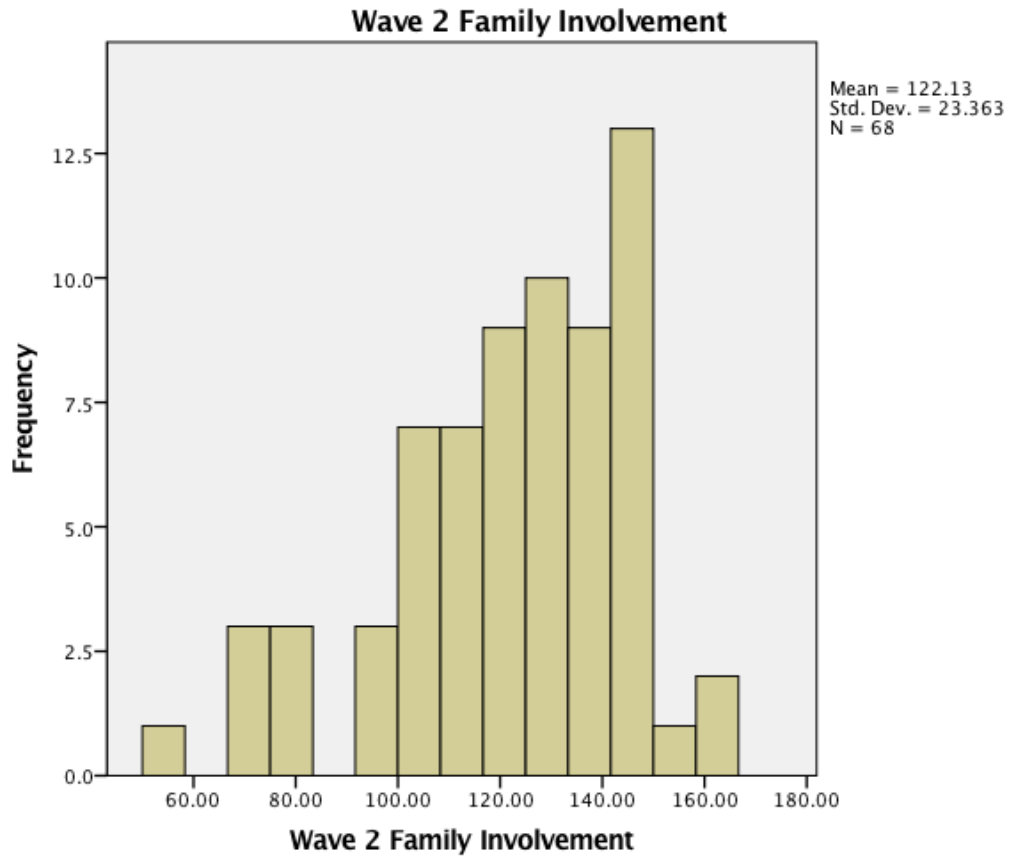
17. On a scale of 1 – 5, how involved would say this child's parents are in his/her education?

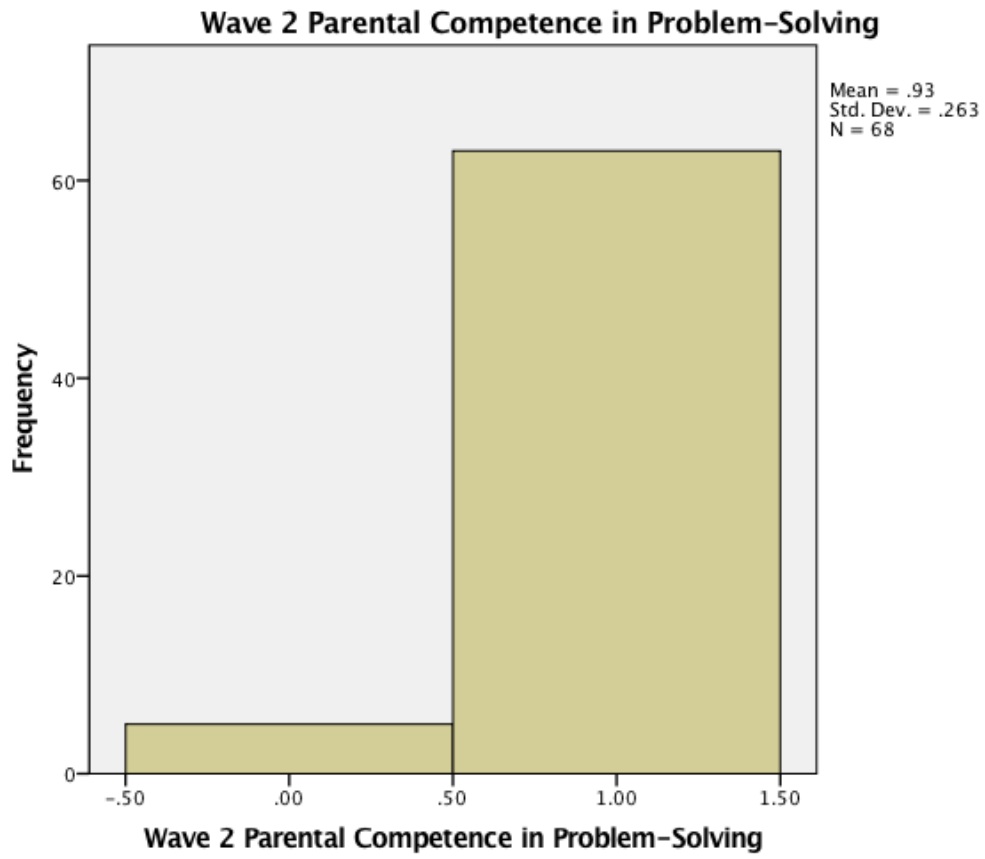
- 1 – Very Uninvolved
 2 – Uninvolved
 3 – Neither Uninvolved nor Involved
 4 – Involved
 5 – Very Involved

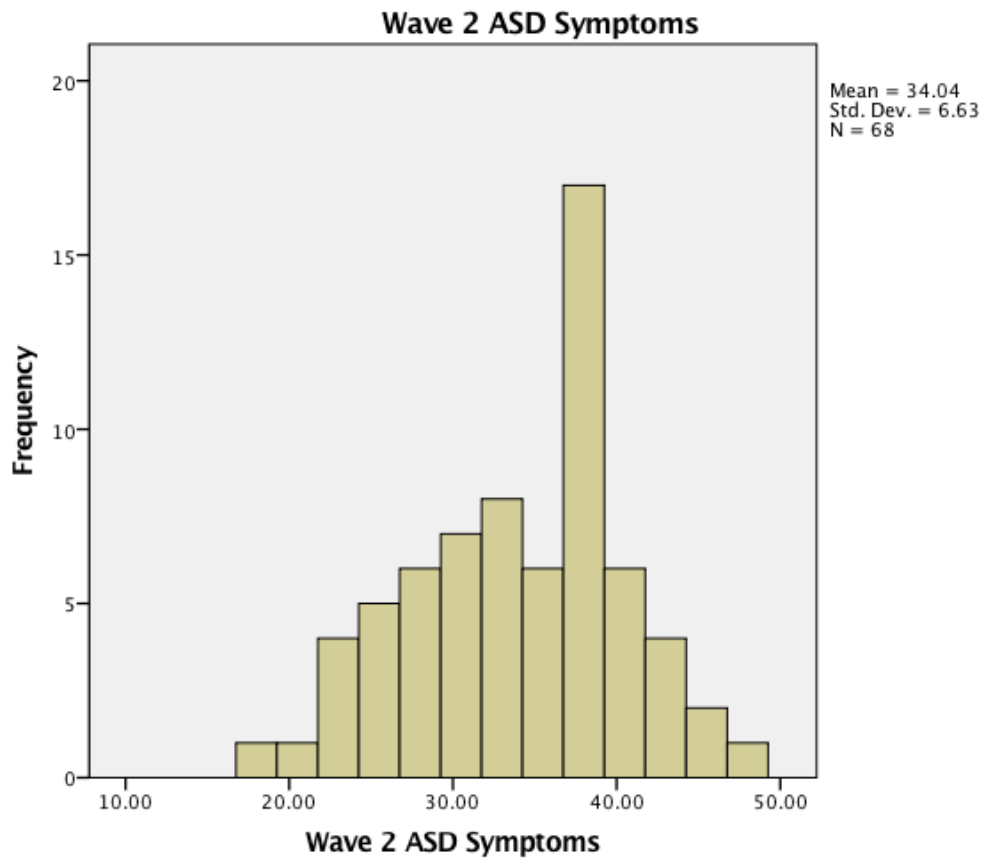
APPENDIX O

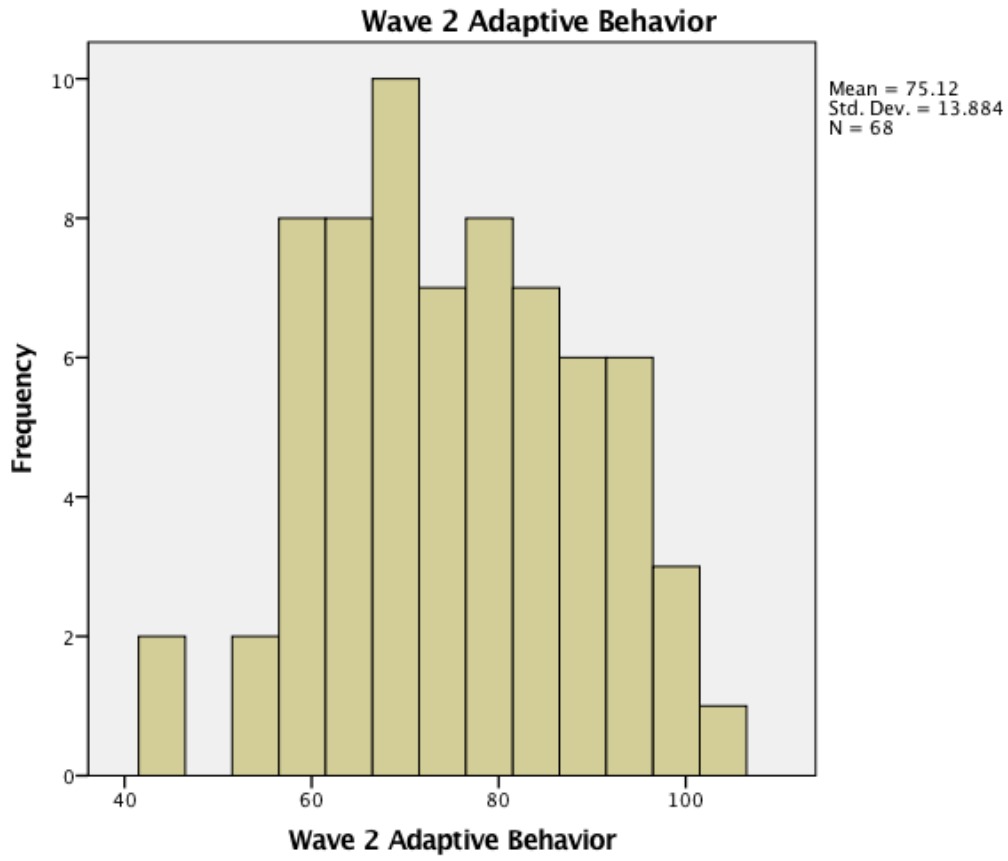
HISTOGRAMS FOR WAVE 2 STUDY VARIABLES

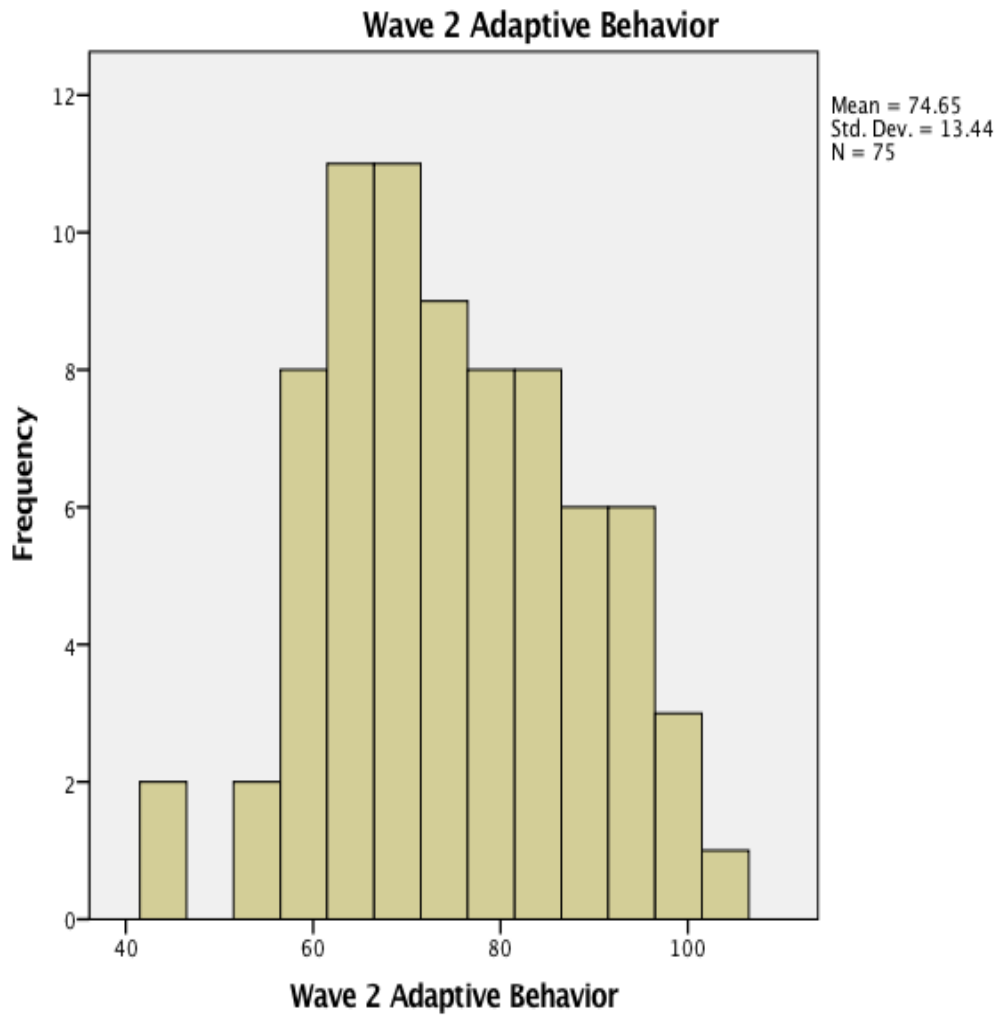


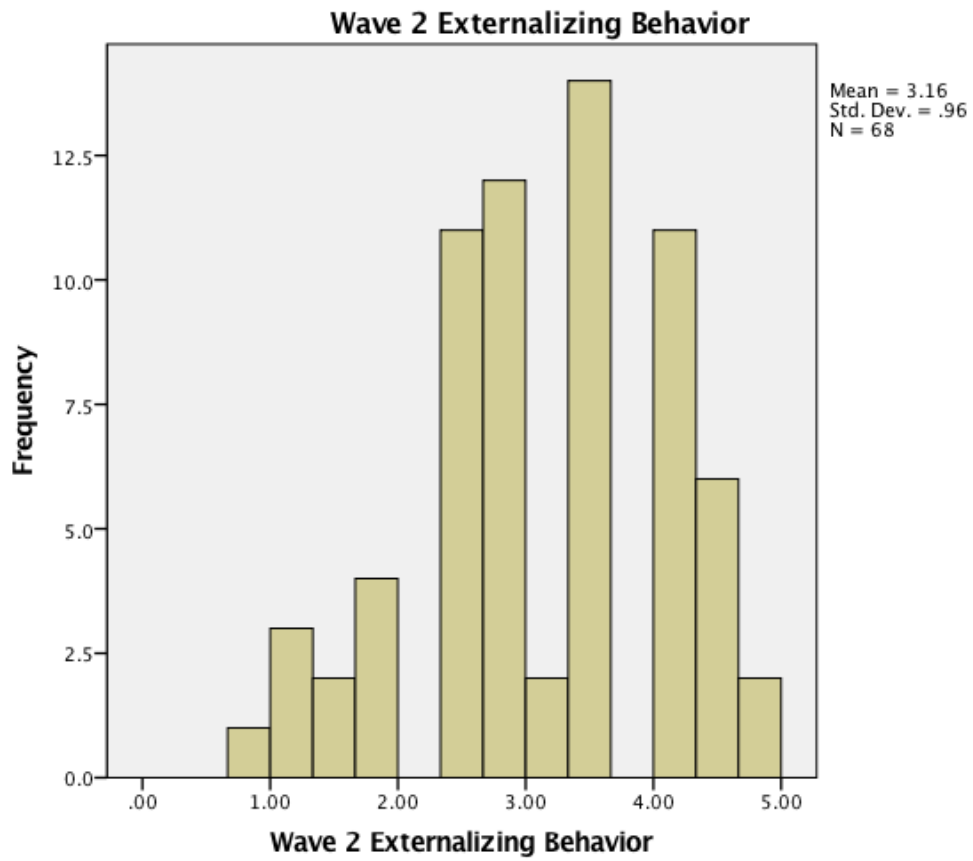


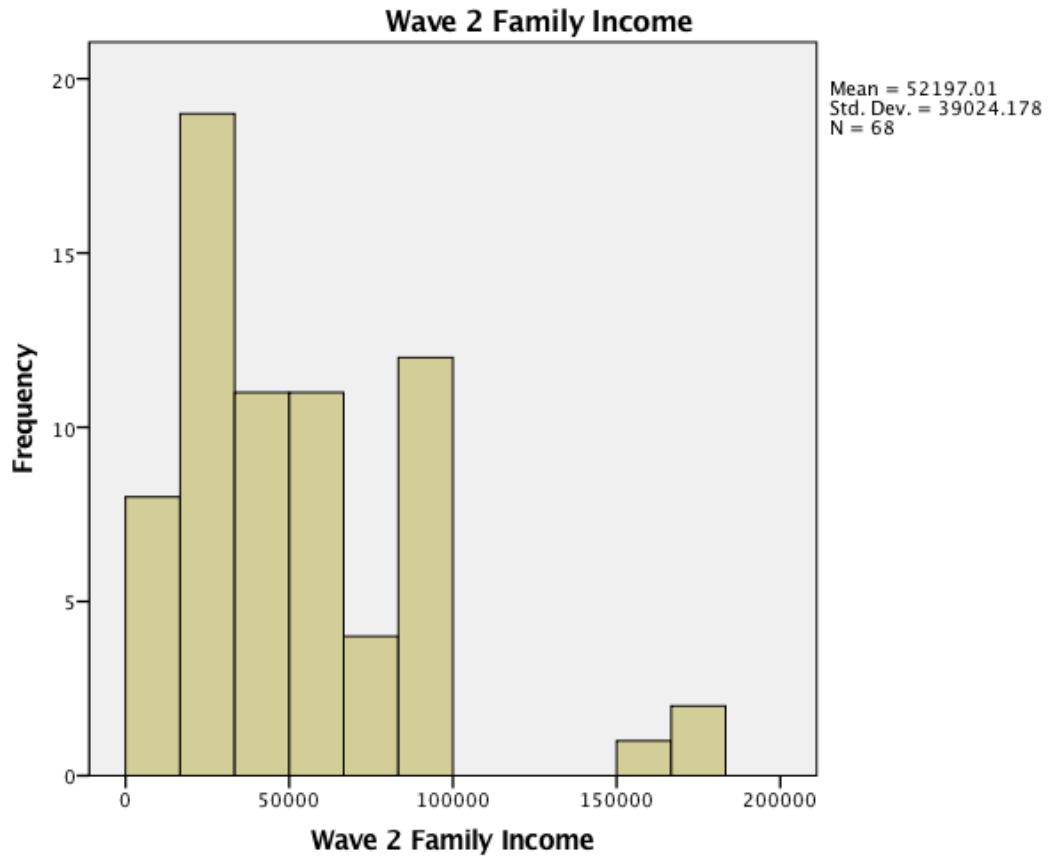


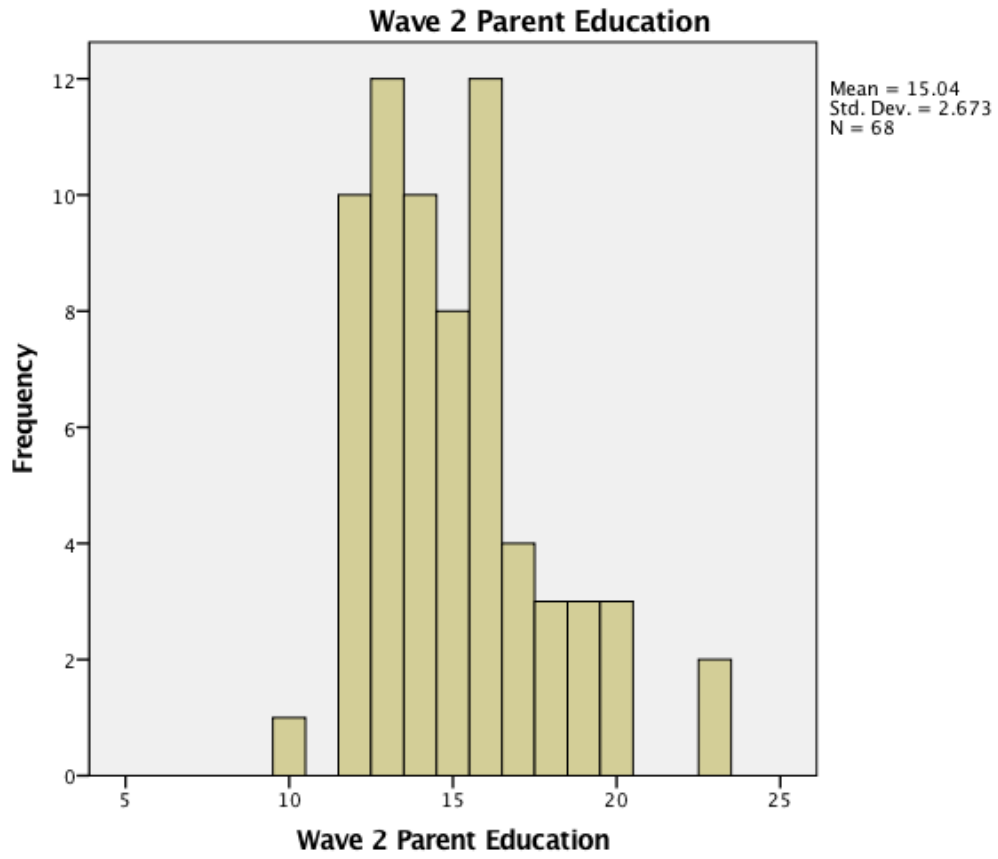


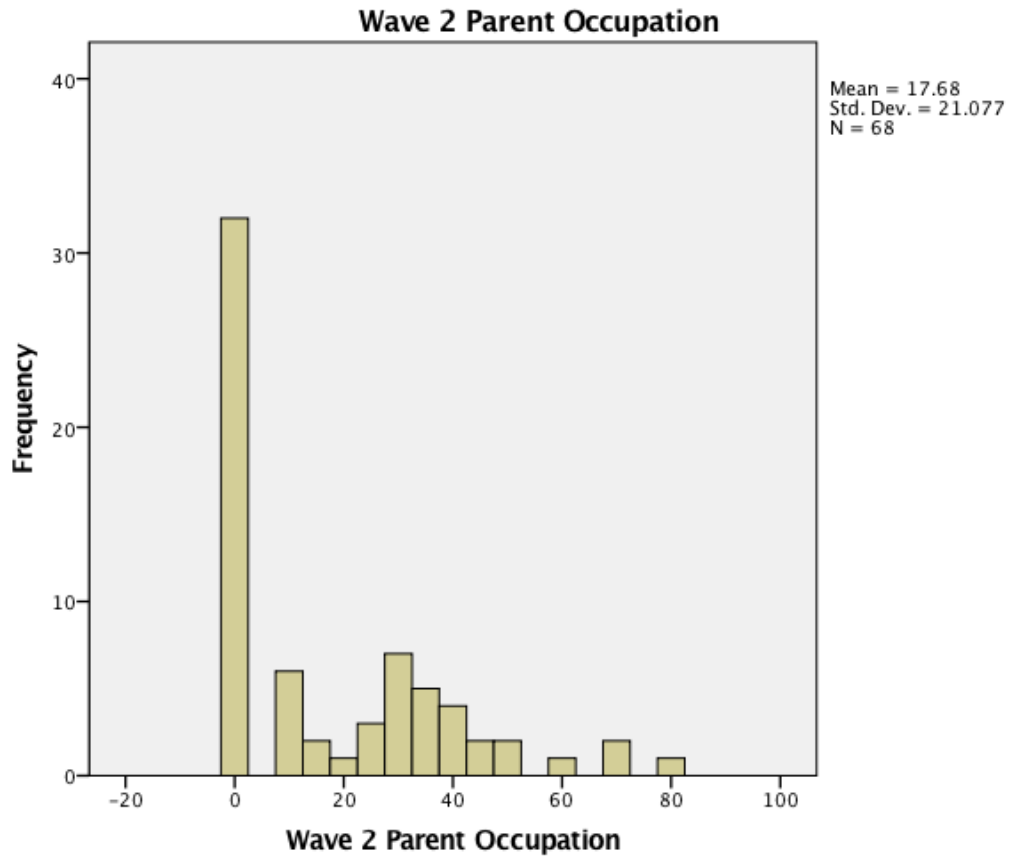


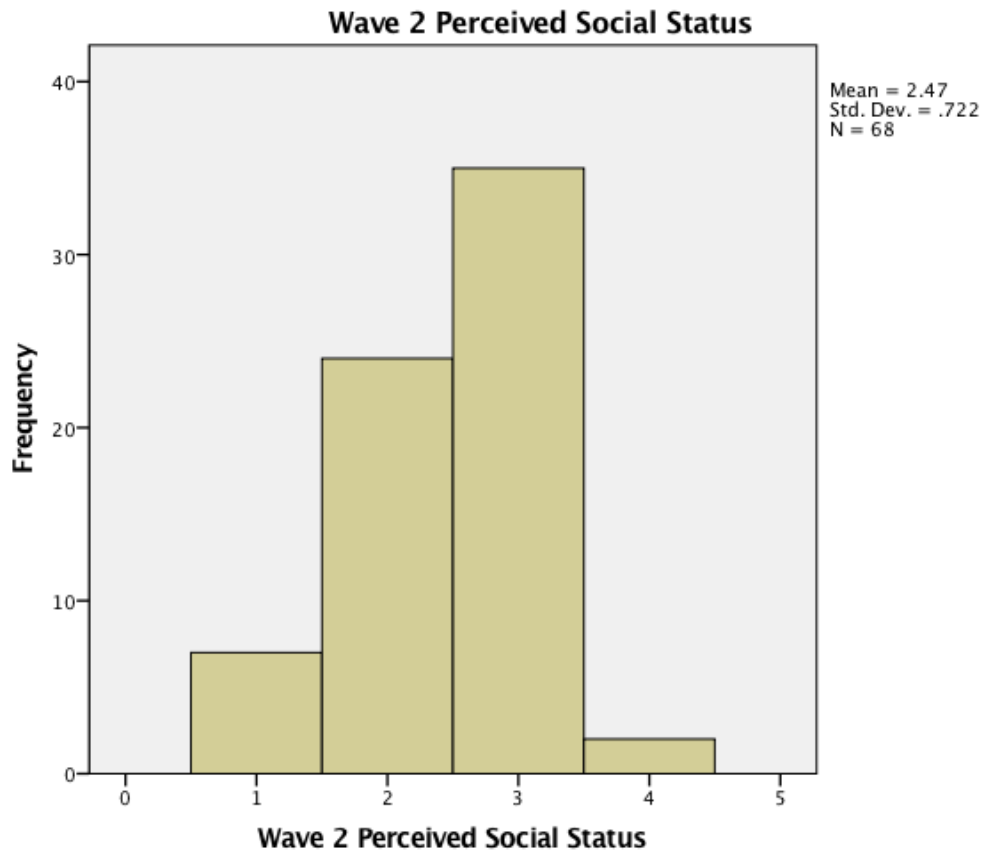


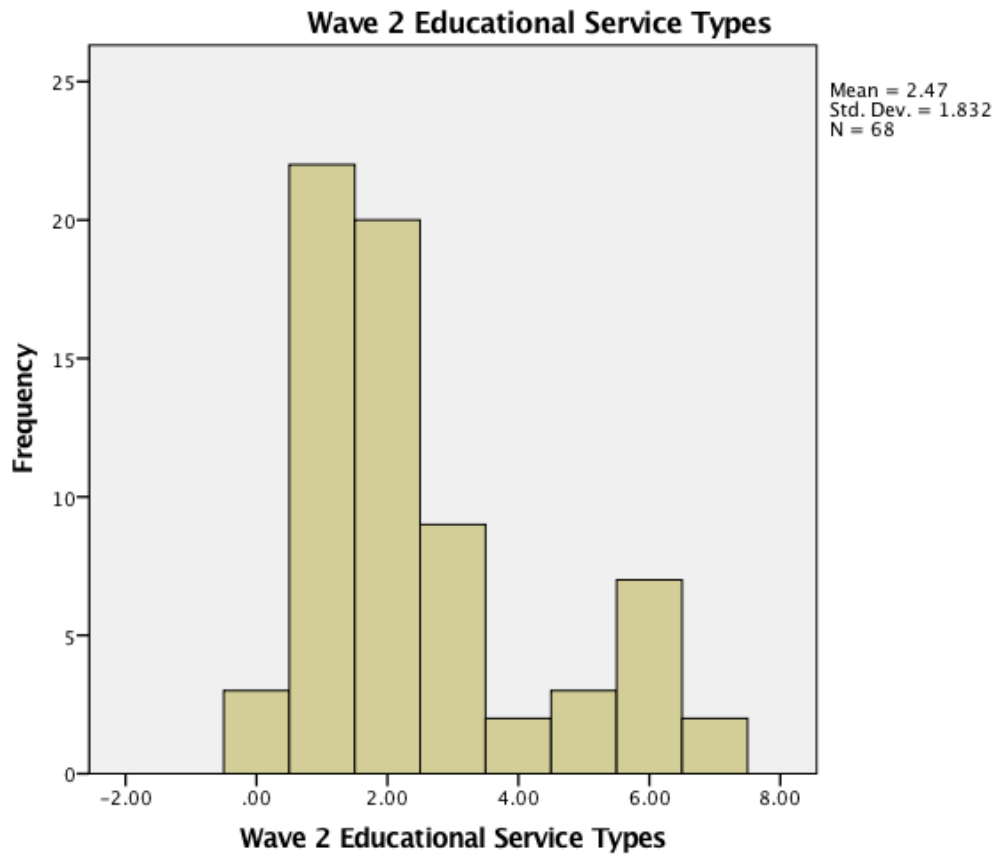


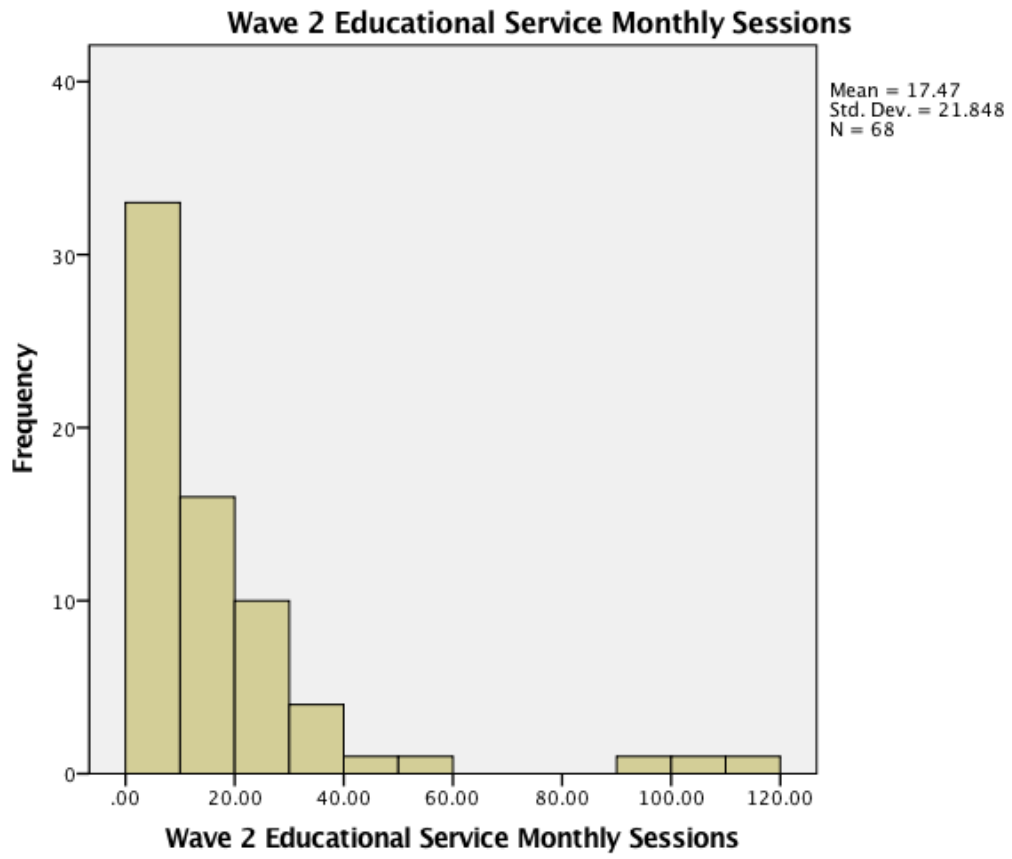






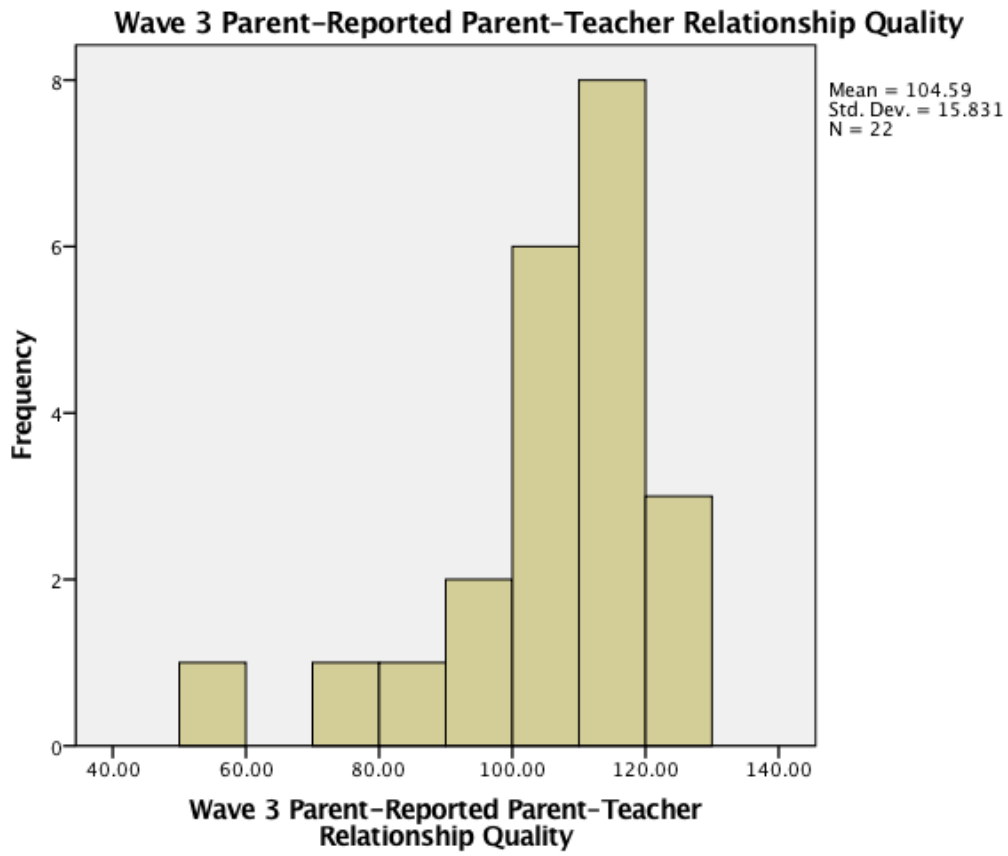


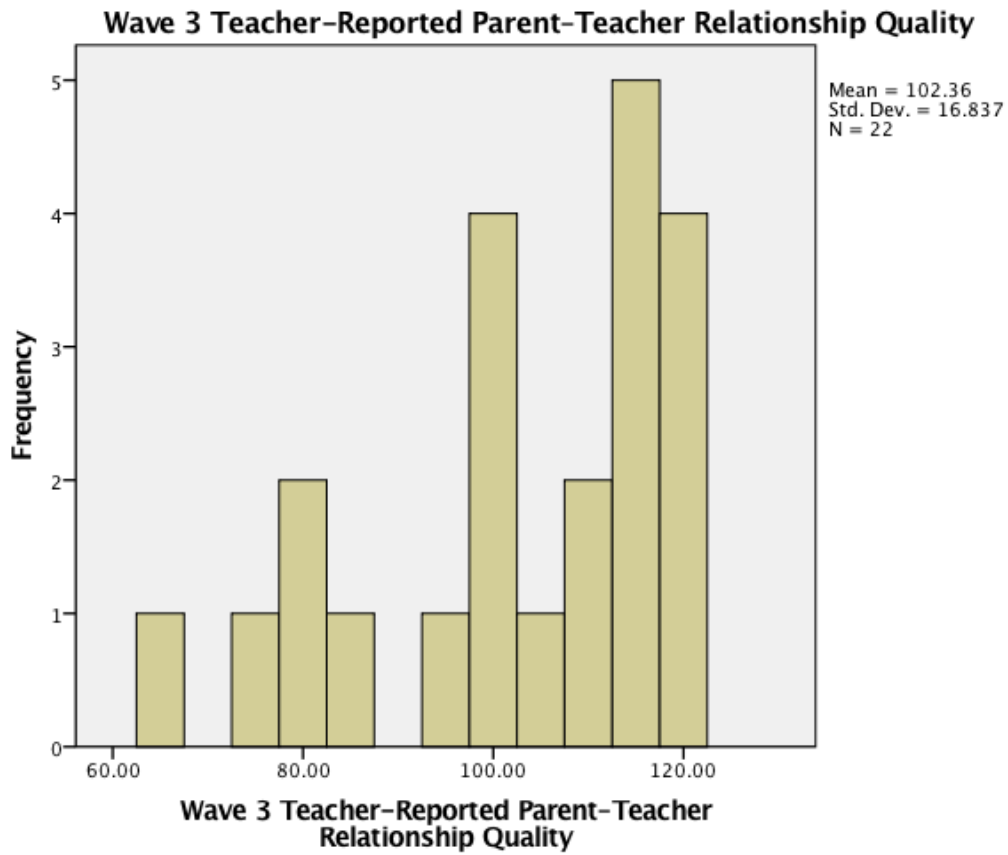


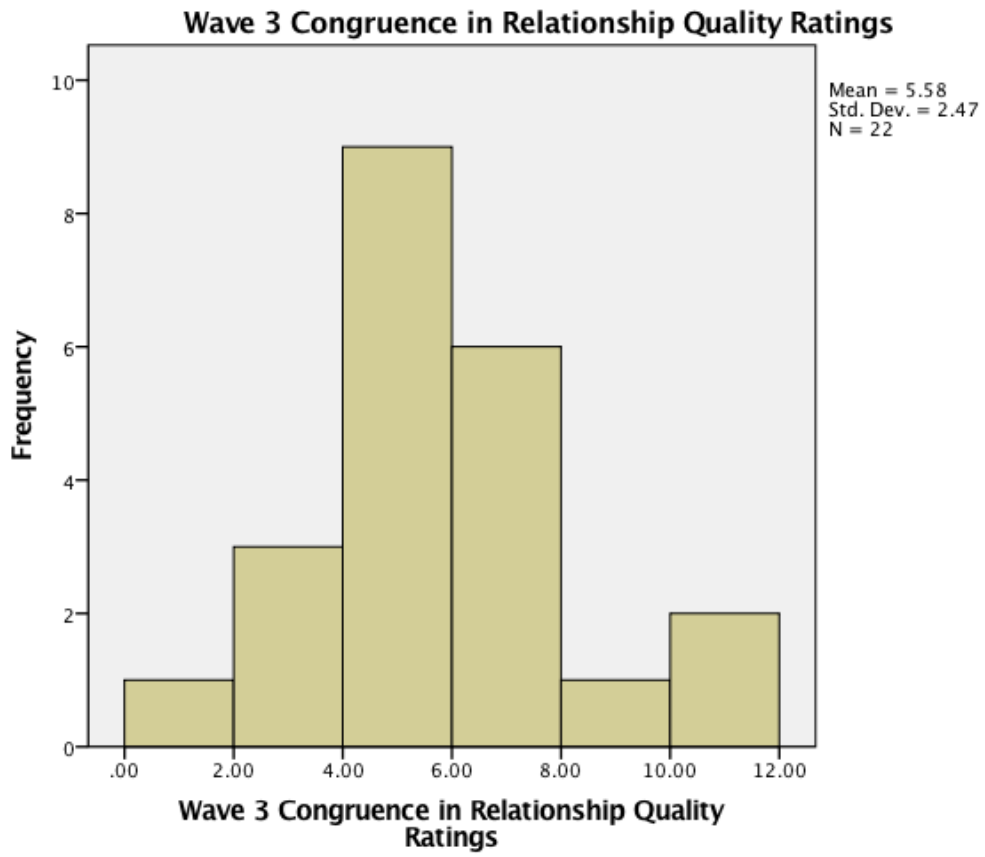


APPENDIX P

HISTOGRAMS FOR WAVE 3 STUDY VARIABLES







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