

# Correlates of Attachment Perceptions in Parents of Children with Autism Spectrum Disorders

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**Abstract** This study explored the relationship between parents' perceptions of their child's attachment to them and parents' own affective attachment to their child, as well the relationship of these constructs to parenting stress, parent-rated child functional impairment, and parenting sense of competence. Mothers ( $n = 76$ ) and fathers ( $n = 30$ ) of children ages 2–10 with autism spectrum disorders participated. Overall, parents' affective attachment to their child was more consistently related to other aspects of their parenting experiences than were their perceptions of their child's attachment to them. Also, perceptions of child-to-parent attachment were related to other aspects of parenting for fathers more than for mothers. Implications for parenting interventions and future research, such as longitudinal investigations, are discussed.

**Keywords** Autism spectrum disorders · Attachment · Parenting stress · Parent cognitions · Parent perceptions

## Introduction

In part due to their distinctive needs and pervasive deficits, the parenting of children with autism spectrum disorders (ASDs) presents unique challenges. Certain aspects of these parents' experiences (e.g., parenting stress) have been addressed

substantially in the literature, while other important aspects have been neglected. This includes parents' attachment-related perceptions and experiences, as well as the correlates of these. Consistent with the broader attachment literature, most attachment research involving children with ASDs has focused on child-to-parent attachment and typically on children's relationships with their mothers. Typically, researchers have investigated the behavioral (rather than the emotional or affective) component of attachment, assessing for the presence, quality, or security of the child's attachment. This research has discredited previous beliefs that children with autism could not form attachments to others. For instance, children with autism have been able to differentiate their parents from others and to direct increased social behaviors toward them following a separation (e.g., Buitelaar 1995). In fact, it has been reported (Rutgers et al. 2004) that many children with ASDs display secure attachments to their parents.

## Parental Perceptions of Child Attachment

Little research has focused on parents' *perceptions* of their child's attachment to them. Hoppes and Harris (1990) compared mothers of children with autism and Down syndrome on their perceptions of their child's attachment and their feelings of maternal gratification. Mothers of children with autism perceived their children to be significantly less attached to them than did mothers of children with Down syndrome. A study by VanMeter (1995) revealed that parents of children with autism reported that their children displayed significantly fewer attachment behaviors than did parents of children with mental retardation. In addition, Sakaguchi and Beppu (2007) reported that mothers of preschool-aged children with autism had significantly higher scores on children's reported lack of attachment behavior than did mothers of preschool-aged

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children with other disabilities. Thus, research has revealed that parents of children with autism may perceive their children to be less attached to them than do parents of children with other disabilities.

There are a number of potential implications of parents perceiving their children to be less attached to them. For example, parents may experience greater stress or may feel less competent as parents (e.g., if they interpret their child's lower degree of attachment to them as a reflection on their parenting). As a result, parenting behavior may be negatively impacted (e.g., parents may be less effective in implementing behavioral interventions with their children, which is a common component of treatment for children with ASDs). Thus, both parents' subjective experiences and their parenting behavior may be impacted by their perceptions of their child's level of attachment to them.

#### Parents' Affective Attachment to their Child

Much of the research that has been conducted on parent-to-child attachment in nonclinical populations has been in the nursing literature and has focused on mothers' prenatal or postnatal attachment in the first 1–2 years of life. As with child attachment, maternal attachment often has been studied behaviorally, such as by observations of mother-infant interactions (e.g., Becker and Becker 1994). In addition to methodological issues with behavioral measures of attachment, there is theoretical support for investigating the less commonly studied affective component of attachment, with researchers calling for increased attention to this topic (e.g., Condon and Corkindale 1998; Zeanah and Benoit 1995). For instance, Müller (1996) proposed that gaining a better understanding of attachment from a mother's perspective would help identify ways to foster an increase in mothers' affection toward their children and to support a positive long-term attachment relationship. Similarly, Slade (2009) argued that inadequate attention had been paid to the subjective experiences of parents of children with ASDs and described what can be a painful struggle for these parents to feel attached to a child who may display little "reciprocity and mutuality" (p. 19), and thus can be experienced as very rejecting. She noted that children's reciprocity can be essential to parents' feelings of satisfaction. Finally, Seskin et al. (2010) suggested that consideration of parents' attachment representations could be valuable in helping parents interpret their children's attachment needs and managing parenting stress.

#### Relationship Between Perceptions of Child Attachment and Parental Affective Attachment

The research to date on the relationship between parental perceptions of child attachment and parental affective

attachment mainly has focused on parents of typically developing children (e.g., Feldstein et al. 2004; Robson and Moss 1970). There are theoretical reasons to expect a relationship between these constructs. The development of attachment is an interactive, reciprocal process between parent and child (e.g., Condon and Corkindale 1998; Feldstein et al. 2004; Howe 2006). Because children with autism often evidence developmental delays and do not exhibit signs of social reciprocity, there may be a relative lack of social reinforcement experienced by parents, hindering the development of their feelings of closeness to their child (Slade 2009). Reviewing the literature on attachment and parent-child interaction in children with disabilities, Howe (2006) noted that when a child appears unresponsive, parents might feel rejected. In like fashion, Talay-Ongan and Wood (2000) hypothesized that the sensory difficulties of children with autism might interfere with their level of responsiveness to others, causing mothers to "feel and act dejected" (p. 209) due to perceived rejection. They proposed that, in contrast to the long-discredited notion of a "refrigerator mother" (p. 210) playing a role in the etiology of autism, parental distance may be a *result* of the disorder.

Given the paucity of research on the topic, as well as theoretical underpinnings for its potential importance, the present study investigated the relationship between the perceptions of child attachment for parents of children with ASDs and their own affective attachment to their child. In addition, associations between these two sets of attachment perceptions and three potential correlates (parenting stress, child functional impairment, and parenting sense of competence) also were explored.

#### Parenting Stress

There is evidence that parents of children with autism show significantly elevated levels of stress (e.g., Kuhn and Carter 2006; Tomanik et al. 2004), levels that are greater than parents of typically developing children (e.g., Baker-Ericzén et al. 2005; Bouma and Schweitzer 1990) and parents of children with other disabilities, such as Down syndrome (Holroyd and McArthur 1976). Little research has addressed parenting stress in relation to perceptions of child attachment or parental affective attachment for parents of children with ASDs. However, Sakaguchi and Beppu (2007) reported an association between children's lack of attachment behavior and the stress responses of mothers of preschool-aged children with autism and other disabilities. Others have recognized that the lack of social reciprocity of children with ASDs can be stressful for parents (e.g., Siklos and Kerns 2006). Hoffman et al. (2009) found, unexpectedly, that mothers of children with autism had higher stress levels than mothers of typically developing children on all

areas of the Parenting Stress Index except for the Attachment subscale, concluding that mothers of children with autism are able to sustain close relationships with their children, despite such high stress levels.

### Child Functional Impairment

Given that children on the autism spectrum often display difficulties with social interaction (e.g., eye contact, deficits in joint attention) and communication skills (e.g., impairment in functional language), which typically are used to demonstrate attachment to other people, it was expected that parents might interpret the absence of or relative deficit in these behaviors as an indication of their child's lack of attachment or weaker attachment to them. Although research has not directly assessed the relationship between parent perceptions of child functional impairment and parents' affective attachment to their child, studies (e.g., Condon and Corkindale 1998; Edhborg et al. 2005) examining related constructs provided reason to expect a negative relationship between the two in the present investigation. Also, theoretically, given that the attachment relationship consists of reciprocal, interactive processes, it was anticipated that parents may find it more challenging to feel attached to a child whom they perceive to be more impaired in the social domain (e.g., unaware of or unresponsive to their social and affective gestures). Alternatively, it is possible that lower feelings of attachment to one's child may lead to perceptions of the child's greater functional impairment.

### Parenting Sense of Competence

Research has shown that parents of children with autism feel less competent in the parenting role than do parents of typically developing children and parents of children with other disabilities (Fisman et al. 1989; Rodrigue et al. 1990). Regarding parenting sense of competence and attachment, Hoppes and Harris (1990) found a significant positive relationship between maternal perceptions of child attachment and maternal feelings of gratification. Research also has suggested a relationship between parenting sense of competence and parental affective attachment (e.g., Mercer and Ferketich 1990, 1994), but prior to the current study, research had not examined this relationship for parents of children with ASDs. Researchers (e.g., Meirsschaut et al. 2010) have argued that clinicians should consider mothers' "feelings and cognitions" (p. 668), such as low self-efficacy, as they may interfere with positive intervention outcomes.

It was hypothesized that there would be a significant positive relationship between parents' perceptions of their child's attachment to them and the parents' own affective

attachment to their child. It also was hypothesized that there would be a significant negative relationship between both attachment constructs (i.e., parents' perceptions of their child's attachment and their own affective attachment to their child) and parenting stress, as well as between both attachment constructs and parent-rated child functional impairment. In addition, it was expected that both attachment constructs would be significantly positively related to parenting sense of competence. Finally, it was hypothesized that parents' perceptions of their child's attachment to them, parents' affective attachment to their child, and child functional impairment would contribute significantly to the variance in parenting stress and parenting sense of competence above and beyond the variance accounted for by child age, diagnosis, and the social desirability of parents' responses.

## Method

### Participants

The participants were parents of children between the ages of 2 and 10 years old with ASDs, including Autistic Disorder, Asperger's Disorder, and Pervasive Developmental Disorder Not Otherwise Specified (PDD-NOS). The parents were recruited from seven organizations and schools in the New York metropolitan area (i.e., urban and suburban) serving children on the autism spectrum and their families. Four of the sites provided autism-specific educational services to children, two provided information and supportive services (e.g., parent support groups) to families of children on the spectrum and/or associated professionals, and one site was a pediatric therapy center for children with various difficulties (not exclusively ASDs). Mothers ( $n = 76$ ) were the main population of interest, as they are often the primary caregivers of children with ASDs (Moes et al. 1992). Data also were collected from a subsample of fathers ( $n = 30$ ).

The children's mean age was 5.51 years ( $SD = 2.47$ ). The sample consisted of about five times more parents of boys ( $n = 89$ ; 84.0%) than parents of girls ( $n = 17$ ; 16.0%), which reflects the prevalence rates in the general population (*DSM-IV-TR*; APA 2000). The children's diagnoses, as reported by their parents, were: 46 (43.4%) children were diagnosed with Autistic Disorder, 45 (42.5%) with PDD-NOS, 7 (6.6%) with Asperger's Disorder, 4 (3.8%) with both Autistic Disorder and PDD-NOS, 2 (1.9%) "other diagnosis," and 2 omissions.

Eighty-five (80.2%) parents were 35 years of age or older, 18 (17.0%) were between 25 and 34, and 3 (2.8%) were 24 or younger. With respect to ethnicity, 69 (65.1%) of the parents were Caucasian, 16 (15.1%) were Hispanic,

9 (8.5%) were African American, 8 (7.5%) were Asian, and 4 (3.8%) endorsed “other.” The average Socioeconomic Index score (Nakao and Treas 1992, 1994), based on income and education, fell into the upper-middle class socioeconomic status (SES) categories.

## Instruments

### *Maternal Perception of Child Attachment (MPCA)*

The MPCA (Hoppes and Harris 1990) was used to measure the degree to which the parents perceived that their child was attached to them. Specifically, the items assess the extent to which a mother (a) views her child as initiating different types of contact (e.g., verbal, physical) and (b) believes that her child identifies with and imitates her, is sensitive to her feelings, and is able to engage in reciprocal intimacy. The scale consists of 23 items rated on a 5-point scale, with higher scores reflecting perceptions of stronger child attachment (Hoppes and Harris 1990). Sample items include “When my child is hurt or in pain, s(he) comes to me for comfort and help,” “My child seems to seek my attention mostly when s(he) wants me to give him/her something” (reverse-scored), and “When my child and I are reunited after having been apart for a few hours, my child will demonstrate a lot of pleasure in seeing me again (greeting me with a warm smile, moving close to me, touching me, etc.).” (Hoppes 1988). Hoppes and Harris (1990) reported data supporting the measure’s construct validity, including its theoretically expected relationship with their Maternal Gratification scale. The scale’s internal consistency in the current study was adequate at  $\alpha = .86-.87$ .

### *Postnatal Attachment Questionnaire (PAQ)*

The PAQ (Condon and Corkindale 1998) was utilized to measure the parents’ affective attachment to their child. It consists of 19 items (e.g., “When I have been away from the child for a while and I am about to be with him/her again, I usually feel...”) assessing the frequency or intensity of parents’ responses to their child. Each item has between two and five response choices, and each item is scored from 1 (low attachment) to 5 (high attachment), regardless of the number of response choices, so that all the items are equally weighted in the total score (Scopesi et al. 2004). The items are summed to calculate the total score, with higher scores reflecting greater parental attachment (Condon and Corkindale 1998). Because the original PAQ was designed to measure parents’ attachment during their child’s first year, in the present study the word “baby” was replaced with “child” to make the wording applicable for all children. Corkindale (personal communication, March

5, 2007) reported that the MPAQ and PPAQ have been used with infants/toddlers over 1 year of age, translated into other languages, and adapted by other researchers to meet their needs. Also, the item content generally refers to parents’ feelings and is therefore applicable to parents of older children. Past research has demonstrated adequate internal consistency for the maternal version of the PAQ ( $\alpha = .77-.79$ ; Condon and Corkindale 1998; Feldstein et al. 2004; Scopesi et al. 2004), and the paternal version of the PAQ ( $\alpha = .78-.85$ ; Condon et al. 2008; Feldstein et al. 2004). Although previous research did not report the psychometric properties of the instrument for parents of children older than 15 months, the current study demonstrated adequate internal consistency for both mothers ( $\alpha = .77$ ) and fathers ( $\alpha = .88$ ). In addition, research has demonstrated the PAQ’s construct validity (e.g., significant negative correlations with measures of parental depression and anxiety; Condon and Corkindale 1998).

### *Parenting Stress Index/Short Form (PSI/SF)*

The PSI/SF (Abidin 1995) was employed to measure parenting stress. The Total Stress score, used in the current study, is a sum of the three subscale scores (12 items each) and yields an assessment of overall level of parenting stress. Thirty-three of the items are rated on the same 5-point Likert-type scale, and the remaining three employ a different format (e.g., choosing from five statements). Higher scores indicate higher levels of parenting stress. The PSI/SF is the most widely utilized measure of parenting stress and has demonstrated satisfactory reliability and validity in numerous studies, including several studies involving parents of children with ASDs (e.g., Tobing and Glenwick 2006). The current study revealed high levels of internal consistency for mothers ( $\alpha = .89$ ) and fathers ( $\alpha = .94$ ). Tobing and Glenwick’s (2006) study demonstrated the measure’s construct validity by demonstrating a significant positive relationship to children’s functional impairment.

### *Childhood Autism Rating Scale-Parent Version (CARS-P)*

The CARS-P (Bebko et al. 1987) assessed parents’ perceptions of their children’s functional impairment. It is a measure of symptom severity that was adapted from the Childhood Autism Rating Scale (CARS; Schopler et al. 1980) for parent, as opposed to professional, completion. The CARS-P contains 14 out of the 15 original CARS items, with each item rated on a 4-point scale. Items are summed to yield a Total score, with higher scores reflecting perceptions of greater functional impairment. The CARS-P has demonstrated good internal consistency (e.g.,  $\alpha = .86$ ; Tobing and Glenwick 2002), including for the

current study ( $\alpha = .89$  for mothers,  $\alpha = .85$  for fathers). Tobing and Glenwick (2002) also demonstrated support for the CARS-P's validity, finding that mothers of children with autism rated their children's symptom severity as greater than did mothers of children with PDD-NOS.

#### *Parenting Sense of Competence Scale (PSOC)*

The PSOC (Johnston and Mash 1989) was used to measure the parents' feelings of self-esteem in the parenting role. Its 16 items (e.g., "I meet my own personal expectations for expertise in caring for my child.") are rated on a 6-point Likert-type scale. There are 9 items on the Satisfaction subscale and 7 items on the Efficacy subscale. The items of the Efficacy subscale are reverse-scored, with higher scores reflecting higher parenting self-esteem. Johnston and Mash (1989) reported adequate internal consistency for the Total score of the PSOC ( $\alpha = .79$ ), as was also found for the current study ( $\alpha = .83$  for mothers,  $.82$  for fathers). In support of the PSOC's construct validity, Tobing and Glenwick (2006) found that parenting sense of competence was significantly negatively related to level of psychological distress for mothers of children with ASDs.

#### *Paulhus Deception Scales (PDS)*

The PDS (Paulhus 1998) was included as a measure of social desirability bias. The items are designed to assess whether individuals' responses are characterized by faking or lying (Impression Management scale) and/or display an unintentional bias toward presenting themselves in a positive light (Self-Deceptive Enhancement scale) (Paulhus and John 1998). There are 40 items, rated from 1 (*not true*) to 5 (*very true*), with each subscale comprised of 20 items. Only extreme responses receive a point; thus, for the IM scale, only responses of 1 or 2, or 4 or 5 (depending on the item) receive a point. For the SDE scale, only scores of 1 or 5 (depending on the item) receive a point. The total PDS raw score is the sum of all 40 items, and can range from 0 to 40. Raw scores are then converted to T-scores on the scoring page of the record form. Although cutoff scores are provided for high or low subscale scores, Paulhus (1998) recommended interpreting the PDS scores as continuous; thus, the higher one's PDS score, the greater the likelihood of socially desirable responding. Paulhus (1998) reported adequate internal consistency for the total PDS ( $\alpha = .83-.86$ ). For the current study, the internal consistencies were  $\alpha = .78$  for mothers, and  $\alpha = .61$  for fathers. Paulhus (1998) reported support for the measure's construct validity, including a positive correlation of .73 between total PDS scores and scores on the Marlowe–Crowne Social Desirability Scale (Crowne and Marlowe 1960).

#### *Information Form*

A short information form created for the current study included questions regarding the child (e.g., age, sex, and diagnosis) and the participating parent (e.g., age, ethnicity, and occupation).

#### *Procedure*

Multiple recruitment methods were employed, including sending research packets home in children's school bags, distributing study announcements to organizations' electronic listserves, inviting parents to participate in person at support groups, and posting a flyer with the study announcement. Depending upon the data collection site, parents received either self-addressed, stamped envelopes to return the consent form and questionnaires by mail or envelopes in which to return them in the children's school bags. Parents were informed that the purpose of the research was to learn more about the experiences of parents of children with ASDs in order to better inform future interventions for families of children with autism and related disorders.

#### **Results**

Independent-samples *t* tests were conducted to assess for potential differences based on child gender or child diagnosis on the primary variables of interest. Zero-order correlations were calculated among the variables of interest, with partial correlations calculated, when necessary, to control for the potential impact of social desirability. Finally, hierarchical regression analyses were conducted with parenting stress and parenting sense of competence as the criterion variables. The regression analyses assessed whether parental perceptions of child attachment, parental affective attachment, and parental perceptions of child functional impairment contributed to the abovementioned criterion variables above and beyond the child's age and diagnosis and the social desirability of parents' responses.

#### *Correlational Analyses*

Independent-samples *t* tests revealed that there were no significant child gender or diagnostic differences on the primary variables of interest. Zero-order correlations were calculated between the variables of interest, as well as between the variables of interest and child age. For both mothers,  $r(74) = .34$ ,  $p = .003$ , and fathers,  $r(28) = .37$ ,  $p = .04$ , functional impairment was significantly positively related to child age. Also, fathers' perceptions of their



child's attachment were significantly negatively related to child age,  $r(28) = -.41, p = .02$ .

There was a significant positive relationship between parents' perceptions of their child's attachment to them and parents' own affective attachment to their child for fathers,  $r(28) = .43, p = .02$ , but not for mothers,  $r(74) = .19, p = .11$ . Similarly, there was a significant negative relationship between parents' perceptions of their child's attachment to them and parenting stress only for fathers,  $r(28) = -.42, p = .02$ ; mothers showed a trend toward significance,  $r(74) = -.21, p = .07$ . There was a significant negative association between parents' affective attachment to their child and parenting stress for both mothers,  $r(74) = -.70, p < .001$ , and fathers,  $r(28) = -.63, p < .001$ . These correlations remained significant when controlling for social desirability bias for mothers. (Partial correlations were not conducted for fathers because there were no significant relationships between these, or any other, variables of interest and social desirability for fathers.)

There was a significant negative relationship between parents' perceptions of their child's attachment and their perceptions of their child's level of functional impairment, for both mothers,  $r(74) = -.42, p < .001$  (which remained significant when controlling for social desirability), and fathers,  $r(28) = -.57, p = .001$ . For mothers, but not fathers, there was a significant negative correlation between parents' affective attachment to their child and parents' perceptions of their child's level of functional impairment,  $r(74) = -.39, p < .001$ , which remained significant when partialling out the contribution of social desirability.

The relationship between parents' perceptions of their child's attachment and parenting sense of competence was not significant for either mothers or fathers. However, there was a significant positive relationship between parents' affective attachment to their child and parenting sense of competence for both mothers,  $r(74) = .66, p < .001$  (which remained significant when controlling for social desirability), and fathers,  $r(28) = .71, p < .001$ .

### Regression Analyses

A series of hierarchical regression analyses were conducted for mothers and fathers separately, with parenting stress and parenting sense of competence as the criterion variables. The child's age and diagnosis and the social desirability of parents' responses were entered in the first step of the regression. The second step included parental perceptions of child attachment, parental affective attachment, and parental perceptions of child functional impairment as predictors.

For mothers, the regression analysis revealed that the first step of predictors accounted for a significant amount of the variance in parenting stress,  $R^2 = .21, F(6, 69) = 3.00,$

$p = .01$ . As hypothesized, the second step of predictors accounted for a significant proportion of the variance in parenting stress above and beyond the variables in Block 1,  $R^2$  change = .35,  $F(3, 66) = 17.04, p < .001$ . Taken together, all of the predictors in the model accounted for 55% of the variance in parenting stress (i.e.,  $R^2 = .55$ ).

An examination of each predictor individually revealed that mothers' affective attachment,  $\beta = -.59, t(66) = -.52, p < .001$ , and mothers' perceptions of their child's functional impairment,  $\beta = .25, t(66) = 2.29, p = .03$ , but not mothers' perceptions of their child's attachment to them, contributed significantly to the variance in parenting stress.

For fathers, the first step of predictors did not account for a significant amount of the variance in parenting stress. The second step of predictors, though, contributed to the variance in parenting stress above and beyond the predictors in Block 1,  $R^2$  change = .43,  $F(3, 21) = 8.18, p = .001$ . Taken together, all of the predictors accounted for 63% of the variance in parenting stress.

Regarding individual predictors, both fathers' affective attachment,  $\beta = -.54, t(21) = -3.53, p = .002$ , and fathers' perceptions of their child's functional impairment,  $\beta = .52, t(21) = 2.64, p = .02$ , but not fathers' perceptions of their child's attachment to them, contributed significantly to the variance in parenting stress.

With parenting sense of competence as the criterion variable, the results for mothers revealed that the first step of predictors accounted for a significant amount of the variance,  $R^2 = .38, F(6, 69) = 6.9, p < .001$ . In addition, the second step of predictors contributed to the variance in parenting sense of competence while controlling for Step 1 variables,  $R^2$  change = .16,  $F(3, 66) = 7.63, p < .001$ . Taken together, the predictors accounted for 54% of the variance in parenting sense of competence.

Regarding individual predictors, mothers' affective attachment accounted for a significant amount of the variance in parenting sense of competence,  $\beta = .53, t(66) = 4.62, p < .001$ , but mothers' perceptions of their child's attachment to them and mothers' perceptions of their child's level of functional impairment did not.

For fathers, Step 1 variables did not account for a significant amount of the variance in parenting sense of competence. However, the second step of predictors, taken together, contributed to the variance in parenting sense of competence above and beyond the Step 1 variables,  $R^2$  change = .60,  $F(3, 21) = 16.21, p < .001$ . The predictors accounted for 74% of the variance in parenting sense of competence.

With respect to individual predictors, fathers' affective attachment accounted for a significant amount of the variance in parenting sense of competence,  $\beta = .74, t(21) = 5.75, p < .001$ , as did their perceptions of their child's

functional impairment,  $\beta = -.53$ ,  $t(21) = -3.21$ ,  $p = .004$ . The contribution of fathers' perceptions of their child's attachment to them to their parenting sense of competence approached significance,  $\beta = -.31$ ,  $t(21) = -2.00$ ,  $p = .06$ .

## Discussion

The current study examined the relationship between parents' perceptions of their child's attachment to them and their own affective attachment to their child, as well as the relationship of these constructs to parenting stress, parents' perceptions of their child's functional impairment, and parenting sense of competence. In so doing, this research built upon the extant, small literature on the attachment perceptions of parents of children with ASDs by investigating affective parent-to child perceptions in this population and including the experience of fathers. Such research complements the typical focus on the behavioral assessment of attachment and is in line with recent research (e.g., Phetrasuwan and Miles 2009; Slade 2009) that has called attention to the importance of the subjective experiences of parents of children with ASDs as well as the related implications for treatment.

The results showed that, overall, parents' perceptions of their affective attachment to their child were more consistently related to other aspects of their parenting experiences than were their perceptions of their child's attachment to them. As such, there were significant relationships between parents' affective attachment to their child and both parenting stress and parenting sense of competence. There was also a significant relationship between mothers' (but not fathers') affective attachment to their child and perceptions of their child's functional impairment. The results revealed that perceptions of child attachment were related to other aspects of parenting for fathers more than for mothers; for fathers only, there were significant relationships between perceptions of child attachment and both affective attachment and parenting stress. Both mothers' and fathers' perceptions of their child's attachment were significantly related to their perceptions of their child's functional impairment. On the other hand, neither mothers' nor fathers' perceptions of their child's attachment to them were related to their parenting sense of competence. Finally, for both mothers and fathers, perceptions of child attachment, parents' affective attachment to their child, and perceptions of child functional impairment contributed significantly to the variance in parenting stress and parenting sense of competence above and beyond the child's age, diagnosis, and the social desirability of parents' responses.

The differences between mothers and fathers with respect to the relationship between parents' perceptions of

their child's attachment to them and their own affective attachment to their child could reflect mothers' greater ability to separate their own feelings of attachment from their experience of their child's attachment to them. Mothers may be better able to differentiate these attachment perceptions because typically they are with their children more often than are fathers.

Similarly, with respect to mothers' and fathers' differences in the relationship between their perceptions of their child's attachment and their levels of parenting stress, it could be that mothers and fathers make different attributions to help explain or understand their child's degree of attachment to them. For instance, if mothers make more external attributions (e.g., related to their child's greater functional impairment) for their child's lower degree of attachment, they may experience it as less of a stressor than if they made more personal attributions (e.g., related to their parenting skills). This potential explanation is supported by the finding that mothers' perceptions of their child's level of attachment were related to their perceptions of their child's functional impairment but not to their sense of parenting competence.

In general, the results suggest that parents' affective attachment to their child is more consistently related to other aspects of their parenting experiences than are their perceptions of their child's attachment to them. For example, the anticipated negative association between parents' affective attachment and their feelings of parenting stress was supported for both mothers and fathers. Parents may feel less stressed because they feel more attached to their child, or, alternatively, they may be able to experience a greater attachment to their child because they experience less parenting stress.

The expected significant positive relationship between parents' perceptions of their child's attachment and their feelings of parenting competence was not supported by the mothers' or fathers' data. For mothers, the same possible explanation for the lack of relationship between parents' attachment perceptions and their feelings of stress may apply. That is, if mothers do, in fact, make more external attributions (e.g., related to their child's functional impairment or diagnosis) for their child's lower degree of perceived attachment, they may be able to separate these perceptions from their sense of competence as a parent, rather than concluding that their child is not as attached to them because of a deficit in their parenting skills. On the other hand, fathers may not regard their child's attachment to them as being related to their parenting abilities. For instance, they may anticipate that their children should naturally be attached to them, regardless of their own contributions to the relationship.

Child age was significantly positively correlated with perceptions of functional impairment for both mothers and

fathers. This suggests that parents of older children tend to perceive their children as having greater functional impairment. It may be that parents' expectations of their children's functioning and their children's actual functioning become more discrepant as the children get older, due to parents' expectations increasing with child age. In addition, parents may expect their children to outgrow behaviors that appear to be atypical. Previous research regarding the relationship between child age and parents' ratings of their child's functional impairment has been inconsistent, with some studies (e.g., Konstantareas and Homatidis 1989) supporting a positive relationship and others (e.g., Bebko et al. 1987) suggesting a negative one. These inconsistent findings suggest that there may be additional factors that influence the relationship between these two variables. For instance, Tobing and Glenwick (2002) found that the significance of the (positive) relationship between child age and parents' perceptions of functional impairment varied by child diagnostic group.

The number of significant relationships between social desirability and the variables of interest suggests that mothers of children with ASDs are, in some way, influenced by a desire to present themselves favorably to others (e.g., by disclosing greater feelings of parenting competence than they actually experience). Previous research on gender differences in socially desirable reporting has revealed mixed results, with some studies (e.g., Ones and Viswesvaran 1998) suggesting that men exhibit a greater social desirability bias than do women and others (e.g., Bernardi and Guptill 2008; Dalton and Ortegren 2011) finding that women display greater socially desirable responding than do men. It may be that gender differences in social desirability vary based upon the aspect of social desirability being measured. For instance, there is evidence that although females may score higher than (Bernardi and Guptill 2008) or not significantly differently than males (Ricketta 2005) on impression management, males may score higher on self-deceptive enhancement (e.g., Musch et al. 2002, as cited in Ricketta 2005). However, scores on both PDS subscales were higher for mothers in the current study, suggesting that patterns of socially desirable responding may be different for parents of children with ASDs compared to nonparent populations.

The contrasting findings in the present study for mothers and fathers with respect to social desirability are in line with Feldstein et al.'s (2004) proposition that society places greater pressure on mothers than fathers to express positive feelings about their children. Although some recent research suggests that (a) views on parental roles have shifted to be more egalitarian and to call for greater paternal involvement in child rearing (e.g., Diehnart 2001) and (b) expectations of mothers have been raised and broadened (e.g., to join the workforce), their familial responsibilities have not changed

(e.g., Hochschild and Machung 2003; Perkins and DeMeis 1996) and they continue to spend significantly more time with their children than do fathers (Pleck and Masciadrelli 2004). Accordingly, mothers of children with ASDs are often their primary caregivers (Moes et al. 1992). Therefore, mothers may still maintain expectations of themselves that are consistent with more traditional parental roles and societal expectations, and thus may be more motivated than fathers to present their parenting experiences in a more positive light.

#### Clinical Implications

The significant relationship between affective attachment and parenting stress for both mothers and fathers suggests that targeting parents' affective attachment to their child may be a beneficial area of intervention. It may be that not feeling attached to one's child contributes to feelings of parenting stress, and addressing factors related to lower feelings of attachment may help decrease parents' stress levels. On the other hand, as noted above, it may be that parents' feelings of stress contribute to lower feelings of affective attachment to their child. In that case, interventions targeted at lowering parenting stress might specifically consider their potentially positive effect on parents' attachment to their child.

The significant association between both parents' affective attachment and their feelings of parenting competence suggests that intervening to help increase parents' feelings of attachment to their child also may have positive implications for their feelings of competence. On the other hand, in a similar manner as with parenting stress, addressing parents' sense of competence may help increase their feelings of attachment to their child.

Because the current findings suggest that mothers and fathers of children with ASDs differ somewhat in how their attachment perceptions relate to various cognitions and perceptions, it may be worthwhile to tailor interventions to the unique experiences of mothers and fathers of children on the autism spectrum, rather than applying the same intervention goals and components to both. Other researchers (Bloch and Weinstein 2010; Keen et al. 2010; Tehee et al. 2009) also have suggested the importance of considering the unique needs of, and intervention implications for, mothers and fathers.

#### Directions for Future Research

Due to the present study's cross-sectional design, it was not possible to make directional inferences regarding causal relationships among variables. Longitudinal research would be valuable in assessing the direction of influence among the constructs of interest.



Future research examining parents' attributions regarding their child's degree of attachment to them could help shed light on differences found between mothers and fathers. For example, mediation by parents' attributions of the relationship between parents' perceptions of their child's attachment and their feelings of parenting stress could explain why a significant relationship between these variables was uncovered for fathers but not for mothers.

The current study shed light on potential relationships between the existing attachment perceptions and experiences of parents of children with ASDs and various aspects of their parenting experiences (e.g., parenting stress). Research might profitably investigate the impact of different therapeutic approaches (e.g., applied behavior analysis as compared to the Developmental Individual Difference Relationship-based [DIR] approach) on parents' attachment perceptions. Such research could have valuable clinical implications with respect to fostering parents' well-being and the quality of the parent–child relationship.

### Limitations

One limitation of this study was the relative homogeneity of the sample (i.e., mostly Caucasian, at least 35 years of age, well-educated, and of upper-middle SES). Therefore, the external validity of the current results with parents of different ethnic, socioeconomic, and age groups warrants investigation. Relatedly, because the parents were recruited from the New York metropolitan (i.e., urban and suburban) area, one cannot assume that the results would generalize to parents of children with ASDs from rural areas. For instance, the parents in the current sample may benefit from more protective factors (e.g., higher SES and greater access to support/treatment resources) than do other parents and may experience less parenting stress. However, given that the current sample's stress level for both mothers and fathers was still considerably high (exceeding the 90th percentile, which reflects clinically significant stress levels; Abidin 1995), our findings may be considered, if anything, conservative. Thus, one would expect the clinical implications of the current results to be not only applicable to, but even more salient for, parents with fewer resources and higher stress levels.

Another limitation is that the parents who chose to participate in the research may have differed on the variables of interest from those parents who declined to participate. For instance, given that parents of children with ASDs comprise a highly stressed population, the parents who did participate may have lower stress levels relative to those parents who did not participate, or they may be better able to manage their stress. It is also possible that responding parents are more open to sharing their parenting experiences than are nonresponding parents. The finding that the main results

remained significant after controlling for the social desirability of parents' responses supports this possibility.

Finally, information was not obtained regarding family size. Such information could be helpful in determining whether parents' responses vary depending on the number of children they have (e.g., parents of an only child compared to parents of multiple children).

### Conclusions

It is clear from the existing literature that parents of children with ASDs are a highly stressed population faced with many daunting challenges. Despite the recognition of the often overwhelming demands of raising a child on the autism spectrum, there is a relative paucity of research addressing these parents' subjective experiences. Furthermore, interventions often neglect to address the needs and experiences of these parents, which warrant attention in their own right, and also have implications for the treatment and outcomes of these children. Given the primary deficits of children with ASDs in social relatedness and communication, skills fundamental to the development and expression of attachment, the current study focused on parents' attachment perceptions and experiences. This seemed to be an important gap in the literature, given the typical focus of attachment research on behaviorally measured child-to-parent attachment. The present results support the value of this line of research, which will hopefully result in a more comprehensive understanding of, and more efficacious interventions with, this population.

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