

## Family Involvement and Parent–Teacher Relationships for Students With Autism Spectrum Disorders

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Family educational involvement and parent–teacher relationships are important for supporting student outcomes and have unique implications for families of children with autism spectrum disorder (ASD). However, little research has examined child and family characteristics among families of children with ASD as predictors of family involvement and parent–teacher relationships. The present study examined child and family variables that may affect family involvement and parent–teacher relationships for families of children with ASD. Findings suggested (a) parents of children with higher developmental risk reported less family involvement and poorer relationships with their child’s teacher and (b) family histories accessing services predicted family involvement and parent–teacher relationships. Limitations of the current study and implications for science and practice are discussed.

**Keywords:** autism spectrum disorder, family involvement, parent–teacher relationships

Autism spectrum disorder (ASD) is a neurodevelopmental disorder characterized by pervasive and sustained impairments in social interaction and communication, and restricted, repetitive behaviors, interests, or activities (American Psychiatric Association, 2013). Recent prevalence rate estimates of ASD in the United States indicated 1 in 68 children are affected (Centers for Disease Control & Prevention, 2014). The course, symptom severity, and behaviors can vary widely among individuals with ASD (C. L. Chang, Lung, Yen, & Yang, 2013). Services children with ASD may benefit from include supports for adaptive behavioral needs (Konst, Matson, Goldin, & Rieske, 2014), including social and communication skills (National Research Council, 2001), as well as for hyperactivity and inattention (Kingston, Hib-

berd, & Ozsivadjian, 2013; Konst et al., 2014; Ozonoff & Rogers, 2003).

### Service Histories

Services for children with ASD often take place in multiple settings, frequently at home and at school (Matson, Mahan, & Matson, 2009). Many families of children with ASD begin to receive services when their child is younger than 3 years old (Friend, 2014). Thus, these families may be involved with the service delivery system for a number of years before their child enters kindergarten. Early intervention services play a critical role in supporting children with ASD (e.g., MacDonald, Parry-Cruwys, Dupere, & Ahearn, 2014), and family involvement is critical (National Research Council, 2001). Services often continue into elementary school. Compared to children with non-ASD diagnoses, school-age children with ASD are four times more likely to receive services (Mandell, Walrath, Manteuffel, Sgro, & Pinto-Martin, 2005). Given the lifelong course of ASD, individuals with ASD and their families may be involved in one or more service delivery systems for the entirety of the individual’s life (Colver et al., 2013; Marcus, Kunce, & Schopler, 2005).

Parents of children with ASD often consider themselves to be the primary care coordinators

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for their children, and they face many responsibilities as they navigate the service delivery system (Carbone, Behl, Azor, & Murphy, 2010). For example, many parents implement interventions at home (Knoche et al., 2012). In addition, through interfacing with educators and other professionals, parents form relationships with service providers (Carbone et al., 2010).

### Family Involvement

The importance of family involvement in services is supported by ecological systems theory. Ecological systems theory identifies the important influence the home and other microsystems have on a child (Bronfenbrenner, 1977). Just as children are influenced by their microsystems, they are similarly affected by the interactions between microsystems, in the mesosystem (Bronfenbrenner, 1977). As children with ASD begin elementary school, two forms of mesosystem interactions, family educational involvement (hereinafter referred to as family involvement) and parent–teacher relationships may have an important impact on outcomes for students with ASD. Minke, Sheridan, Kim, Ryoo, and Koziol (2014) defined family involvement as “a multidimensional construct that encompasses parenting behaviors that support children’s learning” (p. 528). Clarke, Sheridan, and Woods (2009) defined parent–teacher relationships as “a child-centered connection between individuals in the home and school settings who share responsibility for supporting the growth and development of children” (p. 61).

Family involvement has been associated with a number of positive outcomes for children without ASD, including higher levels of academic achievement (Fan & Chen, 2001; Jeynes, 2011; Kohl, Lengua, & McMahon, 2000; Manz, Fantuzzo, & Power, 2004), lower levels of child problem behavior (Domina, 2005), and increased social–emotional skills (Sheridan, Ryoo, Garbacz, Kunz, & Chumney, 2013). This involvement is unique for families of children with ASD (Zablotsky, Boswell, & Smith, 2012). Given the cross-setting nature of support for children with ASD and the potential for lifelong involvement with service providers, family involvement is likely to increase the effectiveness of treatments (Matson et al., 2009).

### Parent–Teacher Relationships

Parent–teacher relationships have been studied for years (Minke et al., 2014), particularly with regard to areas of relationship tension (Kaplan, 1950). Recently, research has established that quality parent–teacher relationships can support children’s academic and behavioral outcomes (Garbacz, Sheridan, Koziol, Kwon, & Holmes, 2015; Minke et al., 2014) and can be strengthened through family school partnership collaborations (e.g., Garbacz & McIntyre, 2015). For families of children with ASD, parent–teacher relationships are particularly important during the transition from early childhood education to kindergarten, which includes the shift from individual family service plans to individualized education programs (Stoner et al., 2005). Thus, it is important to identify factors that predict family involvement and parent–teacher relationships for families of children with ASD.

### Factors Associated With Family Involvement and Parent–Teacher Relationships

A number of factors influence family involvement and parent–teacher relationships, including child characteristics, maternal education, sources of support, and satisfaction with services. Conceptual work on family involvement suggests that parent beliefs about their role in their child’s education, including decisions about whether to become involved in their education, can include a consideration of their child’s needs (Walker, Wilkins, Dailaire, Sandler, & Hoover-Dempsey, 2005). Indeed, child characteristics (e.g., child behavior) can influence parenting (Marshall, Tilton-Weaver, & Bosdet, 2005; Wang, Dishion, Stormshak, & Willett, 2011). Children with ASD frequently encounter difficulty with developing language and communication skills (National Research Council, 2001) and hyperactivity (Konst et al., 2014). The scope of the child’s adaptive behavior support needs may influence the degree to which families are involved in educational programming. In addition, severity of behavior difficulties (Benson, Karlof, & Siperstein, 2008) and social interaction difficulties (Kasari & Sigman, 1997) among children with ASD may influence family involvement. For example, par-

ents of children who exhibit behavior problems may be more likely to seek out support from school staff. One parent factor that has been consistently identified as a predictor of family involvement is maternal education, with higher levels of maternal education predicting more family involvement (e.g., Fantuzzo, Tighe, & Childs, 2000).

Beyond parent and child characteristics, sources of support and satisfaction with services are important to consider and may influence parent willingness to partner with school professionals in the care of the child. For example, sharing information about ASD may act as a form of social support for families of children with ASD (Dunst, Trivette, & Cross, 1986). With regard to satisfaction, satisfaction with services often differs between families of individuals with ASD and families of individuals with other disabilities (Bitterman, Daley, Misra, Carlson, & Markowitz, 2008), suggesting satisfaction with services is important to consider in children's education. Satisfaction with the special education eligibility process has been associated with parental collaboration with professionals, a key component of family involvement (Moh & Magiati, 2012). More work is needed to examine the relations between these factors, and family involvement and parent-teacher relationships for families of children with ASD.

### The Present Study

Children with ASD have needs that entail home- and school-based services, rendering coordination and communication across settings as critical. To date, research has not examined child and family characteristics among families of children with ASD as predictors of family involvement and parent-teacher relationships. Furthermore, research is needed that uncovers the influence family histories accessing services has on family involvement and parent-teacher relationships.

The present study aims to address those gaps by examining child and family variables that may influence family involvement and parent-teacher relationships. This study is unique in that the sample was recruited when children with ASD were in early childhood (Time 1) and has followed them into elementary school (Time 2). The following research questions are examined: (1) Do child characteristics and fam-

ily histories accessing services in early childhood predict family involvement in elementary school? (2) Do child characteristics and family histories accessing services in early childhood predict the parent-teacher relationship in elementary school? (3) What are the relations among maternal education, child characteristics, family histories accessing services, family involvement, and the parent-teacher relationship?

### Method

This study is part of a larger investigation examining child, family, and community variables associated with early identification and treatment of ASD in the northwestern United States. Data for the current study represent a subsample of children and families ( $N = 31$ ) who participated in data collection at two time points (Time 1 = early childhood; Time 2 = elementary school).

At Time 1, eligible children (a) were 6 years old or younger, (b) had a prior diagnosis of an ASD, and (c) lived with their primary caregiver for 1+ years. Recruitment of children and families at Time 1 occurred via early intervention and early childhood education programs and developmental evaluation clinics. Interested caregivers responded to invitation letters and contacted the research office. Participants were screened by telephone for eligibility. Approximately 3 years later, families were recontacted and invited to participate in a second interview. We were successful in reaching 60% of the original sample. Of those who could be reached, 86% ( $n = 31$ ) agreed to participate in Time 2 data collection. Four declined to participate ( $n = 2$  out-of-state;  $n = 2$  too busy). Those who declined to participate did not significantly differ from those who participated at Time 2 on child or family demographic variables collected at Time 1, with the exception of gross annual income. Those who declined to participate at Time 2 reported significantly lower incomes than those chose to participate at Time 2 ( $t = -2.06, p = .04$ ).

The 31 children and their caregivers who participated at both time points comprise the sample for the current study. Data at both time points were collected via in-person interviews with parents in the family homes and through a mail-home packet of questionnaires. This study

was approved by the authors' institutional review board, and participating caregivers provided their informed consent. Caregivers were provided with a small honorarium for their participation (\$25 gift card at Time 1 and \$50 gift card at Time 2).

## Participants

Children were an average of 4.80 years old ( $SD = 1.10$ ) at Time 1 and an average of 8 years old ( $SD = 1.46$ ) at Time 2. The majority of children (87%) were boys. Approximately 60% of caregivers ( $n = 18$ ) reported their child was White/Caucasian, with the remaining children identified as more than one race/ethnicity ( $n = 12$ ; 38.7%), or Latino/Hispanic ( $n = 1$ ; 3.2%). The child's mother served as primary caregiver in 97% of families. Table 1 provides demographic data collected at Time 2.

## Measures

**Demographics and service history.** A family demographics and service history questionnaire was created for this study and com-

pleted as an interview with the primary caregiver at Time 1 and Time 2. A range of child and family demographic questions were included as well as the child's current educational and therapeutic services. Parents used a 5-point Likert-type scale to report on satisfaction with the child's current services (1 = *very dissatisfied*; 3 = *neutral*; 5 = *very satisfied*). At Time 1 parents also identified the number of sources of information that they had about autism by endorsing items from a list of nine sources (teachers/school, therapists, pediatrician/physician, Internet, books/magazines, conferences, autism parent support groups, family members/friends, other parenting groups) plus an additional "other" source. A total sources of information about autism was created by summing the number of sources (possible range 0–10).

**Adaptive behavior.** Research assistants administered the Survey Interview Form of the Vineland Adaptive Behavior Scales (2nd ed.; Vineland-II; Sparrow, Cicchetti, & Balla, 2005) with the primary caregiver to assess the child's adaptive functioning in the areas of communication, daily living skills, socialization, and motor skills at both Times 1 and 2. These domains are combined to yield an overall Adaptive Behavior Composite standard score, with a mean of 100 and standard deviation of 15. Strong evidence of reliability and validity exist for this widely used measure of adaptive behavior (Sparrow et al., 2005).

**Autism symptomatology.** Research assistants administered the Childhood Autism Rating Scale (2nd ed.; CARS 2; Schopler, Van Bourgondien, Wellman, & Love, 2010) to rate children's autism symptoms in 15 areas. Ratings on the CARS-2 are made on a 7-point scale reflecting numerical values of 1 to 4 (higher scores indicate greater impairment). Scores reflect the degree to which the child's behavior deviates from that of a typically developing child of the same age. Scores on the 15 items are summed to form an overall score ranging from 15 to 60. Internal consistency reliability for the CARS-2 in the present sample was  $\alpha = .87$ .

**Problem behavior.** Caregiver informants completed the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997) to assess problem behavior and prosocial behavior of their child with ASD. The SDQ is a 25-item

Table 1  
*Child and Family Demographics of Elementary Sample*

Demographic	<i>N</i>	%
Child age in years, <i>M</i> ( <i>SD</i> )	8.00 (1.46)	
Sex (male)	27	87.10
Race		
White/Caucasian	18	58.10
Hispanic/Latino	1	3.23
Multiple	12	38.71
Grade		
Kindergarten to 2nd grade	12	38.71
3rd to 5th grade	17	54.84
Other	2	6.45
Currently receive special education	28	90.32
Educational setting		
Regular class	1	3.23
80% or more regular class	12	38.71
40%–79% regular class	1	3.23
Less than 40% regular class	8	25.81
Private special school	1	3.23
Parentally placed at home	8	25.81
Vineland-II standard score, <i>M</i> ( <i>SD</i> )	74.39 (10.91)	
Mother's employment,		
% employed	16	51.61
Household median income/year in		
US\$	\$53,000	
Receive state Medicaid program	15	48.39



measure assessing both positive and negative attributes. Items form four problem scales: emotional symptoms (5 items), conduct problems (5 items), hyperactivity/inattention (5 items), and peer relationship problems (5 items), and one prosocial behavior scale (5 items). Respondents rate statements about their child on a 3-point scale (0 = *not true*; 1 = *somewhat true*; 2 = *certainly true*). There is strong evidence of reliability and validity for this instrument, and it has been used with a variety of clinical and nonclinical samples worldwide (e.g., Goodman, 1997, 2001; Janssens & Deboutte, 2009), including children with autism spectrum disorders (Iizuka et al., 2010; Jones, Hastings, Totsika, Keane, & Rhule, 2014). In this study we used the overall mean for the hyperactivity/inattention scale ( $\alpha = .56$  current sample).

**Parent–teacher relationship.** Parent perceptions of the parent–teacher relationship were examined using the parent version of the Parent–Teacher Relationship Scale—II (PTRS-II; Vickers & Minke, 1995). The PTRS-II includes 24 items (e.g., “We cooperate with each other”) rated on a 5-point scale (1 = *almost never*; 5 = *almost always*). Two subscales, Joining ( $n = 19$  items) and Communication ( $n = 5$ ), comprise the total score. The PTRS-II total score was used in the present study as an overall mean. Previous investigations have found strong evidence for internal consistency reliability (e.g.,  $\alpha = .93$ ; Minke et al., 2014). The internal consistency reliability for the current sample was  $\alpha = .69$ .

**Family involvement in education.** The Family Involvement Questionnaire—Elementary version (FIQ-E; Manz et al., 2004) was used to measure parents’ involvement in their elementary-aged child’s education. The FIQ-E is a 46-item (e.g., “I volunteer in my child’s classroom”) parent-report of school-based involvement, home-based involvement, and home–school communication. All items are rated on a 4-point scale (1 = *rarely*; 4 = *always*), indicating the frequency with which parents engage in each behavior or activity. The FIQ-E total score was used in the current sample as an overall mean. Evidence for FIQ-E internal consistency reliability is strong across international samples (e.g., Garbacz, McDowall, Schaughency, Sheridan, & Welch, 2015; Manz et al., 2004). The internal consistency reliability for the current sample was  $\alpha = .94$ .

## Data Analysis

IBM SPSS Statistics 21 was used for data review and analysis. Descriptive statistics were examined and data were screened and evaluated for common assumptions of multiple linear regression (e.g., normality). In addition, multicollinearity diagnostics were run and examined. Data were deemed acceptable to answer the study research questions. To address Research Question 1, multiple regression was used to examine the prediction of family involvement from child characteristics and family histories accessing services. To address Research Question 2, multiple regression was used to examine the prediction of parent–teacher relationship from child characteristics and family histories accessing services. Multiple regressions for Research Questions 1 and 2 were conducted using an iterative model-building strategy based on Hosmer and Lemeshow (2000) that included considering bivariate correlations ( $p < .20$ ) and significant predictors. For Research Question 3, Pearson product–moment correlation coefficient analyses were conducted to examine the relation among maternal education, child characteristics, family histories accessing services, family involvement, and the parent–teacher relationship. The value set for statistical significance testing was  $p < .05$ .

## Results

Table 2 presents descriptive statistics for study variables. On average, parents reported fairly favorable relationships with their child’s teacher, and moderate involvement with educational activities. Most parents reported high satisfaction with early childhood services and the special education eligibility process.

Table 3 presents results for the final multiple regression model that examined the prediction of family involvement. All child characteristic variables (e.g., ASD symptoms) and family histories accessing services (e.g., early childhood satisfaction) were included in the first model. Following the iterative model-building approach, communication, the number of sources of information about ASD, and satisfaction with early childhood services were predictors in the final model. The model was statistically significant,  $F(3, 21) = 12.63$ ,  $p < .05$ , and accounted for approximately 64% of the variance in family

Table 2  
*Descriptive Statistics for Study Variables*

Variable	<i>M (SD)</i> or %	Skewness	Kurtosis	Data wave
Maternal education <sup>a</sup>	15.13 (2.32)	.62	−.71	2
Autism spectrum disorder symptoms <sup>b</sup>	35.85 (6.22)	−.61	−.15	2
Child communication <sup>c</sup>	76.94 (18.13)	.43	.63	2
Child hyperactivity <sup>d</sup>	1.39 (.42)	−.45	−.18	2
Total sources of information about autism spectrum disorder	5.19 (1.70)	−.19	−.73	1
Education eligibility satisfaction <sup>e</sup>	3.73 (1.23)	−.52	−.91	1
Satisfied or very satisfied	60%			
Early childhood services satisfaction <sup>f</sup>	3.77 (1.31)	−.79	−.27	1
Satisfied or very satisfied	58%			
Family involvement <sup>g</sup>	2.66 (.47)	−.58	−.40	2
Parent–teacher relationship <sup>h</sup>	4.24 (.68)	−.66	−.29	2

<sup>a</sup> Maternal education measured in total years of education. <sup>b</sup> Autism spectrum disorder symptoms (measured on the Childhood Autism Rating Scale, 2nd ed.) sum scores range from 15 to 60. <sup>c</sup> Communication (measured by the Vineland Adaptive Behavior Scales) is a standard score ( $M = 100$ ,  $SD = 15$ ). <sup>d</sup> Hyperactivity (measured on the Strengths and Difficulties Questionnaire, Hyperactivity factor) was rated on a 1 (*not true*) to 3 (*certainly true*) scale. <sup>e</sup> Educational eligibility satisfaction was rated on a 1 (*dissatisfied*) to 5 (*very satisfied*) scale. <sup>f</sup> Early childhood services satisfaction was rated on a 1 (*dissatisfied*) to 5 (*very satisfied*) scale. <sup>g</sup> Family involvement (measured on the Family Involvement Questionnaire—Elementary version) was rated on a 1 (*rarely*) to 4 (*always*) scale. <sup>h</sup> Parent–teacher relationships (measured on the Parent–Teacher Relationship Scale—II) was rated on a 1 (*almost never*) to 5 (*almost always*) scale.

involvement scores ( $R^2 = .643$ ). Child communication, the number of sources of information about ASD, and satisfaction with early childhood services all significantly predicted family involvement. Standardized beta coefficients, as seen in Table 3, reflect the relative influence of the variables in the model. Satisfaction with early childhood services had the strongest effect, followed by communication, and then the number of sources of information about ASD. All predictors had positive effects, indicating that higher scores on the predictors (e.g., more

sources of information about ASD) predicted higher family involvement scores.

Table 4 presents results for the final multiple regression model that examined the prediction of parent–teacher relationship. As with the family involvement model, all child characteristics and family histories accessing services were included in the first model. Following the model-building approach, child hyperactivity and satisfaction with the educational eligibility process were predictors in the final model. The model was statistically significant,  $F(2, 22) = 8.68$ ,  $p < .05$ , and accounted for approximately 44% of the variance in parent–teacher relationship scores ( $R^2 = .441$ ). Child hyperactivity and

Table 3  
*Results of the Multiple Regression Predicting Family Involvement*

Variable	<i>B</i>	<i>SE</i>	$\beta$	<i>t</i>
Child communication	.008	.003	.315	2.31*
Total sources of information about autism spectrum disorder	.085	.038	.300	2.25*
Early childhood services satisfaction	.201	.051	.537	3.96*

\*  $p < .05$ .

Table 4  
*Results of the Multiple Regression Predicting Parent–Teacher Relationship*

Variable	<i>B</i>	<i>SE</i>	$\beta$	<i>t</i>
Child hyperactivity	−1.116	.298	−.674	−3.74*
Education eligibility satisfaction	.385	.115	.604	3.36*

\*  $p < .05$ .

satisfaction with the educational eligibility process significantly predicted parent–teacher relationship. Child hyperactivity had a stronger effect than satisfaction with the educational eligibility process. The child hyperactivity effect was negative, indicating that higher child hyperactivity scores predicted lower parent–teacher relationship scores. In contrast, educational eligibility process satisfaction had a positive effect, indicating that higher satisfaction scores predicted higher parent–teacher relationship scores.

Table 5 presents Pearson product–moment correlation coefficients for maternal education, child characteristics, family histories accessing services, family involvement, and the parent–teacher relationship. Child communication, information about ASD, and satisfaction with early childhood services were significantly positively correlated with family involvement. This indicates that as scores on child communication, information about ASD, and satisfaction with early childhood services increase, so did family involvement scores. ASD symptoms was significantly negatively correlated with parent–teacher relationship while child communication was significantly positively correlated with the parent–teacher relationship. This indicates that as children’s ASD symptoms increase, parent report of the parent–teacher relationship decreases. In contrast, as child communication scores increase, parent report of the parent–teacher relationship increases. Maternal education was not significantly correlated with family involvement or the parent–teacher relationship.

In addition to relations with family involvement and the parent–teacher relationship, several other important associations emerged. Ma-

ternal education was significantly positively correlated with child communication, indicating that more years of maternal education was associated with higher ratings of child communication. In addition, ASD symptoms was significantly positively correlated with child hyperactivity, which suggests children with more ASD symptoms may also be viewed by parents as having higher hyperactivity. Finally, child ASD symptoms was not significantly correlated with the number of sources of information about ASD that parents reported having.

## Discussion

The purpose of this study was to advance the understanding of school experiences and support services for children with ASD through examining child and family variables that may influence family involvement and parent–teacher relationships in elementary school. Children with ASD were first assessed in early childhood, and then approximately 3 years later when they were in elementary school. Thus, snapshots of child and family experiences in early childhood and in early elementary school were ascertained. The majority of children in the sample were boys. On average, children in the sample had mild-to-moderate symptoms of ASD based on the CARS-2. Children’s communication was, on average, nearly 1 standard deviation below the mean. Most parents reported that they were satisfied or very satisfied with their child’s early childhood services. On average, in the present study, parents reported favorable relationships with their child’s teacher ( $M = 4.24$ ). This finding is comparable to other descriptive findings with the PTRS-II. For ex-

Table 5  
*Correlations Among Study Variables*

Variable	1	2	3	4	5	6	7	8	9
1. Maternal education	—								
2. Autism spectrum disorder symptoms	-.00	—							
3. Child communication	.45*	-.25	—						
4. Child hyperactivity	-.14	.38*	-.35	—					
5. Information about autism spectrum disorder	.05	.22	.13	.17	—				
6. Education eligibility satisfaction	.07	.28	-.06	.41*	-.10	—			
7. Early childhood satisfaction	.02	.07	.23	.12	.16	.09	—		
8. Family involvement	.00	-.13	.51*	-.19	.43*	-.24	.66*	—	
9. Parent–teacher relationship	.10	-.46*	.45*	-.39	-.04	.29	.18	.23	—

\*  $p < .05$ .

ample, a sample of parents who had a child referred for behavioral consultation reported average ratings from 4.41 to 4.43 (Sheridan et al., 2012). While the current study was small in scope, findings may inform implications and directions for future research. The sections that follow include a discussion of the study's main findings in terms of implications for science and practice.

### Implications for Science

Findings from the present study revealed child and family variables significantly predicted family involvement and the parent–teacher relationship. Findings for child factors indicated that parents of children with higher developmental risk reported less family involvement and poorer relationships with their child's teacher. Specifically, parents of children with lower communication skills reported less family involvement and parents of children with higher hyperactivity reported poorer relationships with their child's teacher as compared to parents of children with higher communication skills and lower hyperactivity. This pattern of findings is consistent with other studies that examine the influence of child characteristics. For example, Goldberg and Smith (2014) found that parents who reported negative school contacts (e.g., about child behavior concerns) also reported lower school satisfaction.

Family histories accessing services revealed several important findings. Satisfaction with early childhood services and satisfaction with the special educational eligibility process, both assessed at Time 1 in early childhood, explained unique variance on parent report of family involvement and the parent–teacher relationship, respectively. In addition, parent-report of the sources of information they accessed about ASD significantly predicted family involvement. These findings may suggest that a family's history accessing services and with service providers in early childhood can influence their educational involvement and perceptions of the parent–teacher relationship in elementary school. Prior research has found that parents can play a key role in their young child's development (Knoche et al., 2012) and form positive relationships with service providers (Carbone et al., 2010). Thus, it may be that a family's experience with services and service providers in

early childhood can prepare them to support their children and develop positive relationships with their teachers into elementary school by educating them on the importance of supportive cross-setting connections. Furthermore, a parent's competence for supporting their child may improve through these early experiences (cf. Sheridan, Ryoo, Garbacz, Kunz, & Chumney, 2013), which may in turn increase their capability or confidence to partner with their child's elementary school teachers.

The association between maternal education and family involvement and parent–teacher relationship was examined, but no statistically significant findings emerged. This nonsignificant finding is in contrast to a large body of literature that identifies parent education as a potent predictor of family involvement (e.g., Fantuzzo et al., 2000; Kohl et al., 2000; Manz et al., 2004). This may suggest that for parents of children with ASD there are other parent or family factors that are more salient for family involvement. However, the range in the maternal education variable for this sample was somewhat restricted given that 55% of mothers were reported to have between 13 and 15 years of education. Furthermore, the sample size in the current sample is small which may have limited power to detect significance.

In addition to the relation between maternal education and family involvement, an interesting finding was observed between ASD symptoms and the total number of sources of information about ASD. In particular, the relation between ASD symptoms and the total number of sources of information was nonsignificant. Although the sample size is small, so these findings are preliminary, this finding is interesting as it could be expected that parents of children with more ASD symptoms would have more sources of information about ASD either provided to them by a provider or independently retrieved as this may serve as a form of social support (Dunst et al., 1986). Alternatively, it may be that they type of information is more important than the total number of sources of information. In the current study all sources of information were treated equally and summed to form a total score.

### Implications for Practice

In this study, parents of children with lower communication skills and higher hyperactivity



reported less family involvement and poorer parent–teacher relationships than children with higher communication skills and lower hyperactivity. These skills and behaviors are malleable targets for intervention (Goldingay et al., 2015). Family histories accessing services also emerged as significant predictors of family involvement and parent–teacher relationships. Children’s skills and behaviors, and family histories accessing services can be addressed together in two ways. First, parents and early childhood service providers can discuss a family’s interests and needs at the outset of their work and tailor the approach in a manner that addresses the family’s needs to increase overall satisfaction. Second, families of elementary schoolchildren can be engaged in their child’s education in an authentic manner that is linked with their needs. In fact, it has been recommended that school staff reach out to families to lay the foundation of open and trusting family school relationships that serve as the basis for academic and behavior supports for children (Christenson & Reschly, 2009). In turn, these open and trusting relationships can influence family involvement (Santiago et al., 2015).

A best practice for addressing children’s behavior and engaging families in educational supports is to use a tiered system of support (McIntyre & Garbacz, 2014). In this manner, children and families are linked with the tier of support for their needs. Findings from the present study have specific implications for Tiers I and III. At Tier I, school behavior support teams, of which school psychologists can be a key member, can engage families in systems-level planning, and school staff can offer families scoped and sequenced plans for supporting their child’s behavior at home in a manner that is linked with school systems (Garbacz, McIntosh, et al., 2016). In addition, a multiple gating assessment strategy (Dishion & Patterson, 1993) can be embedded at Tier I, but reordered so that families report on child behavior at Gate 1 (Moore et al., *in press*). School staff could use information obtained from families at Gate 1 to make proactive positive contacts to families. When concerns arise for children, school staff would have information about a broad range of their strengths and needs, as reported by families, which they could use to inform their discussion to address child needs and facilitate collaboration across home and school. This as-

essment approach could increase the quantity of contacts and quality of family school interactions. High-quality interactions have been highlighted as particularly important for healthy family school relationships (Adams & Christenson, 1998).

Families of children with ASD benefit from cross-setting supports (Garbacz & McIntyre, 2015). In the present study, parent-report of information about ASD explained unique variance on family involvement. At Tier I, school teams or school psychologists can identify resources for families who have a child with ASD and make them available at the school or at community night events. In this way, school staff can be brokers of information and serve as a clearinghouse for sources of information that can provide access to empirically validated supports in the community. In a climate of thin resources and lean economic times, school staff cannot provide individual support to all families that may benefit. A tiered approach that emphasizes linking home systems with the school and connecting families with community resources can be an efficient and effective way to address the needs of children with ASD and their families.

Findings from the present study speak to the important role family histories accessing services can have on family involvement and parent–teacher relationships. Families of children with ASD are involved in their child’s services from a young age (Friend, 2014). Moreover, children with ASD are in need of supports across settings (National Research Council, 2001). Family school partnership interventions can increase parent competence about how to support their child (Sheridan et al., 2013), improve child behavior and parenting skills (Dishion et al., 2008), and enhance the home–school connection (Sheridan et al., 2013). School psychologists are well equipped to use family school partnership interventions for children with ASD who are in need of Tier III support.

One family school partnership intervention, the Family Check-Up (FCU; Dishion & Stormshak, 2007), shows particular promise for use with families who have children with ASD. The FCU is a school-based intervention that targets behavior problems, parenting skills, and school skills in students with or at-risk for adjustment or behavioral problems and is informed by an ecological systems perspective. An ecological

model of school adjustment suggests the need for a comprehensive framework of conditions that supports the child during elementary school, including parents and teachers (Mashburn & Pianta, 2006). The FCU has been shown in numerous studies to increase parenting skills and improve academic and social success for typically developing high-risk students across early childhood and adolescence (e.g., H. Chang, Shaw, Dishion, Gardner, & Wilson, 2014; Fosco, Stormshak, Dishion, & Winter, 2012). In brief, the FCU is an assessment driven model that uses family observations, ecological assessments, and tailored strength-based feedback to motivate caregivers to make changes in parenting and engage in family school partnering activities (Dishion & Stormshak, 2007). Although the FCU was not developed for use with families with children ASD, the model seems appropriate for use with this population given its flexible nature and menu of intervention options that can be tailored according to family need. The FCU, one example of family-school partnership intervention, provides a framework for engaging families and schools together as partners and is compatible with other multitiered systems of support (McIntyre & Garbacz, 2014).

### Limitations and Future Research Directions

There were several important findings in the present study, which revealed critical implications for science and practice. These findings and implications should be considered within study limitations, which point to important future research directions. A strength of this study is that data were considered from two different time points. Snapshots in early childhood and 3 years later in elementary school were used. However, this study design precluded an examination of change or growth over time. Future research should seek to use a strong longitudinal design to track growth. In addition, the sample for this study was relatively small. Thus, these findings may not generalize to a large and diverse sample of children and families. Future research should aim to include larger samples of families of children with ASD. Next, parent perceptions were the basis for measurement the study variables. For many of the variables (e.g., satisfaction with early childhood services), this is appropriate. However, future research should

include multisource assessments, such as direct observations of child behavior at home and school.

### Conclusion

Family involvement and parent-teacher relationships hold unique importance for families of children with ASD. The present study examined child and family characteristics for families of children with ASD as predictors of family involvement and parent-teacher relationships. Limitations notwithstanding, findings indicated developmental risk and family histories accessing services predicted family involvement and parent-teacher relationships. Findings from the present study underscore the importance of family histories accessing services and child developmental risk when examining and intervening on family involvement and parent-teacher relationships.

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