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Couple Conflict in Parents of Children with versus without Autism: Self-Reported and Observed Findings

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Abstract

We compared the couple conflict of parents of children with autism spectrum disorder (ASD) to a comparison group of parents of children without disabilities using self-reported and observational measures. In total, 178 couples who had a child with ASD (aged 5–12 years) and 174 couples who had children without disabilities (aged 5–12 years), recruited from a Midwestern state in the United States, reported on couple conflict in everyday life and engaged in an observed couple conflict interaction. Parents of children with ASD reported more frequent, severe, and unresolved couple problems than the comparison group. Parents who had a child with ASD were observed to have less engaged, balanced, and cooperative couple conflict interactions, but demonstrated more positive affect and sensitivity towards one another, than parents in the comparison group. Group differences had small effect sizes. Findings have implications for marital therapy and relationship education programs.

Introduction

Autism spectrum disorder (ASD) is a lifelong neurodevelopmental disorder characterized by deficits in social communication and restricted/repetitive interests and behaviors (American Psychological Association, 2013). In addition to these ASD symptoms, one-third to one-half of children with ASD have an intellectual disability (Autism and Developmental Disabilities Monitoring Network [ADDM], 2014) and more than half of children with ASD exhibit co-occurring behavior problems or psychiatric conditions (e.g., Maskey, Warnell, Parr, Le

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Ethical Approval: All procedures performed in the study involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study.

Author Contributions:

SH: designed study, took lead on data analyses, and wrote the paper. LP: collaborated with the design of the study and data analyses. IM: assisted in conducting the study and writing of the study. PB: assisted in conducting the study and writing of the discussion. GG: assisted in conducting of the study and writing of the study. EH: assisted in writing of the study.

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Coutuer, & McConachie, 2013; Park, Kim, Koh, Song, & Leventhal, 2014). These child-related challenges are associated with increased levels of parenting stress (e.g., Hayes & Watson, 2013), symptoms of psychopathology (e.g., Kuusikoo-Gauffun et al., 2013), and poor physiological health (e.g., Dykens & Lambert, 2013) in parents of children with ASD. Little is known about the impact of child-related challenges associated with ASD on other family dynamics, including parents' marital relationship. According to the family systems perspective, stressors in one family subsystem influence the functioning of other subsystems (e.g., Cox, Paley, & Harter, 2001); high child-related challenges within the parenting subsystem may thus lead to high couple conflict within the marital subsystem.

Arguably, theory and research on the general population indicate that the most robust predictor of marital quality is couple conflict (e.g., Fincham & Beach, 1999; Gottman, 2014; Kliem, Weusthoff, Hahlweg, Baucom, 2015). How frequently and severely couples disagree and how couples manage these disagreements (i.e., conflict resolution strategies) are critical to healthy, satisfying, and long-lasting relationships. Indeed, longitudinal studies on the general population indicate that couple conflict predicts change in marital adjustment and marital satisfaction across time, as well as the likelihood of divorce (e.g., Finkel, Slotter, Luchies, Walton, & Gross, 2013; Gottman, 1993; Park, & Unutzer, 2014).

Substantial research on the general population has documented that a high level of couple conflict and the use of maladaptive conflict resolution strategies by parents negatively impacts child functioning and behavior problems (e.g., McCoy, George, Cummings, & Davies, 2013; Stroud, Meyers, Wilson, & Durbin, 2014). On the other hand, there is also evidence that contexts of high child-related challenges put parents at risk for frequent, intense, and unresolved couple conflict. Within community samples, child externalizing problems have been found to predict an increased level of couple conflict across time (Schermerhorn, Cummings, DeCarlo, & Davies, 2007), and in particular an increased level of couple conflict over child issues (Jenkins, Simpson, Dunn, Rasbash & O'Connor, 2005). Moreover, disruptive child behaviors associated with attention-deficit/hyperactivity disorder (ADHD) were found to be related to a higher level of argumentative couple communication broadly (Sochos & Yahya, 2015; Wymbs & Pelham, 2010), and during couple discussions about child issues (Wymbs & Pelham, 2010). Thus, a context of high child-related challenges may lead to more couple disagreements about child issues. In addition, child-related challenges associated with externalizing behaviors and ADHD have been shown to contribute to parental stress and psychopathology (e.g., Theule, Wiener, Tannock, & Jenkins, 2013), which are known risk factors for maladaptive couple conflict processes (e.g., Krannitz, Grandey, Liu, & Almeida, 2015; Najman et al., 2013).

To date, virtually nothing is known about couple conflict in parents who have a child with ASD; it is unclear if the high child-related challenges associated with ASD put parents at risk for frequent, intense, and unresolved couple conflicts. A handful of studies have examined marital quality more broadly in parents of children with ASD relative to comparison groups of parents of children without disabilities. These studies are limited to markers of marital stability (i.e., divorce/separation) or self-reported global marital satisfaction or marital adjustment. In the majority of these studies, parents of children with ASD were found to have a higher rate of divorce (Hartley et al., 2010) or a lower self-

reported level of global marital satisfaction or marital adjustment (Brobst, Clopton, & Hendrick, 2009; Gau et al., 2012; Higgins, Bailey, & Pearce, 2005; Santamaria, Cuzzocrea, Gugliandolo, & Larcan, 2012) than parents of children without disabilities. Yet, a smaller number of studies found no group differences (Freedman, Kalb, Zablotsky, & Stuart, 2012; Ramisch, Onaga, & Oh, 2014; Rodriguez, Morgan, & Geffken, 1992). No studies have compared couple conflict in parents of children with ASD to that of comparison groups. However, in an ASD-group only study, Hartley et al. (2016) found that across a 14-day daily diary, parents reported that the most common topic of problem-solving interactions was the child with ASD (25% of the days, on average). In this same study, mothers of children with ASD reported experiencing fewer positive marital interactions (e.g., joking or doing something fun) following a day with high parenting stress (Hartley, Papp, & Bolt, 2016). These findings suggest that couple disagreements about child issues may be frequent and that stress generated from parenting negatively affects parents' couple interactions.

Taking a more nuanced approach to identifying the specific aspects of the couple relationship, such as couple conflict, that go awry in parents of children with ASD is essential for designing interventions. Several marital therapies and relationship education programs designed for the general population (e.g., Finkel et al., 2013; Halford, Markman, Kline & Stanley, 2003) target couple conflict, and have been shown to result in increased marital adjustment and satisfaction (Blanchard, Hawkins, Baldwin, & Fawcett, 2009). Thus, elucidating potential vulnerabilities in the couple conflict processes of parents of children with ASD may offer a modifiable treatment target for improving broader marital outcomes.

Couple conflict can be assessed through varied methodologies. Self-report measures, which are often based on broad experiences, are used to capture an individual's *perception* of couple conflict in everyday life (Heyman, 2001). Therefore, subjective perceptions of couple conflict often differ among partners within couples (Christensen & Nies, 1980; Jacobson & Moore, 1981), given the attributional biases and selective attention of each partner. Observational lab-based interactions that approximate naturalistic couple conflict situations, in contrast, provide an outsider rating of the *actual* verbal and nonverbal behaviors exhibited in a specific context (Blanchard et al., 2009; Heyman, 2001). Studies on the general population have shown that observational lab-based couple conflict interactions are able to capture couple disagreements, in that these interactions elicit behaviors such as criticism and disparaging remarks as well as increased physiological arousal in partners (e.g., Rodriguez & Margolin, 2013). In general, there are moderate associations between self-reported and observational measures of couple conflict (Heyman, 2001) and both predict change in marital quality across time (e.g., Amato & Hohmann-Marriott, 2007; Backer-Fulghum, & Snadford, 2015; Gottman, 1993). Studies involving *both* self-reported and observed methods are thus arguably ideal for capturing the fullest picture of couple conflict.

The purpose of the current study was to compare the couple conflict of parents of children with ASD to that of a comparison group of parents of children without disabilities using self-reported and observed measures. We hypothesized that parents of children with ASD would self-report a higher frequency and severity and lower resolution of couple conflicts and a higher use of maladaptive conflict resolution strategies than the comparison group. Parents of children with ASD were expected to exhibit more maladaptive couple interaction

behaviors during the observed couple conflict interaction than parents in the comparison group.

Method

Participants

Participants were part of an ongoing longitudinal study that originally included a community sample of 183 couples who had a child with ASD and a comparison group of 182 couples who had a child without a disability. Recruitment strategies included mailings to schools and childcare programs, fliers posted at ASD clinics and in community settings (e.g. libraries, YMCA), and research registries. All couples had a child aged 5–12 years (study focus). In the ASD group, the child must have previously received a diagnosis of ASD as documented in medical or educational records (records had to indicate that the Autism Diagnosis Observation Schedule [ADOS; Lord et al., 2000] was used in the diagnostic assessment). In addition, parents completed the Social Responsiveness Scale – Second Edition (SRS2; Constantino & Gruber, 2012), to verify the child's ASD symptoms. Five children in the ASD group had a Total SRS2 T-score < 60 (cutoff for ASD), and were removed from the sample. The comparison group was recruited to provide a one-to-one match a child in the ASD group based on child sex and age (in years). A rigorous set of screening questions was used to ensure that the couple in the comparison group did not have any children with a diagnosed or suspected developmental disability nor had they received birth-to-three or special education services. The SRS2 was also completed by parents to verify a lack of ASD symptoms. Eight couples in the comparison group had a child with a Total SRS2 T-score ≥ 60 (although they did not have a suspected or diagnosed disability and had never received birth-to-three or special education services); these couples were removed from the sample.

Twelve couples had multiple children with ASD in the age range; the oldest child was selected as the target child, as this was when stressful parenting associated with ASD began. In six families (4 ASD group and 2 comparison group), the target child had been adopted (occurred at least 5 years prior). Five couples (2 ASD group and 3 comparison group) were not married but had lived together for at least 5 years. In 21 families (12 ASD group, 9 comparison group) one parent was a stepparent who had been married to the biological parent for at least 3 years.

Data for the present study were taken at one time point in the study (Time 1). The socio-demographics for 178 couples with a child with ASD and 174 comparison group of couples with of child without disabilities are displayed in Table 1. Independent samples *t*-tests and chi-square comparisons indicated that that there were not significant group differences in parent age or race/ethnicity (Caucasian, non-Hispanic vs. other), paternal education, family size (i.e., number of children in the family), or couple relationship length. Parents of children with ASD had a significantly lower household income and a trend for lower maternal education level than the comparison group. As expected, the target child in the ASD group had a significantly higher level of behavior problems on the Child Behavior Checklist (CBCL; Achenbach & Rescolra, 2000; 2001), a higher severity of ASD symptoms on the SRS2, and a lower level of adaptive behavior on the Adaptive Behavior Assessment System–Second Edition (ABAS-2; Harrison & Oakland, 2003) than the target child in the

comparison group. In the ASD group, 112 (67%) children had ASD symptoms in the severe range (33% had symptoms in the mild to moderate range) on the SRS2, 60 (34%) children had clinically significant behavior problems based on the CBCL Total score, and 122 (69%) children had marked impairment in adaptive behavior (General Adaptive Composite ≤ 70). About one-third of the children with ASD had been given a diagnosis of intellectual disability (ID) based on review of medical records. There was a significant difference in overall level of couple relationship satisfaction between parents of children with ASD and comparison group on the Couple Satisfaction Index (CSI; Funk & Rogge, 2007). Overall, 32.8% of parents of children with ASD and 19.3% of the comparison group had a 32-item total CSI score at or below the relationship distress cutoff (Funk & Rogge, 2007).

Procedure

Parents were interviewed and independently completed questionnaires about family socio-demographics, the target child, and their couple relationship. Parents then engaged in a 7-minute videotaped couple conflict interaction. Parents were each paid $50 for this portion of the study.

Measures

Family Socio-demographics—The race/ethnicity of each parent was coded as Caucasian, non-Hispanic (0) versus other (1). Parent educational level was coded less than high school degree (0), high school diploma or General Equivalency Diploma (1), some college (2), college degree (3), some graduate school (4), and graduate/professional degree (5). Family size, operationalized as the number of children in the family, and duration of the relationship, defined as number of years in a committed relationship (coded in years), was jointly reported on by mothers and fathers. The date of birth of the target child was used to calculate child age (in years). Children with ASD were considered to have ID if they had a medical diagnosis of ID and/or met criteria for ID based on review of medical and/or educational records reporting IQ and adaptive behavior testing. Parents reported on their household income, coded from 1–14, starting at ≤$9,999 (1) and increasing by $10,000 to $20,000 intervals to ≥$160,000 (14).

Self-Reported Couple Conflict—The Conflict and Problem-Solving Scale (CPS; Kerig, 1996) is a measure of multiple dimensions of couple conflict (*Frequency, Severity, Efficacy,* and *Resolution*) and resolution strategies (*Collaboration, Avoidance, Stalemate, Physical aggression, Verbal aggression, and Child Involvement*). *Frequency* is a rating of the number of times parents engage in major and minor conflicts in a year (possible range of 3 to 18). *Severity* is the average degree to which parents report disagreeing about each topic/content area (possible range of 0–100). *Efficacy* is the average proportion of couple problems parents report that they are able to solve (possible range of 0–100%). *Resolution* is the summed rating provided for 13 statements regarding the extent to which parents experienced positive versus negative emotional outcomes following problem-solving attempts on a 4-point scale (possible range of 0–39). An example of a *Resolution* item includes “We feel closer to one another than before the fight.”

The CPS also includes 44 items that assess conflict resolution strategies and parents rate how frequently each was used in the previous year. These items are summed into six conflict resolution strategy dimensions (*Collaboration, Avoidance, Stalemate, Physical Aggression, Verbal Aggression,* and *Child Involvement*) based on one's own and partner's use.

The CPS has been found to have strong reliability and convergent validity (Kerig, 1996; 1998). In the current sample, internal consistency for the conflict and resolution strategy dimensions were adequate for both the ASD (Cronbach's α = .76 to .95) and comparison (Cronbach's α = .80 to .95) groups. The CPS couple conflict dimensions were significantly correlated with each other in expected directions (r = .29 to .58, p <.01). Providing evidence of convergent validity, the CPS *Frequency, Severity,* and *Resolution* scores were significantly (p < .01) negatively correlated with the CSI in parents of children with ASD (r = −.41 to −.62) and the comparison group (r = −.50 to −.68). Moreover, the CPS *Efficacy* score was significantly positively (p < .01) correlated with the CSI in parents of children with ASD (r = .56) and the comparison group (r = .69).

Observed Couple Conflict—Couples engaged in a 7-minute video-taped couple conflict interaction in which they discussed a topic of disagreement (e.g., something needed to be worked out or didn't see eye to eye, etc.). This videotaped interaction was independently coded using well-established criteria (Frosch, Mangelsdorf, & McHale, 1998; 2000). Coded dimensions were rated on a 7-point scale (from 1 ["very low"] to 7 ["very high"]) and included: *Engagement* (i.e., interpersonal involvement and partner-directed behaviors such as initiating conversation, body language, visual regard, etc.), *Enjoyment* (i.e., pleasure and enjoyment expressed such as smiling, laughter, etc.), *Mother Positive Affect* and *Father Positive Affect* (i.e., partners responded positively to one another through smiling, laughing, and signs of affection, individually rated), *Irritation* (i.e., overall negative tone of interaction and extent to which partners displayed overt anger or hostility, negative comments or frowning at the couple level), *Mother Negative Affect* and *Father Negative Affec*t (i.e., expressions of negative affect such as frowning, eye rolls, and antagonism, individually rated), *Cooperation* (i.e., couple had joint focus and exhibited a sense of "we-ness"), *Balance* (i.e., relative contribution of each partner to the interaction, including factors such as control, dominance, and turn-taking), *Sensitivity* (i.e., partners affirmed and expressed consideration for each other's statements and feelings), *Conflict Resolution* (i.e., couple smoothly and efficiently came to a resolution in a manner that was satisfying for both partners), and *Global Quality* (i.e., overall quality of the interaction, including the extent of liking, caring, and positive emotional commitment). Each interaction was independently coded by the same three trained researchers for the ASD group and at least two (one of whom was consistent) trained researchers for the comparison group. A two-way mixed absolute agreement single-rater interclass correlation coefficient (ICC) at a 95% confidence interval (Hallgren, 2012) was adequate for the ASD group (ranging from .58 to .77). A one-way random single-rater ICC at 95% confidence interval was also adequate for the comparison group (ranging .56 to . 77). Analyses are based on the ratings of the one coder who coded all the interactions.

The topic of the observed couple conflict interaction was independently coded into 11 topics, based on Kerig (1996) definitions, by two or three trained research staff. Topics included: *Habits/Personality (i.e.,* habit or personality trait of a partner), *Work* (i.e., job, time

spent at work, and issues related to work), *Target Child (i.e.,* behaviors, parenting, discipline, or care of target child), *Other Parenting (i.e., issues related to another child or parenting broadly including discipline or care), Intimacy /Commitment* (i.e., issues related to closeness, sex, affection or commitment), *Relatives* (i.e., issues related to family or in-laws), *Leisure/Friends (i.e. re*creational activities, friendships, time or activity with friends), *Communication (i.e.,* styles and amount of communication), *Money (i.e.,* spending, wages, salary, or bills), *Chores (i.e.,* household activities and responsibilities), and an *Other* category. A one-way random single-rater ICC at a 95% confidence interval was adequate for the ASD (.82) and comparison (.80) groups for topic. Analyses are based on the coded topic of the one researcher who coded all the interactions.

Data Analyses

Overall, 3% of parents had an individual item missing on the CPS. In all but 3 cases, at least 90% of the items on the relevant dimension had been completed and thus the mean score on the dimension was imputed for the missing items. Eight couples (5 in ASD group and 3 in comparison group) were not included in the observed couple conflict interaction analyses; the interaction was inadvertently not recorded in four couples, and the remaining couples opted to not complete the interaction. There were no significant differences in socio-demographic characteristics (child age, parent education, parent race/ethnicity, household income, relationship duration, or family size) or in self-reported couple conflict on the CPS dimensions or on the CSI between these couples and the couples included in the observed couple interaction analyses.

Analyses were first conducted to examine group (parents of children with ASD versus comparison group) differences in self-reported couple conflict. Given that these are individual-level data, multilevel models (MLM) were run using Hierarchical Linear Modeling (HLM) software (Raudenbush et al., 2011), which allowed models to be tested for mothers and fathers simultaneously, yet account for the yoked nature of data from couples (Bolger & Laurenceau, 2013). Intercept-only unconditional MLMs were first conducted for each CPS dimension followed by MLMs that included the Level 2 group variable (*parents of children with ASD* = 1; *comparison group* = −1) to examine the variance accounted for by group status. Full MLM models were then conducted including Level 1 variables of mother (*mother* = 1, *father* = 0) and father (*father* = 1, *mother* = 0), un-centered. Level 2 variables included group (*parents of children with ASD* = 1; *comparison group* = −1) and family socio-demographic variables (i.e., parent race/ethnicity, parent education, relationship duration, household income, family size, and child age) to assess and account for their between-couple effects on the couple conflict dependent variables. Level 2 continuous variables were grand-mean centered. Given multiple MLM analyses, the Benjamini and Hochberg (Benjamini & Hochberg, 1995) false discovery rate test correction was used to determine significance for the examined 20 group effects (n = 10 in mothers; n =10 in fathers). All other effects were interpreted as significant at $p < .01$ level. Finally, as a follow-up analysis, the above MLM was re-run to include overall couple relationship satisfaction (CSI total) in Level 2, in order to understand if group effects could be attributed to a group difference in overall couple relationship satisfaction.

Analyses were then conducted to examine group differences in the observed couple conflict interaction. These data are couple-level data (with the exception of positive and negative affect which are assessed in each partner), and thus a one-way multivariate analysis of covariance (MANCOVA) was conducted in which the observed coded dimensions were the dependent variables, group (parents of children with ASD versus comparison) was the fixed factor, and family socio-demographic characteristics (i.e., parent race/ethnicity, parent education, relationship duration, household income, family size, and child age) were covariates. Bonferroni-corrected univariate analyses were used to determine which dimensions had a significant group effect. As a follow-up, the above model was re-run to include overall couple relationship satisfaction (CSI total) as a covariate, in order to understand if potential group differences could be attributed to a difference in overall couple relationship satisfaction. Finally, a chi-square test of independence was conducted to examine whether there was a difference in the topic of the observed couple conflict interaction by group.

Results

Self-Reported Couple Conflict

Table 2 displays the means and standard deviations for the self-reported couple conflict dimensions in mothers and fathers of children with ASD and the comparison group. There was a significant within-couple, mother-father, positive association between the CPS *Frequency, Severity, Efficacy*, and *Resolution* dimensions in parents who had a child with ASD ($r = .21$ to .50, $p < .01$) and the comparison group ($r = .24$ to .57, $p < .01$). Similarly, there were significant within-couple, mother-father, positive associations between the CPS conflict resolution dimensions of *Verbal Aggression, Physical Aggression, Stalemate, Collaborate*, *Avoidance*, and *Child Involvement* in parents who had a child with ASD ($r = .19$ to .44, $p < .01$) and the comparison group ($r = .20$ to .49, $p < .01$).

Intercept only MLMs were conducted to examine variability in the CPS dimensions in unconditional models. Then, these MLMs were re-run including the group variable (*parents of children with ASD* = 1; *comparison group* = −1) at Level 2. Group accounted for only a modest level of the variance in CPS dimension scores: *Frequency (19%) Severity (21%), Efficacy (18%)*, *Resolution (9%), Verbal Aggression (10%), Physical Aggression (9%), Stalemate (13%), Collaboration (18%)*, *Avoidance (14%)*, and *Child Involvement (16%)*.

Table 3 presents results of the full MLMs examining group differences on the CPS conflict dimensions for mothers and fathers, controlling for between-parent family socio-demographic characteristics. For the *Frequency* score, there was a significant group effect for fathers; fathers of children with ASD reported a higher frequency of couple conflicts than fathers in the comparison group. For the *Severity* score, there was a significant group effect for both mothers and fathers; mothers and fathers of children with ASD reported a higher severity of couple conflicts than mothers and fathers in the comparison group. For the *Efficacy* score, there was a significant group effect for mothers; mothers of children with ASD reported that a lower percentage of couple problems were resolved than mothers in the comparison group. There were not significant group effects for mothers or fathers on the *Resolution* score. As a follow-up analysis, the full MLM for the CPS conflict dimensions

was re-run to include the CSI total score on the Level 2 intercept of the mother and father variables. The pattern of significant group effects in *Severity* (mothers: unstandardized coefficient = .48, *SE* = .17, *p* = .001; fathers: unstandardized coefficient = .43, *SE* = .20, *p* = .002) and *Efficacy* in mothers (unstandardized coefficient = .28, *SE* = .13, *p* = .001) remained, however there was no longer a significant group effect in *Frequency* for fathers (unstandardized coefficient = .38, *SE* = .17, *p* = .032).

Table 4 presents that the full MLMs for the CPS conflict resolution strategy dimensions. There was a significant group effect for fathers on *Stalemate*, such that fathers of children with ASD reported higher *Stalemate* than the comparison group. There were not significant group effects for *Verbal Abuse, Physical Aggression, Collaboration*, *Avoidance*, and *Child Involvement*. At the between-parent level, there was a significant negative association between household income and mothers' rating of *Physical Aggression.* There was a significant positive association between child age and mothers' rating of *Collaboration*. There was a significant positive association between child age and fathers' rating of *Child Involvement.* As a follow-up analysis, the full MLM for the CPS conflict resolution strategy dimensions was re-run to include the CSI total score on the Level 2 intercept of the mother and father variables. With the inclusion of the CSI as a between-family control variable, there was no longer a significant group effect in *Stalemate* for fathers (unstandardized coefficient = .22, *SE* = .14, *p* = .043).

Observed Couple Conflict

Table 5 displays the means and standard deviations for the observed couple conflict interaction. A one-way MANCOVA controlling for family socio-demographic characteristics indicated a significant group (i.e., parents of children with ASD versus comparison group) difference in the coded ratings ($F(1,328) = 6.66$, $p < .01$). Univariate tests indicated that couples of children with ASD exhibited a significantly higher level of *Mother Positive Affect* ($F(1,328) = 10.36$, $p < .01$), *Father Positive Affect* ($F(1,328) = 9.89$, $p < .01$), and *Sensitivity* ($F(1,328) = 5.89$, $p = .02$) than the comparison group. In contrast, couples who had a child with ASD exhibited a significantly lower level of *Engagement* ($F(1,328) = 8.19$, $p < .01$), *Balance* ($F(1,331) = 4.71$, $p = .04$), and *Cooperation* ($F(1,328) = 5.73$, $p = .02$) than the comparison group. As a follow-up analysis, the mother and father CSI Total scores were included as covariates in the MANCOVA. The overall one-way MANCOVA remained significant ($F(1,328) = 6.66$, $p < .01$). However, significant univariate tests were limited to *Mother Positive Affect* ($F(1,328) = 8.22$, $p < .01$), *Father Positive Affect* ($F(1,328) = 8.45$, $p < .01$), and *Sensitivity* ($F(1,328) = 5.01$, $p = .03$); parents in the ASD group had higher levels than the comparison group on all of these dimensions.

The topics of the observed couple conflict interactions for the ASD and comparison group, respectively, were - *Habits/Personality*: n =16 (9.2%); n =16 (9.0%); *Work*: n =11 (6.2%); n = 22 (12.2%); *Target Child*: n = 26 (14.6%); n =15 (8.6%); *Other Parenting*: n =17 (9.6%); n = 23 (13.2%); *Intimacy/Commitment*: n =7 (3.9%); n = 6 (3.4%); *Relatives*: n =18 (10.1%); n = 13 (7.5%); *Leisure/Friends*: n =19 (10.7%); n =20 (11.5%); *Communication*: n = 26 (14.6%); n =14 (8.0%); *Money*: n =15 (8.4%); n = 21 (12.1%); *Chores*: n =23 (12.9%); n = 23 (13.6%); and *Other*: n = 2 (1.2%); n = 4 (2.3%). The *Other* category had cell counts of

less than five (expected cell count), and thus was excluded from analysis. A 2 x 10 chi-square test of independence revealed that group and topic were independent of one another (χ^2 (9) = 13.55, p = .14, Phi = .20).

Discussion

Couple conflict has been shown to play an integral role in the quality and survival of marital relationships in studies on the general population (Fincham & Beach, 1999; Gottman, 2014; Kliem et al., 2015). Parents of children with ASD have been found to be at risk for poor marital outcomes including low marital satisfaction, poor marital adjustment, and divorce (e.g., Brobst et al., 2009; Gau et al., 2012; Hartley et al., 2010; Santamaria et al., 2012). Findings from the present study suggest that in part, maladaptive patterns of couple conflict may contribute to these poor marital outcomes and may be a modifiable target for interventions.

On self-reported measures of couple conflict, fathers of children with ASD reported experiencing more frequent couple conflict and both mothers and fathers of children with ASD reported experiencing more severe couple conflict than the comparison group. This finding is in line with findings from other contexts of high child-related challenges (e.g., ADHD and high externalizing problems), in which parents were found to have an increased level of couple conflict (Sochos & Yahya, 2015; Wymbs & Pelham, 2010). Follow-up analyses indicated that the group difference in self-reported frequency, but not in severity, of couple conflict became non-significant once controlling for between-couple differences in overall couple relationship satisfaction. Thus, parents of children with ASD may be vulnerable to experiencing intense couple conflict beyond what would be expected given their level of couple relationship satisfaction. One possibility to examine in future longitudinal studies is whether a context of high child-related challenges (a stressor external to the couple relationship) reduces parental emotional resources that make parents prone to highly distressing couple disagreements (either due to perceiving couple disagreement as more distressing and/or engaging in couple behaviors that escalate intensity), relative to parents with low overall couple relationship satisfaction due to factors intrinsic to the couple relationship.

The group differences that emerged in self-reported couple conflict resolution strategies were small in scope and effect size, and thus their clinical relevance is not clear. As a group, parents of children with ASD have slightly more difficulty settling couple problems relative to their peers who have children without disabilities. Specifically, mothers of children with ASD reported a lower *Efficacy* (i.e., average proportion of couple problems solved) than mothers in the comparison group and fathers of children with ASD reported a greater use of *Stalemate* (i.e., standoff in which each partners' goal is to maintain their position as opposed to compromising to resolve the issue) than fathers in the comparison group. The group difference in *Efficacy*, but not in *Stalemate*, remained in follow-up analyses controlling for between-couple overall couple relationship satisfaction. Thus, in part, difficulty resolving couple conflict appears to be in line with the lower average-level of couple relationship satisfaction in parents of children with ASD, and may be related to having more frequent couple conflicts. However, a context of high child-related challenges due to ASD also

appears to add unique risk for poor couple conflict resolution, perhaps due to drained emotional resources.

Yet, despite being unable to resolve the actual couple problem to the same extent as their peers, parents of children with ASD appear to be able to end couple conflicts in a meaningful and positive way. On the self-reported measure, there was not a difference in how parents' feelings about how couple conflicts ended (i.e., *Resolution* score) between parents of children with ASD and the comparison group; the average for both groups was above the mid-point on the scale indicating a largely positive rating of how the couple conflict ended. Thus, although the couple problem itself may more often remain unsettled, parents of children with ASD appear to employ adaptive strategies to ensure that the couple interaction ends on a positive note.

Findings from the observed couple conflict interaction presented a similar pattern of both vulnerability and resiliency in parents of children with ASD. As with the self-reported measure, group differences were small in effect size. Parents of children with ASD were rated as being less engaged, less cooperative, and as having a less balanced interaction than parents in the comparison group. In other words, parents of children with ASD did not become fully involved in a joint back-and-forth problem-solving dialogue to the same extent as their peers who have children without disabilities. In follow-up analyses controlling for overall couple relationship satisfaction, these group differences became non-significant. Thus, the increased level of these maladaptive couple conflict behaviors appears to be accounted for by the lower group-level overall couple relationship satisfaction of parents of children with ASD. On the other hand, parents of children with ASD were rated as having a higher level of positive affect and as demonstrating more sensitivity toward one another than were parents in the comparison group. These group effects remained even after controlling for the lower average-level of overall couple relationship satisfaction in parents of children with ASD. In some ways, the shared experience of having a child with ASD may bring couples together by fostering positivity and sensitivity toward one another. This possibility should be examined in future longitudinal studies.

There was not a group difference in the topic of the observed couple conflict interaction. Indeed, parents of children with ASD and parents in the comparison group were equally likely to discuss the target child, or parenting more broadly, as well as other topics (e.g., money, work, chores, etc.). Thus, in contrast to findings on parents of children with ADHD (Jenkins et al., 2005; Wymbs & Pelham, 2010), parents of children with ASD may not be more likely have couple disagreements about child issues relative to their peers who have children without disabilities. Instead, high child-related challenges associated with ASD may lead to poor marital outcomes indirectly through higher parental stress and psychopathology (e.g., Theule, Wiener, Tannock, & Jenkins, 2013), which are known risk factors for couple conflict (e.g., Krannitz et al., 2015; Najman et al., 2013). However, further research is needed as the current study cannot speak to how frequently couple disagreements about the target child occur in everyday life.

Overall, findings from the present study indicate that parents who have a child with ASD exhibit both risk and resiliency in regard to couple conflict. Findings are relevant to the

design of marital therapies and relationship education programs for parents of children with ASD. There are several brief, low-cost therapy and relationship education programs that address couple conflict that have been designed for and shown to be effective in the general population (e.g., Jacobson, Christensen, Prince, Cordova, & Eldridge, 2000; Finkel et al., 2013; Larson et al., 2007). These therapies and programs could be modified for parents of children with ASD and designed to build on their resiliency. Acceptance and change-based marital therapies (e.g., Jacobson et al., 2000) may be a particularly good fit for parents of children with ASD by guiding parents in accepting unchangeable child-related challenges that may be the source of recurrent couple disagreements and instead focusing efforts on modifying changeable child-related challenges. Additionally, utilizing the already heightened levels of positivity and sensitivity among parents of children with ASD may be used to build tolerance and compassion for differences between partners.

There are several strengths to the present study. We included a relatively large sample of parents of children with ASD and a comparison group of parents of children without disabilities in longstanding couple relationships. Our sample represents families of children with ASD who are being diagnosed with ASD by independent health providers (using the ADOS), and reflects a range of children demonstrating mild to severe ASD symptoms. The inclusion of self-reported and observed measures allowed for an understanding of both the *subjective* perspectives of parents broadly and the *actual* verbal and non-verbal behaviors exhibited in a specific context. In addition, self-reported measures of couple conflict were collected from both mothers and fathers and MLMs were used to account for the linked nature of dyadic data.

There were also study limitations. The sample consisted primarily of Caucasian, non-Hispanic and well-educated parents. In part, this sample is reflective of the Midwestern state from which the sample was drawn, as well as population-level trends in diagnosis of ASD (i.e., Caucasian, Non-Hispanic children are significantly more likely than African American children and Hispanic children to be diagnosed with ASD [ADDM, 2014]); therefore, additional research is needed to examine couple conflict in diverse groups and geographical locations. Moreover, this sample largely reflects parents who remained married to the same partner until their child with ASD was aged 5–12 years. Parents who separate or divorce prior to this stage may have employed more maladaptive patterns of couple conflict. The present study is cross-sectional, and thus cannot determine causal pathways between child-related challenges and couple conflict. Indeed, it is possible, and likely, that couple conflict influences the severity of challenges exhibited by the child with ASD.

Future studies should examine same-sex partnerships and should include larger samples of unmarried couples. Future research should also take a within-group approach to examine why some parents of children with ASD fare better in terms of couple conflict than others, as group status (ASD versus comparison) only explained 9–21% of the variability in self-reported couple conflict. Indeed, it is likely that variability in child challenges (e.g., severity of ASD symptoms and/or co-occurring behavior problems) and/or support services predict differences in couple outcomes among parents of children with ASD. We framed our discussion in terms of the impact of child-related challenges on couple conflict. Yet, given genetic underpinnings of ASD (Abrahamson & Geschwind, 2008), it is also possible that

some parents of children with ASD were at risk for couple conflict due to their own personality traits and interpersonal difficulties. Thus, future within-group studies are needed to examine the extent to which parent characteristics and personality traits independently contribute to couple conflict, as well as how these characteristics and traits may interact with child-related challenges to impact couple conflict. Finally, the present study provides a snapshot of couple conflict in parents of children with ASD at one point in time. Further studies are also needed to explore whether group differences between parents of children with ASD and parents of children without disabilities become exaggerated over time and predict change in marital quality and divorce. While the present study focused on parents of children with ASD, findings may be relevant for the broader literature examining couple conflict in the context of other types of high child-related challenges (e.g., ADHD and externalizing behaviors).

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Table 1

Socio-Demographic Characteristics of the Autism Spectrum Disorder (ASD) and Comparison Groups

	ASD (n = 178)	Comparison (n = 174)	t value or χ^2 , p value
Mother			
Age in years (M [SD])	38.71 (5.59)	38.76 (5.99)	t (350) = 0.32, p = .75
Race/Ethnicity (N [%])			
White, Non-Hispanic	160 (89.9%)	150 (86.2%)	χ^2 (2, N = 351) =1.13, p = .29
Other	18 (10.1%)	24 (13.8%)	
Education (N [%])			
No HS Degree	3 (1.7%)	5 (2.9%)	χ^2 (5, N = 349)=9.70, p = .05
HS Degree or equivalency	11 (6.2%)	10 (5.7%)	
Some college	31 (17.1%)	19 (10.2%)	
Associates or Bachelor's degree	96 (53.9%)	81 (46.6%)	
Graduate degree	37 (20.8%)	59 (33.9%)	
Couple satisfaction	114.11 (30.47)	124.53 (29.32)	t (350) = 3.37, p <.01
Father			
Age in years (M [SD])	40.44 (6.24)	40.51 (6.58)	t (350) = 0.33, p = .74
Race/Ethnicity (N [%])			
White, Non-Hispanic	156 (87.6%)	146 (83.9%)	χ^2 (2, N = 350)= 1.01, p = .32
Other	22 (12.4%)	28 (16.1%)	
Education (N [%]))			
No HS Degree	10 (5.6%)	4 (2.3%)	χ^2 (5, N = 349) = 7.22, p = .12
HS Degree or equivalency	22 (12.4%)	14 (8.0%)	
Some college	25 (14.0%)	23 (13.2%)	
Associates or Bachelor's degree	88 (49.4%)	85 (48.9%)	
Graduate degree	33 (18.5%)	48 (27.6%)	
Couple satisfaction	116.36 (26.62)	125.66 (25.00)	t (350) = 3.49 p < .01
Relationship Length (M [SD])	11.30 (5.23)	11.91 (4.64)	t (350) = 1.17, p = .24
Household income (M [SD])	9.00 (3.19)	10.63 (2.85)	t (349) = 5.06 p < .01
Number of Children (M [SD])	2.41 (1.08)	2.55 (1.05)	t (350) = 1.22, p = .22
Target Child			
Male (N [%])	155 (87.3%)	146 (83.4%)	χ^2 (2, N = 351) = .75 p = .39
Age in years (M [SD])	7.88 (2.24)	7.99 (2.35)	t (351) = 0.39, p = .70
Birth order (N [%])			
Oldest	110 (61.8%)	105 (60.3%)	χ^2 (2, N = 351) = .01 p = .95
ID (N [%])	65 (34.4%)	0 (0%)	χ^2 (2, N = 351) = 77.44, p < .01
SRS (M [SD])	77.03 (11.48)	49.81 (8.25)	t (351) = 18.25, p <.01
CBCL (M [SD])	64.80 (9.63)	49.61 (10.38)	t (350) = 20.76, p <.01
ABAS (M [SD])	64.47 (17.38)	100.58 (16.18)	t (351) = 18.79, p <.01

Note. HS = High school; ID = intellectual disability; SRS = Social Responsiveness Scale total t-score score; CBCL = Child Behavioral Checklist total T-score; ABAS = Adaptive Behavior Assessment System Standardized General Adaptive Composite score. Couple Satisfaction assessed through the Couple Satisfaction Index (Funk & Rogge 2007).

Table 2

Range, Mean, and Standard Deviation for Self-Reported Couple Conflict in Mothers and Fathers of Children with Autism Spectrum Disorder (ASD) and Comparison Group

		ASD				Comparison			
		Mothers		Fathers		Mothers		Fathers	
	Possible Range	M (SD)	Range	M (SD)	Range	M (SD)	Range	M (SD)	Range
Nature of Conflict									
Frequency	3–18	8.69 (3.28)	3–16	8.70 (3.26)	3–16	8.17 (3.20)	3–18	7.78 (3.05)	3–18
Severity	0–100	26.83 (14.41)	0–65	23.94 (15.49)	0–78	20.26 (15.81)	1–100	18.88 (1427)	0–70
Efficacy	0–100	63.22 (23.18)	0–128	69.54 (20.710)	5–100	74.02 (20.17)	1–100	74.45 (16.42)	29–100
Resolution	0–39	27.41 (6.25)	12–39	27.50 (6.40)	9–38	28.74 (6.34)	11–39	28.85 (6.08)	13–39
Resolution Strategy									
Verbal aggression	0–48	22.91 (9.33)	0–45	21.01 (9.53)	2–45	23.08 (9.47)	2–48	20.70 (8.47)	0–42
Physical aggression	0–42	1.85 (3.26)	0–17	1.84 (3.77)	0–28	1.33 (3.96)	0–40	1.09 (2.95)	0–29
Collaboration	0–48	36.36 (6.01)	23–48	36.83 (5.74)	19–48	37.89 (5.96)	15–48	38.12 (5.92)	19–48
Stalemate	0–42	13.01 (7.04)	0–30	13.08 (6.99)	0–34	12.91 (7.04)	0–36	11.16 (6.30)	0–29
Avoidance	0–48	25.41 (7.24)	5–42	24.05 (6.69)	4–38	25.73 (6.93)	4–40	23.50 (6.76)	0–38
Child involvement	0–30	8.18 (5.29)	0–24	8.13 (5.48)	0–24	8.13 (5.69)	0–30	7.31 (4.86)	0–22

Table 3

Multilevel Models of Self-Reported Couple Conflict Differences between Mothers and Fathers of Children with Autism spectrum disorder (ASD) and Comparison group

	Nature of Conflict Unstandardized Coefficients (Standard Error)											
	Frequency			Severity			Efficacy			Resolution		
	Unstandardized Coefficient (SE)	P Value	Effect size r	Unstandardized Coefficient (SE)	P value	Effect size r	Unstandardized Coefficient (SE)	P value	Effect size r	Unstandardized Coefficient (SE)	P value	Effect size r
Level 1												
Mother intercept	8.99 (0.42)	<.001	.74	28.28 (3.35)	<.001	.45	66.00 (3.36)	<.001	.72	26.85 (0.99)	<.001	.82
Father intercept	8.49 (0.45)	<.001	.68	20.22 (2.45)	<.001	.39	7271 (3.68)	<.001	.72	29.13 (0.94)	<.001	.85
Level 2												
Mother												
Group	0.23 (0.18)	.201	.07	2.89 (0.83)	**<.001**	.18	−5.27 (1.16)	**<.001**	.24	−0.58 (0.31)	.094	.09
Relationship length	−0.04 (0.03)	.244	.06	−0.05 (0.16)	.743	.02	0.25 (0.24)	.308	.05	−0.03 (0.08)	.667	.01
Parent education	0.13 (0.10)	.202	.07	0.75 (0.48)	.115	.07	0.35 (0.81)	.665	.02	−0.07 (0.20)	.739	.02
Parent ethnicity	−0.48 (0.49)	.327	.05	−4.54 (2.83)	.109	.08	3.99 (3.56)	.262	.06	1.33 (1.06)	.212	.07
Household income	−0.08 (0.06)	.197	.07	−0.74 (0.30)	.020	.13	−0.03 (0.47)	.943	.00	0.14 (0.12)	.233	.06
Family size	0.05 (0.15)	.722	.02	−0.03 (0.66)	.962	.00	−0.86 (1.12)	.441	.04	0.26 (0.30)	.375	.05
Child age	−0.15 (0.08)	.084	.09	−0.67 (0.37)	.068	.10	0.85 (0.53)	.113	.10	0.10 (0.16)	.523	.03
Father												
Group	0.47 (0.17)	**.009**	.12	2.48 (0.84)	**.002**	.15	−2.02 (1.05)	.056	.10	−0.62 (0.33)	.067	.10
Relationship length	−0.03 (0.04)	.427	.04	0.08 (0.21)	.657	.02	0.17 (0.22)	.452	.04	−0.10 (0.07)	.184	.07
Parent education	−0.02 (0.09)	.872	.01	0.73 (0.43)	.077	.09	0.87 (0.57)	.129	.08	0.13 (0.18)	.464	.04
Parent ethnicity	0.39 (0.75)	.453	.04	1.66 (2.65)	.532	.03	−1.04 (3.92)	.791	.01	−0.25 (1.01)	.807	.01
Household income	−0.02 (0.14)	.712	.02	−0.50 (0.31)	.109	.08	0.37 (0.41)	.371	.05	0.09 (0.13)	.476	.04
Family size	0.12 (0.14)	.394	.04	1.43 (0.78)	.067	.10	−1.06 (0.90)	.237	.06	−0.33 (0.32)	.294	.05
Child age	−0.14 (0.07)	.080	.10	−0.01 (0.38)	.978	.00	0.01 (0.45)	.986	.00	0.15 (0.14)	.301	.05

Note. Bolded p values are significant group effects based on Benjamimi-Hochberg false discovery rate. All other effects were interpreted as significant at p < .01.

Group = Parents of Children with ASD (1) vs. Comparison group of parents of children without disabilities (−1). Effect size was calculated with the following equation: r = sqrt [$t^2/(t^2$ + df)]; small effect: *r* >.10, medium effect: *r* >.24 and large effect *r* >.37 (Kirk, 1996). In follow-up analyses controlling for overall couple relationship satisfaction in Level 2, group effects remained significant at p < .01 for severity in mothers and fathers and Efficacy in mothers.

Table 4

Multilevel Models of Self-Reported Couple Conflict Resolution Style Differences between Mothers and Fathers of Children with Autism spectrum disorder (ASD) and Comparison group Conflict Resolution Styles

	Unstandardized Coefficients (Standard Error)																	
	Verbal Aggression			Physical Aggression			Collaboration			Stalemate			Avoidance			Child Involvement		
	Unstandardized Coefficient (SE)	P value	Effect size r	Unstandardized Coefficient (SE)	P value	Effect size r	Unstandardized Coefficient (SE)	P value	Effect size r	Unstandardized Coefficient (SE)	P value	Effect size r	Unstandardized Coefficient (SE)	P Value	Effect size r	Unstandardized Coefficient (SE)	P value	Effect size r
Level 1																		
Mother intercept	27.22 (1.28)	<.001	.73	2.84 (0.81)	<.001	.18	37.89 (0.99)	<.001	.89	15.34 (1.03)	<.001	.61	27.13 (0.88)	<.001	.85	9.83 (0.93)	<.001	.49
Father intercept	23.05 (1.34)	<.001	.66	1.82 (0.56)	<.001	.17	39.25 (1.01)	<.001	.88	13.84 (1.09)	<.001	.56	25.69 (0.92)	<.001	.82	8.46 (0.83)	<.001	.47
Level 2																		
Mother																		
Group	−0.13 (0.49)	.829	.01	0.14 (0.20)	.314	.04	−0.66 (0.32)	.063	.11	−0.03 (0.37)	.693	.00	−0.09 (0.37)	.530	.01	0.03 (0.30)	.695	.00
Relationship length	−0.08 (0.10)	.484	.04	−0.04 (0.03)	.410	.07	−0.06 (0.06)	.131	.05	−0.11 (0.09)	.153	.07	0.04 (0.09)	.828	.02	0.03 (0.06)	.450	.03
Parent education	0.24 (0.27)	.352	.05	−0.11 (0.14)	.312	.05	−0.08 (0.22)	.704	.02	−0.25 (0.21)	.340	.06	0.28 (0.22)	.627	.07	0.19 (0.19)	.117	.06
Parent ethnicity	−2.92 (1.39)	.137	.11	−1.40 (0.81)	.124	.09	0.31 (1.03)	.934	.02	−2.54 (1.38)	.043	.10	−1.79 (0.99)	.160	.09	−1.97 (0.97)	.023	.11
Household income	−0.16 (0.16)	.361	.05	−0.06 (0.04)	.140	.10	0.23 (0.12)	.306	.10	−0.11 (0.13)	.327	.05	−0.16 (0.14)	.758	.06	−0.13 (0.10)	.182	.06
Family size	−0.19 (0.48)	.596	.02	−0.05 (0.14)	.667	.02	−0.19 (0.29)	.655	.03	0.06 (0.36)	.831	.01	0.12 (0.41)	.693	.01	0.12 (0.32)	.734	.02
Child age	−0.16 (0.23)	.466	.04	−0.06 (0.09)	.483	.04	0.37 (0.12)	.002	.06	−0.19 (0.17)	.279	.04	0.07 (0.17)	.256	.02	0.11 (0.14)	.246	.04
Father																		
Group	0.19 (0.25)	.441	.02	0.21 (0.19)	.425	.06	−0.62 (0.33)	.227	.10	0.29 (0.14)	**.009**	.13	0.33 (0.36)	.452	.05	0.51 (0.28)	.026	.09
Relationship length	−0.14 (0.06)	.017	.10	−0.04 (0.02)	.040	.09	−0.05 (0.18)	.122	.02	−0.06 (0.09)	.998	.04	0.03 (0.08)	.784	.02	−0.01 (0.05)	.930	.00
Parent education	0.01 (0.27)	.989	.00	−0.11 (0.05)	.014	.10	0.06 (0.18)	.317	.02	−0.27 (0.19)	.134	.07	−0.27 (0.19)	.352	.08	0.02 (0.15)	.784	.01
Parent ethnicity	−1.53 (1.46)	.356	.05	−0.40 (0.58)	.737	.04	−0.21 (1.07)	.569	.01	−1.98 (1.15)	.318	.09	−2.27 (1.07)	.230	.11	−0.72 (0.89)	.721	.04
Household income	0.02 (0.18)	.563	.01	−0.12 (0.06)	.274	.09	0.04 (0.11)	.321	.02	−0.03 (0.13)	.415	.01	0.06 (0.14)	.893	.02	0.03 (0.09)	.451	.01
Family size	0.20 (0.48)	.924	.02	−0.10 (0.18)	.286	.03	−0.10 (0.28)	.982	.02	0.15 (0.36)	.904	.02	−0.03 (0.31)	.693	.00	0.32 (0.28)	.076	.06
Child age	0.13 (0.24)	.663	.02	0.11 (0.11)	.193	.05	0.16 (0.14)	.438	.06	−0.04 (0.18)	.693	.01	−0.18 (0.18)	.992	.05	0.36 (0.11)	.009	.15

Note. Bolded p values are significant based on Benjamini-Hochberg false discovery rate. All other effects were interpreted as significant at $p < .01$. Group = Parents of Children with ASD (1) vs. Comparison group of parents of children without disabilities (−1). Effect size was calculated with the following equation: $r = \text{sqrt}\,[t^2/(t^2 + df)]$; small effect: $r > .10$, medium effect: $r > .24$ and large effect $r > .37$ (Kirk, 1996). In follow-up analyses controlling for overall couple relationship satisfaction in Level 2, group effects remained significant at $p < .01$ for Stalemate.

Table 5

Means, Standard Deviations, and Multivariate Analysis of Covariance analysis for Observed Quality of Couple Interactions for Autism Spectrum Disorder (ASD) and Comparison Group

	ASD N = 173	Comparison N = 171	F value	P Value	η^2_p
Engagement (M, [SD])	4.54 (1.01)	4.89 (0.94)	9.82	<.001	.03
Enjoyment (M, [SD])	3.30 (1.36)	3.20 (1.36)	0.98	.325	.00
Mother Positive Affect (M, [SD])	3.08 (1.50)	2.70 (1.30)	7.05	.006	.02
Father Positive Affect (M, [SD])	2.83 (1.43)	2.42 (1.24)	8.16	.002	.03
Mother Negative Affect (M, [SD])	2.44 (1.33)	2.25 (1.08)	0.53	.472	.00
Father Negative Affect (M, [SD])	2.19 (1.19)	2.13 (0.98)	0.02	.883	.00
Irritation (M, [SD])	2.42 (1.19)	2.26 (0.96)	0.77	.381	.00
Cooperation (M, [SD])	4.45 (0.95)	4.75 (1.00)	5.24	.022	.02
Balance (M, [SD])	4.88 (0.84)	5.11 (0.66)	4.71	.034	.01
Sensitivity (M, [SD])	3.76 (1.07)	3.54 (1.06)	4.98	.031	.02
Conflict Resolution (M, [SD])	4.17 (0.98)	4.32 (0.88)	1.12	.292	.00
Global Quality (M, [SD])	4.51 (1.15)	4.44 (1.00)	0.68	.413	.00

Note. Covariates included parent race/ethnicity, parent education, relationship duration, family size, household income, and child age. η^2_p = partial eta squared. In follow-up analyses including overall couple relationship satisfaction as a covariate, group differences remained significant for Mother Positive Affect, Father Positive Affect, and Sensitivity. Finally, in a follow-up analysis, group differences in positive and negative affect were examined in a multilevel model using Hierarchical Linear Modeling software as these two dimensions were coded for each parent, within couples. The group effect remained significant for positive affect.