UNIVERSITY OF CALIFORNIA
RIVERSIDE

Parenting Behaviors as Predictive of Early Student-Teacher Relationships in ASD

A Thesis submitted in partial satisfaction
of the requirements for the degree of

Master of Arts

in

Education

by

Ainsley Elizabeth Losh

March 2020

Thesis Committee:
Dr. Jan Blacher, Chairperson
Dr. Katherine Stavropoulos
Dr. Austin Johnson

The Thesis of Ainsley Elizabeth Losh is approved:

_____

_____

_____

Committee Chairperson

University of California, Riverside

ABSTRACT OF THE THESIS

Parenting Behaviors as Predictive of Early Student-Teacher Relationships in ASD

by

Ainsley Elizabeth Losh

Master of Arts, Graduate Program in Education
University of California, Riverside, March 2020
Dr. Jan Blacher, Chairperson

Student-teacher relationship (STR) quality during the early school years has important implications for student adjustment and outcomes. Studies with typically developing (TD) children have identified links between parent behaviors and STRs, but these connections remain unexplored for children with autism spectrum disorder (ASD). The present study investigated relationships between observed parent behaviors during a shared literacy task and STRs one year later for 117 children (ages 4-7) with ASD. Children whose parents displayed more intrusiveness had poorer-quality STRs. Further, parent intrusiveness mediated the predictive relationship between child spoken language skills and STR quality. These results suggest that parent intrusiveness plays an important role in the development of STRs for young children with ASD. Implications for intervention and research are discussed.

Table of Contents

List of Figures

Results

List of Tables

Methods

Results

A growing body of literature suggests that the quality of STRs during the early school years has important implications for student adjustment and outcomes in academic, behavioral, social, and emotional domains (e.g., Pianta, Belsky, Vandergrift, Houts, & Morrison, 2008; Roorda, Koomen, Spilt, & Oort, 2001; Wu, Hughes, & Kwok, 2010). The teacher-completed Student-Teacher Relationship Scale (STRS; Pianta, 2001) is the most widely used assessment tool for STRs, assessing three domains: Conflict, Dependency, and Closeness. Early negative STRs with heightened conflict have been associated with children's negative academic outcomes throughout elementary school and into middle school, including increased perceived loneliness and school avoidance, and decreased school liking, self-directedness, and classroom participation (Birch & Ladd, 1997; Hamre & Pianta, 2001; Zeedyk, Cohen, Eisenhower, & Blacher, 2016). Conversely, STRs indicating high teacher-rated closeness have been linked to positive student academic performance, school liking, and self-directedness (Birch & Ladd, 1997). Warm, close STRs in kindergarten have been demonstrated to predict positive school adjustment, academic competence, and overall school belonging in second and third grades (Hughes, 2011; Pianta, Steinberg, & Rollins, 1995), and remain modestly stable into later grades (Jerome, Hamre, & Pianta, 2009; Pianta & Stuhlman, 2004).

Evidence indicates that students with high rates of externalizing behavior problems can significantly impede positive STRs from developing, often creating a negative cycle of classroom behavior (Garbacz, Zychinski, Feuer, Carter, & Budd, 2014; Hamre & Pianta, 2001). With regard specifically to children with autism spectrum disorder (ASD), teacher-reported behavior problems predicted poorer STRs, marked by

increased conflict and decreased closeness over time (Eisenhower, Blacher, & Hurst Bush, 2015). Students with ASD may have a particularly elevated risk of developing negative STRs during their transition into school and throughout their early school years due to social and communication skill deficits in addition to behavioral challenges. Prior research has found that STRs for students with ASD are considerably poorer, with less closeness and more conflict than those for other student populations, including both typically developing (TD) students and students with intellectual disability (ID) (Blacher, Howell, Lauderdale-Littin, DiGennaro Reed, & Laugeson, 2014; Longobardi, Prino, Pasta, Gastaldi, & Quaglia, 2012). Child risk factors leading to increased student-teacher conflict among these students include disruptive behavior problems and autism severity (Blacher et al., 2014; Caplan, Feldman, Eisenhower, & Blacher, 2016; Robertson, Chamberlain, & Kasari, 2003). In contrast, social skills, IQ, and language abilities have been associated with increased student-teacher closeness (Blacher et al., 2014; Caplan et al. 2016).

In addition to student behavioral, cognitive, social-emotional, and language predictors of STRs, parenting behaviors, and particularly responsivity and intrusiveness, may significantly impact later child outcomes that could affect STRs. Better understanding of parent behavior predictors of STRs could shed light on young children who are particularly vulnerable to developing negative STRs as they transition into early schooling. Although the aforementioned within-child risk and protective factors for later STR quality have been explored (e.g., IQ, language skills), specific parent behavior predictors could ultimately serve as more time-effective and feasible intervention targets

to benefit young children with ASD as they transition into early schooling. One such parent behavior is responsivity, which includes contingent responding, emotional-affective support, joint attention, and language input matched to the child's language level (Landry, Smith, & Swank, 2006; Warren & Brady, 2007). High levels of maternal responsivity may impact children's learning style and sense of self efficacy by reinforcing children's curiosity, creativity, and exploratory behaviors (Hart & Risley, 1995; Warren & Brady, 2007). Young children whose mothers display more responsiveness may develop better social skills and have fewer emotional and behavioral problems (Calkins, Smith, Gill, & Johnson, 1998; Goldberg, Lojkasek, Gartner, & Corter 1989; Kochanska, Forman, & Coy, 1999; Landry, Smith, Miller-Loncar, & Swank, 1998).

In parents attempting to support their child during interactions, there can be a fine line between sensitive, responsive behaviors and intrusiveness. Parent intrusiveness refers to interfering parent behaviors such that the parent dominates the agenda in interactions with the child through, for example, excessive stimulation or interruptions of a child's self-initiated activities (Ispa et al., 2004). It is important to note that not all intrusive behaviors stem from parents' desires to control the interaction or reduce their child's autonomy, and sometimes instead result from parents attempting to offer support or to compensate for a lack of language or expressive communication development in their child (Clincy & Millis-Koonce, 2013). Children with highly intrusive parents may be less likely to develop self-regulation skills and future positive relationships with others, and more likely to develop avoidant behaviors or feelings of incompetence, which may lead

to negative interpersonal styles (Ainsworth, Blehar, Waters, & Wall, 1978; Egeland & Farber, 1984; Egeland, Pianta, & O'brien, 1993; Ispa et al., 2004; Kahen, Katz, & Goffman, 1994; Pettit, Harrist, Bates, & Dodge, 1991). These negative interpersonal outcomes are likely to carry over into STRs. For students with ASD who already face unique barriers to developing positive STRs, including communication deficits, the role of parent responsive and intrusive behaviors may be pivotal in the development of STRs.

Previous research suggests that parents of children with ASD may demonstrate distinctive patterns of interaction. In the context of semi-structured play and compliance activities, parents of young children with ASD have been found to exhibit more behavior regulation (i.e., attempting to control or manage the child's behavior through physical prompts, physically holding the child on task, initiating new activities, or offering objects to the child), structuring, and prompting, including more physical contact and fewer social verbal approaches, than parents of other young children (Doussard-Roosevelt, Joe, Bazhenova, & Porges, 2003; Kasari, Sigman, Mundy, & Yirmiya, 1988; Lemanek, Stone, & Fishel, 1993). There is also a distinct role of child externalizing behaviors in the development of observed behaviors and strategies that parents might use in interacting with their child with ASD. For example, externalizing behavior problems have emerged as a predictor of parenting stress among parents of children with ASD (Eisenhower, Baker, & Blacher, 2005; Estes, Munson, Dawson, Koehler, Zhou, & Abbott, 2009; Gulsrud, Jahromi, & Kasari, 2010, Lecavalier, Leone, & Wiltz, 2006), and higher parenting stress has been associated with parents using more active emotion regulatory strategies (e.g., prompting, redirecting) and fewer vocal emotion regulatory strategies

(e.g., reassurance, vocal comfort) with their young children during play (Gulsrud et al., 2010). Additionally, higher autism symptom severity scores have been negatively associated with coordination, communication, emotional expression, responsivity, and mood in parent-child interactions (Beurkens, Hobson & Hobson, 2013), and parents who have both a child with ASD and a non-ASD child may respond to a higher proportion of social initiatives of their non-ASD child compared with their child with ASD (Meirsschaut, Warreyn, & Roeyers, 2011). Taken together, parents' unique interactions with their children with ASD could also be central in children's development of relationships with their teachers, beyond child predictors currently supported in the literature.

The present study examined connections between child variables, parent behaviors during a shared literacy task, and teacher-rated STR quality one year later for young students (ages 4-7) with ASD, proposing a mediation pathway in which child factors affect parent behaviors within parent-child interactions, which in turn impact later STRs. Specifically, it is hypothesized that lower levels of child expressive language skills will lead to increased parent intrusiveness during a shared literacy task, which will in turn results in poorer quality STRs (Ainsworth et al., 1978; Clincy & Millis-Koonce, 2013; Egeland & Farber, 1984; Egeland et al., 1993; Ispa et al., 2004; Kahen et al., 1994; Pettit et al., 1991). The following research questions were addressed:

1. Are parent responsive and intrusive behaviors during a shared literacy task predictive of STR quality one year later for young students with ASD, above and beyond significant child-related variables?

2. Do parent behavior predictors of STR quality mediate the relation between child predictors and later STR quality?

Methods

Participants

Participants were children with ASD (N = 117), their primary caregivers, and their teachers who enrolled in a longitudinal study (i.e., three time-points) of early school experiences for young students with ASD. This was a multi-site study that recruited from both the greater Boston and Southern California regions through online and print flyers, local school districts, clinicians, autism resource centers, intervention agencies, autism-related conferences, and parent support groups. Informed consent was obtained from all individual participants included in the study. Inclusion criteria for selection of children for the study were the following: (a) between the ages of 4 and 7 years and enrolled in school (grades Pre-K to 2nd Grade) at the initial visit, (b) IQ $\geq$ 50 as assessed by a short form of the Wechsler Preschool and Primary Scales of Intelligence-3 (WPPSI-III; Wechsler, 2002), (c) diagnosed with ASD by school and/or private evaluation, and (d) confirmed ASD diagnosis with the Autism Diagnostic Observation Schedule (ADOS) at the time of the eligibility visit. For children who did not have a full psychoeducational evaluation outside of the school diagnosis, the ADI-R was also administered.

Mean child age at the initial visit was 5.5 years (SD = 1.0). The majority of children in the sample were male (82.9%), which reflected sex differences in current prevalence rates of ASD. Child race was determined based on an open-ended parent report item that was later aggregated into categories as follows: White (59.0%), Bi- or

Multi-racial (19.7%), Latino(a)/Hispanic (9.4%), Black or African-American (4.3%), Asian-American (4.3%), and other (2.6%). One participant did not report or was missing a response about child race. The majority of children in the sample were enrolled in public school (87.1%). Additionally, the mean Estimated Full Scale IQ for the sample was 90.3 (SD = 18.1; Range = 52-139) and the majority of the sample (90.3%) was classified as "autism" versus "autism spectrum" using the ADOS. Most primary caregivers in the sample were female (88.9%), had obtained a bachelor's degree or higher (64.1%), were married (81.2%), and had annual household incomes greater than $50,000 (72.6%). For full demographic information see Table 1.

Table 1. *Participant demographics (N = 117)*

	% of sample or mean (SD)
Child Demographics	
Age at eligibility visit (years)	5.5 (1.0)
Gender (% male)	82.9%
Race (% White)	59.0%
School Setting (% Public)	87.1%
IQ (WPPSI-III)	90.3 (18.1)
"Autism" vs. "Autism Spectrum" Classification (ADOS-2 Algorithm)	90.3%
Primary Caregiver and Household Data	
Gender (% Female)	88.9%
Parent Education (% bachelor's degree or higher)	64.1%
Parent Relationship Status (% married)	81.2%
Household Income (% >$50,000)	72.6%

Measures

Outcome Measure. *Student-Teacher Relationship Scale (STRS; Pianta, 2001).* The STRS is a 28-item instrument completed by teachers that assesses teachers' perceptions of their relationship with a target student (pre-K through 3rd grade). It includes five-point Likert scale item ratings (1 = definitely does not apply, 5 = definitely applies) and is composed

of three subscales: (a) Conflict (12 items), (b), Closeness (11 items), and (c) Dependency (5 items). Conflict indicates the teacher's feelings of negativity or conflict with the target student, Closeness measures the teacher's feelings of affection and open communication with the student, and Dependency reflects the extent to which the teacher views the student as overly dependent. Items also yield a Total Relationship Quality score (range 28-140), with higher scores indicating a better-quality student-teacher relationship. In this study, we were primarily interested in the Total Relationship Quality score, serving as a broad indicator of overall STR quality from the teacher's perspective. The STRS has demonstrated adequate reliability and validity (Pianta, 2001). In this sample, Closeness α = .80, Conflict α = .86, Dependency α = .60, and total quality score α = .82. For this study, only the total STR score was used.

Parent-Related Predictive Measure. *Parent-Child Interaction Rating System (PCIRS; Belsky et al., 1995; Fenning et al., 2007)*. The PCIRS is a rating system of parenting behavior that can be used to assess observed parent-child interactions. It includes five-point Likert scale ratings (1 = not at all characteristic, 5 = highly characteristic) for six dimensions of parenting behavior: (a) positive affect, (b) negative affect, (c) sensitivity, (d) intrusiveness, (e) detachment, and (f) stimulation of cognitive development. These ratings consider both the frequency and intensity of each behavior. Sensitivity refers to the parent's "child-centered" behaviors (i.e., quick, appropriate, and consistent responses to child's needs), whereas intrusiveness reflects "adult-centered" behaviors of the parent. Intrusive parents often impose an agenda upon the child without regard to the child's signals, may be overly stimulating, or may be unable or unwilling to relinquish control.

PCIRS has been used extensively to code parent-child interactions in diverse populations of young children, including young children at developmental risk, or with developmental delays or ASD (Baker & Crnic, 2005; Blacher, Baker, & Kaladjian, 2013; Fenning, Baker, Baker, & Crnic, 2007). In the present sample, videotaped interactions were coded by a lead coder and two project staff, who were trained using videotaped lab observations until reliability was met. The PCIRS reliability criteria were set at 70% exact agreement and 90% within-one-scale-point agreement with the lead coder, which is aligned with other studies employing the PCIRS (e.g., Blacher et al., 2013; Fenning et al., 2007). In addition to the pre-coding training, twenty percent of the total shared literacy interaction videotapes were coded by the lead coder and cross-checked for reliability between project staff coders. Reliability was met and maintained at 80% exact agreement and 99% within 1 scale point.

Child-Related Eligibility Measures. *Autism Diagnostic Observation Schedule (ADOS; Lord et al., 2000).* The ADOS is a semi-structured, standardized assessment of communication, social interaction, play, and restricted and repetitive behaviors (Lord et al., 2000). It is considered one of the gold-standard tools used to assess ASD, and has demonstrated adequate sensitivity and specificity, interrater reliability, internal consistency, and test-retest reliability on item, domain, and classification levels (Lord et al., 2000). The ADOS consists of five modules based upon the individual's language ability and age, and results in a classification of either "autism," "autism spectrum," or "non-spectrum." Data collection for this study began in 2011 prior to the release of the second edition of the ADOS (ADOS-2; Lord, Rutter, DiLavore, Risi, Gotham, & Bishop,

2012), but the revised research algorithms from the ADOS-2 were used for classification determination (Lord et al., 2012).

Wechsler Preschool and Primary Scale of Intelligence, Third Edition (WPPSI-III; Wechsler, 2002). The WPPSI-III is an individually-administered test of cognitive abilities for children between the ages of 2:6 and 7:3. It yields IQ scores with a normative mean of 100 and a standard deviation of 15. As part of the screening process for eligibility, an abbreviated version of the WPPSI-III was administered. This abbreviated version consisted of three subtests (Vocabulary, Matrix Reasoning, Picture Completion), which were summed to generate a full-scale IQ score, estimated using Sattler's conversion tables (Sattler, 2008). In the normative sample, the composite score from these subtests was found to be strongly correlated with the full-scale IQ (Sattler, 2008), and abbreviated versions of the WPPSI have demonstrated high reliability and convergent validity (e.g., LoBello 1991). 85.5% of this sample had estimated full scale IQ of 70 or greater, indicating cognitive development in the typical range.

Child-Related Predictive Measures. *Comprehensive Assessment of Spoken Language (CASL; Carrow-Woolfolk, 1999)*. The CASL is a standardized assessment of spoken language for youth between the ages of 3 and 21 years. The CASL provides an assessment of semantic, syntactic, and pragmatic language indices. It has demonstrated adequate internal consistency and test-retest reliability within a normative sample (Carrow-Woolfolk, 1999). In this study, a composite spoken language score was generated using the sum of two subtests: (a) Syntax Construction and (b) Pragmatic

Judgment, chosen to represent syntactic and pragmatic language skills, respectively. These subtests were significantly correlated ($r = .78$, $p < .001$).

Teacher Response Form (TRF; Achenbach & Rescorla, 2001; Achenbach & Rescorla, 2000). The TRF is a teacher-report form of the Child Behavior Checklist (CBCL), which is used extensively with school-aged children (Achenbach, 2007). It is composed of 112 items depicting a broad range of child behavioral and emotional problems. For each item, the respondent indicates whether the problem is (0) not true, (1) somewhat or sometimes true, or (2) very true or often true within the past 2 months. There are two forms of the TRF, one for ages 1.5-5 years and one for ages 6-18 years. Participating teachers completed the version that corresponded to the target student's age. For the present study, the externalizing broadband score was used as a measure of externalizing behavior problems. Scores of 60-63 are considered borderline for clinical significance, and scores greater than 63 are in the clinical range (Achenbach & Rescorla, 2000). The externalizing broadband score has demonstrated excellent reliability and validity, including concurrent validity with other measures of behavior problems (Achenbach & Rescorla, 2000). Within the current sample, $\alpha = .94$ for the age 6-18 form, and $\alpha = .93$ for the age 1.5-5 form.

Social Responsiveness Scale (SRS; Constantino, 2002). The SRS is a 65-item rating scale that can be employed to assess autism symptoms in individuals ages 4-18. The SRS has demonstrated concurrent validity with the Autism Diagnostic Interview – Revised (ADI-R), which is considered a gold-standard parent interview in the comprehensive assessment of ASD (Constantino et al., 2003). In this sample, the SRS

was completed by parents and the singular scale score was used as an index of ASD social severity deficits (here, α = .86. This T score has a mean of 50 and a standard deviation of 10, with higher scores indicating more impairment in social functioning. Scores greater than 59 are considered clinically significant (Constantino, 2002).

Social Skills Improvement System (Gresham & Elliot, 2008). The SSIS is a teacher-report questionnaire for children ages 3-18 that broadly assesses child social skills, behavior problems, and academic competence. It can be used in screening and classifying students with significant social skills deficits and has been used with students with ASD (Elliot & Gresham, 2013). Teachers rate the frequency of specific skills or behaviors on a 4-point scale (1 = never, 2 = seldom, 3 = often, 4 = almost always). Scores can then be converted to standard scores with a mean of 100 and standard deviation of 15. The SSIS has demonstrated adequate reliability and good validity, including concurrent validity with the Behavior Assessment System for Children, 2nd Edition (BASC-2) and the Vineland Adaptive Behavior Scales, 2nd Edition (Gresham & Elliot, 2008). The total social skills scale was used for the present study, which included ratings of the child's responsibilities, cooperation, self-control, empathy, and assertiveness. The median alpha for the three main scale scores on the teacher form, including social skills, was reported by Gresham & Elliot (2008) to be .96.

Procedures

The study consisted of an eligibility session and three subsequent assessment sessions (Times 1-3) across two academic years. Time 1 occurred in the Fall of Year 1 within 3 months of the start of the school year, Time 2 occurred in the Spring of Year 1

between 7-10 months after the start of the school year, and Time 3 occurred in the Spring of Year 2 between 4-6 months after the start of the following academic year. As the eligibility and Time 1 visits were usually within a month of each other, data from both visits will be referred to as Time 1 measures. The sample included in these analyses were those participants who had completed both a parent-child shared literacy task at Time 2 and teacher assessment measures at Time 3 (approximately one year later). Independent samples t-tests were conducted between the included and excluded participants and showed no significant differences between the groups on child age, household income, parent education level, CASL score, SSIS score, SRS score, or TRF Externalizing score. However, a significant difference was found between the groups on mean IQ, with the sample included having a significantly higher mean IQ (90) than the excluded subjects (81), but both were in the typically developing range.

At the eligibility session, the WPPSI-III was completed as a measure of the child's cognitive ability and autism diagnosis was confirmed with the ADOS. At Time 1, children completed the CASL as a measure of spoken language ability, teachers completed the TRF and SSIS as measures of teacher-perceived child externalizing problem behaviors and social skills, respectively, and parents completed the SRS as a measure of ASD symptom severity. While the SSIS and TRF were also given at subsequent timepoints, the CASL and SRS were not. Thus, only Time 1 data were used in this study. At Time 2 only, parents and children participated in a shared literacy task in which they were provided four storybooks, without words, and were instructed to sit next to each other and "read" the books together as they normally would. Parents were also

told to read them in the order provided, but that it was not necessary to get through all of them during the allotted time of eight minutes. The interactions were video recorded and parent-child interactions were later coded using the PCIRS. At the final time point (Time 3) teachers completed the STRS as a measure of their perception of their relationship with the participating student. Notably, the STRS included in this study was completed by teachers at Time 3; for approximately 88% of the children in this study, these were different teachers than those who completed the earlier TRF, SSIS and STRS measures.

Data Analysis

All statistical analyses were conducted using IBM SPSS Version 24.0 (IBM Corp, 2016). Preliminary bivariate Pearson correlations were carried out initially to examine relationships between variables of interest for each of the research questions. Specifically, correlational analyses explored the following: (a) relationships between parent behaviors (PCIRS) at Time 2 and STRs (STRS) at Time 3, nine months later, (b) relationships between child factors at Time 1 (i.e., SRS, IQ, CASL, SSIS, and TRF Externalizing) and STRs at Time 3, and (c) relationships between child factors and parent behaviors (PCIRS). In order to evaluate predictive properties of significant correlations, further analyses were conducted using multiple linear regression and hierarchical linear modeling. Finally, a mediation pathway was explored using the PROCESS macro for SPSS (Hayes, 2012).

Results

Descriptive statistics for each of the measures are presented in Table 2. Within this sample, 94.0% of participants scored above the clinical cut-off on the SRS and 6.5%

scored above the clinical cut-off on the TRF Externalizing T score, with an additional 13.9% scoring in the borderline clinical range. On the SSIS, 56.5% of this sample scored at least one standard deviation (T score < 85) below the mean and 18.5% scored at least 2 standard deviations (T score < 70) below the mean. The STRS mean Total Relationship score of 111 falls in the 36th percentile relative to the standardization sample (Pianta, 2001).

Table 2. *Descriptive statistics for PCIRS, STRS, and child factors*

	Min-Max	Mean	SD
PCIRS			
Positive Affect	2-5	3.11	.84
Negative Affect	1-4	1.18	.45
Sensitivity	2-5	3.72	.75
Intrusiveness	1-4	1.47	.66
Detachment	1-3	1.07	.31
Stimulation of Cognitive Development	1-5	3.29	.94
STRS			
Closeness	12-55	40.85	7.57
Conflict	12-54	21.66	8.70
Dependency	5-20	9.95	3.43
Total Relationship Quality	56-137	111.15	13.47
Child Measures			
WPPSI-III	52-139	90.27	18.05
SRS Total T Score	46-90	78.93	10.92
CASL	103-259	165.29	34.56
TRF Externalizing	36-77	57.67	9.44
SSIS Social Skills	45-121	83.26	15.26

In addressing research question 1, preliminary bivariate Pearson correlations revealed a significant negative correlation between the parenting behavior of intrusiveness during the shared literacy task (Time 2) and STRS Total Relationship Quality score one year later (Time 3; $r = -.32$, $p < .01$). Because parent intrusiveness emerged as the only significant parent behavior (as measured by the PCIRS) predictor of

Time 3 STR total relationship quality (R_2 = .10, $F(1, 115) = 12.77$, $p < .01$), multiple regression analyses including other parenting behaviors were not conducted.

Bivariate Pearson correlations also indicated relationships between several child factors and STRS Total Relationship Quality score (Time 3). CASL language score (r = .27, $p < .01$), SSIS Social Skills (r = .26, $p < .05$), and Child IQ (r = .22, $p < .05$) were positively correlated with STRS Total Relationship Quality score, while TRF Externalizing Behavior (r = -.22, $p < .05$) was negatively correlated with STRS Total Relationship Quality score. In order to evaluate the unique contribution of CASL, SSIS Social Skills, IQ, and TRF Externalizing scores as predictors of STR total relationship quality, a hierarchical linear regression was conducted. Child factors were added in blocks, in order from most to least significantly correlated with STR total relationship quality (first CASL, then SSIS, then TRF Externalizing, and finally IQ). Results revealed that the CASL language score was the only child variable that explained a significant amount of the variance in Time 3 STRS Total Relationship Quality score (R_2 = 0.08, $F(1, 115) = 9.23$, $p < .01$), with the subsequent addition of SSIS, TRF Externalizing, and IQ resulting in non-significant F changes to the model.

In order to address research question one, whether parent intrusiveness (Time 2) explained a significant amount of variance in STRS Total Relationship Quality score (Time 3) above and beyond the CASL language score, which emerged as the only significant child factor predictor in the previous multiple regression analysis, a multiple linear regression model was constructed using both CASL and parent intrusiveness as predictors. Results suggest that not only was parent intrusiveness a significant predictor

of STRS Total Relationship Quality score, it significantly predicted STR quality above and beyond CASL score ($\triangle R_2 = .06$, $p < .01$; see Table 3).

Table 3. *Multiple linear regression model with CASL and intrusiveness as predictors of STR total relationship quality at time 3*

	R_2	F	β	t	Sig.
Model	.13	8.55			.000
CASL			.19	2.00	.048
Intrusiveness			-.25	-2.71	.008

In addressing research question two, a bivariate Pearson correlation revealed a significant negative association between child CASL score and parent intrusiveness ($r = -.35$, $p < .01$). In order to further assess the significant associations between child CASL language score (Time 1), observed parent intrusiveness during the shared literacy task (Time 2), and STR total relationship quality (Time 3), a mediation analysis was proposed with intrusiveness mediating the relationship between CASL language score and STR quality (Baron & Kenny, 1986; Hayes, 2009). Results supported the proposed mediation pathway (See Figure 1). The unstandardized indirect effect (.033), was statistically significant, with the 95% confidence interval ranging from .01 to .07, computed using 5,000 bootstrapped samples. The completely standardized indirect effect (.087) was also computed using 5,000 bootstrapped samples, with a 95% confidence interval ranging from .02 to .20.

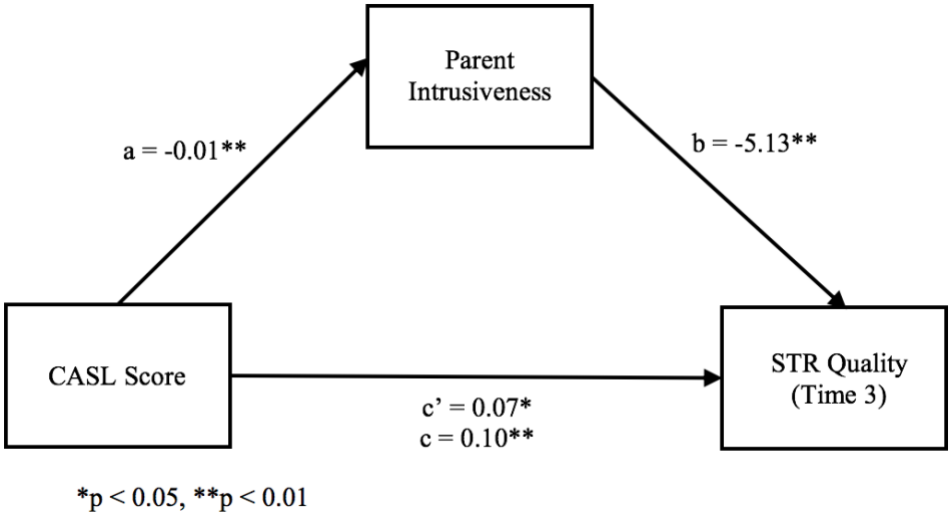

Figure 1. Mediation analysis with unstandardized effects; STR quality (time 3) as outcome, CASL score (time 1) as predictor, and parent intrusiveness (time 2) as mediator.

Discussion

This study aimed to explore connections between parenting behaviors and STR quality for young children with ASD. Our first research question asked whether parent behaviors observed during a shared literacy task predicted STR quality one year later. Parent intrusiveness emerged as a significant parent behavior predictive of STR total quality, with higher parent intrusiveness corresponding to lower STR total relationship quality one year later. These results are consistent with those of a previous study with young typically developing (TD) children in which mother-child dyads exhibiting control struggles during structured tasks, had more negative STRs later in preschool (Pianta, Nimetz, & Bennett, 1997). We hypothesized that both TD children and children with ASD whose parents exhibit more intrusive behaviors or control struggles during a structured task may be at risk for developing poorer-quality STRs later. In line with this expectation, parent intrusiveness remained a significant predictor of STR total

relationship quality even after accounting for child spoken language ability. Better developed child language skills, as measured here, corresponded to higher-quality STRs one year later, whereas greater parent intrusiveness corresponded to poorer-quality STRs.

Our second research question explored the association between predictive child variables and predictive parent behaviors on STR quality. We proposed a mediation pathway in which the relationship between child CASL language score and STR quality was mediated by parent intrusiveness. Results were significant, suggesting that when children have lower spoken language skills (i.e., lower CASL scores), parents demonstrate increased intrusive behavior during a structured task (i.e., higher PCIRS intrusive scores), which in turn may negatively impact later STR total relationship quality. These results align with, and expand upon, a previous study that found parents of children with autism regulated their children's behavior less and demonstrated more mutual play within a semi-structured interaction task when their children had stronger communication skills (Kasari et al., 1988).

These findings have several important implications. Although previous research has explored child characteristics that predicted STRs for young students with ASD (e.g., Eisenhower et al., 2015), and parent factors that contributed to STR quality for young TD students (Jerome et al., 2009; Pianta et al., 1997), the relationship between parent behaviors and STR quality in young students with ASD has remained unstudied. Our results suggest that parent intrusiveness is a mechanism by which child language skills predict STR quality. Taken together with previous research, it is becoming clear that children with ASD, who can be affected by a vast range of language, social, and

behavioral challenges, do not enter the school environment with the same potential for developing positive relationships with teachers (Blacher et al., 2014; Caplan et al., 2016; Longobardi et al., 2012). Among other differences, this increased risk for poor STRs may be due in part to the differentially intrusive parent-child interactions they have experienced. This elucidates the need for teacher training that specifically targets relationship-building with young students with ASD (Garbacz et al., 2014). Teachers should be made aware of the importance of STR quality for student outcomes, and of both child characteristics and parent behaviors that serve as risk factors for the development of negative STRs. Early school interventions targeting student-teacher relationship-building for students with ASD may also benefit from integrating a parent-child relationship-building components (Pianta, La Paro, Payne, Cox, & Bradley, 2002; Pianta et al., 2008).

Lastly, the results of this study highlight an opportunity for early intervention services to take preventative action by developing interventions to help parents avoid intrusive behaviors during interactions with their children, which could in turn result in higher quality STRs when their children enter early schooling. This appears to be of particular importance for children with lower language skills. Interventions targeting a specific parent behavior could be a time-effective addition to interventions targeting within-child factors (e.g., expressive language skills), thereby serving as a feasible leverage point for optimizing children's early student-teacher relationships and academic outcomes. Strategies for parents that concurrently emphasize responsiveness, promotion of child language skills, and mutual engagement in naturalistic settings may be especially

beneficial for these dyads (e.g., Parent-Implemented Enhanced Milieu Teaching; Kaiser, Hancock, & Nietfield, 2000). Interventions that underscore the necessity of "child choice" within interactions, which could be viewed as antagonistic to intrusive parenting, may be helpful in reducing parent intrusiveness (e.g., Pivotal Response Intervention; Koegel, Koegel, Harrower, & Carter, 1999; Natural Language Learning Paradigm; Koegel, O'Dell, & Koegel, 1987). Additionally, Parent-Child Interaction Therapy (PCIT) and the Early Start Denver Model (ESDM) are two well-established interventions that have demonstrated benefits for both young children with ASD and their parents (Dawson et al., 2010; Estes et al., 2014; Masse, McNeil, Wagner, & Quetsch, 2016; Solomon, Ono, Timmer, & Goodlin-Jones, 2008), and that have shown promising outcomes for integration into school-based settings (Garbacz et al., 2014).

Limitations and Future Directions

As always, there were limitations to the current study that should be taken into account. First, this study looked at parent behaviors during a structured, academic skill-focused task, and thus it may be expected that parents would take on more teacher-like roles. It is possible that parent-child interactions in a less structured, or free-play, context would look different, as reported in Blacher et al. (2013), where parenting behaviors were observed in both structured and unstructured settings. Thus, parenting behaviors observed in a different setting may be less predictive of children's subsequent interactions with their teachers. Future research should examine whether these connections between parent behaviors and later STR quality are consistent within free-play contexts. Second, children with ASD who had IQ < 50 were excluded from this

study, and these results may not extend to those students with severe cognitive impairments. Third, child-related characteristics were the only predictors of parent intrusiveness assessed in this study, but in order to more thoroughly understand risk factors for parent intrusiveness which may have negative downstream effects on child outcomes, additional predictors should be explored (e.g., parent attitudes about interacting with their children, specific types of early intervention services received). Importantly, this study included a large, well-characterized sample of young children with a range of behavioral, social, and language skills, utilized a well-researched and reliable observational coding scheme, and incorporated data from multiple-informants (parents, teachers, researchers), thus avoiding shared method variance issues.

In conclusion, the results of this study indicate that intrusive parent-child interaction behaviors play an important mediating role in the relationship between child spoken language skills and STR quality for young students with ASD. Students who have lower language skills are at risk for parents demonstrating more intrusive behaviors during a structured task, which then increases their risk for later developing poorer-quality STRs. Early interventions in both school and home settings may aid in reducing children's risk of developing negative STRs by integrating parent-child relationship-building, and from assisting parents in avoiding intrusive interactions with their young children with ASD.

References

Achenbach, T.M. (2007). Applications of the Achenbach system of empirically based assessment to children, adolescents, and their parents. In: S.R. Smith & L. Handler (Eds.), *The clinical assessment of children and adolescents: A practitioner's handbook* (237-344). Hillsdale, NJ: Erlbaum.

Achenbach, T.M., & Rescorla, L.A. (2000). *Manual for the ASEBA preschool forms & profiles.* Burlington, VT: University of Vermont, Research Center for Children, Youth, and Families.

Achenbach, T.M., & Rescorla, L.A. (2001). *Manual for the ASEBA school-age forms and profiles.* Burlington, VT: University of Vermont, Research Center for Children, Youth, and Families.

Ainsworth, M. D., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: Assessed in the strange situation and at home*. Hillsdale, N.J.: Lawrence Erlbaum Associates.

Baker, J. K., & Crnic, K. A. (2005). The relation between mothers' reports of family-of-origin expressiveness and their emotion-related parenting. *Parenting*, *5*(4), 333–346. https://doi.org/10.1207/s15327922par0504_2

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, *51*(6), 1173–1182. https://doi.org/10.1037/0022-3514.51.6.1173

Belsky, J., Crnic, K., & Woodworth, S. (1995). Personality and parenting: Exploring the mediating role of transient mood and daily hassles. *Journal of Personality*, *63*(4), 905–929.

Beurkens, N. M., Hobson, J. A., & Hobson, R. P. (2013). Autism severity and qualities of parent–child relations. *Journal of Autism and Developmental Disorders*, *43*(1), 168–178. https://doi.org/10.1007/s10803-012-1562-4

Birch, S. H., & Ladd, G. W. (1997). The teacher-child relationship and children's early school adjustment. *Journal of School Psychology*, *35*(1), 61–79. https://doi.org/10.1016/S0022-4405(96)00029-5

Blacher, J., Baker, B. L., & Kaladjian, A. (2013). Syndrome specificity and mother–child interactions: Examining positive and negative parenting across contexts and time. *Journal of Autism and Developmental Disorders*, *43*(4), 761–774. https://doi.org/10.1007/s10803-012-1605-x

Blacher, J., Howell, E., Lauderdale-Littin, S., DiGennaro Reed, F. D., & Laugeson, E. A. (2014). Autism spectrum disorder and the student teacher relationship: A comparison study with peers with intellectual disability and typical development. *Research in Autism Spectrum Disorders*, *8*(3), 324–333. https://doi.org/10.1016/j.rasd.2013.12.008

Calkins, S., Smith, C., Gill, K., & Johnson, M. (1998). Maternal interactive style across contexts: Relations to emotional, behavioral and physiological regulation during toddlerhood. *Social Development*, *7*(3), 350–369. https://doi.org/10.1111/1467-9507.00072

Caplan, B., Feldman, M., Eisenhower, A., & Blacher, J. (2016). Student-teacher relationships for young children with autism spectrum disorder: Risk and protective factors. *Journal of Autism and Developmental Disorders*, *46*(12), 3653–3666. https://doi.org/10.1007/s10803-016-2915-1

Carrow-Woolfolk, E. (1999). *CASL: Comprehensive Assessment of Spoken Language.* Circle Pines, MN: American Guidance Services.

Clincy, A., & Mills-Koonce, W. (2013). Trajectories of intrusive parenting during infancy and toddlerhood as predictors of rural, low-income African American boys' school-related outcomes. *The American Journal of Orthopsychiatry*, *83*(2 0 3), 194–206. https://doi.org/10.1111/ajop.12028

Constantino, J. (2002). *The Social Responsiveness Scale*. Los Angeles: Western Psychological Services.

Constantino, J., Davis, S., Todd, R., Schindler, M., Gross, M. Brophy, S., Metzger, L., Shoushtari, C., Splinter, R., & Reich, W. (2003). Validation of a brief quantitative measure of autistic traits: Comparison of the social responsiveness scale with the autism diagnostic interview – revised. *Journal of Autism and Developmental Disorders*, 33(4), 427-433.

Dawson, G., Rogers, S., Munson, J., Smith, M., Winter, J., Greenson, J., Donaldson, A., Varley, J. (2010). Randomized, controlled trial of an intervention for toddlers with autism: The Early Start Denver Model. *Pediatrics*, *125*(1), e17–e23. https://doi.org/10.1542/peds.2009-0958

Doussard–Roosevelt, J., Joe, C., Bazhenova, O., & Porges, S. (2003). Mother–child interaction in autistic and nonautistic children: Characteristics of maternal approach behaviors and child social responses. *Development and Psychopathology*, *15*(2), 277–295. https://doi.org/10.1017/S0954579403000154

Egeland, B., & Farber, E. (1984). Infant-mother attachment: Factors related to its development and changes over time. *Child Development*, *55*(3), 753–771. https://doi.org/10.2307/1130127

Egeland, B., Pianta, R., & O'Brien, M. (1993). Maternal intrusiveness in infancy and child maladaptation in early school years. *Development and Psychopathology*, *5*(3), 359–370. https://doi.org/10.1017/S0954579400004466

Eisenhower, A. S., Baker, B. L., & Blacher, J. (2005). Preschool children with intellectual disability: Syndrome specificity, behaviour problems, and maternal well-being. *Journal of Intellectual Disability Research : JIDR*, *49*(9), 657–671. https://doi.org/10.1111/j.1365-2788.2005.00699.x

Eisenhower, A.S., Baker, B.L., & Blacher, J. (2007). Early student-teacher relationships of children with and without intellectual disability: Contributions of behavioral, social, and self-regulatory competence. *Journal of School Psychology, 45*, 363-382. https://doi.org/10.1016/j.jsp.2006.10.002

Eisenhower, A. S., Blacher, J., & Bush, H. H. (2015). Longitudinal associations between externalizing problems and student–teacher relationship quality for young children with ASD. *Research in Autism Spectrum Disorders*, *9*, 163–173. https://doi.org/10.1016/j.rasd.2014.09.007

Elliott, S. N., & Gresham, F. M. (2013). Social skills improvement system. In: *Encyclopedia of Autism Spectrum Disorders* (2933–2935). Springer, New York, NY. https://doi.org/10.1007/978-1-4419-1698-3_509

Estes, A., Vismara, L., Mercado, C., Fitzpatrick, A., Elder, L., Greenson, J., Lord, C., Munson, J., Winter, J., Young, G., Dawson, G., & Rogers, S. (2014). The impact of parent-delivered intervention on parents of very young children with autism. *Journal of Autism and Developmental Disorders*, *44*(2), 353–365. https://doi.org/10.1007/s10803-013-1874-z

Estes, A., Munson, J., Dawson, G., Koehler, E., Zhou, X.-H., & Abbott, R. (2009). Parenting stress and psychological functioning among mothers of preschool children with autism and developmental delay. *Autism*, *13*(4), 375–387. https://doi.org/10.1177/1362361309105658

Fenning, R., Baker, J., Baker, B., & Crnic, K. (2007). Parenting children with borderline intellectual functioning: A unique risk population. *American Journal of Mental Retardation*, *112*(2), 107–121. https://doi.org/10.1352/0895-8017(2007)112[107:PCWBIF]2.0.CO;2

Garbacz, L. L., Zychinski, K. E., Feuer, R. M., Carter, J. S., & Budd, K. S. (2014). Effects of teacher-child interaction training (TCIT) on teacher ratings of behavior change. *Psychology in the Schools, 51*(8), 850-865.

Goldberg, S., Lojkasek, M., Gartner, G., & Corter, C. (1989). Maternal responsiveness and social development in preterm infants. *New Directions for Child and Adolescent Development*, *1989*(43), 89–103. https://doi.org/10.1002/cd.23219894309

Gresham, F. M., & Elliott, S. N. (2008). *Social skills improvement system rating scales manual*. Minneapolis: NCS Pearson.

Gulsrud, A. C., Jahromi, L. B., & Kasari, C. (2010). The co-regulation of emotions between mothers and their children with autism. *Journal of Autism and Developmental Disorders*, *40*(2), 227–237. https://doi.org/10.1007/s10803-009-0861-x

Hamre, B.K. & Pianta, R.C. (2001). Early teacher-child relationships and the trajectory of children's school outcomes through eighth grade. *Child Development*, *72*(2), 625–638.

Hart, B., & Risley, T. R. (1995). *Meaningful differences in the everyday experience of young American children*. Baltimore, MD, US: Paul H Brookes Publishing.

Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. *Communication Monographs*, *76*(4), 408–420. https://doi.org/10.1080/03637750903310360

Hayes, A. F. (2012). *PROCESS: A versatile computational tool for observed variable mediation, moderation, and conditional process modeling* [White paper]. http://www.afhayes.com/ public/process2012.pdf

Hughes, J. N. (2011). Longitudinal effects of teacher and student perceptions of teacher-student relationship qualities on academic adjustment. *The Elementary School Journal, 112*(1)*,* 38-60. doi:10.1086/660686

Jerome, E. M., Hamre, B. K., & Pianta, R. C. (2009). Teacher-child relationships from kindergarten to sixth grade: Early childhood predictors of teacher-perceived conflict and closeness. *Social Development (Oxford, England)*, *18*(4), 915–945. https://doi.org/10.1111/j.1467-9507.2008.00508.x

Kahen, V., Katz, L. F., & Gottman, J. M. (1994). Linkages between parent—child interaction and conversations of friends. *Social Development*, *3*(3), 238–254. https://doi.org/10.1111/j.1467-9507.1994.tb00043.x

IBM Corp. Released 2016. IBM SPSS Statistics for Windows, Version 24.0. Armonk, NY: IBM Corp.

Ispa, J. M., Fine, M. A., Halgunseth, L. C., Harper, S., Robinson, J., Boyce, L., Brooks-Gunn, J., & Brady-Smith, C. (2004). Maternal intrusiveness, maternal warmth, and mother-toddler relationship outcomes: Variations across low-income ethnic and acculturation groups. *Child Development*, *75*(6), 1613–1631.

Kaiser, A. P., Hancock, T. B., & Nietfeld, J. P. (2000). The effects of parent-implemented enhanced milieu teaching on the social communication of children who have autism. *Early Education and Development*, *11*(4), 423–446. https://doi.org/10.1207/s15566935eed1104_4

Kasari, C., Sigman, M., Mundy, P., & Yirmiya, N. (1988). Caregiver interactions with autistic children. *Journal of Abnormal Child Psychology*, *16*(1), 45–56. https://doi.org/10.1007/BF00910499

Kochanska, G., Forman, D. R., & Coy, K. C. (1999). Implications of the mother-child relationship in infancy for socialization in the second year of life. *Infant Behavior and Development*, *22*(2), 249–265. https://doi.org/10.1016/S0163-6383(99)00009-0

Koegel, L. K., Koegel, R. L., Harrower, J. K., & Carter, C. M. (1999). Pivotal response intervention I: Overview of approach. *Journal of the Association for Persons with Severe Handicaps*, *24*(3), 174–185. https://doi.org/10.2511/rpsd.24.3.174

Koegel, R. L., O'Dell, M. C., & Koegel, L. K. (1987). A natural language teaching paradigm for nonverbal autistic children. *Journal of Autism and Developmental Disorders*, *17*(2), 187–200. https://doi.org/10.1007/BF01495055

Landry, S. H., Smith, K. E., Miller-Loncar, C. L., & Swank, P. R. (1998). The relation of change in maternal interactive styles to the developing social competence of full-term and preterm children. *Child Development*, *69*(1), 105–123. https://doi.org/10.1111/j.1467-8624.1998.tb06137.x

Landry, S. H., Smith, K. E., & Swank, P. R. (2006). Responsive parenting: Establishing early foundations for social, communication, and independent problem-solving skills. *Developmental Psychology*, *42*(4), 627–642. https://doi.org/10.1037/0012-1649.42.4.627

Lecavalier, L., Leone, S., & Wiltz, J. (2006). The impact of behaviour problems on caregiver stress in young people with autism spectrum disorders. *Journal of*

Intellectual Disability Research, *50*(3), 172–183. https://doi.org/10.1111/j.1365-2788.2005.00732.x

Lemanek, K. L., Stone, W. L., & Fishel, P. T. (1993). Parent-child interactions in handicapped preschoolers: The relation between parent behaviors and compliance. *Journal of Clinical Child Psychology*, *22*(1), 68–77. https://doi.org/10.1207/s15374424jccp2201_7

LoBello, S. G. (1991). A short form of the Wechsler preschool and primary scale of intelligence—revised. *Journal of School Psychology, 29*(3), 229-236. http://dx.doi.org/10.1016/0022-4405(91)90004-B

Longobardi, C., Prino, L. E., Pasta, T., Gastaldi, G. M., & Quaglia, R. (2012). Measuring the quality of teacher-child interaction in autistic disorder. *European Journal of Investigation in Health, Psychology and Education, 2*(3), 103-114.

Lord, C., Risi, S., Lambrecht, L., Cook, E.H. Jr., Leventhal, B.L., DiLavore, P.C., Pickles, A., & Rutter, M. (2000). The autism diagnostic observation schedule – generic: A standard measure of social and communication deficits associated with the spectrum of autism. *Journal of Autism and Developmental Disorders*, 30(3), 205-223.

Lord, C., Rutter, M., DiLavore, P., Risi, S., Gotham, K., & Bishop, S. (2012). *Autism diagnostic observation schedule–2nd edition (ADOS-2)*. Los Angeles, CA: Western Psychological Corporation.

Masse, J. J., McNeil, C. B., Wagner, S., & Quetsch, L. B. (2016). Examining the efficacy of parent–child interaction therapy with children on the autism spectrum. *Journal of Child and Family Studies*, *25*(8), 2508–2525. https://doi.org/10.1007/s10826-016-0424-7

Meirsschaut, M., Warreyn, P., & Roeyers, H. (2011). What is the impact of autism on mother-child interactions within families with a child with autism spectrum disorder? *Autism Research: Official Journal of the International Society for Autism Research*, *4*(5), 358–367. https://doi.org/10.1002/aur.217

Pettit, G. S., Harrist, A. W., Bates, J. E., & Dodge, K. A. (1991). Family interaction, social cognition and children's subsequent relations with peers at kindergarten. *Journal of Social and Personal Relationships*, *8*(3), 383–402. https://doi.org/10.1177/0265407591083005

Pianta, R. C. (2001). *Student–teacher relationship scale*. Charlottesville, VA: University of Virginia.

Pianta, R. C., Belsky, J., Vandergrift, N., Houts, R., & Morrison, F. J. (2008). Classroom effects on children's achievement trajectories in elementary school. *American Educational Research Journal*, *45*(2), 365–397. https://doi.org/10.3102/0002831207308230

Pianta, R. C., la Paro, K. M., Payne, C., Cox, M. J., & Bradley, R. (2002). The relation of kindergarten classroom environment to teacher, family, and school characteristics and child outcomes. *The Elementary School Journal*, *102*(3), 225–238.

Pianta, R. C., Nimetz, S. L., & Bennett, E. (1997). Mother-child relationships, teacher-child relationships, and school outcomes in preschool and kindergarten. *Early Childhood Research Quarterly*, *12*(3), 263–280. https://doi.org/10.1016/S0885-2006(97)90003-X

Pianta, R.C., Steinberg, M.S., & Rollins, K.B. (1995). The first two years of school: Teacher-child relationships and deflections in children's classroom adjustment. *Development and Psychopathology, 7*(2), 295-312. https://doi.org/10.1017/S0954579400006519

Pianta, R.C., & Stuhlman, M.W. (2004). Teacher-child relationships and children's success in the first years of school. *School Psychology Review*, *33*(3), 444–458.

Robertson, K., Chamberlain, B., & Kasari, C. (2003). General education teachers' relationships with included students with autism. *Journal of Autism and Developmental Disorders, 33*(2), 123-130.

Roorda, D. L., Koomen, H. M. Y., Spilt, J. L., & Oort, F. J. (2011). The influence of affective teacher–student relationships on students' school engagement and achievement: A meta-analytic approach. *Review of Educational Research*, *81*(4), 493–529. https://doi.org/10.3102/0034654311421793

Sattler, J.M. (2008). *Assessment of children: Cognitive foundations.* La Mesa, CA: Jerome M. Sattler, Publisher.

Solomon, M., Ono, M., Timmer, S., & Goodlin-Jones, B. (2008). The effectiveness of parent-child interaction therapy for families of children on the autism spectrum. *Journal of Autism and Developmental Disorders*, *38*(9), 1767–1776. https://doi.org/10.1007/s10803-008-0567-5

Warren, S. F., & Brady, N. C. (2007). The role of maternal responsivity in the development of children with intellectual disabilities. *Mental Retardation and Developmental Disabilities Research Reviews*, *13*(4), 330–338. https://doi.org/10.1002/mrdd.20177

Wechsler, D. (2002). *Wechsler preschool and primary scale of intelligence – third edition (WPPSI-III).* San Antonio, TX: The Psychological Corporation.

Wu, J.-Y., Hughes, J. N., & Kwok, O.-M. (2010). Teacher-student relationship quality type in elementary grades: Effects on trajectories for achievement and engagement. *Journal of School Psychology*, *48*(5), 357–387. https://doi.org/10.1016/j.jsp.2010.06.004

Zeedyk, S. M., Cohen, S. R., Eisenhower, A., & Blacher, J. (2016). Perceived social competence and loneliness among young children with ASD: Child, parent and teacher reports. *Journal of Autism and Developmental Disorders*, *46*(2), 436–449. https://doi.org/10.1007/s10803-015-2575-6