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A longitudinal perspective on parent-child conflict and conflict resolution in youth with or without developmental disability

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A longitudinal perspective on parent-child conflict and conflict resolution in youth with or without developmental disability

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Doctor of Philosophy in Psychology

by

Willa Amelia Smyke Marquis

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ABSTRACT OF THE DISSERTATION

A longitudinal perspective on parent-child conflict and conflict resolution in youth with or without developmental disability

by

Willa Amelia Smyke Marquis

Doctor of Philosophy in Psychology

University of California, Los Angeles, 2017

Professor Bruce L. Baker, Chair

Parent-child conflict is associated with a range of negative socioemotional outcomes for youth, including mental health problems, poorer social functioning, and long-term detrimental effects on romantic partnerships and their own parenting practices. Little is known about parent-child conflict in families of youth with developmental disabilities (DD), namely intellectual disability and autism spectrum disorders, despite their particular susceptibility to its problematic impact. Youth with DD have a heightened risk of mental health problems and social difficulties, and their parents exhibit more stress and negative parenting. Furthermore, most research to-date has examined parent-child conflict during adolescence. Research exploring the longitudinal course of parent-child conflict and contributors to conflict earlier in development could help identify targets for effective early intervention. Finally, researchers debate as to what empirical methods best capture parent-child conflict. More research is needed to examine how self-report

and behavioral observations of parent-child conflict relate to one another and to broader relational outcomes.

This dissertation is a three-study longitudinal examination of parent-child conflict and conflict resolution in youth with or without developmental disability. In Study 1, child emotion dysregulation and cognitive ability were investigated as predictors of parent-child conflict across ages 3 to 7 years. Results indicated that level of conflict increased across time only for children with both low intellectual functioning and high dysregulation, suggesting a transactional relationship between these two risk factors that underscores the importance of early behavioral intervention in offsetting problematic relational patterns. In Study 2, the unique and joint contributions of youth disability status (typically developing [TD] or with intellectual disability [ID]) and youth externalizing problems to observed parent-child conflict resolution behaviors were explored across pre- to mid-adolescence (ages 9, 13, and 15 years). The findings suggested that parental expectations may strongly influence parent-youth conflict resolution skills and indicated that externalizing behavior and conflict resolution skills may be more strongly linked within families of TD youth. In Study 3, disability status group differences (TD, ID, or with autism spectrum disorders [ASD]) were examined with respect to observed conflict resolution behaviors and parents' and youths' perceptions of conflict and closeness during mid-adolescence (age 15 years). The disability status groups were generally similar in terms of the observed behaviors and self-reported perceptions and how these related to one another, though there were some differentially negative outcomes and associations for TD youth as compared to their peers with ID or ASD. Results were explored in the context of additive risk and disruptive transition points during child development, as well as ways in which identifying resiliency and strengths can break down stigma for individuals with DD and their families.

The dissertation of Willa Amelia Smyke Marquis is approved.

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CHAPTER 1: General Introduction

Parent-child conflict is associated with a host of negative socioemotional outcomes for child development. A large body of literature suggests a strong association between parent-child conflict and mental health problems in youth (Laursen & Hafen, 2010; Smetana, 1996). Studies have linked parent-child conflict to conduct disorder, oppositional defiant disorder, and higher levels of antisocial behavior across a wide developmental span (Burt, McGue, Krueger, & Iacono, 2005; Ingoldsby et al., 2006), as well as to higher rates of anxiety and depression (Branje, van Doorn, van der Valk, & Meeus, 2009; Marmorstein & Iacono, 2004; Rengasamy et al., 2013) and higher levels of emotional dysregulation (Basten et al., 2013; Eisenberg et al., 2008). Longitudinal research in this field suggests that parent-child conflict affects the trajectory of youth psychopathology, with higher levels of conflict predicting increased problem behavior and symptomology across time (Burt et al., 2005; Lam, Solmeyer, & McHale, 2012; Klahr, McGue, Iacono, & Burt, 2011).

Parent-child conflict also impacts children across multiple social domains. Ostrov and Bishop (2008) observed higher levels of relational aggression during free play in preschoolers who were experiencing higher levels of parent-child conflict, and findings from a national study of adolescent development indicated a link between parent-child conflict and association with more deviant, aggressive peers (Knoester, Haynie, & Stephens, 2006). Parent-child conflict, predictably, also relates to other problematic aspects of family functioning. Attachment security was lower in dyads of mothers and their 3-year-olds who exhibited more conflict during an observed laboratory task (Panfile, Laible, & Eye, 2012). Exploring spillover effects of interparental conflict, Gerard, Krishnakumar, and Buehler (2006) found that parent-child conflict

mediated the association between marital conflict and child internalizing and externalizing behavior problems across middle childhood.

Research has also indicated a link between parent-child conflict and social functioning later in life. Adults who experienced higher levels of conflict with their parents as adolescents perceived the quality of their own romantic partnerships to be poorer in their mid 20s (Overbeek, Stattin, Vermulst, & Engels, 2007). Youth who, during mid-adolescence, reported poor trust and communication in their parent-child relationships exhibited lower levels of observed warmth, sensitivity, and effective child management, as well as more overreactive parenting, at age 30 with their own children (Friesen, Woodward, Horwood, & Fergusson, 2013). The effects of parent-child conflict are present in multiple domains during child development and have a lasting impact for children's interpersonal functioning and mental health.

Parent-child conflict and conflict resolution in youth with developmental disabilities

Limited research (e.g., Costigan, Floyd, Harter, & McClintock, 1997; Wieland, Green, Ellingsen, & Baker, 2014) has examined parent-child conflict among children with developmental disabilities (DD), namely intellectual disability (ID) and autism spectrum disorders (ASD). Though this small body of research has been informative in understanding how the family environment impacts youth with DD, more research is needed, as youth with DD may be particularly susceptible to the effects of parent-child conflict. For one, there is a well-established higher risk of child mental health and social problems among children with DD. Children with DD are 3 to 4 times more likely to exhibit clinically-significant behavior problems as compared to their typically developing (TD) peers (Baker, Blacher, Crnic, & Edelbrock, 2002; deRuiter, Dekker, Verhulst, & Koot 2007). Preschoolers with DD are approximately 3 times more likely to have a diagnosis of ADHD (Baker, Neece, Fenning, Crnic, & Blacher, 2010), and

youth with DD have higher rates of depression (Kiddle & Dagnan, 2011) and anxiety (Green, Berkovits, & Baker, 2014). With respect to poorer social adjustment, children with DD are viewed as less competent and popular than their TD peers, and they have more trouble developing and maintaining reciprocal peer friendships (Solish, Perry, & Minnes, 2010; Guralnick, Hammond, Connor, & Neville, 2006). Given the heightened risk of maladjustment for youth with DD, comprehending how parent-child conflict may exacerbate these difficulties is of the utmost importance.

Understanding the role of parent-child conflict for youth with DD is also highly relevant because parents of children with DD have consistently reported higher stress and more parental mental health problems than parents of TD children (Baker et al., 2002; Gray et al., 2011; Totsika, Hastings, Emerson, Lancaster, & Berridge, 2011). The stress experienced by parents of youth with DD has been characterized as chronic stress marked by various "crises" emerging at different transition points in the youths' development (e.g., transition into school, transition into young adulthood; Wikler, 1981). Parents of youth with DD also tend to exhibit more negative parenting behavior, including negative affect, controlling behavior, and hostility (Basten et al., 2013; Brown, McIntyre, Crnic, Baker, & Blacher, 2011; Fenning, Baker, Baker, & Crnic, 2014; Floyd, Harter, & Costigan, 2004). These families experience heightened stress due to broader logistical factors, including increased strain on family income and limited leisure opportunities (Blacher, Neece, & Paczkowski, 2005), as well as to the societal stigma of youth with DD and their caregivers (Ali, Hassiotis, Strydom, & King, 2012; Cantwell, Muldoon, & Gallagher, 2015; Ditchman et al., 2013).

Ameliorating the heightened distress and negativity observed in parents of DD youth is highly important because, in general, these parents play a larger role in their youths' care across

the lifespan (Blacher et al., 2005). In a 20-year follow-up of children with DD, the vast majority of young adults were un- or under-employed, socially isolated, and living with and financially dependent on their families (Keogh, Bernheimer, & Guthrie, 2004). A study comparing socioemotional adjustment of adults with ID (40 years or older) indicated that, while adults living with their families reported being happier than those who lived in residential settings, they also reported higher levels of loneliness (Rourke, Grey, Fuller, & McClean, 2004). Parents of youth with DD serve as an important source of logistical, social, and emotional support across the lifespan. This underscores the importance of research aimed at facilitating an optimally supportive environment for youth with DD, particularly within the parent-child bond.

Finally, studying conflict, and especially conflict resolution, in parent-child relationships in families of youth with DD is important in understanding limitations that youth with DD may face in enduring and resolving conflict. Family functioning requires that family members determine how to relate to one another productively to accomplish tasks as a family and to simultaneously satisfy the individuals' needs (Costigan et al., 1997). More broadly, as a child develops into adolescence and beyond, demands for social interactions become significantly more complex and involve discussion, problem solving, and overall greater social competence (Klimes-Dougan & Zeman, 2007), which is a challenge for the cognitive and social limitations associated with DD (Hutchins & Prelock, 2014). Fenning, Baker, and Juvonen (2011) found that, in children with or without DD, children who engaged in emotional discourse with their parents were more adept at thinking of prosocial problem solving strategies, which in turn related to higher-rated social skills. The parent-child bond, particularly in terms of conflict and its resolution, may serve as an important sphere in which youth with DD can learn to compensate

for cognitive and social limitations as they face the challenge of navigating increasingly complex social situations.

New directions for research on parent-child conflict and conflict resolution

Though there is a large, and growing, body of research examining parent-child conflict, there are many unanswered questions, particularly in families of children with DD. First, with the majority of this research focusing on adolescence, previous research has highlighted the importance of examining conflict longitudinally beginning earlier in development, with the goal of elucidating predictors of change in conflict that may inform intervention design (Burt et al., 2005; Collins, Maccoby, Steinberg, Heatherington, & Bornstein, 2000; Smetana, 2008). Second, it is important to identify which specific aspects of conflict and conflict resolution have the greatest impact on a child's emotional functioning. Findings have highlighted the differential impact of frequency, intensity, and affective tone of conflict (Laursen, Coy, & Collins, 1998; Nelson, Boyer, Sang, & Wilson, 2014). Others suggest that whether, and how, conflict is resolved is more important than the nature of the conflict itself (Smetana, 2008). It is simultaneously important to consider that the "correct" way to communicate and resolve conflict may vary by child and family characteristics and may have a differential impact on children's socioemotional development (Filippello, Marino, Spadaro, & Sorrenti, 2013; Laursen & Collins, 2004).

Finally, much research has focused on how to best capture parent-child conflict through empirical measures. In particular, researchers have discussed the benefits and drawbacks of utilizing more objective observational measures of conflict as compared to evaluating the subjective perceptions of the parents and youth involved (Welsh & Dickson, 2005; Wieland et al., 2014; Noller & Callan, 1990; Dixon, Graber, & Brooks-Gunn, 2008). More research is

needed to explore how self-report and behavioral observation align, and differ, and when one method or the other is more predictive of broader relational outcomes.

Current Studies

This aim of this dissertation was to provide a clearer understanding of parent-child conflict and its relation to socioemotional functioning from a developmental perspective, with a particular focus on how parent-child conflict presents and is resolved in families of children with or without DD. Based on a longitudinal study of children ages 3 to 15 years with or without DD, the three studies present a range of complementary issues related to parent-child conflict and conflict resolution:

- ***Study 1***. Child emotion dysregulation and cognitive ability were examined as predictors of change in parent-child conflict across early to middle childhood (ages 3 to 7 years).
- ***Study 2***. The unique and joint contributions of youth disability status (TD, ID) and youth externalizing problems in the trajectory of observed conflict resolution behaviors were explored across pre- to mid-adolescence (ages 9, 13, and 15 years).
- ***Study 3***. Disability status group differences (TD, ID, ASD) were investigated with respect to observed conflict resolution behaviors and mothers' and youths' perceptions of conflict and closeness during mid-adolescence (age 15). We also examined how perceptions of conflict and closeness related to observed conflict resolution behaviors and whether these associations differed by youth disability status.

CHAPTER 2: Child cognitive ability and emotion dysregulation: Predicting parent-child conflict across early to middle childhood (Study 1)

Abstract

Though previous findings have established a link between parent-child conflict and youth mental health and social adjustment, few studies (e.g., Basten et al., 2013) have examined how child emotion dysregulation relates to conflict, particularly early in development, where understanding predictors of change in conflict could be especially salient for intervention (Smetana, 2008). This is particularly important for children with developmental delays, who exhibit higher dysregulation (Pears, Kim, Healey, Yoerger, & Fisher, 2014) and whose families tend to experience more discord (Brown, McIntyre, Crnic, Baker, & Blacher, 2011). Child emotion dysregulation and cognitive ability were examined as predictors of change in parent-child conflict across early to middle childhood (ages 3 to 7). Participants (n =211) were selected from a longitudinal study of the development of psychopathology in children with or without developmental delays. Level of conflict was derived from naturalistic home observations, while dysregulation was measured using the CBCL-Emotion Dysregulation Index. PROCESS was used to examine the conditional interactive effects of child IQ and dysregulation on change in conflict from child ages 3 to 5 and 5 to 7 years. Parent-child conflict increased from ages 3 to 5 for only families of children with both low IQ and high dysregulation. From ages 5 to 7, however, conflict increased when children had high dysregulation and either low or moderate IQ. Findings are considered in the context of behavioral expectations and compounding risk factors across this developmental period. Results are also discussed within a resilience framework and as related to implications for intervention.

Research suggests that both parent-child conflict ("conflict") and child emotion dysregulation relate to a host of negative emotional, psychological, and physical outcomes (Aldao, Nolen-Hoeksema, & Schweizer, 2010; Laursen & Hafen, 2010). Despite their shared association with youth socioemotional outcomes, few studies (e.g., Eisenberg et al., 2008) have examined the direct association between conflict and dysregulation, and even fewer have studied this association early in development (e.g., Basten et al., 2013). Research that has examined this association early in development has largely relied on self- and/or parent-report data, which is susceptible to response bias and has limited validity for use with young children (Furr & Funder, 2007; Ingoldsby et al., 2006).

Identifying predictors of change in conflict beginning early in development has important implications for interventions that target the family's emotional climate (Collins, Maccoby, Steinberg, Heatherington, & Bornstein, 2000; Smetana, 2008). This is especially important for children with limited cognitive ability, who are at heightened risk for developing problem behaviors (Baker, Blacher, Crnic, & Edelbrock, 2002) and whose parents report higher stress and exhibit more negative affect and negative parenting towards their children (Baker et al., 2002; Brown et al., 2011; Fenning, Baker, Baker, & Crnic, 2014; Floyd, Harter, & Costigan, 2004). The primary aim of this study was to examine child IQ and emotion dysregulation as predictors of change in conflict, using naturalistic observations of parent-child interactions, from early to middle childhood.

Parent-child conflict and mental health

Research indicates that parent-child conflict relates to the development of externalizing problems like conduct disorder, oppositional defiant disorder, and antisocial behavior (Burt, McGue, Krueger, & Iacono, 2005; Ingoldsby et al., 2006), and to relational aggression and

association with deviant peers (Ostrov & Bishop, 2008). Conflict has also been linked to child anxiety and depression (Marmorstein & Iacono, 2004). Furthermore, parent-child conflict predicts children's social functioning later in life, including romantic relationships (Overbeek, Stattin, Vermulst, Ha, & Engels, 2007) and their own parenting practices (Friesen, Woodward, Horwood, & Fergusson, 2013).

Mental health and parent-child conflict in children with cognitive delays

Researchers have called for greater comprehension of individual differences in the relationship between parent-child conflict and youth mental health (Laursen & Collins, 2004). Understanding this association is particularly important in children with developmental delays because of their increased risk of developing psychopathology. Children with delays are 3 to 4 times as likely to exhibit clinically significant behavior problems, including symptoms of ADHD and ODD, than their typically developing peers (Baker, Neece, Fenning, Crnic, & Blacher, 2010; deRuiter, Dekker, Verhulst, & Koot, 2007). Youth with low IQ have higher rates of depression (Kiddle & Dagnan, 2011) and anxiety (Green, Berkovits, & Baker, 2015), and they have more difficulty developing and maintaining peer friendships (Guralnick, Hammond, Connor, & Neville, 2006). In addition, children with low IQ have been found to be poorer regulators of emotion and behavior than children with higher IQ (Pears et al., 2014).

Furthermore, parents of children with low IQ have consistently reported higher stress and poorer parental mental health than parents of children with typical cognitive abilities, and research suggest that this stress is based more on child behavior problems than on the child's delays *per se* (Baker et al., 2002; Totsika, Hastings, Emerson, Lancaster, & Berridge, 2011). Research suggests that lower child IQ has a negative impact on parenting behavior, such that parents of children with delays are more likely to display negative affect, negative-controlling

behavior, and hostility towards their children (Basten et al., 2013; Brown et al., 2011; Fenning et al., 2014; Floyd et al., 2004). Given the heightened risk of psychopathology for children with delays, understanding how parent-child conflict may arise from, or exacerbate, these difficulties is important.

Dysregulation, IQ, and conflict

An emerging body of research has linked emotion dysregulation to parent-child conflict in children with cognitive delays. For example, Basten and colleagues' research within the Generation R Study, a population-based cohort pre-birth and onward from the Netherlands, revealed an association between child dysregulation and family hostility (Basten et al., 2013) as well as child dysregulation and nonverbal intelligence (Basten et al., 2014) in early childhood. This interrelationship aligns with existing empirical conceptualizations of maladjustment in children with delays, which have highlighted the interplay between IQ, child self-regulation, and family climate as crucial to youth adjustment (Crnic, Hoffman, Gaze, & Edelbrock, 2004).

Limitations in the assessment of conflict

Most studies examining parent-child conflict have relied on self-report measures of conflict from parents, children, or both (e.g., Burt et al., 2005; Lam, Solmeyer, & McHale, 2012; van Doorn, Branje, & Meeus, 2011). Though self-report measures have the advantage of requiring fewer logistical demands, they are susceptible to response bias (Furr & Funder, 2007), a limitation that may be heightened with a topic as emotionally-laden as conflict. Furthermore, self-report likely has limited validity with young children, while behavioral coding (Ingoldsby et al., 2006; Nelson, Boyer, Sang, & Wilson, 2014) may provide a more valid measure of relational patterns.

Additionally, researchers have called for a clearer understanding of how conflict unfolds across time, particularly early in development (Burt et al., 2005; Klahr, McGue, Iacono, & Burt, 2011). Longitudinal studies of parent-child conflict have important benefits. For one, research suggests that aspects of conflict and the link between conflict and child socioemotional outcomes differs by age (Branje, van Doorn, van der Valk, & Meeus, 2009; Gerard, Krishnakumar, & Buehler, 2006; Laursen, Coy, & Collins, 1998). Though some studies have explored this interplay in longitudinal samples (e.g., Lam et al., 2012), much of this research is cross-sectional and focused on parent-child conflict during adolescence. Furthermore, longitudinal studies could provide a deeper understanding of factors that lead to change in conflict, which could guide future directions for intervention design (Collins et al., 2000; Smetana, 2008).

The present study

In this study, IQ and emotion dysregulation were investigated as predictors of change in parent-child conflict across early to middle childhood (ages 3 to 7). Conflict was assessed during naturalistic home observations across 3 representative time points: ages 3, 5, and 7 years. Measures of dysregulation from ages 4 and 6 were utilized, given their temporal standing between time points of conflict measurement. The focus on the mother-child relationship specifically is supported by findings that mothers tend to be responsible for more of the management and discipline of youth behaviors than fathers (Finley, Mira, & Schwartz, 2008) and tend to have higher rates of conflict with youth than fathers do (Laursen & Collins, 2004).

Based on previous findings linking low IQ, high emotion dysregulation, and high parent-child conflict (e.g., Basten et al., 2013; Basten et al., 2014; Brown et al., 2011; Pears et al., 2014), and drawing on additive models of risk to child development (Evans, Li, & Whipple, 2013), it was expected that conflict would increase most among children who had both low IQ

and high emotion dysregulation. This is the first longitudinal study, to our knowledge, of parent-child conflict in children as young as 3 years of age. Thus, in considering whether IQ and emotion dysregulation would function differently as predictors at different ages, hypotheses as to age differences were exploratory.

Method

Participants

Participants were 211 families enrolled in the Collaborative Family Study, a longitudinal study of children and their families, followed from child age 3 to 15 years, with samples drawn from Southern California and Pennsylvania. The Collaborative Family Study has been based at three universities: Penn State University, University of California, Los Angeles, and University of California, Riverside. Informed consent was obtained from participating parents and assent from the children. The present sample included all families in which participants had completed the naturalistic home visit at age 3 and at least one other home visit at ages 5 or 7. The larger study from which this sample was drawn recruited families at child age 3 years and enrolled children with a broad range of IQ. Families were recruited from preschools and local daycare programs, as well as regional agencies providing diagnostic and intervention services for children with delay (see Marquis & Baker, 2014, for more detailed description of participant recruitment). Demographics are presented in Table 2-1. Socioeconomic status was generally high, and the majority of participating parents were married (defined here as legally married or living together for at least six months).

Procedures

Data for the present study were obtained through mother-completed questionnaires and naturalistic home observations conducted yearly around the child's birthday from ages 3 to 7

years. Child IQ was assessed by research staff in the laboratory at age 5. All procedures were approved by the Institutional Review Boards of the three participating universities.

Measures

Stanford-Binet IV (SB-IV; Thorndike, Hagen, & Sattler, 1986). Children's IQ was evaluated with the Stanford-Binet IV, a widely used measure with sound psychometric properties. The SB-IV yields an IQ score with a normative mean of 100 and a standard deviation of 15. It is well suited to assessing children with delays because the examiner adapts starting points according to the child's developmental level.

Parent-Child Interaction Rating System (PCIRS; Belsky, Woodworth, & Crnic, 1996). Conflict was coded from mother-child interactions during the naturalistic home observations using the PCIRS, which is widely used and has been described more extensively elsewhere (e.g., Baker et al., 2010; Fenning et al., 2014). Home observations were 90 minutes at age 3, 60 minutes at age 5, and 30 minutes at age 7. Observations occurred in the evening when the entire family was in the home. Family members were instructed to "act as they normally do" during the observation. The examiner observed the behavior of the child, either parent towards the target child, and any interactions between the child and parents. The examiner then provided a global code of a specified behavioral index on a 5-point scale, ranging from 1 (not at all characteristic) to 5 (highly or predominately characteristic) of the behavior. These global codes were provided for each 15-minute increment (e.g., 6 global codes of conflict were provided at the 90-minute age 3 assessment). The present study included only the mother-child *dyadic conflict* code, which measured the amount of conflict, tension, or vented hostility between the mother and the child. Dyadic conflict codes were averaged across the observational time segments to create a mean

dyadic conflict score for each assessment time point. Given the relative positive skew of this mean value, conflict was log-transformed for analyses.

Coders were trained by watching videos of home observations and attending live home visits with an experienced coder until reliability was established (70% exact agreement and 95% within 1 point). To maintain cross-site reliability, master coders were designated at each site for reliability checks. Kappa was .60 or higher each year for both within and cross-site reliability; these levels are considered acceptable (Fleiss, Cohen, & Everitt, 1969). Dimensions measured by this rating system are relatively stable over time (Park, Belsky, Putnam, & Crnic, 1997) and are reliable, valid indicators of naturalistic parent-child interaction (Crnic, Gaze, & Hoffman, 2005).

Child Behavior Checklist for ages 1½-5 (CBCL; Achenbach, 2000) and for ages 6-18 (Achenbach & Rescorla, 2001). The CBCL-Emotion Dysregulation Index (CBCL-EDI) used in the present study is adapted from the work of Samson and colleagues (2014) and contributes to a relatively recent approach in the literature to assessing child emotion dysregulation. The original CBCL-EDI index score was developed via an expert rating process in a study of emotion dysregulation in youth ages 6 to 16 with or without autism spectrum disorders (see Samson et al., 2014, for further description). This index was found to have high internal consistency (α=.90). Two items addressing self-harm and suicidality were endorsed at a very low frequency in our study's young sample and were thus removed, leaving 16 of the original 18 CBCL-EDI items to create the adapted index score utilized in the present study. This revised CBCL-EDI had similar internal consistency (α=.85) to the original index score.

Furthermore, a comparable CBCL-EDI scale was formed using the CBCL 1½-5 version, with 14 identical items and two substitute items representing analogous constructs ("defiant" substituted for "argues a lot"; "hits others" for "threatens people;" see Berkovits, 2015). This

scale also had high internal consistency within our sample (α=.85). This adapted CBCL-EDI allows reseachers to span the gap between the two CBCL versions and is more appropriate for young children, as several items on the 6-18 version assessing rule-breaking and conduct disorder are rare in children across early and middle childhood.

Analytic Plan

PROCESS, an SPSS utility for conditional process modeling (Hayes, 2013), was used to address how IQ and dysregulation predicted change in conflict over time. To prevent model overfitting, two separate models were conducted to assess change in conflict from ages 3 to 5 and from ages 5 to 7. Figure 2-1 provides a conceptual diagram of the age 3 to 5 model. In the first model, we tested the three-way interaction between conflict at age 3 (independent variable), child IQ (moderator 1), and dysregulation at age 4 (moderator 2) in predicting conflict at age 5 (dependent variable). The second model was similar to the first and included conflict at age 5 (independent variable), IQ (moderator 1), and dysregulation at age 6 (moderator 2) in predicting conflict at age 7 (dependent variable).

Accounting for the variance attributed to earlier conflict scores in analyses allowed us to determine if the other variables, child IQ and dysregulation, accounted for change (Rausch, Maxwell, & Kelley, 2003). Using PROCESS, bootstrapped (5000 resamples) tests were conducted of each 2-way interaction at all levels of the third variable, and the 3-way interaction was interpreted by examining regions of significance of each of the 2-way interactions (e.g., low IQ/low dysregulation, low IQ/moderate dysregluation, etc.). PROCESS has been used previously for similar three-way interactions in social science literature (e.g., Vasey et al., 2013) and has the advantage of providing both model coefficients using OLS regression and bias-corrected

bootstrap confidence intervals for conditional effects (Hayes, 2012). Lastly, Stata 13 was used for graphical purposes (StataCorp, 2013).

Due to the fact that typically developing participants and those with developmental delays in this study were recruited through different agencies and have been found to differ by socioeconomic variables (e.g., see Marquis & Baker, 2014), demographic variables listed in Table 2-1 that correlated with IQ and had a significant relationship ($p < .05$) with one or more of the dependent variables were covaried in the analyses. These were family income and mother employment for the age 3 to 5 model and only family income for the age 5 to 7 model.

Results

Correlations among IQ, dysregluation, and parent-child conflict

Table 2-2 displays intercorrelations within and between the variables of interest. Child dysregulation showed high stability from ages 4 to 6, while conflict showed weak, though significant, stability. IQ had a weak, negative relationship with dysregulation. IQ correlated negatively with conflict at age 5 only, but correlated positively with conflict at age 3. This unexpected positive association, while small, should be investigated further in future research. Higher dysregulation at ages 4 and 6 each correlated significantly, although weakly, with higher conflict at ages 5 and 7.

IQ and dysregulation as predictors of change in conflict

To test the hypothesis that child IQ and dysregulation predict change in conflict, "moderated moderation" analyses were conducted (PROCESS Model 3; Hayes, 2012). We constructed two separate models, the first predicting age 5 conflict (Model A) and the second predicting age 7 conflict (Model B).

Table 2-3a presents regression analyses for Model A. A significant three-way interaction emerged between age 3 conflict, IQ, and dysregulation. Significant effects were also found for family income, conflict, and conflict by dysregulation. The total model accounted for 19% of the variance in conflict at age 5, $F(9, 194)=4.97$, $p<0.001$.

The significant three-way interaction indicated that change in conflict differed by levels of child IQ and dysregulation. To probe this finding, we examined the significance of the interaction at low (-1 SD), moderate (mean), and high (+1 SD) levels of both IQ and dysregulation in our sample. It should be noted that, due to our study's emphasis on children with developmental delays, our mean IQ is lower than the population mean (i.e., IQ of 89 rather than the population mean of 100), as are the 1 SD above and below the mean. Among all combinations of low, moderate, and high IQ and dysregulation, the significant increase in conflict occurred only when children had both low IQ and high dysregulation (effect=.40, $t=2.67$, $p=.008$). See Figure 2-2a for a graphical depiction of expected increase in conflict based on participants' levels of IQ and dysregulation from ages 3 to 5.

Table 2-3b presents regression analyses for Model B. Similar to Model A, the three-way interaction between age 5 conflict, IQ, and dysregulation was significant. A significant effect was also found for conflict by dysregulation. The total model accounted for 13% of the variance in conflict at age 7, $F(8, 148)=2.78$, $p<0.007$.

Again, we probed the three-way interaction to assess the levels of the moderators that were driving the effect. As in Model A, the interaction was significant for children with both low IQ and high dysregulation (effect=.30, $t=2.34$, $p=.02$). In Model B, the interaction was also significant when children had moderate range IQ and high dysregulation (effect=.24, $t=2.01$,

p=.047). See Figure 2-2b for a graphical depiction of expected increase in conflict based on participants' levels of IQ and dysregulation from ages 5 to 7.

Discussion

Children's cognitive ability (IQ) and emotion dysregulation were examined as predictors of change in parent-child conflict, as observed across early to middle childhood. The hypothesis that conflict would increase across time for children with low IQ and high emotion dysregulation was supported in both models. These findings are consistent with the additive risk of cognitive delay and psychopathology in predicting other aspects of family functioning (e.g. Ellingsen, Baker, Blacher, & Crnic, 2014). Understanding this elevated risk is particularly important given the heightened impact, in turn, of the parent-child relationship on the developmental course of vulnerable children (Greenberg & Crnic, 1988; Noroña & Baker, 2014).

Interestingly, we found that, in our middle childhood model (predicting conflict at age 7), conflict increased for children with high dysregulation and low IQ as well as high dysregulation and moderate IQ. This finding can be considered in the context of parents' expectations of their children's behavior. Specifically, child tantrums that accompany dysregulation are relatively normative among children with or without developmental delays during early childhood. Dysregulated behavior during early childhood may be somewhat less distressing to parents and thus may not lead as easily to parent-child conflict. However, as children transition into middle childhood, particularly into more formal school settings, there is a heightened demand for children to remain well-regulated. Children with high dysregulation may endure more negative consequences during this developmental stage, including heightened conflict with their parents.

This study provides several insights into our understanding of contributors to conflict in early and middle childhood. While research to-date has linked dysregulation to IQ (Noroña &

Baker, 2014; Pears et al., 2014), dysregulation to conflict (Eisenberg et al., 2008), and IQ to parent-child conflict (Brown et al., 2011; Floyd et al., 2004), this study joins a small body of research examining these three constructs together early in development (e.g., Basten et al., 2013; Basten et al., 2014). Furthermore, the longitudinal design allowed us to respond to a call in the literature to examine change in conflict across time (Collins et al., 2000; Smetana, 2008). The findings of the present study suggest that patterns of change in conflict may emerge early and sustain into middle childhood. Furthermore, this is the first study, to our knowledge, investigating IQ and dysregulation as predictors of change in parent-child conflict using naturalistic observations of parent-child interactions. While the majority of the literature in this area has relied on self-report, our naturalistic behavioral measure of conflict allows for valid inclusion of younger children, who would be unable to provide a self-report perspective.

It is useful to consider our findings within methodological limitations and opportunities for future research. First, we acknowledge that recognizing IQ and dysregulation as predictors of change in conflict is one aspect of a complex developmental process. Research suggests that there may be a transactional relationship between mental health problems and parent-child conflict, with conflict, in turn, predicting an increase in youth problem behavior and psychopathology across time (e.g., Burt et al., 2005; Lam et al., 2012). Thus, future studies could build upon this study and explore how parent-child conflict relates to changes in, for example, emotion dysregulation across time. Furthermore, previous research has identified several more nuanced aspects of conflict (e.g., intensity, frequency, affect) in addition to level of conflict as was examined in this study (Laursen et al., 1998). These studies have primarily been comprised of adolescent samples and could be explored further in younger children.

Additionally, while our naturalistic data has many benefits, our use of home observations does allow for more variation between families, including involvement of other family members (e.g., siblings) and other interruptions that would not be present in the laboratory setting. Also, due to the limited availability of observational data between children and fathers, only mothers were included in the present study. While previous research supports the mother-child bond as a primary focus (Finley et al., 2008; Laursen & Collins, 2004), it would be important to include fathers and other primary caregivers in future studies, particularly since findings suggest that patterns of conflict may differ between caregivers (van Doorn et al., 2011). Finally, this study focused on child contributors to change in conflict over time. Previous findings suggest that parent and family factors, like marital discord and cultural background, may be highly relevant to parent-child conflict (Dixon, Graber, & Brooks-Gunn, 2008; Gerard et al., 2006). Future research should explore parent and family qualities, including both protective and risk factors, that may contribute to change in conflict across time.

In closing, these findings can be conceptualized not only in terms of risk, but also in terms of resilience (Luthar, Cichetti, & Becker, 2000). A critical aspect of these findings is that conflict did *not* increase when children had other resources, such as high IQ or low dysregulation, in their favor. From a strengths perspective, these findings suggest that capitalizing on a child's alternative resources in the presence of a risk factor may be protective for declining family functioning. Indeed, early intervention is found to be most effective when operating within a framework of risk and protective factors at three levels: child social and cognitive competencies, family interaction patterns, and family ability (Guralnick, 2011). While IQ exhibits high stability across the lifespan (Deary, Whalley, Lemmon, Crawford, & Starr, 2000), children's regulatory skills are more susceptible to environmental factors (Noroña &

Baker, 2014), which certainly include effective intervention. Addressing dysregulation may foster an important aspect of resiliency for vulnerable children across the developmental span.

Table 2-1. Sample demographics at age 3 years

Children	
Sex (% male)	57.8%
Race/ethnicity (% White, Non-Latino)	59.2%
Mean Stanford Binet Mental Index at 5 (SD)	88.7 (24.3)
Parent & Family	
Mother's mean age (SD)	33.4 (5.9)
Mother race/ethnicity (% White, Non-Latino)	62.1%
Maternal education (highest grade; SD)	15.2 (2.5)
Mother marital status (% married)	84.8%
Mother employment (% employed)	56.3%
Family income (% > $50K)	51.9%

Table 2-2. Intercorrelations among IQ, dysregulation, and conflict

	IQ 5	DYS 4	DYS 6	CON 3	CON 5
DYS 4	-.23** (*n*=170)	--			
DYS 6	-.24** (*n* =205)	.71** (*n* =167)	--		
CON 3	.14* (*n* =211)	.06 (*n* =205)	.00 (*n* =170)	--	
CON 5	-.21** (*n* =211)	.19** (*n* =205)	.16* (*n* =170)	.15* (*n* =211)	--
CON 7	-.14 (*n* =163)	.18* (*n* =158)	.17* (*n* =157)	.29** (*n* =163)	.19* (*n* =205)

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

Table 2-3a. Model A – predicting conflict at age 5 years

	B (SE)	β
Covariates		
Family income	-.01(.00)	-.16*
Mother employment	.02(.01)	.07
Main Effects		
Conflict, age 3 (CON3)	-1.31(.64)	-1.29*
Dysregulation, age 4 (DYS4)	.00(.09)	.00
IQ	.00(.00)	-.16
Interactions		
CON3 x DYS4	3.44(1.15)	3.60**
CON3 x IQ	.01(.01)	.01†
DYS4 x IQ	.00(.00)	.00
CON3 x DYS4 x IQ	-.03(.01)	-.04*

†$p < .10$. *$p < 0.05$. **$p < .01$.

Table 2-3b. Model B – predicting conflict at age 7 years

	B (SE)	β
Covariate		
Family income	-.01(.00)	-.13
Main Effects		
Conflict, age 5 (CON5)	-.94(.50)	-.81†
Dysregulation, age 6 (DYS6)	-.10(.13)	-.27
IQ	.00(.00)	.20
Interactions		
CON5 x DYS6	2.41(1.00)	1.21*
CON5 x IQ	.01(.01)	.82†
DYS6 x IQ	.00(.00)	.29
CON5 x DYS6 x IQ	-.03(.01)	-1.03*

†$p < .10$. *$p < 0.05$

Figure 2-1. Conceptual Diagram of Model A –predictors of change in conflict, ages 3 to 5

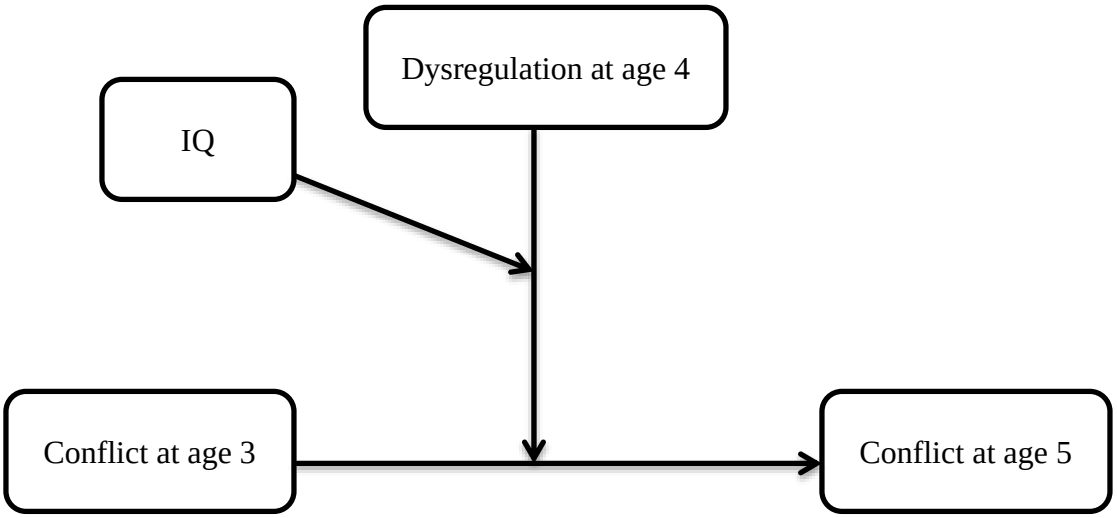


Figure 2-2a. Expected increase in conflict, ages 3 to 5 (Model A)

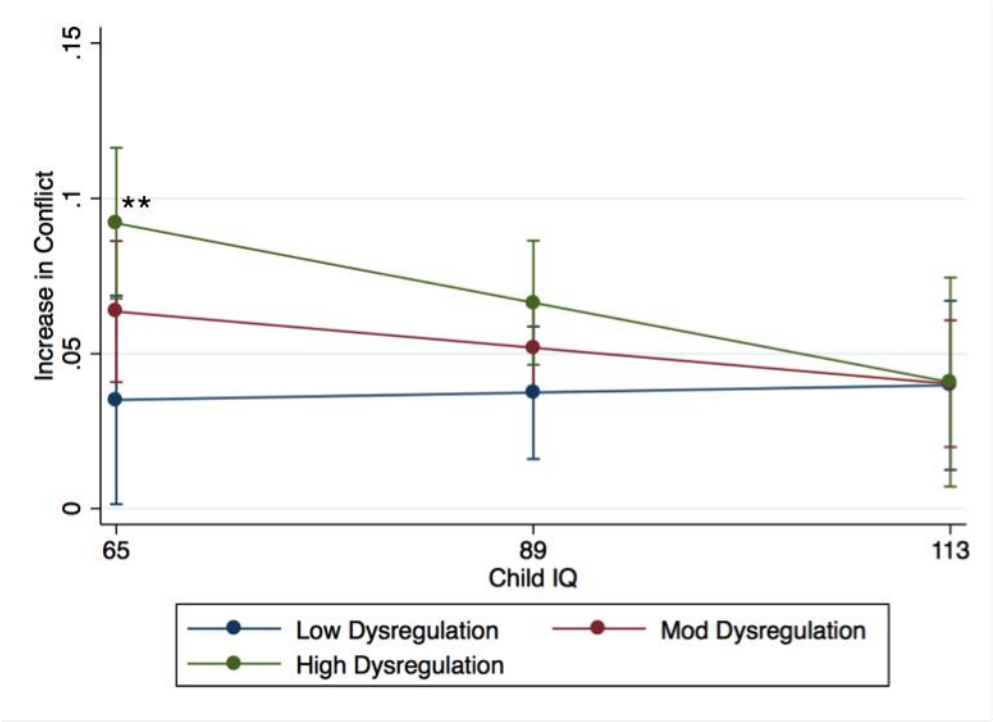
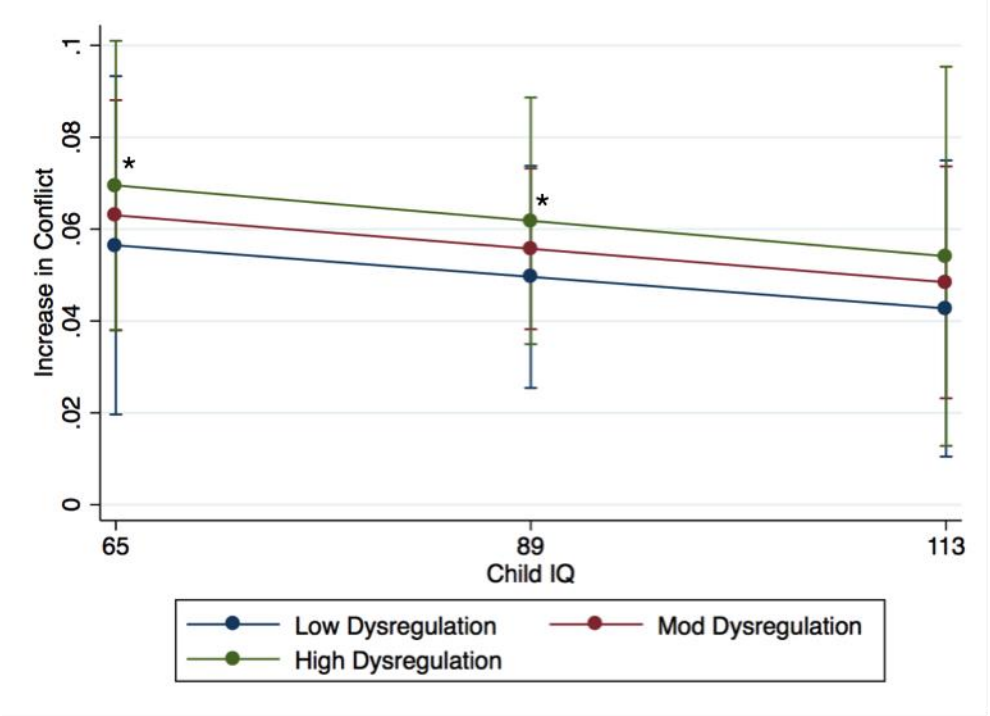


Figure 2-2b. Expected increase in conflict, ages 5 to 7 (Model B)



CHAPTER 3: Parent-child conflict resolution across pre- to mid-adolescence: Youth with typical cognitive development or intellectual disability (Study 2)

Abstract

Adolescence is an important period for developing conflict resolution skills within the parent-child relationship (Klimes-Dougan & Zeman, 2007). However, little is known about the longitudinal trajectory of these skills, particularly during the transition into adolescence (Smetana, 2008). This is especially important for youth with intellectual disability (ID), whose struggles with problem solving and communication exacerbate their heightened risk for problem behavior and social difficulties (Hutchins & Prelock, 2014; Wieland, Green, Ellingsen, & Baker, 2014). We explored the unique and joint contributions of youth disability status (typically developing [TD], with ID) and externalizing behavior to the development of conflict resolution behaviors in mother-youth dyads across time. Participants (n = 148) were selected from a longitudinal study of the development of psychopathology in youth with or without ID, with a focus on pre- to mid-adolescence (ages 9, 13, and 15 years). Conflict resolution behaviors were assessed from an adapted behavioral coding system and externalizing behavior via the CBCL. Several findings aligned with the literature, such as mothers of youth with ID exhibiting higher Mother Problem Solving and lower levels of externalizing problems predicting higher likelihood of Resolution Reached. There were also multiple unanticipated findings, including lower levels of externalizing behavior relating to more positive Youth Affect for TD youth only and the likelihood of Resolution Reached decreasing over time for TD youth but increasing for youth with ID. Findings suggest that parental expectations strongly influence parent-youth conflict resolution skills and that externalizing behavior and conflict resolution skills may be more strongly linked within families of TD youth. Implications for family interventions are discussed.

Adolescence is a pivotal period in the development of conflict resolution skills, with the parent-child relationship serving as an essential bond in which to learn this social ability. Adolescents are required to assume more complicated social roles with peers and adults as they transition into young adulthood, and these roles require more complex social interactions that involve discussion, problem solving, and increased social competence (Klimes-Dougan & Zeman, 2007). Adolescents' relationships with their parents provide a sphere in which to learn conflict resolution skills that allow them to more easily navigate complex social situations or, in some cases, may provide a basis for developing problematic approaches to conflict resolution that can lead to child maladjustment (Branje, van Doorn, van der Valk, & Meeus, 2009; Cummings, Faircloth, Mitchell, Cummings, & Schermerhorn, 2008). Though previous research provides strong support for studying conflict resolution over time, little is known about longitudinal processes of conflict resolution prior to adolescence, particularly in the transition from middle childhood to adolescence (Holmbeck, 1996; Smetana, 2008; Steinberg, 1990). Understanding these processes is particularly important for youth with intellectual disability (ID), whose communicative impairments exacerbate their heightened risk for problem behavior and difficulty forming social relationships (Hutchins & Prelock, 2014). In the present study, we explored the contributions of youth disability status (typically developing [TD], with ID) and youth externalizing behavior to the developmental trajectory of three indices of conflict resolution – Problem Solving, Affect, and Resolution Reached – within the mother-child relationship across pre- to mid-adolescence.

Conflict resolution during adolescence

Though parent-child conflict certainly occurs across the lifespan, most studies of parent-child conflict and conflict resolution focus on adolescence. This is in part due to the consistent

finding that parent-child conflict increases during adolescence (Laursen, Coy, & Collins, 1998; Smetana, 2008), as well as to the well-established link between parent-adolescent conflict and behavioral maladjustment (e.g., Klahr, McGue, Iacono, & Burt, 2011). As adolescents' social-cognitive skills become increasingly developed, they tend to seek autonomy and to test limits, while their parents strive to preserve social order to maintain their youth's safety and wellbeing (Smetana, 1996). Youth conflict resolution strategies exhibited during adolescence have been linked to internalizing and externalizing behavior problems (Branje et al., 2009) as well as to emotion regulation skills, and both youth and maternal behaviors during conflict discussions in a laboratory setting have related to affective dimensions of the mother's parenting, measured concurrently and in earlier years (Eisenberg et al., 2008).

Furthermore, there are several logistical reasons for using conflict resolution, specifically, to examine the parent-adolescent relationship. First, as parent-child interaction naturally shifts from largely play-based and more emotionally expressive to more subtle and discussion-based, parent-adolescent relational patterns are more difficult to observe through naturalistic behavioral tasks that are typical in research with younger children (Wieland et al., 2014). A more structured parent-child conflict resolution task, on the other hand, elicits parents' and adolescents' emotions and behaviors, providing insight into the parent-child relationship in a relatively brief timeframe. Additionally, the importance of conflict resolution in evaluating the nature of a relationship and its associated outcomes has strong empirical backing in research on marriage and romantic relationships (e.g., Davies & Cummings, 1994; Gottman & Levenson, 1985; Pasch & Bradbury, 1998) and could be applicable to parent-youth relationships as well.

Conflict resolution across time

Researchers have identified a need for a clearer understanding of how conflict resolution skills unfold across time (Collins & Russell, 1991; Klahr et al., 2011). Despite longstanding calls for more research on the transition into adolescence (Holmbeck, 1996; Steinberg, 1990), there remain few studies that examine conflict resolution in youth across middle childhood and adolescence (Smetana, 2008). Longitudinal studies of conflict resolution across time have two important benefits. For one, evidence suggests that aspects of conflict resolution and its link to youth socioemotional outcomes differ by age (Branje et al., 2009; Laursen et al., 1998), but given that the majority of this research is cross-sectional, longitudinal research is needed to clarify how conflict resolution changes with age in the same youth. Second, such research could shed light on predictors of change in conflict and conflict resolution, for better or worse (Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000; Klahr et al., 2011; Smetana, 2008).

Conflict resolution in youth with ID

Little is known about how youth with ID develop and exhibit conflict resolution skills across adolescence. There is extensive research indicating higher levels of externalizing, internalizing, and social problems among youth with ID (Baker, Blacher, Crnic, & Edelbrock, 2002; Baker, Neece, Fenning, Crnic, & Blacher, 2010; deRuiter, Dekker, Verhulst, & Koot, 2007; Green, Berkovits, & Baker, 2014; Solish, Perry, & Minnes, 2010). This challenging behavior in youth with ID arises in part due to their difficulties with interpersonal communication (Hutchins & Prelock, 2014). Youth with ID experience communicative impairments related to difficulties with joint attention, theory of mind, expressive language, and understanding pragmatics and inferential language (Hutchins & Prelock, 2014). Many children with ID are limited in opportunities to develop communication skills, given their difficulty initiating and sustaining social relationships (Hutchins & Prelock, 2014). Certainly

understanding dynamics of communication within the parent-youth relationship could provide important insight into how youth with ID develop these skills over time, particularly during times of conflict.

A small body of research (Costigan, Floyd, Harter, & McClintock, 1997; Wieland et al., 2014) suggests that youth with ID indeed differ from their TD peers in their conflict resolution capabilities. Specifically, youth with ID have been found to struggle more in problem solving and to be less likely to come to a resolution, and their parents have exhibited a more directive approach during conflict discussions (Costigan et al., 1997; Wieland et al., 2014). Understanding not only how conflict resolution presents but also how it develops in youth with ID may have implications for intervention within the parent-adolescent relationship during the often-tumultuous transition into adolescence.

Contributions of ID and externalizing behavior

No study, to our knowledge, has simultaneously examined externalizing behavior and disability status as predictors of conflict resolution skills across time. Given the strong association between intellectual disability and heightened externalizing behavior, it is important to clarify whether a socioemotional outcome is more dependent on a youth's problem behavior or another aspect of his or her disability. For example, in a longitudinal sample of youth with and without developmental delay, parenting stress was higher among parents of youth with delay than parents of TD youth across early to middle childhood (Baker et al., 2002; Neece, Green, & Baker, 2012). Further exploration of these findings, however, indicated that at the early ages, this difference was due to the youth's greater behavior problems; during middle childhood, however, behavior problems no longer mediated this association, and the authors attributed the difference to these parents feeling heightened stress related to accessing disability-related services (Baker et

al., 2002; Neece et al., 2012). Given the associations in the literature between conflict resolution skills and externalizing behavior (e.g., Branje et al., 2009) and conflict resolution skills and ID (Hutchins & Prelock, 2014), discerning the relevance of both ID and externalizing behavior to conflict resolution skills could have implications for family interventions.

Relevant markers of conflict resolution skills

There is significant debate in the literature as to which specific aspects of conflict resolution are most relevant to emerging social competence and youth developmental outcomes (Laursen et al., 1998). Some research has focused on *problem solving* as the key aspect of conflict resolution. In one experimental study, mothers who increased their use of future-oriented problem solving during family conflict exhibited improved parenting and relationship quality, and their children showed improved adjustment (Cummings et al., 2008). Adolescents who reported using less problem solving and more withdrawal during conflict with their parents exhibited more externalizing problems than youth who reported using other strategies during conflict with their parents (Branje et al., 2009). Certainly, constructive problem solving has a pertinent role in adolescents' and parents' ability to effectively manage conflict, both in the parent-youth relationship and in the broader social sphere.

Affect has been identified as another important aspect of conflict resolution (Eisenberg et al., 2008; Laursen et al., 1998). Affect during conflict can help adolescents perceive a conflict as either a threatening attack or as an opportunity for productive negotiation (García- Ruiz, Rodrigo, Hernández- Cabrera, & Máiquez, 2013). Warm and supportive affective tone in parent-child relationships has been linked to more effective conflict resolution and negotiation, while harsh, critical affective tone has been linked to youth withdrawal during conflict (García-Ruiz et al., 2013; Rueter & Conger, 1995; Tucker, McHale, & Crouter, 2003). Understanding how

affective tone during conflict resolution impacts the resolution itself, and how it relates to other relational and behavior outcomes, remains an important area for empirical growth.

Still others have emphasized the importance of whether or not a *resolution has been reached* (Smetana, 2008). Indeed, unresolved family conflict has been linked to greater externalizing problems and poorer emotion regulation in children (Siffert & Schwarz, 2011; Underwood, Beron, Gentsch, Galperin, & Risser, 2008), and researchers have asserted that with unresolved parent-child conflict, the parent-child relationship deteriorates over time (García-Ruiz et al., 2013). Studies have also linked problem solving, affect, and whether a successful resolution has been reached. In a study of conflict resolution between young children (ages 5-7 years) and their mothers, constructive comments from both the mothers and children increased the likelihood of the dyad reaching a resolution, and dyads were more likely to compromise when mothers were more emotionally responsive during interactions (Nelson, Boyer, Sang, & Wilson, 2014). Beyond exploring our specific research question, we sought, in this study, to contribute a valid, relatively simple empirical tool for assessing important aspects of conflict resolution skills across a range of youth ages and intellectual capabilities.

The present study

In the present study, we explored how youth disability status (TD, with ID) and externalizing problems predicted the trajectory of parent-youth conflict resolution skills (i.e., Mother and Youth Problem Solving, Mother and Youth Affect, and Resolution Reached) across pre- to mid-adolescence (ages 9, 13, and 15). Our study provides a unique, behavioral observational perspective of conflict resolution, whereas most previous studies in this field have relied on self-report. Furthermore, the longitudinal nature of the study provides an opportunity for understanding stability and change in the mother-youth relationship, as well as clarity on the

transition into adolescence. Empirical findings that mothers tend to be more active in reorganizing the parent-adolescent relationship (Laursen et al., 1998), tend to be responsible for more of the management and discipline of youth behaviors than fathers (Finley, Mira, & Schwartz, 2008), and tend to have higher rates of conflict with youth than fathers do (Laursen & Collins, 2004) support our focus on the mother-child relationship.

We drew on previous studies in predicting how disability status and externalizing problems would affect the trajectories of conflict resolution behaviors, and we drew on relevant findings in establishing tentative hypotheses for those research questions not yet explored in the literature.

Hypotheses 1: Disability Status. 1a) Mothers of youth with ID would exhibit more Problem Solving behavior than mothers of TD youth at all ages (Costigan et al., 1997; Wieland et al., 2014). 1b) TD youth would exhibit higher levels of Youth Problem Solving than youth with ID (Costigan et al., 1997; Hutchins & Prelock, 2014). 1c) No disability status differences would be present for Mother or Youth Affect (Wieland et al., 2014), but Mother Affect may relate to demographic covariates, in accordance with research linking high socioeconomic status with low parental negativity and high warmth (Belsky, Bell, Bradley, Stallard, & Stewart-Brown, 2007). 1d) Given increased difficulty with problem solving among youth with ID, mother-youth dyads in the ID group would have a lower likelihood of Resolution Reached.

Hypotheses 2: Externalizing problems. Drawing on the established association between externalizing problems and conflict (e.g., Burt et al., 2005; Ingoldsby et al., 2006), we predicted that higher levels of externalizing behavior would relate to: lower levels of Mother and Youth Problem Solving; less positive Mother and Youth Affect; and lower likelihood of Resolution Reached.

Hypotheses 3: The joint contribution of disability status and externalizing problems. Our hypotheses related to potential joint or interactive effects of disability status and externalizing problems were exploratory, as no study, to our knowledge, has examined conflict resolution in the context of both problem behavior and developmental disability. On the one hand, drawing on the additive risk model (Evans, Li, & Whipple, 2013), it is possible that high levels of externalizing behavior could lead to particularly poor outcomes among youth with ID by exacerbating the youths' poor communication skills and high parental stress that are typical in families of youth with ID (Baker et al., 2002; Hutchins & Prelock, 2014). On the other hand, it is conceivable that externalizing problems may be more pertinent to conflict resolution skills in the TD group, as behavior problems are less frequent and may cause more conflict and distress.

Hypotheses 4: Change over time. Since no study, to our knowledge, has examined the developmental trajectory of conflict resolution beginning in pre-adolescence, much less these particular indices, our hypotheses as to changes over time were also exploratory. Based on previous findings from longitudinal studies of conflict resolution skills beginning in early adolescence (van Doorn, Branje, & Meeus, 2011), we tentatively predicted that Youth Problem Solving would increase over time. With this increased Youth Problem Solving, we anticipated that, for both disability status groups, the likelihood of Resolution Reached might consequently increase over time, as well.

Method

Participants

Participants were 148 families enrolled in the Collaborative Family Study (CFS), a longitudinal study of children and their families with samples drawn from Southern California (87%) and central Pennsylvania (13%). The CFS has been based at three universities: Penn State

University, University of California, Los Angeles, and University of California, Riverside. The present sample included all families in which participants had completed at least two observations of the Parent-Child Conflict Resolution Task and at least two maternal reports of externalizing behavior from the age 9-, 13-, and 15-year assessments. The larger study from which this sample was drawn recruited families at child age 3 years. Participants were classified into two disability status groups: typically developing (TD, $n = 92$) or with intellectual disability (ID, $n = 56$). For the present study, the ID group included youth with ID and youth with ID and comorbid autism spectrum disorders. Youth who were classified as having borderline ID (IQ = 76-84; APA, 2000) were also included in the ID group for the present study.

In the initial recruitment phase, families of youth with ID were recruited primarily through regional agencies that provide and purchase diagnostic and intervention services for individuals with developmental disabilities. In California, nearly all families with young children with ID register for services with one of a network of Regional Centers. Families of TD youth were recruited primarily through local preschools and daycare programs. Selection criteria for TD youth were that the child score in the range of normal cognitive development and not have been born prematurely or have any developmental disability. All participants with ASD had a previous diagnosis of autism spectrum disorder from a licensed clinical psychologist, a school district school psychologist, and/or representative of the California Regional Center. In recruiting participants, school and agency personnel mailed brochures describing the study to families who met selection criteria, and interested parents contacted one of the research centers.

Table 3-1 shows demographic characteristics by disability status. Socioeconomic status was generally high, and because recruitment initially focused on intact families, the majority of participating parents were married (defined here as legally married or living together for at least

six months). With respect to disability status differences, the mothers of TD youth had significantly higher maternal education and were more likely to be employed outside the home. Families of TD youth had higher income on average than did families of youth with ID. Demographic variables that differ by disability status will be covaried as described in the Analytic Plan below.

Procedures

Data were obtained during laboratory sessions at youth ages 9, 13, and 15, which occurred around the youth's birthday. Demographic information was updated, and mothers were asked to complete another series of questionnaires. Mothers were interviewed during each assessment about child psychopathology, and the child's cognitive ability and adaptive functioning were assessed at ages 9 and 13. Mothers and their youth participated in dyadic lab activities, which were videotaped and later coded by trained coding teams, as well as separate semi-structured interviews about the youth's current academic, interpersonal, and socioemotional functioning.

Measures

Wechsler Intelligence Scale for Children, Fourth Edition (WISC-IV; Wechsler, 2003). Youth's performance on a subset of the WISC-IV (Vocabulary, Matrix Reasoning, and Arithmetic) was used to estimate intellectual functioning at child ages 9 and 13, both to determine an estimated IQ range and also to confirm group classification. These three subtests were selected based on their high correlation (r = .91) with the full scale IQ from the full administration of the WISC-IV (Sattler & Dumont, 2004). For the present study, age 13 composite scores were used to establish disability group status if available, and if not, age 9 scores were utilized.

Vineland Scales of Adaptive Behavior (VABS; Sparrow, Cicchetti, & Balla, 2005). The VABS is a semi-structured interview conducted with a parent or caregiver to assess adaptive behavior across a variety of domains. The Adaptive Behavior Composite is derived from scores on the communication, daily living skills, and socialization subscales. The VABS has been shown to have good reliability (with alphas for most subscales in the low 80s) and high validity for children (Sparrow et al., 2005). The VABS was administered at ages 9 and 13; age 13 composite standard scores were used in classification of disability status if available and, if not, age 9 scores were used.

Parent-Child Conflict Resolution Task (adapted from Wieland et al., 2014). Parent-youth conflict resolution behaviors were measured with an observational coding system modified from previous parent-child problem solving tasks (e.g., Buhrmester, Camparo, Christensen, Gonzalez, & Hinshaw, 1992). At child ages 9, 13, and 15 years, youth and their mothers participated in an observational task in the laboratory. Mothers were given a form listing 12 to 15 (depending on the assessment year) typical areas of youth/parent disagreement at that age (e.g., listening or following instructions, getting along with brother or sister, time spent on the phone/texting). They were asked to rate the level of disagreement with the child in each area from (0) never disagree to (5) always disagree. The top three areas of mother-rated disagreement were then presented to the youth, who was asked to pick the one that he or she felt they argued about the most. The youth and mother were then brought into the same room and were asked to discuss the identified conflict and to try to come up with a resolution. The dyad was allowed 10 minutes at age 9 and was asked not to stop before 5 minutes. At ages 13 and 15, the dyad was stopped at 5 minutes.

The coding system was originally developed utilizing the current sample following a thorough literature search, formation of theoretically driven hypotheses, and an in-depth review of pilot videotapes (see Wieland et al., 2014 for further description). At ages 9 and 13, the coding system included 10 task codes rated on 5-point ordinal scales (see Appendix A for a description of task codes from the manual). At age 15, a previously single code (i.e., social competence) was divided into two codes (i.e., expression of ideas and willingness to negotiate) based on the observation by coders that these may be more appropriately distinct entities at the older ages. For the present analyses, they were averaged into a single youth social competence code for consistency with previous codes.

The author developed a manual with detailed descriptions for each code and anchors to assist coders in the coding process. For the most part, codes were global and holistic in nature, though some codes required a minimum number of occurrences (e.g., mother's validating comments, youth's ideas expressed for resolution) for certain ratings. Coding was done by two master coders (including the first author of the present study) and by trained pairs of undergraduate research interns. Coding teams watched videos together, coded the observations independently, and then, through discussion, came to consensus codes. Reliability was achieved when coders reached a 0.70 or higher intra-class correlation coefficient for each code with the master coder, and the master coder continued to code videos periodically to ensure that reliability was maintained throughout coding.

For the present study, analyses were conducted with composite scores that were constructed based on theory and factor analysis into the following codes: (1) *Mother Problem Solving* (mother directiveness); (2) *Youth Problem Solving* (youth social competence minus youth resistance; concurrent intercorrelations at ages 9, 13, and 15: r = -.50 to -.65); (3) *Mother*

Affect (mother engagement + mother validation + mother warmth minus mother antagonism; median concurrent intercorrelations: r = .31 to .40); and (4) *Youth Affect* (youth warmth minus youth antagonism; concurrent intercorrelations r = -.18 to -.39). To clarify interpretation of analyses, the Youth Problem Solving and Affect codes were linear-transformed (i.e., 4 was added to each score), producing positive values for all participants. Original, non-transformed values are displayed in in Table 3-3.

Finally, the 5) *Resolution Reached* code was established with two possible outcomes: a) no resolution is reached or b) a resolution is reached by the end of the task (i.e., youth agreed to mother's resolution, mother agreed to youth's resolution, or a compromise was made in which both contributed to the resolution).

Child Behavior Checklist for ages 6-18 (CBCL; Achenbach & Rescorla, 2001). The mother-report CBCL was used to measure youth externalizing problems at ages 9, 13, and 15. The CBCL contains 113 items, each of which indicates a child problem (e.g., too shy or timid, impulsive or acts without thinking, doesn't eat well). Mothers completed this questionnaire prior to laboratory visits and indicated whether this problem was *not true* (0), *somewhat or sometimes true* (1), or *very true or often true* (2) for their youth then or in the previous 2 months. The CBCL yields a total problem score, broadband externalizing and internalizing scales, and seven narrowband scales. The CBCL yields T scores for the broadband scales (M=50; SD=10). In the present study, we used the externalizing broadband scale. One outlier was detected, and the score was reduced to within 3 standard deviations of the mean.

Analytic Plan

A comparison (TD versus ID) of demographic variables may be found in Table 3-1. Variables that differed by disability status and were related to the dependent variables were

covaried in the analyses. When multiple demographic variables met such criteria, regression analyses were conducted, with disability status (TD, ID) and any potential demographic covariates as independent variables and the outcome variable as the dependent variable. Demographic variables that were significant at the $p < .10$ level were retained as covariates in analyses. These were family income for Mother Affect and youth externalizing problems at age 9, mother's employment for Mother Affect and youth externalizing problems at age 15, and family income for analyses that examined Mother Affect across ages.

Before addressing the research question, we conducted Pearson correlations to explore interrelations among the key variables. We also conducted *t* tests to examine differences in Mother Problem Solving, Youth Problem Solving, Mother Affect, and Youth Affect between the TD and ID groups. We conducted chi square analyses to determine whether the groups differed in terms of Resolution Reached. Though well-established in the literature and not a central focus to our research questions, we also conducted *t* tests examining group differences in externalizing problems, given this variable's inclusion in our primary set of analyses.

For the primary analyses, exploring how disability status and youth externalizing behavior related to conflict resolution skills across ages 9, 13, and 15, we conducted mixed effects linear regressions for Mother Problem Solving, Youth Problem Solving, Mother Affect, and Youth Affect. We conducted a mixed effects logistic regression for Resolution Reached. The regressions included: disability status (TD, ID); age (9, 13, and 15 years); youth externalizing problems (continuous variable); a demographic covariate, as appropriate; and the interactions among the study variables. Interactions were removed when non-significant. Intercepts and slopes were allowed to vary randomly, and maximum likelihood estimation was used so that all participant data available was utilized in analyses. Youth externalizing problems were

standardized for regression analyses for ease of graphing and interpretation. All mixed effects analyses were conducted, and graphs created, with Stata software (StataCorp, 2013).

Results

Correlations among observed conflict resolution behaviors and externalizing problems

Table 3-2 displays Pearson correlations among the conflict resolution behaviors and externalizing problems at ages 9, 13, and 15 in the larger sample. Mother and Youth Problem Solving exhibited low-to-moderate stability across the three time points, while Mother and Youth Affect displayed moderate stability. Externalizing problems were highly stable across time. Resolution Reached at age 9 had a low, negative association with Resolution Reached at ages 13 and 15, such that higher likelihood of resolution at 9 was associated with a lower likelihood at the later ages. At age 9, Mother Problem Solving had negative, low-to-moderate correlations with the other observed variables, with higher Mother Problem Solving relating to lower Youth Problem Solving and less positive Mother and Youth Affect. At ages 13 and 15, Mother Problem Solving did not relate to the other observed variables. However, at all three time points, there were low-to-moderate, positive correlations among the other observed variables, such that higher Youth Problem Solving, higher Mother and Youth Affect, and higher likelihood of Resolution Reached were associated with one another. While youth externalizing problems did not relate to the Mother Problem Solving or Mother Affect variables, externalizing problems exhibited significant low-to-moderate correlations with Youth Problem Solving and Youth Affect, such that youth who were reported to have more externalizing problems displayed less Problem Solving and less positive Affect during the conflict resolution task at all three time points.

Disability status differences in conflict resolution behaviors and externalizing problems

Results of *t* tests and chi square analyses indicated several TD versus ID status differences that largely aligned with our hypotheses (see Table 3-3). As predicted, mothers of youth with ID exhibited more Problem Solving at all ages, and youth with ID displayed less Problem Solving at all ages. Also as expected, the disability status groups did not differ with respect to either Mother or Youth Affect. An unanticipated finding emerged such that, while TD youth had a higher likelihood of Resolution Reached with their mothers at age 9, the likelihood of Resolution Reached was higher among mothers and youth with ID at age 15, with no group difference at age 13. In accordance with the literature, externalizing problems were higher among youth with ID across all ages.

Impact of disability status and externalizing problems on conflict resolution behaviors across pre- to mid-adolescence

Results of mixed effects linear (Mother and Youth Problem Solving, Mother and Youth Affect) and logistic (Resolution Reached) regressions revealed several significant effects of youth disability status, externalizing problems, age, and various interactions among the variables in predicting the observed conflict resolution behaviors. Regarding *Mother Problem Solving*, a three-way interaction emerged among disability status, externalizing problems, and age ($\chi^2[2] = 6.90$, $p = .03$; see Table 3-4a). Figure 3-1a shows a graphical depiction of the interaction. To clarify the interaction, we conducted follow-up pairwise comparisons of predictive margins. Mothers of TD youth exhibited significantly less Problem Solving at all corresponding time points and levels of externalizing problems (low, moderate, or high), with the exception of both TD and ID youth with low levels of externalizing problems ($p > .05$). Exploring within the disability status groups, results indicated that, in the TD group, the relation of externalizing problems to Mother Problem Solving differed by age. Specifically, at ages 9 and 13, Mother

Problem Solving was significantly higher when youth had low levels of externalizing problems than moderate (age 9: z = -2.41, p = .02; age 13: z = -2.19, p = .03) or high (age 9: z = -2.41, p = .02; age 13: z = -2.19, p = .03) and also higher among youth with moderate levels than those with high levels (age 9: z = -2.41, p = .02; age 13: z = -2.19, p = .03). No differences by levels of externalizing problems were present at age 15 in the TD group. Furthermore, there was no significant change over time in the TD group, across levels of externalizing problems.

Among youth with ID, Mother Problem Solving did not differ by youths' level of externalizing problems at ages 9 or 13. At age 15, however, Mother Problem Solving in the ID group was higher among youth with low levels of externalizing problems than either moderate (z = -2.69, p = .01) or high levels (z = -2.69, p = .01) and also higher among mothers of youth with moderate levels than with high levels of externalizing problems (z = -2.69, p = .01). Regarding change over time, Mother Problem Solving increased among mothers of youth with ID with low levels of externalizing problems from age 9 to 13 (z = 2.34, p = .02) but not to age 15 (p > .05). For youth with ID with moderate externalizing problems, Mother Problem Solving increased between ages 9 and 15 (z = 2.64, p = .01) but did not differ between ages 9 and 13 or 13 and 15 (p > .05). There was no change over time in Mother Problem Solving for ID youth with high levels of externalizing problems.

For *Youth Problem Solving*, no interactions were significant, but several main effects emerged as significant (see Table 3-4b). Specifically, TD youth tended to exhibit more Problem Solving than youth with ID, and youth exhibited more Problem Solving at age 13 than they did at age 9. Furthermore, youth with higher levels of externalizing problems exhibited less Problem Solving on average.

For *Mother Affect*, only the demographic covariate, family income, emerged as a significant predictor, such that mothers who reported a higher family income exhibited more positive Affect (B = .20, SE = .08, z = 2.37, p = .02).

For *Youth Affect*, a significant interaction emerged between disability status and externalizing problems ($\chi^2[1] = 4.89$, p = .03; see Table 3-4c and Figure 3-1b for a graphical depiction). Specifically, in the ID group, Youth Affect did not differ by youths' level of externalizing problems (dy/dx = -.16, SE = .13, z = -1.23, p = .22), while TD youth with higher levels of externalizing problems exhibited lower levels of positive Affect (dy/dx = -.57, SE = .13, z = -4.27, p < .01). Follow-up pairwise comparisons of predictive margins confirmed that TD youth with low levels of externalizing problems exhibited significantly higher positive Affect than those with moderate (z = -4.27, p < .01) or high levels (z = -4.27, p < .01), and TD youth with moderate levels of externalizing problems exhibited more positive Affect than those with high levels (z = -4.27, p < .01). There were no disability status group differences at low, moderate, or high levels of externalizing problems.

Lastly, regarding *Resolution Reached*, there was a main effect for externalizing problems; youth with higher levels of externalizing behavior were less likely to come to a resolution with their mothers (see Table 3-4d). Furthermore, a significant interaction emerged between disability status and age ($\chi^2[2] = 7.08$, p = .03; see Table 3-4d and Figure 3-1c for a graphical depiction). Follow-up pairwise comparisons revealed that TD youth were more likely to reach a resolution with their mothers at age 9 than they were at age 13 (z = -2.97, p < .01) or age 15 (z = -3.90, p < .01). Youth with ID were more likely to reach a resolution at age 15 than they were at age 13 (z = 2.52, p = .01). When controlling for externalizing problems, the disability status groups differed

only at age 15, at which point youth with ID had a higher likelihood of Resolution Reached than TD youth ($z = 3.12$, $p < .01$).

Discussion

We explored how three indices of conflict resolution – Problem Solving, Affect, and Resolution Reached – differed for youth with or without ID and their mothers across pre-to mid-adolescence. We also examined the contributions of youth disability status and externalizing behavior to conflict resolution. While many of the results aligned with the current literature, there were also several unexpected findings and findings that provide new insight into exploratory hypotheses. We review these in the context of parental expectations and in terms of surprising resilience that may be present in families of youth with ID as compared to those of TD youth. We also discuss implications for family interventions that may most optimally meet the different needs of typical families and those impacted by disability.

First, several findings were consistent with the literature. Though some more complex interactions emerged that will be discussed below, overall, mothers of youth with ID consistently exhibited more Mother Problem Solving than mothers of TD youth across ages, in accordance with the literature (Costigan et al., 1997; Wieland et al., 2014). Additionally, as expected, Youth Problem Solving was higher among TD youth (Costigan et al., 1997; Hutchins & Prelock, 2014) and among youth with fewer externalizing problems (Branje et al., 2009; Ingoldsby et al., 2006). Youth Problem Solving also increased from age 9 to 13, in accordance with previous literature indicating that social competence increases in youth during the transition into adolescence (Klimes-Dougan & Zeman, 2007). Mother Affect did not differ by disability status but was higher in mothers who reported a higher family income. This aligns with previous research indicating that higher socioeconomic status predicts higher levels of warmth and lower levels of

negativity (Belsky et al., 2007). Finally, as expected, there was a higher likelihood of Resolution Reached when youth had lower reported levels of externalizing problems (Branje et al., 2009; Ingoldsby et al., 2006). The fact that these findings align with previous literature not only provides further support to this literature; it also serves as further validation of our coding system and procedures for use in future similar studies.

There were several findings that were either unexpected or provided new insights for tentative hypotheses that, to this point, have not yet been explored in the literature. In reviewing these findings, we conceptualize them as supporting two notions. The first conclusion is that conflict resolution behaviors may relate to mothers adapting their expectations based on their youths' abilities and behaviors. For instance, the significant three-way interaction between disability status, externalizing problems, and age for Mother Problem Solving revealed complex patterns that may relate to maternal expectations. At ages 9 and 13, mothers of TD youth exhibited less Mother Problem Solving when youth had higher levels of externalizing behavior problems, possibly indicating that these mothers became frustrated and disengaged from the task or that they were sidetracked from the task by the youth's problem behavior. This pattern was not present for mothers of youth with ID at these younger ages but was present in the ID group at age 15. This may indicate that mothers of TD children may be more affected by their youths' behavior problems in early adolescence, while externalizing behavior may be more expected among youth with ID and thus not impact mothers' behavior. Indeed, youth with developmental delays have been found to exhibit consistently higher behavior problems than their TD peers from toddlerhood to middle-childhood (Neece et al., 2012). The fact that this association does exist in the ID group at age 15 might suggest that mothers may, by then, have developed higher expectations for their youths' behavior.

While there was no change over time for Mother Problem Solving in the TD group, mothers of youth with ID who had relatively low and moderate levels of externalizing behavior showed increases in Problem Solving over time. Once again, this may reflect mothers' expectations of their youths' capacities. Perhaps mothers of relatively well-behaved youth with ID were increasingly committed to working with their youth to solve the task at hand over time as their youths' cognitive abilities increased with age, while mothers of youth with more problem behavior either spent more effort managing the behavior, disengaged during the discussion, or did not believe the task was feasible for their youth. These notions should be investigated in future studies, perhaps with more nuanced coding of mothers' emotional reaction to their youth (e.g., whether she exhibits disengaged and/or frustrated behaviors).

Regarding Youth Affect, our results revealed an association between positive Affect and externalizing problems in the TD group only, with higher levels of externalizing problems predicting less positive Affect towards their mothers across ages. This relationship was not present among youth with ID. Again, this effect may be reflective of familial expectations of externalizing behavior among TD youth. Specifically, while higher levels of externalizing behavior are expected among youth with ID across the developmental span, behavior problems are less typical among TD youth and may thus lead to more family discord. It is possible that, even within this brief conflict resolution task, TD youth with high externalizing behavior became defensive and exhibited less positive Affect.

Our second conclusion regarding our unanticipated findings is that there appear to be certain difficulties around conflict resolution facing families of TD adolescents that are not present for those of youth with ID, at least during this stage of pre- to mid-adolescence. For one, as described above, the association between externalizing behaviors and Youth Affect was

present only for TD youth. In our tentative hypotheses regarding the interaction of disability status and externalizing behavior, we deemed it possible that externalizing problems may exacerbate poor communication skills and high parental stress typical in families of youth with ID (Baker et al., 2002; Hutchins & Prelock, 2014), in accordance with the additive risk model (Evans et al., 2013), or that externalizing problems may be more pertinent in families of TD youth, where behavior problems are less frequent and thus less expected. Our findings appear to support the latter, suggesting that the presence of externalizing problems may be a particular risk factor for conflict resolution in typical families.

Furthermore, against expectation, TD youth were less likely to reach a resolution with their mothers as early- and mid-adolescents than they were as pre-adolescents, while ID youth were more likely to reach a resolution as mid-adolescents. We interpret from this finding that TD youths' ability to reach a resolution – or not – may relate more strongly to their increased desire for autonomy during adolescence (Smetana, 1996), while this urge for autonomy may be less present, or less detrimental to conflict resolution, among youth with ID. Future studies could continue to follow samples of TD youth and youth with ID into late- and post-adolescence to determine whether youth with ID follow similar, delayed patterns or whether they maintain a different trajectory in terms of Resolution Reached as compared to their TD peers.

The present study has several strengths. An important contribution is our measure of parent-child conflict resolution itself, namely validation that the coding system and manual can be reliably used by well-trained coders to assess the study domains with youth across pre- to mid-adolescence with a range of cognitive abilities. Useful indices (i.e., Problem Solving, Affect, and Resolution Reached) were derived from both theory and empirical methods, allowing for measuring conflict resolution with a relatively simple paradigm and coding system. It is

increasingly difficult to gain meaningful insight into the parent-child relationship during adolescence, when interaction shifts from play-based to more nuanced discussion (Wieland et al., 2014). The Parent-Child Conflict Resolution Task coding system provides a useful resource for researchers examining the parent-adolescent relationship. Moreover, the use of observational data provided insight into behaviors that could not be captured by self-report, allowing for less response bias, which may be especially pertinent for such an emotionally laden issue as parent-child conflict (Furr & Funder, 2007; Welsh & Dickson, 2005). Furthermore, our longitudinal sample, and inclusion of pre-adolescents, contributed to limited research examining how conflict resolution skills change over time (Smetana, 2008). Finally, no study to our knowledge has examined disability and externalizing behavior simultaneously as predictors of conflict resolution skills, much less across time. Given the well-established link between disability status and behavior problems (deRuiter et al., 2007), it is important to discern when status group differences are related as much or more to behavior disorders than the youth's intellectual disability itself.

Limitations of the present study should be noted. First, due to sample size, we were unable to explore these differences by ethnic group. Previous findings highlight the importance of cultural considerations in parent-child conflict resolution (Dixon, Graber, & Brooks-Gunn, 2008; Smetana, 2008), and future research may benefit from exploring the roles of ethnicity and other cultural factors in conflict resolution across time, particularly in families impacted by disability. Future research should also certainly include fathers and other primary caregivers, particularly given previous work suggesting that conflict resolution styles may differ and may differentially change over time between mothers and fathers (van Doorn et al., 2011). Additionally, we relied on mother report for our measure of youth externalizing behavior.

Though our measures of conflict resolution behaviors and externalizing behavior were different methods and were captured at different times, it is possible that shared variance was present, particularly between behavior problems and the mothers' behavioral indices. Furthermore, more frequent assessment of conflict resolution skills, perhaps yearly rather than at the selected representative time points, may bolster the validity of our conclusions. Finally, our interpretations suggest that mothers' and youths' expectations and attitudes were a significant influence on the behaviors witnessed. For example, we posited that mothers became frustrated or disengaged in the presence of youth behavior problems and that negative affect among TD youth with high levels of externalizing behavior may be a defensive response to their parents. Future research could build upon this rich source of information by adding self-report measures of perceptions, expectations, and emotional reactions to give even deeper insight into the behaviors observed.

Our findings have important implications, both for our empirical understanding of parent-child conflict resolution and for intervention. Overall, our findings suggest that externalizing behavior certainly contributes to poorer conflict resolution skills, in accordance with the literature (e.g., Branje et al., 2009), but that this link may be stronger for TD youth than it is for youth with ID. Thus, interventions designed to address parent-child conflict may take different forms for youth with or without ID. For example, interventions for TD youth with disruptive behavior disorders and their parents might focus more on targeting the externalizing behavior, while interventions for youth with ID and their parents might more fruitfully focus on increasing the youths' problem solving skills. The nuanced ways in which behavior problems and disability status influenced conflict resolution by specific index measured (i.e., Problem Solving, Affect, and Resolution Reached) suggest that the development of conflict resolution skills is a complex

process. Interventionists may be most effective by supplementing measures of behavior disorders with an initial assessment comparable to our conflict resolution paradigm. A behavioral analysis of the primary communication deficits could help in tailoring the intervention to fit the family's specific needs.

Table 3-1. Sample demographics at age 13 years

	ID (***n*** **= 56)**	**TD** (***n*** **= 92)**	***t or*** χ^2
Youth			
Sex (% male)	61.1%	50.0%	$\chi^2 = 1.69$
Race/ethnicity (% White, non-Latino)	50.0%	58.7%	$\chi^2 = 4.39$
Mean WISC Full Scale Score (SD)	66.5 (12.8)	108.7 (12.6)	$t = 19.13$***
Parent & Family			
Mother's mean age (SD)	43.8 (7.3)	45.8 (6.4)	$t = 1.70$
Mother race/ethnicity (% White, Non-Latino)	51.9%	66.3%	$\chi^2 = 2.99$
Maternal education (highest grade; SD)	15.0 (2.5)	16.1 (2.3)	$t = 2.60$*
Mother Marital Status (% married)	64.7%	76.7%	$\chi^2 = 2.33$
Mother Employment (% employed)	64.7%	84.3%	$\chi^2 = 7.04$**
Family Annual income (% > $50K)	58.8%	77.3%	$\chi^2 = 5.29$*

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 3-2. Intercorrelations among key study variables.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Conflict																	
Age 9																	
1. M PS	--																
2. Y PS	-.33**	--															
3. M AF	-.25*	.26*	--														
4. Y AF	-.27**	.63***	.31**	--													
5. Res reach	-.20†	.52***	.26*	.41***	--												
Conflict																	
Age 13																	
6. M PS	.27*	-.11	-.07	-.13	-.05	--											
7. Y PS	.03	.31**	.07	.46***	-.12	-.32***	--										
8. M AF	-.16	.21†	.44***	.33**	.05	-.05	.25**	--									
9. Y AF	.13	.21†	.06	.38***	-.02	-.07	.49***	.47***	--								
10. Res reach	.13	-.02	.09	-.06	-.18*	.07	.45***	.22**	.37***	--							
Conflict																	
Age 15																	
11. M PS	.35**	-.09	-.04	-.25*	-.01	.43***	-.32***	-.11	-.15	.16†	--						
12. Y PS	-.21†	.27*	.20†	.44***	-.11	-.24**	.38***	.20*	.22*	.03	-.42***	--					
13. M AF	-.10	-.02	.37**	.24*	.06	-.08	.11	.33***	.17†	.08	-.05	.46***	---				
14. Y AF	-.04	.27*	.26*	.48***	-.03	-.03	.11	.13	.30**	.02	-.10	.51***	.52***	--			
15. Res reach	< .01	.18†	.07	.05	-.21*	-.11	.04	.01	.04	-.08	.06	.35***	.39***	.21*	--		
Externalizing problems																	
16. EXT, 9	-.02	-.26*	-.12	-.30**	.03	-.15	-.16	-.14	-.19*	.01	-.01	-.23*	-.05	-.31**	.09	--	
17. EXT, 13	-.12	-.27*	-.04	-.28*	.14	-.07	-.28**	-.14	-.16†	.04	.03	-.20*	.10	-.14	.04	.83***	--
18. EXT, 15	-.14	-.19†	-.14	-.21†	.07	-.01	-.20*	-.08	-.07	.07	-.12	-.22*	-.04	-.24**	-.04	.73***	.73***

$^{\dagger}p < .10$. *$p < 0.05$. **$p < .01$. ***$p < 0.001$. Note: n =148.

Table 3-3. Disability status group differences in primary variables.

	ID	TD	*t or* χ^2
	M (SD)	*M (SD)*	
Parent-Child Conflict Resolution Codes			
Mother Problem Solving			
Age 9	3.97 (.68)	3.59 (.68)	*t* = -2.43*
Age 13	4.12 (.65)	3.65 (.64)	*t* = -4.15***
Age 15	4.24 (.80)	3.66 (.67)	*t* = -4.49***
Youth Problem Solving			
Age 9	-.28 (2.17)	1.08 (1.96)	*t* = 2.98**
Age 13	.50 (2.03)	1.38 (1.53)	*t* = 2.68**
Age 15	.12 (2.10)	1.22 (1.51)	*t* = 3.22**
Mother Affect			
Age 9	8.31 (3.30)	8.86 (2.60)	*t* = .34
Age 13	8.27 (2.32)	8.58 (2.49)	*t* = .73
Age 15	8.88 (2.57)	8.67 (2.17)	*t* = -1.12
Youth Affect			
Age 9	.62 (1.59)	.92 (1.60)	*t* = .84
Age 13	1.08 (1.34)	1.11 (1.58)	*t* = .14
Age 15	.98 (1.53)	1.23 (1.43)	*t* = .84
Resolution Reached (% reached)			
Age 9	69.0%	87.5%	χ^2 = 4.59*
Age 13	57.7%	69.3%	χ^2 = 1.92
Age 15	72.0%	54.2%	χ^2 = 4.14*

Youth Externalizing Problems			
Age 9	10.75 (9.15)	6.47 (6.76)	t = -2.00*
Age 13	10.94 (8.99)	5.39 (6.84)	t = -3.82***
Age 15	10.04 (9.60)	4.99 (7.37)	t = -3.41**

$^{\dagger}p < .10$. $^{*}p < 0.05$. $^{**}p < .01$. $^{***}p < 0.001$.

Tables 3-4. Effect of disability status, age, and externalizing problems on conflict resolution variables

3-4a. Mother Problem Solving	Coefficient	Std. error	*z*
Main Effects			
Age (reference: Age 9)			
Age 13	.08	.10	.81
Age 15	.08	.10	.81
Disability (reference: TD)			
ID	.40	.14	2.74**
Externalizing	-.25	.10	-2.41*
Interactions			
Age*Disability (reference: Age 9)			
Age 13*ID	.17	,17	1.02
Age 15*ID	.30	.18	1.71†
Age*Externalizing (reference: Age 9)			
Age 13	.06	.12	.48
Age 15	.11	.12	.85
Disability*Externalizing (reference: TD)			
ID	.38	.15	2.61**
Age*Disability*Externalizing (reference: Age 9*TD)			
Age 13*ID	-.32	.18	-1.82†
Age 15*ID	-.46	.18	-2.62**

†$p < .10$. *$p < 0.05$. **$p < .01$. ***$p < 0.001$.

3-4b. Youth Problem Solving	Coefficient	Std. error	*Z*
Main Effects			
Age (reference: Age 9)			
Age 13	.44	.21	2.13*
Age 15	.24	.23	1.06
Disability (reference: TD)			
ID	-.84	.24	-3.46**
Externalizing	-.37	.11	-3.30**

*$p < 0.05$. **$p < .01$. ***$p < 0.001$.

3-4c. Youth Affect	Coefficient	Std. error	*z*
Main Effects			
Age (reference: Age 9)			
Age 13	.22	.17	1.32
Age 15	.26	.17	1.52
Disability (reference: TD)			
ID	.03	.20	.17
Externalizing	-.57	.13	-4.27***
Interaction			
Disability*Externalizing (reference: TD)			
ID	.41	.19	2.21*

*$p < 0.05$. ***$p < 0.001$.

3-4d. Resolution Reached	Coefficient	Std. error	*Z*
Main Effects			
Age (reference: Age 9)			
Age 13	-1.95	1.03	-1.90†
Age 15	-2.78	1.16	-2.40*
Disability (reference: TD)			
ID	-1.35	.93	-1.45
Externalizing	-.67	.24	-2.81**
Interactions			
Age*Disability (reference: Age 9)			
Age 13*ID	1.11	1.02	1.09
Age 15*ID	3.47	1.44	2.41*

†$p < .10$. *$p < 0.05$. **$p < .01$.

Figure 3-1a. Interaction of status, externalizing problems, and age in predicting Mother Problem Solving

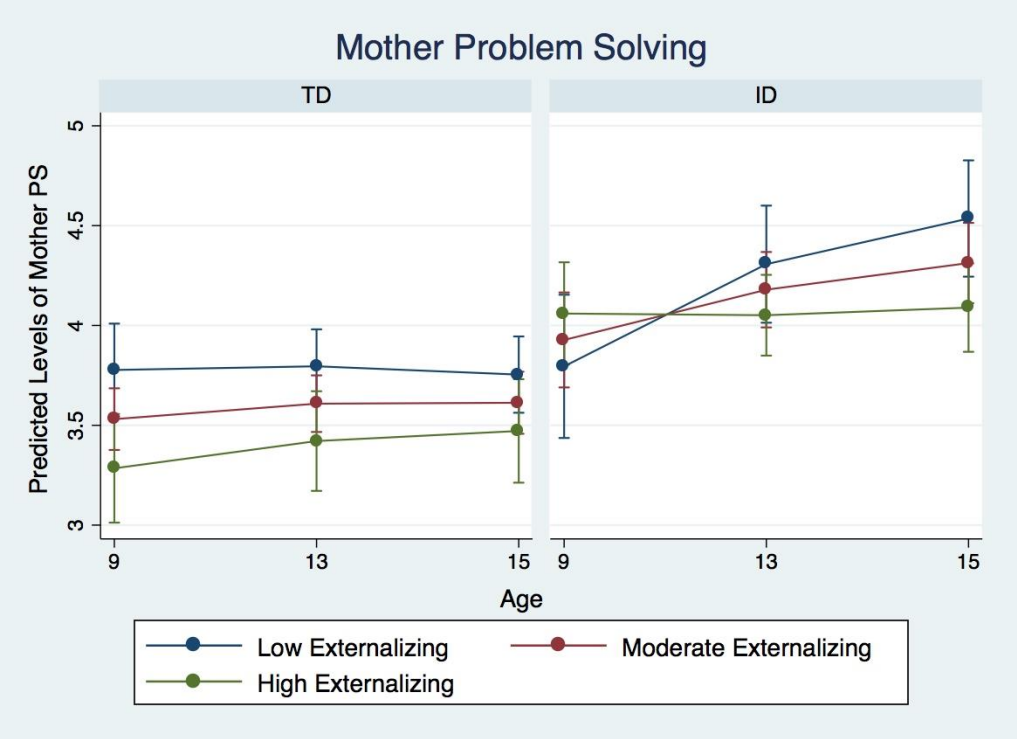


Figure 3-1b. Interaction of status and externalizing problems in predicting Youth Affect

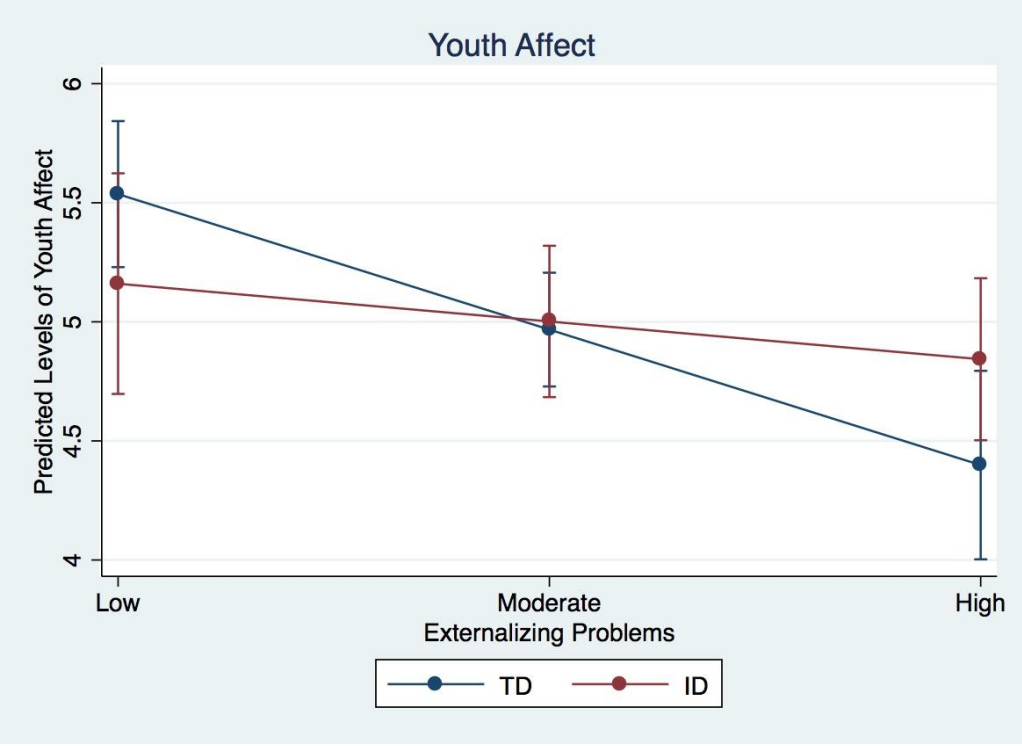


Figure 3-1c. Interaction of status and age in predicting Resolution Reached

CHAPTER 4: A comparison of observed conflict resolution behavior and perceived conflict and closeness in parent-adolescent dyads: Youth with typical cognitive development, intellectual disability, or autism spectrum disorders (Study 3)

Abstract

Adolescence provides an opportunity for youth to develop conflict resolution skills within the parent-child relationship that help them manage increasingly complex social situations as they transition into young adulthood (Klimes-Dougan & Zeman, 2007). This is especially important for youth with developmental disabilities (DD), who struggle with problem solving and with establishing and maintaining social relationships (Hutchins & Prelock, 2014; Solish, Perry, & Minnes, 2010). Researchers have argued the merits and drawbacks of using observational behavioral measures versus self-reported perceptions of conflict and closeness (Noller & Callan, 1988, 1990; Welsh & Dickson, 2005), but little is known about how conflict resolution behavior and perceptions of relational quality align in youth with DD. We examined how observed conflict resolution behaviors and perceptions of conflict and closeness differed between adolescents with typical cognitive development (TD), intellectual disability (ID), or autism spectrum disorder (ASD), and also how the observed behaviors and perceptions aligned. Participants (n =167) were selected from a longitudinal study of the development of psychopathology in youth with or without DD, focusing on mid-adolescence (age 15 years). Conflict resolution behaviors were assessed from a coded behavioral Parent-Child Conflict Resolution Task, and total perceived conflict and mother and youth closeness were assessed from a self-reported questionnaire and semi-structured interviews. While Mother Problem Solving was higher, and Youth Problem Solving lower, in families of youth with ID than youth with TD or ASD, the disability status groups were generally similar in terms of observed conflict behaviors

and self-reported perceptions of conflict and closeness. Lower levels of mothers' perceived conflict and mothers' and youths' reported close relationships related to more positive observed conflict resolution behaviors. Results also suggested some differentially negative outcomes and associations for TD youth as compared to their peers with disability. Future directions for research and implications for interventions are discussed. Results are considered in relation to perceptions of risk and developmental compromise during adolescence.

Parents anticipate and, indeed, experience increased conflict and strife in their relationships with their children during adolescence (Buchanan, 2003; Laursen, Coy, & Collins, 1998). As adolescents push boundaries in seeking autonomy, their parents attempt to maintain order, causing a natural increase in parent-child conflict (Smetana, 1996). However, adolescence also provides the opportunity for youth to become more adept at conflict resolution, a pertinent skill not only in the parent-child relationship but also in navigating the increasingly complex peer relationships that accompany adolescence (Klimes-Dougan & Zeman, 2007). This is particularly important for adolescents with intellectual disability (ID) and/or autism spectrum disorder (ASD). Difficulties with communication that are inherent to developmental disabilities (DD) often lead youth to struggle in problem solving (Hutchins & Prelock, 2014; Wieland, Green, Ellingsen, & Baker, 2014), as well as in establishing and maintaining social bonds (Guralnick, Hammond, Connor, & Neville, 2006; Solish et al., 2010).

Researchers examining conflict resolution in families vary in their use of observational measures or self-reported perceptions. For example, Noller & Callan (1998, 1990) examined how perceptions of conflict and relational quality align with empirical observations, and questioned which methods were more accurate in the prediction of relational outcomes. These studies have occurred largely in the context of marriage and romantic relationships (e.g., Gottman & Levenson, 1999; Welsh & Dickson, 2005), though recent research has examined parent-adolescent relationships within this framework as well (Dixon, Graber, & Brooks-Gunn, 2008). No study, to our knowledge, has examined the association between parent-youth relational perceptions and observed conflict resolution behavior in adolescents with DD. In the present study, we examined how observed conflict resolution behaviors and perceptions of conflict and closeness differed in parent-adolescent dyads, for youth with ID, ASD, or typical

development (TD), and how these reported perceptions and observed behaviors aligned during mid-adolescence.

Behavioral observations versus self-report

Previous research in the field has supported the use of both behavioral observation and self-report data, with rationale and associated outcomes highlighting the merits of both methods. Observing familial interactions allows researchers to garner clear, specific insight into how interpersonal interactions unfold in a way that cannot be captured with more global self-report measures (Welsh & Dickson, 2005). Observational data is not susceptible to response bias that impacts self-report data, and it allows for evaluation of actual behavior as viewed by an objective outsider (Furr & Funder, 2007; Noller & Callan, 1990).

Early research examining conflict resolution in married couples often prioritized behavioral observation to avoid the biased nature of self-report on relationships (Margolin, 1987), and findings suggested that observations provided valuable predictive data for broader relational outcomes. Gottman and Levenson (1999), for example, were able to predict divorce with 82.6% accuracy in married couples over a 4-year period using affective codes from a 15-minute conflict resolution paradigm observed in the laboratory. In a study examining social support and problem solving behavior in newlywed couples, conflict resolution behavior observed shortly after a couple's wedding predicted the trajectory of marital satisfaction and divorce rate across the first 10 years of marriage (Sullivan, Pasch, Johnson, & Bradbury, 2010). Indeed, observation of conflict resolution in dyads has had an important role in clinical assessment and intervention in families experiencing conflict (Heyman, 2001).

Self-reported perceptions of conflict and conflict resolution have also received significant empirical support. Some have argued that using standardized behavioral coding systems across

families and individuals places meaning on interactions that may differ by factors like culture, socioeconomic status, and family values (Laursen & Collins, 2004; Welsh & Dickson, 2005). Indeed, previous research suggests that participants in a conflict differ in their interpretations of the conflict and that behaviors hold certain idiosyncratic meanings in individual family environments (Gottman, 1979; Laursen & Collins, 2004; McNamee & Gergen, 1992). Researchers have asserted the importance of the subjective experience and have called for more empirical data on adolescents' and parents' perceptions of their conflictual interactions, and their relationships, in multiple, more general contexts (Smetana, 2008).

Previous findings support that perceptions hold unique predictive value. In a study of adolescents in romantic relationships, adolescents' perceptions of their connectedness with a partner during a conflict resolution interaction were associated with greater relationship satisfaction and with affectionate sexual behavior with their partners (Welsh & Dickson, 2005). In examining conflict resolution in married couples, a female participant's perceptions that her partner was attempting to understand her were more predictive of relationship satisfaction than more objective behavioral coding of her partner's attempts at understanding her (Waldinger & Schulz, 2006). Certainly both observations and perceptions of conflict resolution behavior, and of relationships on a larger scale, have demonstrated predictive value in relational outcomes.

Relation of observed behaviors and perceptions

While they may capture different aspects of familial interaction, observed behaviors and perceptions have been found to relate to one another, both in the context of specific conflict interactions and on a broader scale. Regarding specific interactions, video recall procedures, which involve participants watching videotaped interactions and providing self-report data, allow researchers to gather and code observational data while also obtaining participants' perceptions

of their affective experiences (see Welsh & Dickson, 2005 for a review of video recall research). Couple members' self-reported experience of affect during such interactions, as reported through video recall procedures, has been associated with trained observers' coding of the couple member's affect (Gottman & Levenson, 1985). Researchers have also explored the relation between perceptions and observed conflict resolution behaviors within the parent-adolescent relationship (e.g., Gonzales, Caucé, & Mason, 1996; Noller & Callan, 1988). For example, in a study examining conflict discussions in a sample of girls during middle childhood and their mothers, mothers who exhibited higher levels of communication competence (e.g., presented ideas clearly and concisely, validated daughters' point of view) and higher levels of responsive listening also self-reported significantly less frequent conflict with their daughters day-to-day (Dixon et al., 2008). More research is needed to bolster our understanding of when objective and subjective measures align – or differ – in the parent-youth relationship (Welsh & Dickson, 2005).

Importance for youth with developmental disability

Family relationship researchers have called for a greater understanding of individual differences in this field (Laursen & Collins, 2004); certainly, differences by disability status merit empirical attention. Youth with DD, specifically ID and ASD, struggle with conflict resolution in part because of the difficulties with joint attention, expressive language, and pragmatic understanding that are markers of DD (Hutchins & Prelock, 2014). Youth with DD often struggle to understand nuanced interpersonal cues that are necessary for effective conflict resolution, and they often exhibit worse social adjustment and have fewer close interpersonal relationships than their TD peers (Hutchins & Prelock, 2014; Laursen & Collins, 2004; Solish et al., 2010; Youniss, 1980).

Previous findings indicate that parent-adolescent conflict and relational perceptions likely differ between youth with and without DD, though it is unclear how the distinction may be demonstrated. On one hand, higher levels of behavior problems and parental stress in families of youth with DD (Baker, Blacher, Crnic, & Edelbrock, 2002) may lead to more intense and frequent conflict and perhaps more negative perceptions within the family. On the other hand, research indicates that, despite higher reports of family stress, parents continue to report positive perceptions of, and relationships with, their youth with DD (Blacher & Baker, 2007; Hoffman, Sweeney, Hodge, Lopez-Wagner, & Looney, 2009). Regardless, the social and cognitive difficulties that accompany ASD and ID, as well as the heightened importance of the parent-child relationship into adulthood for youth with DD (Blacher, Neece, & Paczkowski, 2005), make understanding observed behaviors and relational perceptions a priority for these families.

The present study

We explored the following research questions within mother-adolescent dyads: (1) How do observed conflict resolution behaviors and perceptions of conflict and closeness differ by disability status (TD, ID, or ASD [without ID])? and (2) How do perceptions of conflict and closeness relate to observed conflict resolution behaviors, and does the association between perceptions and behaviors vary by disability status?

We examined the following observed behavioral indices, as coded during a conflict resolution task: Mother Problem Solving, Youth Problem Solving, Mother Affect, Youth Affect, and Resolution Reached. Self-reported variables included: youths' and mothers' perceptions of closeness, mothers' total perceived conflict, and specific conflicts reported by mothers. Our study focused on the mother-adolescent relationship, as mothers tend to be more responsible for management and discipline of youth behaviors than fathers and tend to have both higher rates of

conflict, as well as more frequent and positive communication, with their youth (Finley, Mira, & Schwartz, 2008; Laursen & Collins, 2004; Montemayor & Hanson, 1985; Youniss & Smollar, 1985).

Hypotheses

Hypotheses 1: Disability status differences in observed conflict resolution behaviors.

1a. Mothers of youth with ID would exhibit more observed Mother Problem Solving than mothers of TD or ASD youth.

1b. Youth with TD and ASD would exhibit more observed Youth Problem Solving than youth with ID, due to the latter's cognitive limitations (Costigan, Floyd, Harter, & McClintock, 1997; Wieland et al., 2014).

1c. Neither Mother nor Youth Affect would differ by disability status (Wieland et al., 2014).

1d. Youth with ASD or ID would be less likely to reach a resolution with their mothers than TD youth, given their increased difficulty with problem solving (Costigan et al., 1997; Hutchins & Prelock, 2014).

Hypotheses 2: Disability status differences in self-reported (perceived) variables.

2a. Our hypothesis regarding mothers' Total Perceived Conflict was exploratory. We predicted that Total Perceived Conflict may be higher in families of youth with ASD or ID, given the higher levels of conflict in youth with DD at younger ages (Basten et al., 2013; Brown McIntyre, Crnic, Baker, & Blacher, 2011), or it may be lower in youth with ID than the TD or ASD groups, as level of conflict has been associated with cognitive maturation and adolescents' perceptions of themselves as equals in authority to their parents (Laursen & Collins, 2004).

2b. Neither Mother nor Youth Closeness would differ, based on previous findings regarding positive relational perceptions in families of youth with DD (Blacher & Baker, 2007; Hoffman et al., 2009).

2c. Disability status differences in Specific Problems for which mothers endorsed having high conflict was also exploratory, given the lack of research in this area. It seemed possible that the disability status groups might differ, given differing life circumstances. For instance, TD youth may have more conflict with their parents around socially oriented topics (e.g., time spent and contact with peers) and autonomy, while youth with DD may have more conflict regarding behavior problems.

Hypotheses 3: Association of relational perceptions to observed conflict behaviors.

3a. Mother-reported Total Perceived Conflict would have a negative association with the observed behaviors (Dixon et al., 2008), such that higher levels of Total Perceived Conflict would relate to lower Mother and Youth Problem Solving, less positive Mother and Youth Affect, and a lower likelihood of Resolution Reached.

3b. Mother and Youth Closeness would relate to higher levels of positive observed conflict behavior (e.g., more positive Mother Affect, higher likelihood of Resolution Reached), given the association between positive attributions of the relationship (e.g., open communication) and conflict resolution behavior (García- Ruiz, Rodrigo, Hernández- Cabrera, & Máiquez, 2013).

3c. Our hypotheses regarding how these effects may differ based on disability status were tentative. On the one hand, drawing on the additive risk model (Evans, Li, & Whipple, 2013), we may expect more problematic outcomes (e.g., lower levels of positive Affect, lower likelihood of reaching a resolution) among families of youth with DD already impacted by higher levels of

stress and behavior problems (Baker et al., 2002). On the other hand, parents of TD youth may be more impacted by the strain that comes with adolescence, given their more limited experience, on average, managing difficult behavior in their youth.

Method

Participants

Participants were 167 families enrolled in the Collaborative Family Study (CFS), a longitudinal study of children and their families with samples drawn from Southern California (91%) and central Pennsylvania (9%). The CFS has been based at three universities: Penn State University, University of California, Los Angeles, and University of California, Riverside. The present sample included all participating families that had completed the Parent-Child Conflict Resolution Task and the parent and youth interviews. The larger study from which this sample was drawn recruited families at child age 3 years, with an additional recruitment of youth with ASD at age 13. Participants were classified into three disability status groups for the present study: typically developing youth (TD, $n = 86$), youth with intellectual disability with or without autism spectrum disorder (ID, $n = 54$), and youth with autism spectrum disorder without ID (ASD, $n = 27$). Children who were classified as having borderline ID (IQ 71-84; APA, 2000) were included in the ID group for the present study. Youth with comorbid ASD and ID were included in the ID group.

In the initial recruitment phase, families of youth with ID were recruited primarily through regional agencies that provide and purchase diagnostic and intervention services for individuals with developmental disabilities. In California, nearly all families with young children with ID register for services with one of a network of Regional Centers. Families of TD youth were recruited primarily through local preschools and daycare programs. Selection criteria for

TD youth were that the child score in the range of normal cognitive development and not have been born prematurely or have any developmental disability. All participants with ASD recruited at age 13 had a previous diagnosis of autism spectrum disorder from a licensed clinical psychologist, a school district school psychologist, and/or representative of the California Regional Center. In recruiting participants, school and agency personnel mailed brochures describing the study to families who met selection criteria, and interested parents contacted one of the research centers.

Table 4-1 shows demographic characteristics by disability status. Socioeconomic status was generally high, and because recruitment initially focused on intact families, the majority of parents were married (defined here as legally married or having lived together for at least six months). The ASD group, as expected, had a higher proportion of males than both the TD group ($\chi^2 = 12.20$, $p < .01$) and the ID group ($\chi^2 = 8.19$, $p < .01$). Mothers of TD youth were more likely to be employed outside the home than mothers of youth with ID ($\chi^2 = 9.24$, $p < 0.01$). Mothers of youth with TD had more years of education than mothers of youth with ID ($t = 2.71$, $p = .01$). Demographic variables that differed by disability status were covaried as described in the Analytic Plan below.

Procedures

Data were obtained during laboratory sessions at child age 15, which occurred around the child's birthday. Demographic information was updated, and mothers were asked to complete another series of questionnaires. Mothers were interviewed during each assessment about child psychopathology. Youth cognitive ability and adaptive functioning had been assessed at ages 9 and 13. Mothers completed a self-report checklist of parent-youth conflict. Mothers and youth then completed dyadic lab activities, which were videotaped and later coded by trained coding

teams, followed by separate semi-structured interviews about the youth's current academic, interpersonal, and socioemotional functioning.

Measures

Wechsler Intelligence Scale for Children, Fourth Edition (WISC-IV; Wechsler, 2003). Youth performance on a subset of the WISC-V (Vocabulary, Matrix Reasoning, and Arithmetic) was used to estimate intellectual functioning at child ages 9 and 13, both to determine an estimated IQ range and also to confirm status group classification. These three subtests were selected based on their high correlation (r = .91) with the full scale IQ from the full administration of the WISC-IV (Sattler & Dumont, 2004). For the present study, age 13 composite scores were used to establish disability group status if available, and if not, age 9 scores were utilized.

Vineland Scales of Adaptive Behavior (VABS; Sparrow, Cicchetti, & Balla, 2005). The VABS is a semi-structured interview conducted with a parent or caregiver to assess adaptive behavior across a variety of domains. The Adaptive Behavior Composite is derived from scores on the communication, daily living skills, and socialization subscales. The VABS has been shown to have good reliability (with alphas for most subscales in the low 80s) and high validity for children (Sparrow et al., 2005). The VABS was administered at ages 9 and 13; age 13 composite standard scores were used in classification of disability status if available and, if not, age 9 VABS scores were used.

Parent-Child Conflict Resolution Task (adapted from Wieland et al., 2014). Conflict resolution behaviors were measured with an adapted observational coding system that was modified from previous parent-child problem solving tasks (e.g., Buhrmester, Camparo, Christensen, Gonzalez, & Hinshaw, 1992). Youth and their mothers participated in an

observational task in the laboratory. Mothers rated conflicts on a form listing several typical areas of youth/parent disagreement during adolescence (see Parent-Child Conflict Checklist description below). The top three areas of mother-rated disagreement were then presented to the youth, who was asked to pick the one that he or she felt they argued about the most. The youth and mother were then brought into the same room and were asked to discuss the identified conflict and to try to come up with a resolution. The examiner entered the room to stop the dyad's discussion at 5 minutes.

The coding system was developed utilizing the current sample following a thorough literature search, formation of theoretically driven hypotheses, and an in-depth review of pilot videotapes (see Wieland et al., 2014 for further description). The system was developed prior to the 9-year assessment and was utilized during behavioral observations of the conflict resolution task at ages 9, 13, and 15, with revisions for the 15-year assessment coding by the first author of the present study. The coding system included 11 task codes rated on 5-point ordinal scales. The author developed a manual with detailed descriptions for each code and anchors to assist coders in the coding process (see Appendix A for code descriptions). For the most part, codes were global and holistic in nature, though some codes required a minimum number of occurrences (e.g., mother's validating comments, youth's ideas expressed for resolution) for certain ratings. Coding was done by a master coder (the first author of the present study) and by trained pairs of undergraduate research interns. Coding teams watched videos together, coded the observations independently, and then, through discussion, came to consensus codes. Reliability was achieved when coders reached a 0.70 or higher intra-class correlation coefficient for each code with the master coder, and the master coder continued to code videos periodically to ensure that reliability was maintained throughout coding.

Analyses were conducted with composite scores that were constructed based on theory and factor analysis into the following codes: (1) *Mother Problem Solving* (mother directiveness); (2) *Youth Problem Solving* (youth social competence minus youth resistance; concurrent intercorrelations: r = -.49); (3) *Mother Affect* (mother engagement + mother validation + mother warmth minus mother antagonism; r = .40 [engagement & validation], r = .14 [engagement & warmth], r = -.01 [engagement + antagonism], r = .52 [validation & warmth], r = -.40 [validation & antagonism], r = -.31 [warmth + antagonism]); and (4) *Youth Affect* (youth warmth minus youth antagonism; r = -.32). To clarify interpretation of analyses, the Youth Problem Solving and Affect codes were linear-transformed such that all participants had positive values (i.e., 4 was added to each score). However, original, non-transformed values are displayed in the means comparisons in Table 4-3 to more accurately indicate exhibited levels.

Finally, the 5) *Resolution Reached* code was established with two possible outcomes: a) no resolution is reached or b) a resolution is reached by the end of the task, either by the youth agreeing to the mother's resolution, the mother agreeing to the youth's resolution, or by a compromise (defined as both members contributing to the resolution).

Parent-Child Conflict Checklist. The Parent-Child Conflict Checklist was used to examine mothers' perceptions of parent-youth conflict in the home (see Appendix B). The Checklist is based on checklists utilized in similar previous research (e.g., Nelson, Boyer, Sang, & Wilson, 2014; Welsh & Dickson, 2005) and lists 14 typical areas of youth/parent disagreement during adolescence (e.g., chores, amount of time the youth spends on the phone/internet, youth's attitude or tone of voice). Mothers were asked to rate the extent to which they had conflict with their children about each *Specific Problem* from (0) never disagree to (5) always disagree. The top three areas of disagreement were presented to the youth, and the youth then picked the

Specific Problem he or she felt they argued about the most. In addition to examining Specific Problems, we summed mothers' ratings for all problems to create the *Total Perceived Conflict* index.

Parent interview. *Mother Closeness*, or a mother's perceived closeness of her relationship with her youth, was assessed from a semi-structured parent interview conducted at youth age 15 and lasting, on average, 45 minutes. Mothers were asked about their youth's current social, emotional, and academic functioning. Topics included the adolescent's friendships and peer relationships, experiences of bullying (if any), attitudes and plans for the future, school and activity involvement and performance, and familial relationships. Graduate students and trained research staff administered the interviews. They received ongoing feedback to ensure fidelity across interviewers. A detailed coding system was piloted with data from the 12-year assessment and then utilized for the 13- and 15-year assessments. A coding team worked together for over a year and achieved high reliability. For the present study, coded parent responses to the following questions about parent-youth relationships were included: "How close do you feel to your child?"; "Do you feel like your child comes to talk to you about things that worry or concern him/her?"; and "What types of things do you typically talk about with [child]?"

Specifically, codes captured mothers' perceived closeness of their relationship with their youth. Initial codes included: *not close* (child does not talk to mother about his/her concerns, conversation about daily life is minimal); *somewhat close* (child talks to mother about some topics, but they are mostly superficial, like schoolwork); *close* (child comes to mother to discuss issues that concern him/her, including topics of more depth like relationships with others, and appears to see mother as source of support); and *too close/overinvolved* (inappropriate boundaries between mother and child). For the present study, the *too close/overinvolved* code

was eliminated, as only 1 subject met this criterion, and *not close* and *somewhat close* were merged due to low frequency. Thus, two codes remained: (1) *not close* and (2) *close*.

Adolescent interview. The semi-structured adolescent interview was also conducted at age 15 and paralleled the parent interview. Adolescents were asked about topics that included their friendships and peer relationships, relationship with siblings (if any) and parents, opinions of and involvement in school, and plans for their future. Trained interviewers, different from parent interview coders, administered the adolescent interview, and a similar coding system was developed. The present study focused on adolescents' views on their relationships with their mothers and included coded responses to the following questions: "How close do you feel to your parents?"; "Do you feel like you can talk to them about things you're worried about or experiencing?"; "What types of things can you talk to them about?"; "What types of things would you not feel comfortable talking to them about?"

Codes assessed *Youth Closeness*, or a youth's perceived closeness of his or her relationship with his or her mother. Codes for Youth Closeness were identical to those described above and included *not close*, *somewhat close*, *close*, and *too close/overinvolved*. Once again, *too close/overinvolved* was eliminated, and codes were merged such that participants fell into (1) *not close* or (2) *close*.

Analytic Plan

Demographic variables listed in Table 4-1 that differed by disability status and were significantly (overall *F* and/or pairwise *t* relationship [$p < .05$]) related to the dependent variable were covaried in the analyses as appropriate. These were child sex for Mother Affect during the conflict resolution task and mothers' employment outside the home for mothers' Total Perceived Conflict.

To examine our first question, that is, how observed conflict resolution behaviors and perceptions of conflict and closeness differed by disability status group (TD, ID, and ASD), a series of descriptive analyses was conducted. ANOVA analyses were utilized to explore how the disability status groups differed in the observed conflict resolution variables (with the exception of the Resolution Reached variable) and in mothers' Total Perceived Conflict index. Chi square analyses were used to explore whether the status groups differed in Mother and Youth Closeness and in Resolution Reached. Finally, a rank correlation analysis was conducted to discern status differences in mothers' rankings of Specific Problems.

To answer our second research question, a series of regressions was conducted to examine how perceptions of conflict and closeness related to observed behaviors during the conflict resolution task. For each perceived variable (i.e., mothers' Total Perceived Conflict, Mother Closeness, and Youth Closeness), we conducted a set of 5 regressions, one to examine each observed conflict resolution variable as an outcome variable (linear regressions: Mother Problem Solving, Youth Problem Solving, Mother Affect, and Youth Affect; logistic regression: likelihood of Resolution Reached). Each regression included the perceived variable, youth disability status (TD, ID, ASD), and the interaction term to see whether the effect of the perceived variable differed by status group. Disability status was coded such that TD youth were the disability reference group, but regressions were conducted with a recoded disability variable (i.e., ID as the reference group) to explore differences between the ID and ASD status groups as well. All regression analyses were conducted with Stata software (StataCorp, 2013).

Results

Correlations among observed conflict resolution behaviors and reported perceptions

Table 4-2 displays Pearson correlations within and between the observed behaviors and reported perceptions. Observed Mother Problem Solving was higher when youth exhibited lower Problem Solving but was otherwise unrelated to observed variables. Higher levels of Youth Problem Solving related to more positive Mother and Youth Affect, as well as to a higher likelihood of Resolution Reached. Mother and Youth Affect were significantly and positively associated with one another, and both related to a higher likelihood of Resolution Reached. Regarding reported perceptions, Mother and Youth Closeness exhibited a low but significant positive association with one another. Higher mother-reported Total Perceived Conflict was negatively related to Youth Closeness but was not related to Mother Closeness. With respect to associations between the observed and perceived codes, higher levels of mothers' Total Perceived Conflict related to lower Youth Problem Solving, less positive Mother and Youth Affect, and a lower likelihood of Resolution Reached during the observed task. Mother Closeness also related to more positive Mother Affect and a higher likelihood of Resolution Reached, and Youth Closeness related to higher positive Youth Affect.

Disability status differences in observed and perceived variables

Observed conflict resolution behaviors. Table 4-3 shows ANOVA and Chi Square analyses of observed and perceived variables across disability status (TD, ID, ASD). Mothers of youth exhibited higher levels of Problem Solving in the ID group than in the TD ($t = 3.75$, $p < .001$) or ASD ($t = 3.00$, $p = .004$) groups. Conversely, youth with ID exhibited lower levels of Problem Solving than their peers with TD ($t = 2.88$, $p = .005$) or ASD ($t = -2.77$, $p = .007$). There were no status differences in either Mother or Youth Affect, or in Resolution Reached.

Self-reported (perceived) variables. Mothers' reported close relationships were highest when youth had ASD and lowest when youth had TD (χ^2 = 5.78, p = .02). The status groups did not differ significantly on youth reports of closeness or mothers' perceived conflict.

The Specific Problems that mothers initially rated were examined across disability groups. We ranked the Specific Problems in each status group by mothers' mean rating of the Specific Problem (see Table 4-4a). Spearman's rank correlation coefficients on the mean rating ranks were high among the status groups (TD and ID: ρ = .86, p < .001; TD and ASD: ρ = .74, p < .01; ID and ASD: ρ = .85, p < .001), indicating that Specific Problems were generally rated as similarly contentious among the three groups. Indeed, four Specific Problems – chores, listening, youth's attitude or tone of voice, and computer use – were rated as the top four most contentious problems in all three groups.

There were some Specific Problems that were rated differentially (see Table 4-4b). Listening was rated as more contentious by ID or ASD group mothers than by TD group mothers. Mothers of youth with ID reported higher levels of conflict than mothers of TD youth regarding youths' TV usage, dress, and privacy. Mothers of youth with ASD rated higher levels of conflict than mothers of TD youth with relation to youths' computer usage, school performance, and money, and higher conflict than mothers of ID youth around computer usage.

Relational perceptions as predictors of observed conflict resolution behavior

Total Perceived Conflict. Higher mother-reported Total Perceived Conflict was associated with lower levels of observed Youth Problem Solving (β = -.35, t = -4.95, p < .001), less positive Mother Affect (β = -.32, t = -4.26, p < .001), less positive Youth Affect (β = -.33, t = -4.44, p < .001), and a lower likelihood of reaching a resolution (z = -3.32, p = .001). Though there were no interactions present in these models, several disability effects also emerged as

significant jointly with Total Perceived Conflict. Youth with ID exhibited less Youth Problem Solving than TD youth (β = -.19, t = -2.49, p = .014) or youth with ASD (β = .27, t = 3.43, p = .001). Mothers of youth with ASD exhibited more positive Mother Affect than mothers of TD youth (β = .19, t = 2.35, p = .020). Furthermore, youth with ID were more likely to reach a resolution than TD youth (z = 2.22, p = .027). While Total Perceived Conflict did not predict Mother Problem Solving, disability status was significant in this model, with mothers of ID youth exhibiting more Mother Problem Solving than mothers of TD youth (β = .29, t = 3.63, p < .001) or mothers of youth with ASD (β = .28, t = .34, p = .001).

Mother Closeness. Mothers who reported having a close relationship with their youth exhibited more positive Mother Affect towards their youth during the task (β = .27, t = 3.38, p = .001), and they were more likely to reach a resolution during the task (z = 2.15, p = .032). Mother Closeness did not predict Mother Problem Solving, Youth Problem Solving, or Youth Affect. However, there were significant, expected disability effects for the Mother and Youth Problem Solving models. As expected, Mother Problem Solving was higher in the ID group than in the TD (β = .33, t = 4.18, p < .001) or ASD (β = .30, t = 3.58, p < .001) groups, and Youth Problem Solving was lower among youth with ID than their TD peers (β = -.29, t = -3.62, p < .001) or youth with ASD (β = -.25, t = -2.88, p = .004).

Youth Closeness. Two significant interactions emerged, indicating that the association of Youth Closeness to Youth Problem Solving and to Mother Affect depended on youths' disability status. First, for the TD group only, Youth Problem Solving was higher when youth reported having a close relationship with their mothers than a "not close" relationship (t = 2.77, p = .006). This effect was not present in the ID group (t = -.33, p = .743) or in the ASD group (t = .63, p = .531). See Table 4-5 and also Figure 4-1 for a graphical depiction.

Regarding Mother Affect, mothers' positive Affect was higher when their youth had reported having a close relationship with their mothers in the TD (t = 2.43, p = .016) and ASD groups (t = 2.66, p = .009), but not in the ID group (t = -1.08, p = .284). See Table 4-6 and also Figure 4-2 for a graphical depiction of these interactions.

Youth Closeness was not associated with Youth Affect or Resolution Reached, and, once again, only disability predicted Mother Problem Solving in this set of regressions, with mothers of youth with ID exhibiting more Problem Solving than mothers of TD youth (β = .30, t = 3.88, p < .001) or mothers of youth with ASD (β = .29, t = 3.47, p = .001).

Discussion

In the present study, we examined how observed conflict resolution behaviors and perceptions of conflict and closeness differed by disability status and also how they related to one another. Several of the findings were consistent with the literature, while some results provide new insight for our tentative hypotheses about how observed behaviors and perceptions relate differentially according to youths' abilities. Importantly, our findings also suggest that several of the observed or perceived variables did not differ by disability status. When differences were noted, there were unexpectedly more negative associations among TD youth as compared to their peers with disability. We discuss these findings considering perceptions of risk and resilience for families of youth with disability.

First, several of the findings aligned with existing literature. Predictably, mothers of youth with ID exhibited more Mother Problem Solving than mothers in the TD or high-functioning ASD groups, and youth with ID exhibited less Youth Problem Solving than their TD peers or those with ASD. This is consistent with previous findings on the cognitive and social pragmatic limitations of youth with ID and their mothers using a more directive approach during

conflict resolution (Costigan et al., 1997; Hutchins & Prelock, 2014). Furthermore, mothers who reported less Total Perceived Conflict and who expressed having a close relationship with their youth exhibited more positive Mother Affect and were more likely to reach a resolution with their youth during the task. Youth of mothers who reported less Total Perceived Conflict also exhibited more Youth Problem Solving. These findings are in accordance with previous research linking perceptions of conflict and closeness to conflict resolution behavior (Dixon et al., 2008; García- Ruiz et al., 2013). Future research could expand upon these findings using longitudinal studies to explore the causal mechanisms underlying these associations. For example, mothers may perceive more conflict day-to-day when youth exhibit less constructive problem solving, youth may come to disengage or resist resolving conflict when conflict is more frequent in the home, or there may be a transactional interplay between the two.

Given the heightened levels of parenting stress, negative parenting, youth mental health problems, and youth problem solving difficulties in families of DD youth (Brown et al., 2011; deRuiter, Dekker, Verhulst, & Koot, 2007; Hutchins & Prelock, 2014; Neece, Green, & Baker, 2012), the fact that several observed behaviors and perceptions did *not* differ by disability status is promising. Consistent with the literature, in the disability status group comparison analyses, there were no differences in either Mother or Youth Affect (Wieland et al., 2014), or in the proportion of youth who reported having a close relationship with their mothers (Blacher & Baker, 2007; Hoffman et al., 2009). Surprisingly, mothers' Total Perceived Conflict was similar across disability groups, and there was high consistency as to how mothers of the various disability groups rated conflict related to Specific Problems. Future studies could examine content and frequency of parent-child conflict from early ages into adolescence to help elucidate whether heightened levels of parent-child conflict in families of DD youth early in development

(Basten et al., 2013; Brown et al., 2011) decrease into adolescence or whether the similarity is due to an increase in conflict in families of TD youth.

In forming our hypotheses regarding disability status differences, we posited that there may be more problematic outcomes and associations in the ID or ASD groups based on the additive risk model (Evans et al., 2013) or, by contrast, that TD families may be more strained by adolescents' autonomy-seeking (Laursen & Collins, 2004) and thus exhibit more negative outcomes and associations. Our results appear to support the latter, specifically that, when disability differences were present, they tended to favor youth with disability. For instance, mothers of youth with ASD reported having a close relationship with their youth at a higher rate than mothers of TD youth, and they exhibited more positive Mother Affect than mothers of TD youth in one of the models. Mother-youth dyads in the ID group were more likely to reach a resolution than dyads in the TD group. It is important to note that, in our sample, 33% of the dyads that reached a resolution did so by the youth agreeing to the mother's proposed idea, 66% reached a compromise (i.e., a resolution with input from both the mother and youth), and only 1% reached a resolution in which the mother agreed with the youth's proposed idea. Thus, it is not surprising that TD youth, who exhibit more complex ideas and expect more autonomy during discussions with their parents by middle adolescence (Laursen & Collins, 2004), were less likely to come to a resolution with their parents in this context.

There were two interactions between disability status and youths' reported close relationships with their mothers that also support the notion of a stronger association between perceptions and observed behaviors in TD youth. First, TD youth who reported having a close relationship with their mothers demonstrated higher levels of Youth Problem Solving, an effect that was not present for youth with ASD or ID. It is conceivable that variations in Youth Problem

Solving among youth with ID and ASD are more related to aspects of their disabilities (e.g., difficulties with pragmatic understanding and expressive language [Hutchins & Prelock, 2014]), while Youth Problem Solving is more dependent on parent-youth relational quality among TD youth. Additionally, mothers in the TD and ASD groups, but not in the ID group, exhibited more positive Mother Affect when their youth perceived having a close relationship with them than when youth reported a "not close" relationship with their mothers. It is possible that mothers of youth with ID are more cognizant of youths' social and cognitive limitations, and their positive Affect less dependent on social cues they receive from their youth. Alternatively, TD youth and youth with high-functioning ASD may be more attuned to their mothers' positive Affect toward them, which in turn may influence how close they view their relationship to be. These findings merit further investigation into the possibility that, at this stage in development, families impacted by disability may be no more or, in some cases, less impacted by challenges that typically arise during adolescence.

The present study has several strengths. It is the first study, to our knowledge, that merges the examination of how parent and youth perceptions and observed conflict resolution behavior align (e.g., Dixon et al., 2008) and the comparison of conflict resolution behaviors in youth with or without DD (e.g., Costigan et al., 1997; Wieland et al., 2014). Additionally, since it is highly difficult to gain meaningful insight into the parent-child relationship during adolescence (Wieland et al., 2014), the assessment tools by which we attained our perceived and observed variables are an important contribution in their own right. The Parent and Adolescent Interview questions about closeness, the Parent-Child Conflict Checklist, and the Parent-Child Conflict Resolution Task behavioral coding system are all relatively simple to administer and score. These tools may be useful in clinical settings for assessing parent-child relationship

quality, identifying potential targets for intervention, and serving as outcome measures to track intervention success. Furthermore, they can be validly implemented for youth with a range of abilities.

Our results suggest that parent and youth perceptions of conflict and closeness, indeed, relate to their behavior during conflict resolution but that this relationship is complex and context-dependent. To this end, limitations of the present study should be noted. First, due to sample size, we were unable to explore disability status differences and the various associations by ethnic group. Researchers have highlighted the importance of cultural considerations in parent-child conflict resolution (Dixon et al., 2008; Smetana, 2008), and future studies of this nature would benefit by exploring ethnic and cultural influences. Second, it would also be important to include fathers and other primary caregivers in future studies with larger samples, particularly since research suggests that patterns of conflict differ between caregivers (van Doorn, Branje, & Meeus, 2011) and by parent and youth gender (Panfile, Laible, & Eye, 2012) and also that parent-youth conflict relates to other family processes (e.g., marital conflict [Gerard, Krishnakumar, & Buehler, 2006]). Third, while our paradigm and coding system provide a feasible, valid way to assess conflict resolution behaviors, there are certainly limitations as to what can be captured in 5 minutes as compared to longer observation periods. One construct that may be particularly beneficial to expand upon is our Resolution Reached code. Specifically, there are several distinct ways to reach a resolution (e.g., compromise versus entirely parent-driven), and our current code of "no resolution" may be assigned to families in different stages of resolution (i.e., a dyad that is engaged in a constructive but unfinished discussion versus a contentious stand-off). Further delving into these and other codes may capture a more nuanced picture of families' conflict resolution capabilities.

Future research might also explore interrelations of the perceived or observed variables, such as investigating how Mother and Youth Affect influence one another and influence the dyad's ability to reach a resolution (Nelson et al., 2014). It also would be useful to identify which of these variables, or combination of variables, relate to youth comorbid psychopathology and particularly which lead to increased risk for poor socioemotional outcomes (Branje, van Doorn, van der Valk, & Meeus, 2009; Lam, Solmeyer, & McHale, 2012; Tucker, McHale, & Crouter, 2003). As we alluded to previously, longitudinal research would allow for examining the interplay of these perceptions and observed behaviors across time to establish causality, which may reveal optimal targets for intervening in highly conflictual mother-youth dyads. Recognizing and further clarifying how these patterns may differ by disability status would allow for more optimal, individually-tailored family intervention.

In closing, we deem it important to underscore how our findings contribute to perspectives on risk and developmental compromise during adolescence. It is very well established that youth with DD and their families are at heightened risk for an array of psychopathology and problematic interaction styles (Baker, Neece, Fenning, Crnic, & Blacher, 2010; Basten et al., 2013; Brown et al., 2011; Crnic, Hoffman, Gaze, & Edelbrock, 2004). Our results suggest that families of TD youth may be facing relational challenges that, at least during mid-adolescence, are less problematic or not present for families of youth with ASD or ID – or perhaps that parents of youth with ASD or ID have developed resilience to strife with their youth. While it is certainly important to acknowledge the additive risk model (Evans et al., 2013) and identify risk factors for youth and family outcomes for those impacted by DD, our findings may provide some relief to parents of youth with disability, suggesting that this stage of development may be a smoother transition than is experienced in typical families.

Table 4-1. Sample demographics at age 15 years

	TD (*n* = 86)	**ID (*n* = 54)**	**ASD (*n* = 27)**	***F* or χ^2**
Children				
Sex (% male)	51.2%	57.4%	88.9%	$\chi^2 = 12.36$**
Race/ethnicity (% White, Non-Latino)	58.1%	51.9%	59.3%	$\chi^2 = 0.65$
Mean WISC Full Scale Score at 13 (SD)	108.9 (12.5)	65.3 (13.1)	108.2 (15.2)	$F = 183.12$***
Parent & Family				
Mother's mean age (SD)	47.8 (6.4)	45.4 (7.4)	46.3 (7.6)	$F = 1.79$
Mother race/ethnicity (% White, Non-Latino)	66.3%	53.7%	74.1%	$\chi^2 = 3.82$
Maternal education (highest grade; SD)	16.3 (2.4)	15.1 (2.7)	15.7 (2.5)	$F = 3.71$*
Mother marital status (% married)	69.4%	64.8%	66.7%	$\chi^2 = 0.33$
Mother employment (% employed)	81.2%	57.4%	63.0%	$\chi^2 = 9.84$**
Family annual income (% > $50K)	75.6%	64.7%	74.1%	$\chi^2 = 2.21$

*$p < .05$. **$p < .01$. ***$p < .001$. Note: χ^2 or *F* values are from analyses across the 3 groups.

Table 4-2. Intercorrelations among key study variables.

	1	2	3	4	5	6	7
Observed Conflict Resolution Codes							
1. Mother Problem Solving	--						
2. Youth Problem Solving	-.34***	--					
3. Mother Affect	.06	.50***	--				
4. Youth Affect	-.01	.52***	.53***	--			
5. Resolution Reached	.11	.39***	.47***	.30***	--		
Reported Perceptions of Relationship							
6. Total Perceived Conflict	.09	-.36***	-.29***	-.33***	-.24**	--	
7. Mother Closeness	.05	.12	.29***	.09	.19*	-.14	
8. Youth Closeness	-.05	.15†	.14†	.15*	.07	-.16*	.23**

*$p < 0.05$. **$p < .01$. ***$p < 0.001$.

Table 4-3. Disability status differences in observed and perceived variables

	TD	ID	ASD	*F or* χ^2
Observed Conflict Resolution Codes				
Mother Problem Solving (M[SD])	3.65 (.66)	4.15 (.90)	3.56 (.70)	F = 8.87***
Youth Problem Solving (M[SD])	1.23 (1.49)	.29 (2.11)	1.61 (1.86)	F = 6.72**
Mother Affect (M[SD])	8.62 (2.18)	8.94 (2.75)	9.85 (3.05)	F = 1.46
Youth Affect (M[SD])	1.15 (1.55)	.93 (1.55)	1.07 (1.86)	F = .33
Resolution Reached (% reached)	53.5%	68.5%	63.0%	χ^2 = 3.25
Reported Perceptions of Relationship				
Total Perceived Conflict (M[SD])	21.74 (10.27)	25.37 (11.91)	25.58 (11.21)	F = 1.60
Mother Closeness (% reported close)	61.3%	73.1%	87.5%	χ^2 = 6.51*
Youth Closeness (% reported close)	73.3%	62.3%	55.6%	χ^2 = 3.65

*p < 0.05. **p < .01. ***p < 0.001. Note: χ^2 or F values are from analyses across the 3 groups.

Table 4-4a. Rank and mean of mother-reported Specific Problems on Parent-Child Conflict Checklist

TD		***ID***		***ASD***	
Item	*Mean*	*Item*	*Mean*	*Item*	*Mean*
1) Chores	2.51	1) Listening	2.80	1) Computer	3.22
2) Attitude	2.37	2) Attitude	2.64	2) Attitude	2.78
3) Listening	2.02	3) Chores	2.57	3) Chores	2.67
4) Computer	1.91	4) Computer	2.13	3) Listening	2.67
5) Phone	1.76	5) School	2.05	5) School	2.30
6) Sibling	1.71	6) TV	1.87	6) Dress	1.70
7) School	1.66	7) Dress	1.86	7) Money	1.63
8) Family time	1.24	8) Phone	1.74	8) TV	1.59
9) TV	1.21	9) Sibling	1.72	9) Family time	1.52
10) Dress	1.15	10) Privacy	1.65	10) Sibling	1.44
11) Money	1.05	11) Family time	1.22	11) Privacy	1.19
12) Privacy	1.01	12) Money	1.02	12) Phone	1.15
13) Friends	0.92	13) Friends	.99	13) Friends	1.00
14) Curfew	0.77	14) Curfew	.54	14) Curfew	.44

Table 4-4b. Disability status group differences in Specific Problems

Specific Problem	*Overall status group difference (F)*	**TD vs. ID** (*t*)	**TD vs. ASD** (*t*)	**ID vs. ASD** (*t*)
Listening	7.25**	-3.64***	-2.42*	.41
Computer	7.53**	-.83	-4.06***	-2.83**
TV	3.84*	-2.72**	-1.10	.75
Dress	4.89**	-2.83**	-1.68	.41
Privacy	4.53*	-2.82**	-.71	1.41
School	2.71†	-1.68†	-2.04*	-.74
Money	2.53†	.13	-2.27*	-1.87†

$^{\dagger}p < .10$. $^{*}p < 0.05$. $^{**}p < .01$. $^{***}p < 0.001$.

Table 4-5. Youth Problem Solving, predicted by disability status and Youth Closeness

R^2 = .12	Coefficient	Std. error	β	*t*
Main Effects				
Disability Status (reference: TD)				
ID	.01	.53	.01	.01
ASD	1.01	.62	.20	1.62
Youth Closeness (reference: Not Close)				
Close	1.18	.43	.30	2.77**
Interaction				
Status*Closeness (reference: TD*Not Close)				
Close*ID	-1.34	.65	-.29	-2.05*
Close*ASD	-.75	.80	-.12	-.94

*$p < 0.05$. **$p < .01$.

Table 4-6. Mother Affect, predicted by disability status and Youth Closeness

R^2 = .12	Coefficient	Std. error	B	*t*
Main Effects				
Child Sex (reference: Female)				
Male	.68	.40	.13	1.69†
Disability Status (reference: TD)				
ID	1.80	.75	.33	2.41*
ASD	.64	.88	.09	.73
Youth Closeness (reference: Not Close)				
Close	1.44	.59	.27	2.43*
Interaction				
Status*Closeness (reference: TD*Not Close)				
Close*ID	-2.19	.91	-.34	-2.40*
Close*ASD	1.07	1.12	.12	.96

†$p < .10$. *$p < 0.05$. Note: Analyses in which ID was re-coded to be the reference group revealed a significant interaction between the ID and ASD groups, as well ($\beta = .37$, $t = 2.79$, $p = .006$).

Figure 4-1. Graphical depiction of Youth Problem Solving, predicted by disability status and Youth Closeness

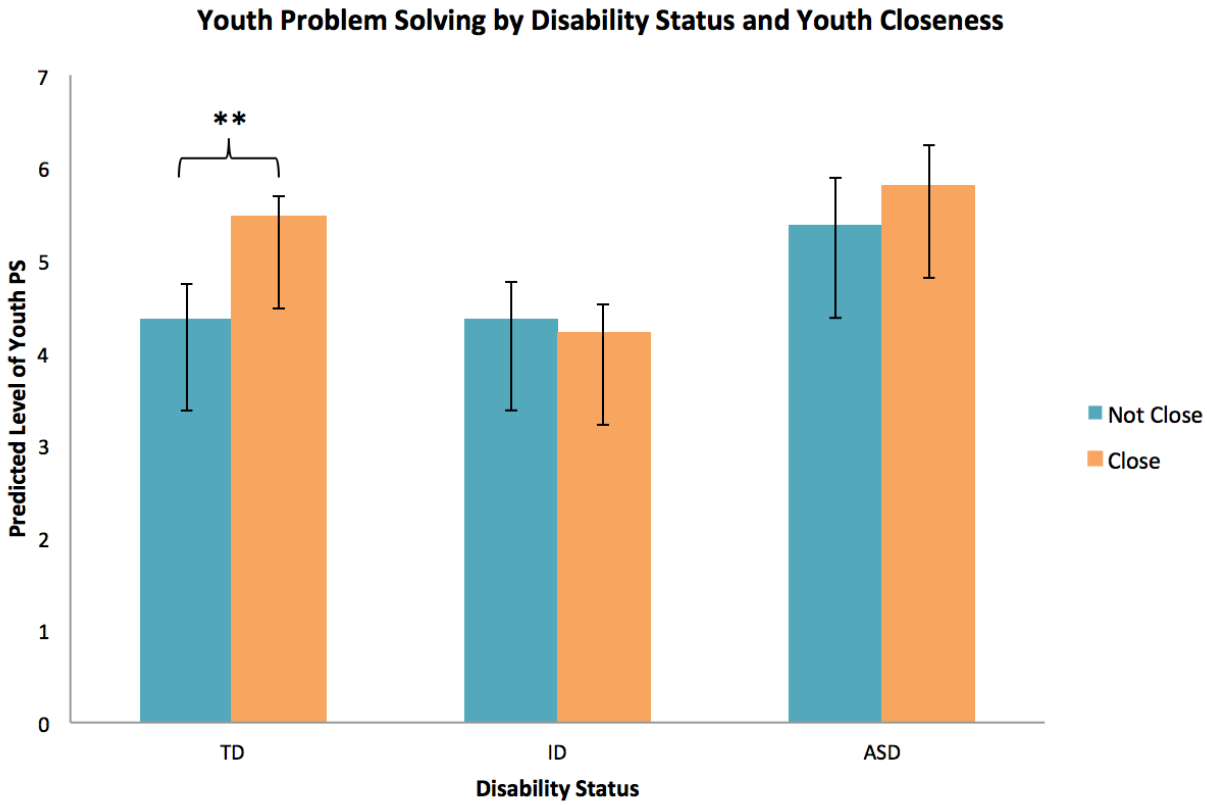
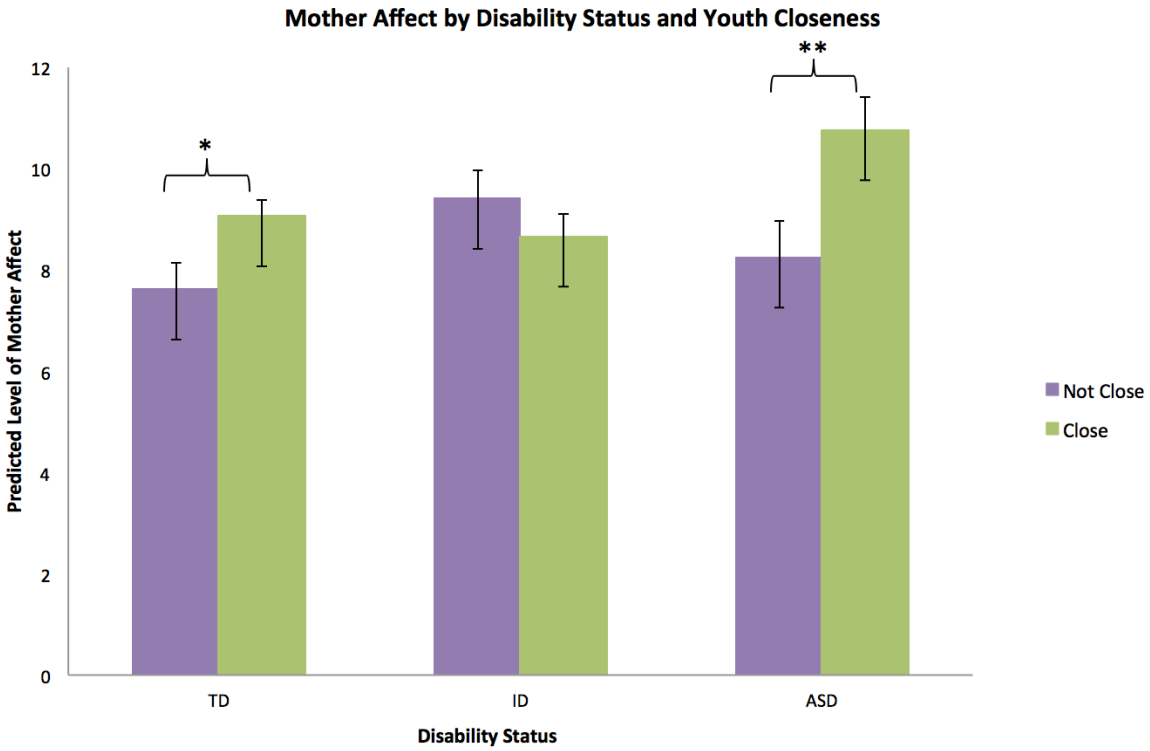


Figure 4-2. Graphical depiction of Mother Affect, predicted by disability status and Youth Closeness



CHAPTER 5: General Discussion

Parent-child conflict and conflict resolution reflect complex, dynamic family processes. Thus, it is unsurprising that the results of these studies revealed nuanced patterns that varied by age, youth disability status, and the specific aspect of conflict or conflict resolution behavior in question. However, several overarching conclusions can be drawn from the findings. In each study, we posited that our results could support the additive risk model (Evans et al., 2013), revealing more problematic outcomes among youth with DD, given their already heightened risk of psychopathology. Alternatively, TD families might experience more conflict or problematic conflict resolution behavior because they are less accustomed to, and thus more strained by, challenges like youths' emotion dysregulation, externalizing problems, and autonomy-seeking. Study 1 appeared to support the former notion, indicating that, during this early to middle childhood stage, the combination of low cognitive ability and high dysregulation led to increased parent-child conflict.

Studies 2 and 3, however, suggested a different pattern during pre- and middle adolescence. While there were a few predictable risk factors unique to ID across ages (e.g., lower levels of Youth Problem Solving), the vast majority of risk factors and negative associations applied to youth with *or* without disability. For example, across the disability groups, youth externalizing behavior led to a lower likelihood of reaching a resolution, higher mother-reported conflict was associated with less positive Mother or Youth Affect, and youth tended to argue about similar Specific Problems with their mothers. When negative associations did differ among the disability groups, they often surprisingly favored youth with disability. For example, among TD youth, but not youth with DD, youths' reported "not close" relationships with mothers were associated with less Youth Problem Solving, and higher levels of externalizing problems related

to less positive Youth Affect. These results support the idea that, during pre- to mid-adolescence, there appear to be risk factors that either equivalently impact youth with or without disability or, in some cases, are present for TD youth alone.

It has been asserted that the experience of parenting a youth with DD is best understood as "chronic stress" across the youth's developmental span that is marked by disruptive transition points, or "crises," that require parents to constantly readjust their expectations and behaviors (Wikler, 1981). Wikler (1981) also emphasized the importance of parents having the knowledge and resources to anticipate these crises so that they may be better prepared to cope, logistically and emotionally. She also highlighted the role mental health professionals can take in providing information, connecting parents to interventions, and validating the grief that parents may experience during these crises (Wikler, 1981). It is our hope that this body of work may provide further insight into aspects of parent-child conflict that are particularly challenging for families impacted by DD and may point to potential targets for interventions that may reduce the heightened risk of conflict in these families (Basten et al., 2013; Brown et al., 2011). Though youth characteristics like IQ may be difficult to change (Deary et al., 2000), these studies suggests that interventions that increase emotion regulation and youth problem solving and that decrease externalizing behaviors may increase the likelihood of positive family functioning for these at-risk families.

While certainly validating the difficulties of parenting youth with disability, we also emphasize the fact that many of the processes and associations from the adolescent studies were similar, or even more positive, among youth with DD as compared to their TD peers. We highlight these findings in large part to challenge the stigma associated with DD. Researchers have identified individuals with DD as "one of the most stigmatized groups in society (p. 2122,

Ali et al., 2012) and have asserted that, even compared to stigma associated with other mental illness, stigma towards DD is greater and also understudied (Ditchman et al., 2013). This stigma perpetuates discrimination against individuals with DD in healthcare, housing, legal settings, and employment (Ditchman et al., 2013; Scior et al., 2016) and has been found to relate to poorer mental health in individuals with DD as well as their caregivers (Ali et al., 2012; Cantwell et al., 2015). It is difficult to overstate the depth of this stigma, not only on a societal level but also "self-stigma" for individuals with DD and "affiliate stigma" for their caregivers (Ali et al., 2012). In a striking example of the strength of this stigma, a research group investigating effects of the *Atkins* decision (i.e., that individuals with ID not receive the death penalty) found that defendants and their families diligently denied any possibility of the defendant having ID, even knowing that such a diagnosis could save the defendant's life (Olley, 2010).

It is important that researchers continue to explore and disseminate possible areas of resilience, adaptation, and strength in families of youth with DD. Findings of this nature may provide relief to families of youth with DD, allowing them to allocate emotional and logistical resources to other upcoming difficult transitions (e.g., transition into the workplace as a young adult). Furthermore, research indicates that more extensive knowledge of DD is associated with lower stigma and more positive attitudes (Scior, Addai- Davis, Kenyon, & Sheridan, 2013). Positive results, like those in the present studies, may contribute to a gradual breakdown of the stigma associated with DD, conveying the reality that many family processes are shared among youth with a range of intellectual and social capabilities.

Appendix A: Description of Parent-Child Conflict Resolution Task codes

Code	Description
Problem Solving Codes	
Parent Directiveness	Degree to which parent controls flow of conversation (1) Not at all directive (2) Minimally directive (3) Parent and youth have equal roles in directing conversation (4) Mostly directs conversation (5) Directs conversation almost entirely
Youth Resistance	Degree to which youth changes/avoids subject, exhibits disengaged behavior (e.g., looking away, getting up), and/or exhibits resistant behavior (e.g., shows indifference to task) (1) Not at all resistant (2) Minimally resistant (3) Moderately resistant (4) Very resistant (5) Predominately resistant
Youth Social Competence	Degree of taking into account mother's perspective, willingness to be flexible in content of solution, ability to express self clearly, ability to see one's contribution to the conflict (1) No willingness to express oneself/negotiate (2) Minimal willingness to express oneself/negotiate (3) Moderate willingness to express oneself/negotiate (4) Very willing to express oneself/negotiate (5) Predominately willing to express oneself/negotiate
Affect Codes	
Parent Engagement	Degree to which parent is active in participating in the task, staying on topic, and discussing the identified issue with the youth (1) Very disengaged/detached from task (2) Minimally engaged in task (3) Moderately engaged in task (4) Very engaged in task (5) Extremely engaged in task
Parent Validation	Degree to which parent validates youth's feelings/ideas, encourages youth to express feelings/ideas, highlights the constructive points from youth's suggestions (1) Parent does not validate youth at all (2) Parent is minimally validating of youth (3) Parent is moderately validating of youth

	(4) Parent is very validating of youth (5) Parent is predominately validating of youth
Parent Warmth	Degree of affection (verbal and non-verbal), including smiling, eye contact, expressive tone, physical contact, pleasure in being with youth (1) No warmth towards youth (2) Minimally warm towards youth (3) Moderately warm towards youth (4) Very warm towards youth (5) Predominately warm towards youth
Youth Warmth	Degree of affection (verbal and non-verbal), including smiling, eye contact, expressive tone, physical contact, pleasure in being with mother (1) No warmth towards mother (2) Minimally warm towards mother (3) Moderately warm towards mother (4) Very warm towards mother (5) Predominately warm towards mother
Parent Antagonism	Degree of blaming youth, criticism, belittling behavior, expression of anger, harsh tone, negative body language (1) No antagonism towards youth (2) Minimally antagonistic towards youth (3) Moderately antagonistic towards youth (4) Very antagonistic towards youth (5) Predominately antagonistic towards youth
Youth Antagonism	Degree of blaming mother, criticism, belittling behavior, expression of anger, harsh tone, negative body language (1) No antagonism towards mother (2) Minimally antagonistic towards mother (3) Moderately antagonistic towards mother (4) Very antagonistic towards mother Predominately antagonistic towards mother
Resolution Reached Code	(1) No resolution is reached. (2) Resolution is reached by the end of task, either by the youth agreeing to the mother's resolution, the mother agreeing to the youth's resolution, or by a compromise (defined as both members contributing to the resolution).

Appendix B: Parent-Child Conflict Checklist

Parent-Child Conflict Checklist

Below is a list of issues children and parents often disagree about. We are interested in learning about how much you and your child disagree about these topics at home. Please rate each item on a scale from 0 to 5, where 0=Never Disagree and 5= Always Disagree.

	Never Disagree		Sometimes Disagree		Always Disagree	
1. Your child's chores or how much s/he helps around the house	0	1	2	3	4	5
2. School work, grades, or trouble at school	0	1	2	3	4	5
3. Time spent on the phone/texting.	0	1	2	3	4	5
4. Listening or following instructions	0	1	2	3	4	5
5. Your child's curfew	0	1	2	3	4	5
6. Getting along with brother or sister	0	1	2	3	4	5
7. The amount of time your child spends on the computer/playing video games.	0	1	2	3	4	5
8. Allowance or money	0	1	2	3	4	5
9. The amount of television your child watches	0	1	2	3	4	5
10. Your child's privacy or whether s/he can keep something to him/herself	0	1	2	3	4	5
11. Your child's dress or appearance	0	1	2	3	4	5
12. Spending time together as a family	0	1	2	3	4	5
13. Friends or who your child hangs out with	0	1	2	3	4	5
14. Your child's attitude/tone of voice.	0	1	2	3	4	5
15. _____	0	1	2	3	4	5

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