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# A Comparison of Parenting Dimensions between Mothers of Children with Down Syndrome and Mothers of Typically Developing Children

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A COMPARISON OF PARENTING DIMENSIONS BETWEEN MOTHERS OF CHILDREN  
WITH DOWN SYNDROME AND MOTHERS OF TYPICALLY DEVELOPING CHILDREN

by

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A DISSERTATION

Submitted in partial fulfillment of the requirements  
for the degree of Doctor of Philosophy  
in the Department of Psychology  
in the Graduate School of  
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2014

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## ABSTRACT

**Introduction:** The purpose of the current study was to compare the parenting styles and dimensions in mothers of children with Down syndrome and mothers of typically developing children. Effective parenting is vital for a child's intellectual, physical, social, and emotional development, and not all parenting techniques are equal in their effectiveness in raising a healthy, well-adjusted child. We expected that parents of children with Down syndrome would display more negative parenting techniques than parents of typically developing children because of their decreased parental well-being and increased caregiving demands.

**Methods:** The sample was comprised of 35 mothers of children with Down syndrome and 47 mothers of typically developing children. The mothers completed nine parent-report questionnaires asking about the way in which they parent their child, their child's cognitive and behavioral abilities, their own well-being, and the expectations and fears they have in relation to their child.

**Results:** We found that mothers of children with Down syndrome use an authoritative parenting style less and a permissive parenting style more than mothers of typically developing children. Additionally, we found that mothers of children with Down syndrome provided their children with less structure but more chaos than mothers of typically developing children. However, these differences between groups on parenting styles and dimensions no longer existed when we included parental stress in the analyses. Finally, we found that within the Down syndrome group negative parenting dimensions were positively correlated with child behavior problems.

**Conclusion:** The results suggested that mothers of children with Down syndrome are overall using similar parenting methods as mothers of typically developing children. All differences that do exist in parenting styles and dimensions can be accounted for by parental stress. As such, parenting interventions for parents of children with Down syndrome should be either focused on reducing parental stress in an effort to improve parenting techniques or on educating parents on how to utilize positive parenting techniques despite their stressful life circumstances.

## DEDICATION

This dissertation is dedicated to the three people in my life who have made the topic of parenting such a passionate endeavor for me. First, it is dedicated to my mom, Belinda Shelton, who has shown me what it means to be an amazing parent. Every day of my life, she has provided me with love, support, and encouragement. She has fulfilled my need for structure, and she has continually helped me pursue and fulfill my desires and dreams. Growing up, she was always a parent first and a friend second, and because of this commitment to being the type of parent that every child needs, she is now my lifelong best friend. She is my number one cheerleader, my role model, my prayer warrior, and my hero. Life has not always been easy, but no matter the circumstances she has joy. I have learned so much from her, and I have so much to learn still. I truly would not be the woman that I am today without her, and I thank God daily for blessing me with the best mother imaginable.

Second, this dissertation is dedicated to my precious daughter, Jordyn Phillips, who made me a mommy. For as long as I can remember, becoming a mom has been a constant desire of my heart, but I never could have imagined how wonderful being a parent truly is. I love every moment that I have with her. She is pure joy with her infectious smile, big belly laughs, excitement about life, and love for those around her. She has taught me so much in her short eight months of life, and I cannot wait for a lifetime together. She has been the driving force behind my dissertation and my study of parenting. I want to not only help others understand what being a good parent really means, but I also want to know how I can better parent Jordyn and give her everything that she deserves and more.

Finally, this dissertation is dedicated to my loving husband, Camaron Phillips, who is my partner in this journey of parenting. I could not have asked for a better person to be the father of my children; he is the most amazing daddy. He is dedicated, loving, caring, and supportive. He is the hardest worker and will do whatever is necessary to take care of his family. He constantly brings the fun, laughter, and excitement that is so needed in our lives. Throughout my graduate school career, he has stood by my side through the good and the bad. He is my support system, my shoulder to cry on, and my reality check when I start worrying too much about the little things. I know that my future is bright with him by my side.

## LIST OF ABBREVIATIONS AND SYMBOLS

ANOVA	Analysis of variance
B	Unstandardized coefficient
BDI-II	Beck Depression Inventory 2 <sup>nd</sup> Edition
BRIEF	Behavior Rating Inventory of Executive Function
CA	Chronological age
CBCL	Child Behavior Checklist
CI	Confidence interval
DD	Developmental disability
DS	Down syndrome
<i>F</i>	Fisher's <i>F</i> ratio: A ration of two variances
FRI	Family Routines Inventory
ID	Intellectual disability
MANOVA	Multivariate analysis of variance
MANCOVA	Multivariate analysis of covariance
<i>n</i>	Sample size for group
<i>p</i>	Probability associated with the occurrence under the null hypothesis of a value as extreme as or more extreme than the observed value
PEQ	Parental Expectations Questionnaire
PFQ	Parental Fears Questionnaire



PSDQ	Parenting Styles and Dimensions Questionnaire
PSI-4-SF	Parenting Stress Index 4 <sup>th</sup> Edition, Short Form
<i>r</i>	Pearson product-moment correlation coefficient
<i>SD</i>	Standard deviation
<i>t</i>	Computed value of <i>t</i> test
TD	Typically developing
<	Less than
>	Greater than
=	Equal to
Λ	Lambda
$\eta_p^2$	Partial eta squared: effect size

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I would like to thank my advisor and dissertation chair, Dr. Fran Connors, for providing me with wonderful advice, knowledge, and guidance throughout the entirety of this project and my graduate school career. It is truly because of your continuous support and encouragement that I have made it to where I am today. I could not have asked for a better mentor, and I feel tremendously blessed to have had the opportunity to work with you. Additionally, I would like to thank the members of my committee, Dr. Mary Liz Curtner-Smith, Dr. Ed Merrill, Dr. Ansley Gilpin, Dr. Matt Jarrett, and Dr. Angie Barber, for their invaluable advice and for the time and service they invested in my dissertation. I would also like to thank my fellow graduate student and friend, Melissa McInnis, for being there every step of the way on this crazy journey, for being my constant sounding board, and for your empathy when things did not go according to plan. Finally, I would especially like to thank the University of Alabama Intellectual Disabilities Participant Registry and most importantly my participants. Without you and your willingness to participate, this work would not be possible.

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## CHAPTER 1

### INTRODUCTION

Effective parenting is vital for a child's intellectual, physical, social, and emotional development. Not all parenting techniques are equal in their effectiveness in raising a healthy, well-adjusted child. While much work has been conducted on the dimensions of parenting typically developing (TD) children, little work has examined these dimensions in parents of children with Down syndrome (DS). However, parenting has a major influence on of a child's development regardless of the child's intellectual functioning. The current study compared parenting styles and dimensions in mothers of children with DS to mothers of TD children to gain a better understanding of the role parents play within this population.

#### **History of Parenting Research**

The conceptualization of parenting styles began in the 20<sup>th</sup> century with both behaviorist and Freudian theorists as they examined how the behavioral and emotional processes of parents influenced child development. Parenting styles are defined as “a constellation of attitudes toward the child that are communicated to the child and that, taken together, create an emotional climate in which the parent's behaviors are expressed” (Darling & Steinberg, 1993, p. 488). In the earliest assessment of parenting styles, behaviorists focused primarily on how parental behaviors affected child development, while psychoanalysts focused more on the parental attitudes.

**Behavioral model.** Behaviorists centered their study of parenting styles on particular parental practices and behaviors. They believed that differences in children's development were

due to difference in the learning environment in which children were raised. Consequently, the measurement of parenting styles attempted to depict the pattern of parental behaviors (Sears, Macoby, & Levin, 1957; Whiting & Child, 1953). For example, Watson (1928) emphasized the parental behavior of control. He believed that a child's development was based solely on the environment and that parents can control all stimulus-response associations within that environment. In providing the perfect amount of parental control, he specifically promoted a detached approach to parenting. He believed that parents should limit their displays of affection, such as kissing and hugging, for the most optimal child outcomes. This view was rooted in the idea that society does not provide excessive comfort to adults, and, therefore, if parents continually provide love and affection to their children, the children will be conditioned to expect love and affection, which is an unrealistic expectation of the real world. While behaviorist researchers frequently used factor analysis to group and summarize parenting practices, a more concrete, theoretical understanding of parenting styles was not developed (Darling & Steinberg, 1993). Consequently, the greatest limitation to the behaviorist's view of parenting is that examining individual parenting behaviors can be misleading. While looking at the correlation between certain behaviors, such as corporal punishment or reading aloud to one's child, and child outcomes can be beneficial, a single behavior is less predictive of a child's overall well-being than a more general pattern of parenting (Darling, 1999).

**Psychodynamic model.** Psychodynamic researchers, in contrast, looked beyond specific parenting practices and focused their work on the emotional relationship between parents and children. They specifically examined how parental attitudes impacted children's psychosexual, psychosocial, and personality development (Darling & Steinberg, 1993). For example, Freud (1962) stressed that the way in which parents handled their children's sexual and aggressive



desires would be the primary determinant of the children's personality development and whether or not the children became well-adjusted adults. His view stated that children must be completely gratified at each stage of development in order to achieve secure and healthy adult personalities, and, therefore, parenting should allow for complete acceptance of the child's current needs for gratification and offer total freedom for the child to achieve gratification. Further, he believed that all neurosis was based in negative parent-child relationships. Such views led to the support of very permissive parenting strategies at this time. Expanding from Freud's original psychosexual work, researchers attempted to group parenting practices in a conceptually meaningful way according to the emotional impact the parenting practices had on children (Baldwin, 1948; Orlansky, 1949; Schaefer & Bell, 1958; Symonds, 1939). Examples of such groupings that developed included autonomy granting, ignoring, punitiveness, viewing the child as a burden, strictness, utilizing fear as a means of control, and displays of affection (Schaefer, 1959; 1965). These groups provided a much more concrete understanding of parenting styles as separate entities but accounted little for the actual parenting behaviors.

**Early parenting styles.** Working to combine the parenting practices emphasized by the behaviorists and the parental attitudes emphasized by the psychodynamic theorists, early empirical work on specific parenting styles developed. Each of the primary researchers of this time stressed a different dichotomy. Symonds (1939) distinguished acceptance/rejection and dominance/submission, Baldwin (1955) emotional warmth/hostility and detachment/involvement, Schaefer (1959) love/hostility and autonomy/control, Sears (1957) warmth and permissiveness/strictness, and Becker (1964) warmth/hostility and restrictiveness/permissiveness. While each used different terminology to describe the significant dichotomy seen in parenting, there is a clear commonality amongst all of these early researchers. However,

not until Baumrind began to longitudinally study parenting did a solid theoretical model of parenting styles that assimilated both behavioral and emotional processes develop.

### **Baumrind's Parenting Styles**

Baumrind's (1971) development of parenting styles provided a framework from which all future parenting research was shaped. Her research includes over 30 years of longitudinal work looking at the relationship between parenting styles and social and psychological adjustment, academic success, and general well-being of children (Baumrind 1966; 1967; 1991; 1996). The families studied were middle- to upper-class, and the children were born in the 1960s. Each parent-child dyad was assessed at three time points—preschool (4-5 years old;  $n = 134$ ), juvenile (7-9 years old;  $n = 164 - 104$  from original cohort plus 60 from second cohort), and early adolescence (14-15 years old;  $n = 139 - 89$  from original cohort plus 50 from second cohort)—on a series of childrearing dimensions and child outcome measures. From this work, she developed three parenting styles—authoritative, authoritarian, and permissive.

Parenting styles differ from parenting practices. Parenting styles are grounded in parents' beliefs and goals for socializing their children, the specific practices they use to reach these goals, and the attitudes they maintain about their children (Darling & Steinberg, 1993).

Parenting practices are specific behaviors based on particular situations and individual socialization goals. For example, if a parent desires to improve her child's academic achievement, she may set aside time each day to work on homework together or go to school to meet with the child's teacher, both of which would be considered specific parenting practices. While parental practices are goal-specific, parenting styles are not defined by individual goals but instead transcend across situations. For example, all authoritative parents provide their children with explanations for policies and encourage their children to be involved in decision-

making processes. However, the actual practices for implementing authority may be different from parent to parent. One parent may explain to the child that the consequence for bad behavior is time-out, while another parent may explain that the consequence is completing extra chores. Both parents are exerting authoritative parenting but are doing so through different parenting practices. Further, it is through such interactions that the parent's attitudes toward the child are conveyed and an emotional climate for the parent-child interaction is established. For example, by consistently offering explanations to the child, the authoritative parent shows recognition of the child's autonomy, and by incorporating the child's point of view into family decisions, the authoritative parent exhibits respect for the child. With an endless number of individual parenting practices, the parenting styles established by Baumrind provide a broader conceptualization of parenting that clearly display relations between parenting and child outcomes.

The different parenting styles are indicative of varying parental characteristics that are used to socialize children, and each parenting style is a particular combination of the parenting dimensions of responsiveness and demandingness (Baumrind, 1996). Responsiveness is associated with parental warmth, reciprocity in parent-child interactions, clear communication and person-centered conversation, and secure attachment. Parents who are high in responsiveness promote the individuality of their child, are supportive, and attend to the child's needs. Demandingness is associated with direct confrontations, monitoring, and consistent, contingent discipline. Parents who are high in demandingness help their child become integrated into their family and community by having consistent expectations and clear guidelines, providing close supervision, and being willing to confront their child even if it evokes conflict. While Baumrind was the first researcher to classify parents into broad parenting styles based on

these two dimensions, these two overarching concepts are exceptionally similar to the dichotomies studied by Schaefer and others.

**Authoritative parenting.** Authoritative parents are high in responsiveness and high in demandingness. They stress parental control through the use of warm, responsive parenting by providing explanations, treating the child as an individual, and working to promote the child's autonomy. Such parents apply firm control when necessary but are not overly restrictive; they take into consideration their child's point of view but never base the final decision solely on the child's desires. Finally, they utilize skills of reasoning, clear communication, and rational discussion when interacting with their child. Authoritative parenting has been repeatedly associated with the most positive child outcomes (e.g., Baumrind, 1971; 1991; Boyes & Allen, 1993; Furnham & Cheng, 2000; Klein, O'Bryant, & Hopkins, 1996; Pettit, Bates, & Dodge, 1997; Reitman & Gross, 1997; Steinberg, Elmen, & Mounts, 1989; Steinberg, Lamborn, Darling, Mounts, & Dornbusch, 1994). For example, Baumrind (1971; 1991) found that children whose parents implemented authoritative parenting were more emotionally and socially stable, used alcohol and drugs significantly less, and scored higher on academic achievement tests than children whose parents implemented authoritarian or permissive parenting. The relationship between each of these outcomes and authoritative parenting can best be explained by the skills that authoritative parents implement. For example, parents who practice authoritative parenting tend to be more involved with their child, offer their child more encouragement, and provide their child with greater autonomy, all of which foster, for example, increased academic performance in children. Parents who practice authoritarian or permissive parenting do not implement such skills, and, therefore, their children do not experience the same positive outcomes.

**Authoritarian parenting.** Authoritarian parents are low in responsiveness but high in demandingness. They emphasize parental control by demanding obedience and frequently using punishment and providing little parental warmth, affection, or nurturance. Such parents maintain a rigid, absolute standard for their children and value obedience above all else; they utilize punitive and forceful measures in times when the children's belief contradicts their own. They frequently restrict the child's autonomy and engage in limited communication with the child, instead preferring that the child simply accept whatever they say to be true. Authoritarian parenting is associated with several negative outcomes including low self-reliance, low self-esteem, decreased happiness, decreased academic success, increased alcohol and drug use, and increased anxiety (Baumrind, 1971, 1991; Furnham & Cheng, 2000; Klein, et al., 1996; Wolfradt, Hempel, & Miles, 2003). However, Baumrind (1996) does speculate that children from particular cultural and socioeconomic circumstances may have more positive outcomes from the use of authoritarian parenting. For example, children living in more dangerous neighborhoods may show beneficial outcomes from a parenting style that is high in restrictiveness. However, no empirical support for such hypotheses exists.

**Permissive parenting.** Permissive parents are high in responsiveness but low in demandingness. They have no parental control and, while they are warm, they place few demands on their children. Such parents completely accept their children's desires and actions and require little of their children in terms of household responsibility and obedient behavior. They attempt to use reason and discuss family decisions and rules with their children, but they never apply power to accomplish parenting goals. Permissive parenting is associated with more negative child outcomes including low self-control, less responsibility, decreased academic

success, and low self-reliance (Baumrind, 1971, 1991; Dornbusch et al., 1987; Furnham & Cheng, 2000).

### **Parenting Dimensions**

More recent research has moved away from examining parenting styles and now focuses more on specific parenting dimensions, which are defined as “the features, the qualities, the descriptive scheme used to capture the nature of parenting” (Skinner, Johnson, & Snyder, 2005, p. 184). While parenting styles are viewed as concrete categorizations, parenting dimensions are viewed on a continuum where parents can be high or low on each dimension. One of the greatest criticisms of Baumrind’s parenting styles is that parents may not perfectly fit into one style; rather, one’s overarching pattern of parenting may exhibit aspects of more than one style. Therefore, parenting dimensions, in contrast to broader parenting styles, allow for a more detailed and complete understanding of parenting techniques. Such dimensions are based on three themes that have clearly been identified in the parenting literature in the past 50 years: (1) Parental warmth and affection are fundamental to children’s development (Rohner, 1976), (2) Parents must provide structure for their children including consistent expectations and clear limits (Flammer, 1995; Kochanska, 1993; Schneewind, 1995), and (3) Children develop best when parents offer autonomy support by granting their children freedom to develop their own opinions, ideas, and independence (Barber, 1996; Deci & Ryan, 1985; Grolnick & Slowiaczek, 1994).

As research has expanded on these three themes by exploring parenting and the parent-child relationship from preschool to adolescence (for reviews, see Darling & Steinberg, 1993; Maccoby & Martin, 1983; Skinner et al., 2005), it has become clear that although an endless number of individual parenting practices exist, only a limited number of dimensions are

influencing parent-child interactions. The six primary dimensions of parenting that emerged through statistical procedures such as factor analysis, structural equation modeling, and correlations with child outcomes include warmth, rejection, structure, chaos, autonomy support, and coercion. These dimensions were originally thought of as three bipolar dimensions: warmth versus rejection, structure versus chaos, and autonomy support versus coercion (e.g., Schaefer, 1965; Schluderman & Schluderman, 1970). However, more recent work has found that these dimensions are in fact unipolar dimensions. In studying the six dimensions in 1212 parents, Skinner and colleagues (2005) found that models of unipolar dimensions provided a significantly better fit than models of bipolar dimensions. A parent is not necessarily high on one pole of a dimension and low on the other pole of a dimension. Rather, a parent could potentially be low on both poles of a dimension and might be found to be uninvolved, or a parent could potentially be high on both poles of a dimension and might be found to be volatile. If scores were simply calculated for each of the three bipolar dimensions with reverse coding for the negative side of the dimension, then both of these parents would have similar parenting scores; however, they are implementing completely different parenting techniques. Consequently, assessing each of the six dimensions separately provides a more comprehensive view of parenting. The following section provides a complete description of each dimension and the related constructs used to assess the dimension throughout the last 60 years of parenting research.

**Warmth.** Warmth is the most prominent dimension in parenting research and is seen in almost all constructs of parenting (for review, see Skinner et al., 2005; Baldwin, 1955; Barber & Olsen, 1997; Barnes, Farrell, & Cairns, 1986; Becker, Peterson, Luria, Shoemaker, & Hellmer, 1962; Champney, 1941; Cutrona & Russell, 1987; Delaney, 1996; Epstein, 1983; Hardy, Power, & Jaedike, 1993; Herman, Dornbusch, Herron, & Herting, 1997; Lamborn, Mounts, Steinberg, &

Dornbusch, 1991; Milton, 1957; Roe & Siegelman, 1963; Rohner, 1976, 1986; Rosen, 1964; Schaefer, 1959, 1965; Sessa, Avenevoli, Steinberg, & Morris, 2001; Slater, 1962; Steinberg, Lamborn, Dornbusch, & Darling, 1992; Turner, Irwin, Tschann, & Millstein, 1993). Warmth is associated with love, affection, caring, enjoyment, appreciation, and emotional support (Schaefer, 1965; Skinner et al., 2005). Related constructs in theory and research include approving, acceptance, love, support, supportive control, positive involvement, closeness, connection, and child-centeredness.

**Rejection.** Rejection is the theoretical opposite of warmth and refers to a parent's active dislike of a child. It is associated with hostility, aversion, harshness, over-reactivity, irritability, critical evaluations, and disapproval (Schaefer, 1965; Skinner et al., 2005). Related constructs in theory and research include deprecating, hostility, harshness, disapproval, negativity, cold, derogation, critical, over-reactivity, aversion, irritability, dislike, and irritable explosive discipline (for review, see Skinner et al., 2005; Arnold, O'Leary, Wolfe, & Acker, 1993; Barnes et al., 1986; Becker et al., 1962; Epstein, 1983; Roe & Siegelman, 1963; Roff, 1949; Rohner, 1976; Schaefer, 1959, 1965; Sessa et al., 2001; Shoben, 1949; Slater, 1962; Worell & Worell, 1974).

**Structure.** Structure was first discussed in the parenting literature in relation to discipline and control and was based on the consistent expectations and clear limits that parents offered their children. As such, structure was most prominent in references to authoritative discipline and communication (Baumrind, 1967, 1971), where parents who provide structure clearly explain rules, provide explanations for all disciplinary actions, and always carry out discipline when necessary. Work on both learned helplessness (Seligman, 1975) and infant cognition (Watson, 1966, 1979), however, helped broaden the concept of structure to include contingency



(Gunnar, 1980). In regards to parent-child interactions, contingency refers to the social and physical support and guidance offered by the parents to help the children achieve desired goals and avoid undesired goals (Connell & Wellborn, 1991; Grolnick & Ryan, 1989; Skinner, 1991, 1995). Parents help their children achieve such goals by providing consistent and predictable routines and organization within the household and daily life. Taken together, structure is the parenting dimension where parents help children achieve their goals by maintaining clear and appropriate limits, and it is associated with firm control, consistency, and predictability (Grolnick & Ryan, 1989; Skinner et al., 2005). Related constructs in theory and research include demandingness, firm control, behavioral control, contingency, responsiveness, behavior contingency, directive behavior, assertive control, strictness, supervision, organization, regulation, rule-setting, regularity of routine, and household organization (for review, see Skinner et al., 2005; Arnold et al., 1993; Baldwin, 1955; Barber, Olsen, & Shagel, 1994; Barnes et al., 1986; Becker et al., 1962; Champney, 1941; Grolnick & Ryan, 1989; Hardy et al., 1993; Herman et al., 1997; Lamborn et al., 1991; Lorr & Jenkins, 1953; Milton, 1957; Otto & Atkinson, 1997; Paulson, 1994; Roff, 1949; Schaefer, 1965; Sessa et al., 2001; Slater, 1962; Steinberg, Elmen, & Mounts, 1989; Steinberg et al., 1992).

**Chaos.** Chaos is the theoretical opposite of structure and includes the lack of consistent discipline, frequently referred to as lax control, and noncontingency (Abramson, Seligman, & Teasdale, 1978; Skinner & Wellborn, 1994, 1997). Parents who utilize chaotic parenting interfere with children's abilities to reach their goals and bring disorganization and environmental confusion into their children's lives (Matheny, Wachs, Ludwig, & Phillips, 1995). Additionally, they are inconsistent, erratic, unpredictable, arbitrary, and undependable (Skinner et al., 2005). Related constructs in theory and research include permissiveness, non-directive,

lax control, unpredictable, undependable, non-contingent, erratic, casual, under-controlled, laissez faire, and inconsistent discipline (for review, see Skinner et al., 2005; Arnold et al., 1993; Baldwin, 1955; Barber et al., 1994; Becker et al., 1962; Bloom, 1985; Buri, 1991; Lorr & Jenkins, 1953; Matheny et al., 1995; Roff, 1949; Schaefer, 1965; Slater, 1962; Worell & Worell, 1974).

**Autonomy support.** Originally autonomy support was simply thought to be the lack of coercion (Barber, 1996), but more recent work has elaborated on our understanding of this dimension (Deci & Ryan, 1985; Grolnick & Ryan, 1989, 1992; Grolnick, Ryan, & Deci, 1991; Ryan, 1982; Skinner & Edge, 2002; Skinner & Wellborn, 1994). Autonomy support promotes independence, supports the child in the exploration of personal preferences and opinions, allows the child to freely express ideas and actions, and encourages the child's contribution in decisions and problem solving (Grolnick & Ryan, 1989; Skinner et al., 2005). Related constructs in theory and research include psychological autonomy, freedom, responsiveness, democratic, permissiveness, non-directive, and autonomy granting (for review, see Skinner et al., 2005; Barnes et al., 1986; Bloom, 1985; Buri 1991; Dornbusch, Ritter, Leiderman, Roberts, & Fraleigh, 1987; Grolnick et al., 1991; Hardy et al., 1993; Herman et al., 1997; Roff, 1949; Schaefer, 1959, 1965; Steinberg et al., 1989; Steinberg et al., 1992; Turner et al., 1993; Worell & Worell, 1974).

**Coercion.** Coercion is the theoretical opposite of autonomy support. Frequently referred to as psychological control and linked to authoritarian parenting (Baumrind, 1967, 1971), coercive parents demand obedience and implement a restrictive, over-controlling parenting style through the use of punitive disciplinary methods such as corporeal punishment (Grolnick & Ryan, 1989; Skinner et al., 2005). Coercive parents are quick to punish without providing a

reason or explanation. Additionally, they use techniques to exert psychological control on their child such as attempting to change or control how the child thinks, feels, or behaves or talking to the child in a derogatory manner (e.g., telling the child that he/she is dumb or stupid). Coercion is associated with internalizing and externalizing problems in adolescence (Barber, 1996).

Related constructs in theory and research include arbitrary control, demandingness, restrictiveness, autocratic, psychological control, controllingness, inflexible rigid discipline, intrusive control, intrusive support, strict control, over-restrictive, over-controlling, power assertion, and intrusiveness (for review, see Skinner et al., 2005; Baldwin, 1955; Barber, 1996; Barber et al., 1994; Barnes et al., 1986; Bloom, 1985; Buri, 1991; Pomerantz & Eaton, 2001; Roe & Siegelman, 1963; Roff, 1949; Schaefer, 1959, 1965; Sessa et al., 2001; Slater, 1962).

As can be seen, the terminology used throughout the history of parenting research can create much confusion (Skinner et al., 2005). For example, the idea of control is used to describe several different dimensions in seemingly contradictory ways. However, our current understanding of the different dimensions allows us to piece apart such confusion and create a clearer understanding of parenting. For instance, behavioral control (i.e., structure), psychological control (i.e., coercion), and supportive control (i.e., autonomy support) are clearly distinguished from one another, and parents should strive to be high in structure and autonomy support but low in coercion. Because we now have a more precise understanding of control, we are able to see how parents can use control in an effective manner and how they can use control in a detrimental manner. Therefore, a parent who would have previously just been classified as high in control could now be classified as being high in autonomy support but not necessarily high in structure or high in structure but not necessarily high in coercion. Rather than broadly

classifying parenting behavior, each of the six dimensions provides a unique contribution to one's overall parenting practices.

Together, these six dimensions are the foundation of the Self-system Model of Motivational Development (Connell & Wellborn, 1991; Deci & Ryan, 1985; Grolnick & Ryan, 1992), which states that children are inherently motivated by three primary needs. First, children must feel that they belong and are related to others, which is nurtured by parental warmth. Second, children need to understand themselves as effective and competent, which is facilitated by parental structure. Third, children desire to be seen as unique and autonomous, which is encouraged by parental autonomy support. When children find themselves to be related, competent, and autonomous, they have more positive relationships with their parents and are better socialized overall (Darling & Steinberg, 1993; Kochanska, 1997). Further, these three positive parenting dimensions are correlated with self-regulation, academic and social competence, academic achievement, commitment to school, control understanding (i.e., knowing who and what controls important success and failure outcomes), self-worth, mastery (i.e., perception of personal control), less substance use, and fewer problem behaviors (e.g., Grolnick & Ryan, 1989; Grolnick et al., 1991; Skinner et al., 2005). However, when children experience parental rejection, chaos, and coercion, they feel unrelated, lack efficacy, and do not acquire psychological autonomy. Further, such children are more likely to become estranged from their parents, avoid socialization, have negative academic outcomes, engage in substance use more frequently, and have greater problem behaviors (Skinner et al., 2005).

### **Stability of Parenting Styles and Dimensions**

Parents typically adopt the parenting style or utilize the parenting dimensions that their own parents used. Therefore, parenting styles and dimensions are thought to be transmitted

intergenerationally, and this intergenerational transmission has been demonstrated for both constructive and harsh parenting practices (for review see Putallaz, Costanzo, Grimes, & Sherman, 1998 and van Ijzendoorn, 1992). Much of this research developed from studies examining the intergenerational continuity of harsh or abusive parenting, where a strong relationship is found between individuals' own abusive experiences and later abusive treatment of their own children (Egeland, Jacobvitz, & Papatola, 1987; Straus, Gelles, & Steinmetz, 1980). This relationship persists even after accounting for socioeconomic status, personality, psychological well-being, and parenting beliefs (Simons, Whitbeck, Conger, & Wu, 1991; Simons, Beaman, Conger, & Chao, 1993). Consequently, researchers believe that the most reliable predictor of coercive parenting is early experiences of harsh or abusive parenting (Steinmetz, 1987). Based on the social learning theory, there are several learning processes through which harsh parenting can be transmitted including a direct learning from personal experiences of harsh parenting, the development of a parenting philosophy centered on harsh parenting, and the formation of a tendency to respond aggressively towards others (Simons et al., 1991).

When examining positive parenting dimensions, similar intergenerational transmission results are found with individuals who experienced more support, sensitivity, warmth, and responsiveness from their parents being more responsive, supportive, and having better interactions overall with their own children (Chen & Kaplan, 2001; Cox, Own, Lewis, Riedel, Scalf-Michler, & Suster, 1985; Main, Kaplan, & Cassidy, 1985; Ricks, 1985; Simons et al., 1993). For example, Chen and Kaplan (2001) longitudinally studied the intergenerational transmission of constructive parenting. When participants were in seventh grade, they completed a measure about their perception of experiencing good parenting, answering questions about how

happy they were at home, perception of receiving good parenting (e.g., parental consistency), and perception of parental acceptance and love. Then when participants were in their mid- to late-30s, they completed a measure about their own constructive parenting, answering questions about how well they monitored their children, communicated with their children, involved themselves in their children's education, showed affection toward their children, and disciplined their children. They found a modest relationship for the intergenerational continuity of constructive parenting, and, similar to results from studies on harsh parenting, they found role modeling to be the strongest explanation for this relationship.

While intergenerational transmission of parenting styles and dimensions is the most dominant view, several factors can influence parents' adoption of styles and dimensions. First, psychological well-being influences parenting, with psychological health being associated with more positive parenting practices (Cox et al., 1985; Heinicke, Diskin, Ramsey-Klee, & Given, 1983) and psychological disturbances such as depression, anxiety, and low self-esteem being associated with more negative parenting practices (Belsky, 1993; Culp, Culp, Soulis, & Letts, 1989; Lahey, Conger, Atkeston, & Treiber, 1984; Oates & Forrest, 1985; Simons et al., 1993; Whipple & Webster-Stratton, 1991). Second, individuals' interpersonal relations influence parenting. Long before becoming parents, individuals' personality traits and interactional styles influence how they interact with others, and these also affect how they interact with their children (Chen & Kaplan, 2001). For example, adolescents and young adults who develop an unstable personality and interpersonal relations characterized by coercion are likely to engage in negative parenting behaviors once they have children. Finally, individuals' social experiences influence parenting practices. Parents' attainment of higher education is associated with authoritative parenting, whereas lower levels of education are associated with more authoritarian

parenting (Dornbusch et al., 1987; Serbin, Cooperman, Peters, Lehoux, Stack, & Schwartzman, 1998). Additionally, parents who are neglectful or who maltreat their children are less involved in formal organizations or informal social activities than parents who are involved and who do not maltreat their children (Giovannoni & Billingsley, 1970; Polansky, Chalmers, Buttenwieser, & Williams, 1981; Polansky, Gaudin, Ammons, & Davis, 1985). All of these factors are shaped by one's early interactions with their parents; therefore, they are typically viewed as mediators in the intergenerational transmission of parenting styles and dimensions (Chen & Kaplan, 2001).

The styles and dimensions that parents adopt are typically viewed as stable traits that result in reoccurring patterns of behavior. These traits are viewed similarly to personality traits in that they are stable across time and situations. They provide an overarching representation of parents' interactions with their children rather than focusing on individual behaviors or stand-alone interactions (Holden & Miller, 1999). Baumrind's parenting styles are an example of this trait-like view to parenting. However, numerous variables have been identified that either promote similarity or difference in parenting. For example, Holden (1997) identified 30 variables that affect parenting including parent characteristics, child characters, and situational variables.

Particular variables encourage parents to continue utilizing a similar pattern of parenting techniques (for review see Holden & Miller, 1999). The broadest variable in this category is culture, which greatly influences parental beliefs and attitudes. For instance, culture helps determine how one should care for an infant, what characteristics should be promoted and impeded in a child, and what specific parenting practices are considered acceptable (Bornstein, 1995; Valsiner, 1989). Likewise, social class, ethnicity, and religious affiliation can result in more stable parenting by presenting clear models for how one should raise a child and restricting

variation in parenting. For example, Kohn (1979) found differences in parenting based on social class with working-class parents fostering obedience and conformity in their children and upper-class parents encouraging greater autonomy and personal initiative. Similarly, religions such as conservative Protestants tend to promote corporal punishment as an appropriate form of punishment necessary for proper socialization (Ellison, Bartowski, & Segal, 1996). The greatest determinant of stable parenting is parental beliefs. Such beliefs are the cognitive associations that parents have about children and child-rearing and include values, attitudes, perceptions, expectations, and ideas (Goodnow, 1995; Goodnow & Collins, 1990; Holden, 1995; McGillicuddy-DeLisi & Sigel, 1995; Sigel, McGillicuddy-DeLisi, & Goodnow, 1992). When parents have strong beliefs about child-rearing, these beliefs will cause them to maintain stable interactions with their children that are consistent with their beliefs. For example, if a parent believes that high involvement is crucial for successful socialization, they will continue to implement high involvement behaviors across time and in a variety of situations. Several studies have found empirical support for the belief-driven stability of parent-child interactions. For example, Loeber and colleagues (2000) longitudinally examined the stability of family interaction in boys between the ages of 6 and 18 years and found stability correlations across one-year periods ranging from .46 and .70 for five parenting concepts (i.e., physical punishment, communication, supervision, positive parenting, and parent-child relationship).

While parenting techniques are viewed as traits and are typically thought of as being stable, several variables have been identified that can result in child-rearing differences either across time, across children, or across situations (for review see Holden & Miller, 1999). Most importantly, parents make changes based on a child's behaviors and characteristics. For example, parenting can be influenced by a child's age, gender, temperament or activity level



(e.g., Anderson, Lytton, & Romney, 1986; Fagot & Kavanaugh, 1993; Maccoby, 1984). Parents are continually responding to changes in their children's behavior, so many parenting practices are actually an interaction of parent and child characteristics (Bugental & Shennum, 1984; Dix, Ruble, & Zambarano, 1989). Parenting is foundationally relational and therefore, is based on the individual relationships created between each parent and each child. For example, Dix and colleagues (1989) found that mothers altered their disciplinary practices for their child depending on how well the child understood the violated rules and the competency and responsibility of the child's behavior. When children were less likely to understand the rules and were viewed as less competent and responsible, the mothers were more likely to use induction and reasoning than power-assertive parenting. They also found that mothers who adopted an authoritarian parenting style were more likely to utilize power-assertion because they found the child who misbehaved to be more competent and responsible, further showing how parenting is based on both parent and child characteristics. Many of the parenting changes that parents undergo due to child behaviors and characteristics are at the parental practices level, not the parenting styles or dimensions level. For instance, parents would not use the same language and tone of voice when interacting with an infant as when interacting with an adolescent. Therefore, natural changes in parenting behaviors are necessary as the child develops. However, certain changes in parenting dimensions have been noted in relation to a child's development such as a decrease in warmth after the onset of puberty (Paikoff & Brooks-Gunn, 1991; Steinberg, 1981).

In addition to a child's behaviors and characteristics, child-rearing practices can be altered due to changes that the family unit experiences including the birth of another child, change in employment, change in marital quality, health concerns, divorce, and remarriage (e.g., Dunn & Kendrick, 1980; Hetherington & Stanley-Hagan, 1995; Holden & Miller, 1999; Taylor

& Kogan, 1973). For example, when the marriage quality is poor, parents are more likely to exhibit negative emotions towards their children and to struggle with child management (Cummings & Davies, 1994). Finally, many situational factors such as time of year, time of day, parental mood, and parental aging can alter one's parenting (Clarke-Steward, 1978; Clifford, 1959; Crouter & McHale, 1993; Dix, 1991; Dix & Reinhold, 1991; Holden, 1988; Holden, Coleman, & Schmidt, 1995; Kuczynski, 1984; Ragozin, Basham, Crnic, Greenberg, & Robinson, 1982; Schaffer & Liddell, 1984; Zussman, 1980). For example, corporal punishment is more likely to be utilized at night than any other time of the day (Clifford, 1959; Holden et al., 1995).

Rimehaug, Wallander, and Berg-Nielsen (2011) conducted the most recent study on the stability of parenting, and they looked beyond individual parenting practices and investigated three parenting dimensions—warmth, protectiveness, and authoritarianism. One hundred and fifty parents completed a parenting questionnaire twice, nine months apart. Using stability correlations, stability estimates from structural equation modeling, and distributions of change at the individual level, they found varying degrees of instability in all three dimensions. Warmth was the most stable dimension but was not as stable as personality traits. Rather, its stability was comparable to the stability of depressive symptoms. Protectiveness showed moderate stability that was similar to the stability of anxiety symptoms, and authoritarianism showed the lowest level of stability but still fell in the lower end of the moderate stability range. The researchers concluded that fluctuations do occur in parenting dimensions even with only months separating the testing times and that the stability of parenting dimensions should be viewed similar to emotional symptoms rather than personality traits.

## **Parenting Children with Intellectual Disability**

Intellectual disability (ID) is a disorder characterized by both intellectual deficits and adaptive functioning impairments with onset before the age of eighteen years (American Psychiatric Association, 2000). Individuals with ID typically have an IQ of 70 or below, and this deficit in general cognitive abilities impairs functioning in one or more aspect of daily life such as communication, social/interpersonal skills, academic skills, work, or personal independence. Individuals with ID have developmental delay, but not all individuals with developmental delay have ID. Individuals with developmental delay have a severe and chronic disability that affects three or more of the following areas of life: capacity for independent living, economic self-sufficiency, learning, mobility, receptive and expressive language, self-care, and self-direction. Developmental delay can be attributed to a mental impairment, a physical impairment, or a combination of mental and physical impairments. Consequently, developmental delay may not always include the intellectual deficits that are characteristic of ID, and ID may not always include the physical deficits that are characteristic of some developmental delays. Frequently, a child is first diagnosed with developmental delay and is reevaluated throughout early elementary school before a formal diagnosis of ID is given, so many children do not receive an ID diagnosis until late elementary school. Therefore, when examining ID in younger children, ID and developmental delay diagnoses must be examined.

As a result of impairments in cognitive and adaptive functioning, families of individuals with ID experience unique challenges and problems. Parental well-being and family functioning can be greatly disrupted when having a child with ID, and the family requires additional accommodations and support to be resilient in the face of daily stressors.

**Parental well-being.** A child's diagnosis of ID is a traumatic experience for a parent that brings tremendous and unanticipated stress into a family's life (Blacher, Baker & Braddock, 2002). Parents have enhanced anxiety about the upbringing and future of their children, and their daily parenting stress increases exponentially. Indeed, research has repeatedly found that parents of children with ID show higher stress levels than parents of TD children (Baxter, Cummins, & Yiolitis, 2000; Hauser-Cram, Warfield, Shonkoss, & Krauss, 2001; Norlin & Broberg, 2013; Oelofsen & Richardson, 2006). Much of this added stress comes from experiences of increased child behavior problems (Hodapp, Fidler, & Smith, 1998; Konstantareas & Homatidis, 1989; Orr, Cameron, Dobson, & Day, 1993; Quine & Pahl, 1985, 1991; Sloper, Knussen, Turner, & Cunningham, 1991; Stores, Stores, Fellows, & Buckley, 1998), greater care-giving demands (Crnic, Friedrich, & Greenberg, 1983; Plant & Sanders, 2007), increased financial burdens (Parish, Seltzer, Greenberg, & Floyd, 2004; Quine & Pahl, 1985, 1991), and negative interactions with professionals and school systems (Blacher & Hatton, 2007). For example, seemingly simple daily activities such as helping a child at mealtimes, cleaning up after a child, bedtime routines, toileting, and advocating for the child are reported as highly stressful events for parents of children with ID (Plant & Sanders, 2007).

However, not all of the added stress comes directly from the ID diagnosis itself; the relationship between ID and parenting stress has several moderating and mediating variables (Plant & Sanders, 2007). Moderating variables in this association include the difficulty of care-giving tasks, extent of child behavior problems, severity of the child's disability, and level of parental social support. This means that higher stress is reported when the care-giving tasks are difficult, the child's behavior is problematic, the disability is severe, and little support from family, friends, or professionals is offered. Further, parents' cognitive assessment of their care-

giving responsibilities is a mediating variable between the severity of the child's disability and parental stress, meaning that parents of more severely disabled children negatively view their care-giving responsibilities and feel that the tasks are beyond their control. This mindset directly results in increased levels of parental stress.

In addition to stress, parents of children with ID report poorer mental health compared to parents of TD children (Emerson, 2003; Oelofsen & Richardson, 2006). Specifically, parents, especially mothers, of children with ID indicate heightened depressive symptomology (Blacher, Lopez, Shapiro, & Fusco 1997; Blacher, Shapiro, Lopez, Diaz, & Fusco, 1997; Harris & McHale, 1989). Lloyd and Hastings (2009) found that hope (i.e., the perception that one can accomplish goals and the perception that one can find another route to reach these goals if needed) is a moderating variable between ID and maternal depression, where mothers with lower levels of hope display higher levels of depression. Further, risk for parental depression increases when the child's disability results in social disadvantages, when parents experience more than one stressful life event, when the family is economically deprived, or when the family is functioning in an unhealthy manner (Emerson, 2003). Parental stress and depression can have detrimental consequences for the child, the parent, and the entire family (Plant & Sanders, 2007). For example, stress is associated with dropping out of parent training programs (Sanders, Markie-Dadds, Tully, & Bor, 2000) and negative parent-child relationships (Mitchell & Hauser-Cram, 2010).

**Family functioning.** Having a child with ID influences not only the well-being of parents but also the family functioning. Marital quality is one specific aspect of family functioning that is affected. Parents of children with ID have lower-quality marriages than parents with TD children (Kersh, Hedvat, Hauser-Cram, & Warfield, 2006; however, see Norlin & Broberg,

2013). This decreased marital quality is associated with greater parenting stress, more depressive symptoms, worsened child behavior, and fewer social supports. Therefore, marital quality is a critical component of parental well-being.

In contrast to marital relationships, parent-child relationships do not display the same negative effects. While the relationships experienced by parents and children with ID may be different from typical parent-child relationships, they are still reported as being primarily positive (Orsmond, Seltzer, Greensberg, & Krauss, 2006). For example, Orsmond and colleagues (2006) found that mothers expressed positive relationships with their children with autism spectrum disorder (60.4% of sample also met criteria for ID) through measures of positive affect, expressed emotion, and warmth. Several early childhood predictors of parents' relationships with adolescents with ID exist with lower levels of parental stress, parental pessimism, and maladaptive child behaviors being predictive of more positive parent-child relationships (Mitchell & Hauser-Cram, 2010; Orsmond et al., 2006). Overall, ID may alter the relationship between parents and children, but it does not fundamentally impair this relationship.

In addition to the quality of family relationships, the coping strategy implemented by a family can greatly affect their adjustment to raising a child with ID (Glidden & Natcher, 2009). Families must cope with the original diagnosis, increased care-giving responsibilities, treatment plans, healthcare and educational systems, and the child's lifelong success and quality of life. To deal with such situations, people utilize both problem-focused and emotion-focused coping strategies. Problem-focused strategies involve actively working to control and improve the stressful situation, while emotion-focused strategies involve regulating the stressful emotions. Problem-focused coping strategies have been found to be more effective for families with a child with ID than emotion-focused coping strategies (Glidden, Billings, & Jobe, 2006). Further,

problem-focused strategies are predictive of lower levels of depression and higher levels of subjective well-being in parents of children with ID, while emotion-focused strategies are predictive of higher levels of depression and lower levels of subjective well-being (Glidden et al., 2006). Consequently, when parents are able to implement problem-solving methods and actively seek out social support, they report greater positive adjustment outcomes than when they attempt to deny, escape and avoid the stressors associated with raising a child with ID.

Finally, family functioning is greatly characterized by the routines and rituals implemented by the families. Routines are a series of steps used to achieve a particular goal, and tend to be repeated on a daily basis. Rituals are typically an aspect of routines that promote significant family interactions that result in feelings of family identity and personal belonging. Routines provide the framework for the development of rituals, and rituals promote positive family relationships and continued involvement in the family (Segal, 2004). However, parents of children with intellectual and developmental disabilities have a more difficult time maintaining family routines and rituals. For example, studies of children with autism have repeatedly found that parental stress, child behavior problems, and increased caregiver demands interrupt the development of healthy routines and rituals (Larson, 2006; Marquenie, Rodger, Mangohig, & Cronin, 2011).

**Accommodations to family life.** A child's disability causes a family to accommodate their daily routines for living, working, and socializing. While adjustments are required for the birth of any child, additional adjustments are needed to maintain daily routines that promote the quality of life for the entire family. Quality of life is found when a family has their needs met, enjoys interacting together, and is able to pursue meaningful goals (Park, Turnbull, & Turnbull, 2002). For this state to be reached, families must adapt. There are two types of accommodations

that families make—internal accommodations and external accommodations (Keogh, Garnier, Bernheimer, & Gallimore, 2000). Internal accommodations are adjustments to the roles and routines of individual family members such as career choices, household chores, caring for the child, safety of home and neighborhood, and marital roles. Likewise, external accommodations are adjustments that occur outside of the immediate family such as use of services, child peer groups, instrumental and emotional support, and informational resources. In order to accommodate, families change jobs for better insurance coverage, quit jobs to take care of the child, move to a safer house or neighborhood, help more with household chores and caring for the child, seek professional services, provide the child with a chance to interact with other children through peer groups, become members of family support groups, and attend lectures and parent organizations to receive information about the child’s disability (Diamond & Kontos, 2004). Additionally, the severity of the child’s disability affects the number and intensity of accommodations made by the family with more severe child problems predicting a greater number of and more intense accommodations (Keogh et al., 2000; Diamond & Kontos, 2004).

Almost all parents of children with ID report needing at least one type of support and two-thirds of parents report needing three or more types of support (Douma, Dekker, & Koot, 2006; Turnbull & Ruef, 1996). The types of support cited include a friendly ear to listen to parents, information, activities for the child, respite care, practical or material help, child mental health care, and parental counseling. However, Douma and colleagues (2006) found that none of these needs are being fulfilled completely. Of the types of support, ‘a friendly ear’, ‘respite care’, and ‘information’ are being met for over fifty percent of the parents, while ‘practical and material help’, ‘child mental health care’, ‘activities’, and ‘parental counseling’ are being met for less than forty-three percent of the parents. This lack of support may be due in part to the



division between informal and formal sources of support, where using family and friends for support and the Internet for information is easier than getting support from professional organizations (Douma et al., 2006). Additionally, income and finances are affecting the use of external resources (Diamond & Kontos, 2004). Even if the parent meeting, support group, or child playgroup is free of cost, families are hindered by indirect costs such as travel expenses and childcare. When families have the ability to be involved in support programs, they are experiencing positive results (Glazemakers & Deboutte, 2013; Hudson, Cameron, & Matthews, 2008). For example, Hudson and colleagues (2008) evaluated the Signposts for Building Better Behavior program and found after participation that parents were less depressed, less anxious, less stressed, and more confident and able to handle their child's behavior, and children expressed fewer problem behaviors.

**Parenting styles.** While much work has been conducted examining the well-being and family functioning of parents of children with ID, only a few studies have explored the actual parenting practices of these parents. Woolfson and Grant (2006) examined parenting styles and parental stress in parents of children with developmental disability (DD). They found that parents of younger children with DD (ages 3-5 years) used authoritative parenting more often than parents of younger TD children but that parents of older children with DD (ages 9-11 years) used authoritative parenting less than parents of older TD children. Further, their results suggested that parenting style might be a moderator of the differences in groups on parental stress with parents of children with DD exhibiting greater stress than parents of TD children. They believe that utilizing authoritative parenting techniques may be exceptionally challenging for parents of children with DD due to the increased demands of the child's disability, the constant need to reiterate expectations and explanations to the child, and the little success

received with such techniques. For example, a parent may provide a clear expectation that the child cannot hit, and when the child does hit, the parent explains to the child why hitting is wrong and provides an appropriate measure of discipline. Even with the clear guideline, explanation, and discipline, the child continues to hit others. After the child repeatedly continues to hit, the parent may grow frustrated and tired of discussing expectations and providing explanations and may stop using such techniques and only implement punitive actions when the child hits. As this example illustrates, parents may experience increased stress when trying to apply authoritative parenting, and, consequently, as the children get older, parents may decide to implement a less taxing parenting style as a way of coping with their daily demands.

Several other researchers have described circumstances that may also diminish the use of authoritative parenting (Halvy & Hanzlik, 1990; Roberts & Lawton, 2001; Woolfson, 2004). For example, Halvy and Hanzlik (1990) compared perceived maternal competency in child-rearing abilities between mothers of children with DS and mothers of TD children, and they found that mothers of children with DS felt significantly less competent when their children were school-aged. Specifically, as the children got older, the mothers' perceived competency decreased in the areas of promoting social interaction skills, clarifying values, promoting school skills, encouraging conscience development, and educating at puberty. Further, Roberts and Lawton (2001) found that parents of children with disabilities (both physical and intellectual) experience significantly greater care needs for their children than parents of TD children. For example, 66% of the children exhibited moderate to severe behavior problems. Other studies have shown that children with DD show physical and verbal aggression towards others (Sigafos, Kerr, & Attwood, 1994), self-injurious behavior (Norlin & Broberg, 2013; Sigafos et al., 1994), mealtime behavior problems (Levin & Carr, 2001), and sleeping problems (Bartlett, Rooney, &

Spedding, 1985; Quine, 1991). Such problem behaviors then influences parenting practices. For example, sleep problems cause the parent and child to be more tired during the day and, therefore, reduces the parent's teaching abilities and negatively influences child's daytime behavior (Wiggs & Stores, 1996). Floyd and Phillippe (1993) directly examined the effect of child behavior problems on parenting behaviors. They found that increased child behavior problems were related to parents' decreased behavioral management (i.e., the ability to instruct and control a child's behavior) and increased coercive strategies.

Additionally, there is a possible bidirectional relationship between parenting behaviors and child behaviors (Hastings, 2002). Child problem behaviors are thought to result in increased stress for the parents, which in turn leads to parents utilizing parenting techniques that only serve to reinforce the problem behaviors. For example, children may express problem behaviors as a way to gain parental attention or to avoid particular demands; parents, in an attempt to stop the problem behavior, give the child attention or remove the demand being requested of the child. The parental actions are reinforcing to the child, and the temporary elimination of the child's problem behavior is reinforcing to the parent. Therefore, such negative parent-child interactions continue.

Finally, Woolfson (2004) suggested that society's view of individuals with intellectual or physical disabilities might influence parenting practices. Society typically views disability as a medical problem that needs to be cured, a tragedy that must be eliminated (e.g., genetic screening or therapy), and something to be feared and pitied. When parents are able to reassess their understanding of disability to create a positive view of their child, then they are more likely to become effective parents. As effective parents, they recognize that one aspect of their role is to educate their children on appropriate societal behavior and cultural expectations. However, if

a culture has different expectations of children with disabilities, then parents of these children may also alter how they parent and how they train their child. For example, the societal view that individuals with disabilities will always be dependent on others may cause parents to become overprotective and limiting in their autonomy granting. Ferguson and Asch (1989) discuss narrative accounts showing that parents who had low expectations of their child with a disability, such as their child's polite behavior, participation in family and community activities, and future aspirations, were more likely to have adult children with less independence and autonomy. Moreover, Green, Caplan, and Baker (2013) found that mothers of children with DD attempted to control their child in a way that was interfering and intrusive more than twice as much as mothers of TD children. After accounting for the child's developmental level, interference control was significantly predictive of lower adaptive and social skills for the children with DD but not TD children. The authors conclude that TD children have many resources they can use to gain autonomy but that children with DD do not, making parental control a more significant predictor of child outcomes for children with DD than TD children. Consequently, if parents of children with DD continually interfere in the children's attempts to complete activities or completes the tasks for them, they will never gain crucial autonomy and self-help skills. Therefore, in attempting to protect their children from potentially challenging tasks, parents may be limiting their children in the long run. All of these factors together—decreased competency, increased care needs, increased behavior problems, and decreased societal expectations—may result in parents utilizing a permissive or authoritarian parenting style instead of an authoritative style as a method of coping with the child's disability. Further, research from the typically developing literature would support the view that parenting styles change based on child behaviors and characteristics (for review see Holden & Miller, 1999).

## **Parenting Children with Down Syndrome**

Much of the current research in intellectual and developmental disabilities examines specific etiologies of ID because we know that important cognitive and behavioral differences exist amongst specific etiologies. Down syndrome is the most common genetic disorder that results in ID and is caused by an extra copy of chromosome 21 (i.e., Trisomy 21). DS affects approximately one in 691 live births (Parker et al., 2010) and drastically impairs cognitive, emotional, and physical development. Intellectually, individuals with DS are usually moderately to severely delayed with an average IQ range of 30 to 70. They also have a distinct cognitive-linguistic profile. Based on mental age comparisons, speech, language, and verbal short-term memory are all areas of clear impairment in DS (for reviews, see Abbeduto, Warren, & Conners, 2007; Baddeley & Jarrold, 2007; Chapman & Hesketh, 2000; Kent & Vorperian, 2013; Næss, Lyster, Hulme, & Melby-Lervåg, 2011), but visuospatial processing is not quite as impaired (Jarrold & Baddeley, 1997; Jarrold, Baddeley, & Hewes, 1999; Silverstein, Legutki, Friedman, & Takayama, 1982). For example, on short-term memory tasks, individuals with DS perform better when the task involves visual or spatial materials (e.g., pictures, block locations) than when the task involves verbal materials (e.g., letters, digits). Physically, individuals with DS experience an increased risk for congenital heart disease, respiratory infections, loss of vision and hearing, and early-onset Alzheimer's disease (Van Allen, Fung, & Jurenka, 1999). Due to such health risks, individuals with DS typically experience a decreased life expectancy compared to TD individuals, though life expectancy is increasing for the population with DS (Bittles & Glasson, 2004).

In comparison to the work conducted with individuals with mixed-etiology ID and DD, research on syndrome-specific differences in parenting is in its infancy, and many gaps exist in

our understanding of parenting children with syndrome-specific ID such as DS. However, recent research has found distinctions between parenting children with DS and parenting children with non-DS ID. For instance, families of children with DS report greater well-being than families of children with other types of ID (Hodapp, Ly, Fidler, & Ricci, 2001). More specifically, parents of children with DS report less stress, depression, and pessimism than parents of children with non-DS ID (e.g., Abbeduto, Seltzer, Shattuck, Krauss, Orsmond, & Murphy, 2004; Dumas, Wolf, Fisman, & Culligan, 1991; Fidler, Hodapp, & Dykens, 2000; Fisman, Wolf, Ellison, Gillis, Freeman, & Szatmari, 1996; Olsson & Hwang, 2003). For example, parents of children with DS report lower levels of stress than parents of individuals with autism (e.g., Dabrowska & Pisula, 2010; Fisman, Wolf, & Noh, 1989; Dumas et al., 1991; Kasari & Sigman, 1997; Sanders & Morgan, 1997; Olsson & Hwang, 2003), mixed-etiology ID (e.g., Seltzer, Krauss, & Tsunematsu, 1993; Kasari & Sigman, 1997; Hodapp, Ricci, Ly, & Fidler, 2003; Olsson & Hwang, 2003; Ricci & Hodapp, 2003), and other neurological disabilities (Hanson & Hanline, 1990). This has been referred to as the “Down syndrome advantage” (Hodapp et al., 2001).

Several factors may influence this “advantage” including the personality characteristics of individuals with DS, parents’ increased understanding of the nature and cause of DS, readily available support systems for parents of children with DS, greater maturity of mothers of children with DS, and higher socioeconomic statuses (Hodapp, 2002). For example, individuals with DS are typically described as having more sociable personalities and fewer maladaptive behaviors than individuals with other types of ID. Additionally, children with DS are more likely to be born to older mothers, who may be more experienced parents and have a higher family income (Hodapp et al., 2001; Stoneman, 2007). Parents of children with DS also report increased satisfaction with the support groups available to them (Goldberg, Marcovitch,

MacGregor, & Lojkasek, 1986; Seltzer et al., 1993), and mothers feel more secure in the knowledge they have about raising a child with a disability (Rodrigue, Morgan, and Gefken, 1990). Further, parents report more enjoyment, satisfaction, and reciprocated closeness with their child with DS than parents of children with non-DS ID (Abbeduto et al., 2004; Goldberg et al., 1986).

Finally, parents of children with DS have the ability to know whether or not their child has DS prior to birth, giving them the option to either prepare for the life of a child with ID or terminate the pregnancy. One could make the case that only parents who have a more positive outlook on raising a child with DS proceed with the pregnancy, making them naturally better candidates for experiencing the “advantage” of DS. The pregnancy termination rates for DS are significantly higher than other prenatal diagnoses, exceeding 92 percent (Mansfield, Hopfer, & Marteau, 1999). The reasons behind these selective abortions appear to be a perceived decrease in quality of life and increase in parenting burdens as well as negative views towards raising a child with a cognitive impairment (Lawson, 2006). In comparison to raising a child with a physical disability, parenting a child with DS is thought to be less personally rewarding. Consequently, parents who choose to not terminate the pregnancy know before the birth of their child that life may be more challenging, and they may utilize a more positive coping technique that improves their personal well-being and the overall functioning of their family.

While distinctions may exist between parents of children with DS and parents of children with non-DS ID, the same pattern of results is found when making DS-TD comparisons as when making ID-TD comparisons. That is, parents of children with DS report increased stress (Dabrowska & Pisula, 2010; Roach, Orsmond, & Barratt, 1999), depression (Roach et al., 1999; Scott, Atkinson, Minton, & Bowman, 1997), caregiving demands (Roach et al., 1999), and child

behavior problems (Cuskelly & Dadds, 1992; Roach et al., 1999) compared to parents of TD children. Additionally, stress for parents of children with DS has been shown to increase over the early childhood years as the demands associated with raising a child with DS increase (Eisenhower, Baker, & Blacher, 2005; Hauser-Cram et al., 2001; Most, Fidler, Booth-Laforce, & Kelly, 2006). However, parents of children with DS perceive their child as having a positive mood, being adaptable, and providing parents with positive reinforcement to the same degree as parents of TD children (Roach et al., 1999), and even with the increased caregiving demands associated with raising a child with DS, parents do not show differences from parents of TD children in parental satisfaction and self-efficacy (Gilmore & Cuskelly, 2012). Therefore, children with DS appear to be easier to parent than children with other disabilities, but parents of children with DS still report greater difficulties than parents of TD children.

Only two studies to date have examined parenting dimensions of parents of children with DS. Gilmore and Cuskelly (2012) sampled 25 mothers of children with DS and tested them at two time points, first when the child was 4-6 years old and again when the child was 11-15 years old. Through self-report, they measured respect for autonomy (i.e., autonomy support), control (i.e., coercion), consistency (i.e., structure), child-centeredness (i.e., warmth), and detachment (i.e., rejection). They found all of the parenting dimensions to be stable across time except for respect for autonomy, which displayed a significant increase from Time 1 to Time 2. Further, they found that mothers utilized greater autonomy support and less detachment when their child exhibited many positive behaviors, but that mothers utilized less autonomy support and greater detachment when the child exhibited many negative behaviors. However, due to the small sample size, lack of control group, and correlational nature of the study, interpretation of these results is limited.



In a second study of parenting dimensions, Blacher, Baker, and Kaladjian (2013) examined positive parenting (i.e., positive affect, sensitivity, stimulation of cognition, and the reverse coding of detachment) and negative parenting (i.e., negative affect and intrusiveness) in mothers of children with DS ( $n = 10$ ), autism ( $n = 12$ ), cerebral palsy ( $n = 9$ ), undifferentiated developmental delay ( $n = 37$ ), and TD ( $n = 115$ ). They found that mothers in all of the developmentally delayed groups exhibited more negative parenting techniques than parents of TD children. However, they found that mothers of children with DS also displayed more positive parenting techniques than any other group. They theorized that this increase in positive parenting for parents of children with DS might be due to the child's positive personality characteristics and increased compliance and self-regulation in comparison to children with other types of disabilities. Such characteristics may cause parents to show their child greater positive regard, warmth, and affection. Again, though, the small sample size of the developmentally delayed groups must be noted when drawing conclusions from these findings.

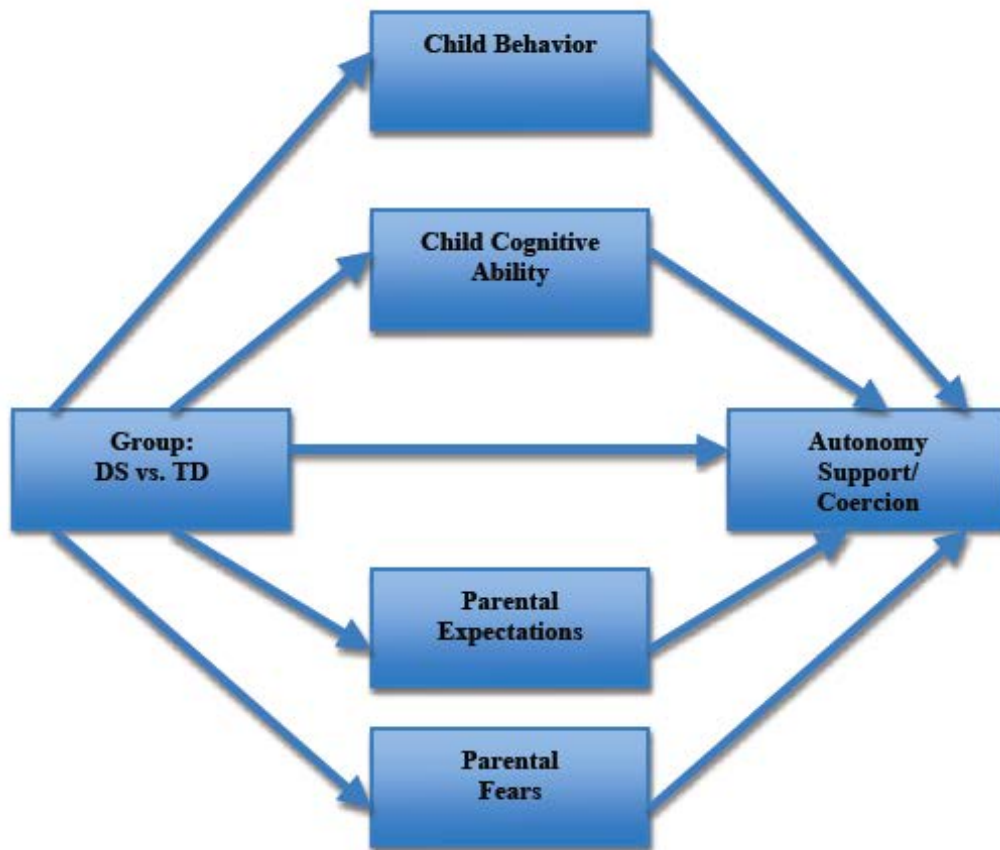
### **Purpose of the Current Study and Hypotheses**

The purpose of the current study was to directly examine the parenting styles and dimensions of mothers who have children with DS and to determine if they differ from mothers of TD children. This is one of the only studies to look beyond Baumrind's classic parenting styles (i.e., authoritative, authoritarian, and permissive) and to explore specific dimensions of parenting (i.e., warmth, rejection, structure, chaos, autonomy support, and coercion) in any sample of parents of children with ID including DS. With a larger sample size than previous studies, this study allowed us to see if parents of children with DS are actually parenting differently than parents of TD children, which provided better insight and a more complete understanding of parenting children with DS. Additionally, the current study examined if such

differences in parenting exist above and beyond the known differences in parental stress and depression. Following are our specific hypotheses:

1. We hypothesized that differences in parenting styles exist and that these differences would remain even after differences in parental stress and depression were statistically controlled for.
  - a. As found by Woolfson and Grant (2006), we hypothesized that the parents of children with DS would use less authoritative parenting and more authoritarian and permissive parenting than parents of TD children.
2. We hypothesized that differences in parenting dimensions would exist and that these differences would remain even after differences in parental stress and depression were statistically controlled for.
  - a. We hypothesized that parents of children with DS would offer more warmth than parents of TD children.
    - i. We believed that this increase in warmth was due to the positive personality characteristics of children with DS, which were more likely to elicit positive regard, warmth, and affection from parents (Blacher et al., 2013).
  - b. We hypothesized that parents of children with DS would offer less autonomy support and more coercion than parents of TD children (Green et al., 2013).
    - i. We believed that this decrease in autonomy support was due to the child's cognitive and behavioral problems as well as the low parental expectations and high parental fears of children with DS (Ferguson & Asch, 1989; Gilmore & Cuskelly, 2012; Green et al., 2013; Woolfson, 2004) (see

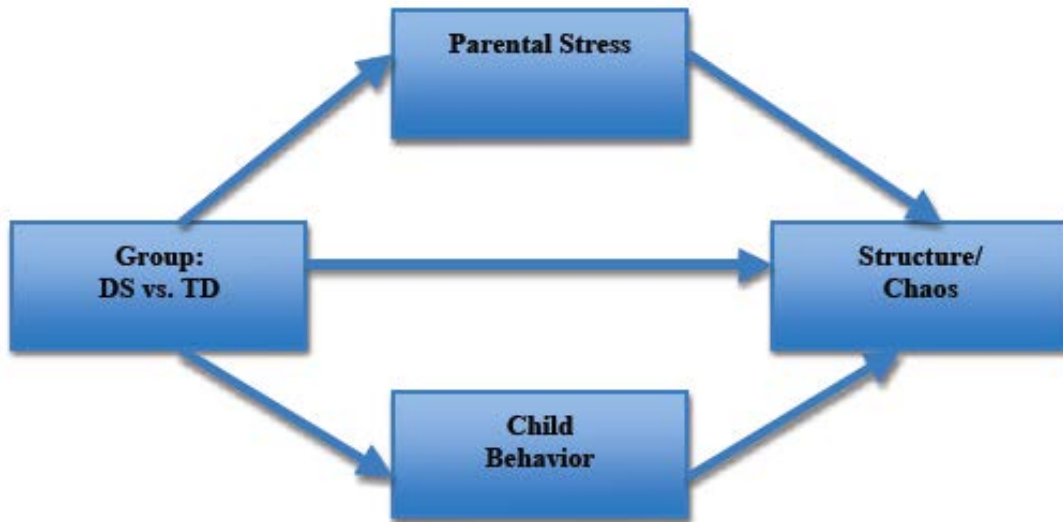
Figure 1). Parents might be too fearful of negative outcomes—both physical and emotional—to give their child freedom and might not feel that their child has the cognitive abilities to understand the situation well enough to have involvement in the decision-making process; therefore, we believed that parents would utilize more parental control and coercion and would remain over-protective when raising their child with DS.



*Figure 1.* Hypothesized mediators for group differences in autonomy support and coercion.

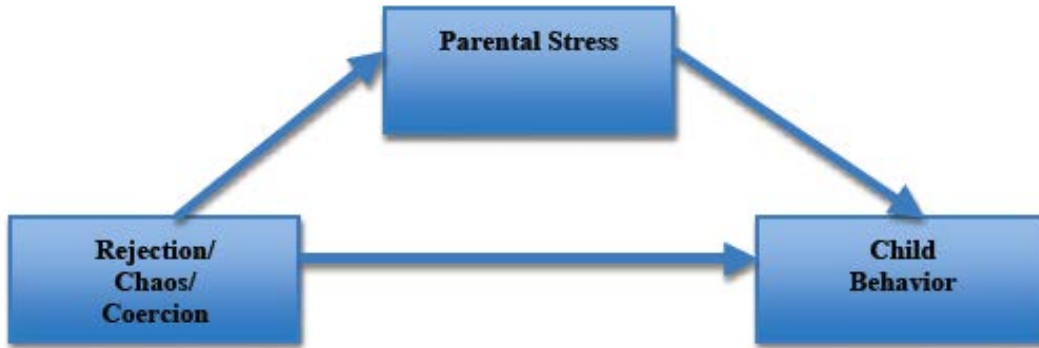
- c. We hypothesized that parents of children with DS would provide less structure and more chaos in their parenting than parents of TD children.
  - i. We believed that this decrease in structure was due to the increased behavioral problems in children with DS and increased parental stress,

which tend to result in inconsistency and unpredictability in daily routines that is more characteristic of the parenting dimension of chaos (Larson, 2006; Marquenie et al., 2011) (see Figure 2).



*Figure 2.* Hypothesized mediators for group differences in structure and chaos.

3. To also examine the relationship between parenting behavior and child behavior, we hypothesized that differences in parenting dimensions within each group were related to differences in child behavior problems with parents who are high in rejection, chaos, and/or coercion having children higher in behavioral problems (Gilmore & Cuskelly, 2012).
  - a. As theorized by Hastings (2002), we hypothesized that the relationship between parenting behavior and child behavior problems within each group was mediated by parental stress (see Figure 3).



*Figure 3.* Hypothesized mediator for the relationship between the parenting dimensions of rejection, chaos, and coercion and child behavior.

## CHAPTER 2

### METHODOLOGY

#### **Participants**

All participants were mothers or female guardians. There were two groups of participants—mothers/female guardians of children with DS and mothers/female guardians of TD children. The children in both groups were between the ages of 5 and 12 years. Participants were recruited through multiple avenues including a research participant registry, local agencies, and social media.

**Mothers/Female Guardians of Children with DS.** Of the 41 participants in the group with DS who agreed to participate in the study, 35 mothers or female guardians completed and returned the questionnaires. This resulted in a response rate of 85.37%. The mean age of the child was 9.06 years,  $SD = 2.32$ , Range = 5.08 – 12.92 (17 males; 31 Caucasian, 2 White-Hispanic, 1 African American, 1 Other Race). The DS diagnosis of the child was based on parent report. For the mother's highest degree of education, 2 did not complete high school, 5 completed some college, 16 received a bachelor's degree, and 12 had graduate training or received a graduate degree. For total family income, 1 made less than \$10,000, 1 made \$10,000 - \$19,999, 1 made \$20,000 - \$29,999, 1 made \$40,000 - \$49,999, 3 made \$50,000 - \$59,999, 3 made \$60,000 - \$69,999, 2 made \$70,000 - \$79,999, 4 made \$80,000 - \$89,999, 2 made \$90,000 - \$99,999, and 16 made \$100,000 or more (note: one participant chose not to respond). For the mother's marital status, 33 were married and 2 were divorced. For the number of children the mother had, 3 had one child, 9 had two children, 15 had 3 children, 4 had 4 children, and 4 had 5

or more children. For all demographic variables, only categories where participants responded are represented in this description; see Appendix A for a copy of the Background Questionnaire and a list of all possible categories.

**Mothers/ Female Guardians of TD Children.** To ensure that children in the TD group were truly typically developing, the following eligibility questions were asked: (1) Has your child ever been diagnosed with an intellectual disability or developmental delay? (2) Has your child been diagnosed with autism? (3) Is your child in special education in school? If the child had ever been diagnosed with an ID or DD, then he/she was automatically ineligible. The autism question was included because some parents do not realize that autism would be considered a DD; if diagnosed with autism, then the family was ineligible. Finally, the special education question was included to make sure that the children in our TD group were in regular classrooms; if they are receiving special education services, then they were ineligible. No participants were excluded based on these eligibility questions. Of the 49 participants in the TD group who agreed to participate in the study, 47 mothers or female guardians completed and returned the questionnaires. This resulted in a response rate of 95.92%. The mean age of the child was 8.06 years,  $SD = 1.71$ , Range = 5.00 – 12.92 (27 males; 42 Caucasian, 4 African American, 1 Other Race). For the mother's highest degree of education, 1 completed high school or obtained a GED, 10 completed some college, 16 received a bachelor's degree, and 20 had graduate training or received a graduate degree. For total family income, 1 made \$10,000 - \$19,999, 3 made \$20,000 - \$29,999, 4 made \$30,000 - \$39,999, 3 made \$40,000 - \$49,999, 4 made \$50,000 - \$59,999, 5 made \$60,000 - \$69,999, 2 made \$70,000 - \$79,999, 7 made \$80,000 - \$89,999, 4 made \$90,000 - \$99,999, and 13 made \$100,000 or more (note: one participant chose not to respond). For the mother's marital status, 40 were married, 3 were widowed, 2 were

single and never married, and 2 were living with a partner. For the number of children the mother had, 6 had one child, 23 had two children, 13 had 3 children, and 5 had 4 children. For all demographic variables, only categories where participants responded are represented in this description; see Appendix A for a copy of the Background Questionnaire and a list of all possible categories.

## **Measures**

### **Background measure.**

*Background Questionnaire.* The Background Questionnaire asked about parent demographic information (educational attainment, marital status, annual family income, number of children, ages of children), child demographic information (birth date, sex, race, grade in school), and child diagnosis (type of diagnosis, cause of diagnosis, age diagnosis was received). Such demographic and diagnosis questions were included to provide basic information about our sample and to also give us information about variables that might potentially need to be controlled for in analyses (e.g., annual family income, birth order of child). Additionally, the questionnaire asked parents about the parenting advice they have received (who they receive advice from, how satisfied they are with this advice, involvement in parenting training programs). These questions were included to better understand whether or not parents are implementing particular parenting practices because of the advice they have received, to understand where the majority of parents are receiving parenting advice, and to understand if parents of children with DS receive advice from different people and are more or less satisfied with this advice in comparison to parents of TD children. Finally, parents were asked about the parenting support they have received (satisfaction with the support they receive, need for more support). These questions were included because having parenting support is related to less



depression, less anxiety, less stress, and more confidence in their ability to handle a child's behavior (e.g., Hudson et al., 2008), and we wanted to see if parents of children with DS receive more or less parenting support than parents of TD children. The Background Questionnaire took approximately 10 minutes to complete (see Appendix A for copy of questionnaire).

**Primary measures.**

***Parenting Styles and Dimensions Questionnaire.*** The Parenting Styles and Dimensions Questionnaire (PSDQ; Robinson, Mandleco, Olsen, & Hart, 2001) is a 62-item parent-response questionnaire that measures the three global parenting styles as first described by Baumrind (authoritative, authoritarian, and permissive). It was designed for use with parents of children from 4- to 12-years-old. The authoritative style includes four subscales as assessed by 27 items: warmth and involvement (e.g., gives child praise, reassurance, and sympathy), 11 items; reasoning/induction (e.g., explains to child why it is important to obey rules), 7 items; democratic participation (e.g., allows child to be involved in the development of family rules), 5 items; and good-natured-easygoing (e.g., relaxed and patient with child), 4 items. The authoritarian style includes four subscales as assessed by 20 items: verbal hostility (e.g., raises voice when child is disobedient), 4 items; corporal punishment (e.g., spansks when child misbehaves), 6 items; nonreasoning and punitive strategies (e.g., administers punishment for disobedience without offering an explanation to the child), 6 items; and directiveness (e.g., criticizes to get child to improve), 4 items. The permissive style includes three subscales as assessed by 15 items: lack of follow-through (e.g., threatens punishment but never actually punishes child), 6 items; ignoring misbehavior (e.g., allows child to misbehave without being punished), 4 items; and self-confidence (e.g., finds it difficult to punish child), 5 items. Responses are on a Likert-scale ranging from *never* (1) to *always* (5).

In addition to measuring parenting styles, each question was classified into one of the six parenting dimensions. This division of items into parenting dimensions had not been done previously. We used the past literature on the development of parenting dimensions and the related constructs (for review, see Skinner et al., 2005) to classify each item as one of the six primary dimensions. By doing so, this one measure allowed us to simultaneously assess parenting styles and parenting dimensions. The warmth dimension includes 13 items, and the rejection dimension includes 6 items. Two of the rejection items were added from the Psychological Control/Over-protecting Parenting Questionnaire (Hart, Nelson, Robinson, Olsen, & McNeilly-Choque, 1998) since this dimension was a limited aspect of the PSDQ. The structure dimension includes 9 items, and the chaos dimension includes 14 items. The autonomy support dimension includes 6 items, and the coercion dimension includes 17 items. Four of the coercion items were added from the Psychological Control/Over-protecting Parenting Questionnaire to better assess the psychological control aspect of coercion. With the additional items added, the total questionnaire is 68 items. The PSDQ took approximately 15 minutes to complete (see Appendix B for copy of questionnaire).

Scores for the three styles and six dimensions are found by finding the mean for the items within each style or dimension (Note: some items are reverse scored). Adequate reliability was previously shown for each of the three styles: authoritative = .91, authoritarian = .86, and permissive = .75 (Robinson, Mandlco, Olsen, & Hart, 2001). Reliability for each of the six dimensions was calculated for the current sample to assess the success of our classifications. Reliability was analyzed using Cronbach's alpha, which measures how closely related a set of items is as a group. More specifically, Cronbach's alpha measures the intercorrelations among the items to gain an internal consistency estimate. Adequate reliability was shown for each

dimension when analyzing all of the participants together and in all except two cases when analyzing the dimensions separately for each group (Rejection for the TD group and Coercion for the DS group fell below adequate reliability). Cronbach’s alphas for all analyses are listed in Table 1.

**Table 1**  
**Reliability for PSDQ**

<b>PSDQ Dimension</b>	<b>All Participants</b>	<b>DS Group Only</b>	<b>TD Group Only</b>
Warmth	.77	.71	.81
Rejection	.66	.72	.58
Structure	.77	.72	.76
Chaos	.96	.96	.73
Autonomy Support	.71	.71	.72
Coercion	.73	.57	.81

Note: all values are Cronbach’s alpha. PSDQ = Parenting Styles and Dimensions Questionnaire.

***Family Routines Inventory.*** The Family Routines Inventory (FRI; Jensen, James, Boyce, & Hartnett, 1983) was used to measure the parenting dimensions of structure. While the PSDQ assesses parenting structure, it is limited to items about providing clear and appropriate limits, consistent discipline, and explanations of all expectations and disciplinary action. The FRI includes an assessment of the predictable routines and organization within the household and daily life, allowing for a more complete measurement of the structure dimension. The FRI was originally designed to be completed by parents of children 16 years of age and younger. It includes 28 items divided into ten subscales. Only five of the subscales were used in the current study—workday routines (8 items), children’s routines (5 items), bedtime routines (2 items), meal routines (3 items), and chores (1 item). For each item, respondents are asked the frequency with which the routine occurs in their family. Frequency is recorded on a 4-point scale (0 = almost never; 1 = 1-2 times a week; 2 = 3-5 times a week; 3 = always everyday). The FRI had a test-retest reliability of .79. Convergent validity for the measure was determined through

significant correlations with four subscales of the Family Environment Scale (Cohesion, Organization, Control, and Conflict), a valid measure on family functioning, as well as a significant correlation with subjective reports of overall satisfaction with family life, which has been shown to be a primary positive outcome of frequent family routines and structure (Jensen, James, Boyce, & Hartnett, 1983). It took approximately 5 minutes to complete (see Appendix C for copy of questionnaire).

In order to combine the score from this measure of the structure dimension to the score from the structure dimension on the PSDQ, the items were re-coded to be consistent with the PSDQ. A score of 0 was re-coded as 1, 1 was re-coded as 2, 2 was re-coded as 4, and 3 was re-coded as 5. Once the scores were re-coded, the mean of all items on the FRI was calculated. Finally, the mean of the average FRI score and average PSDQ structure dimension score were calculated to obtain an overall score from the structure dimension.

#### **Mediator measures.**

***Child Behavior Checklist.*** The Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001) is a parent-report measure of a child's behavioral and emotional problems. The 6- to 18-year-old version of the measure was used. Parents are asked to rate their child's behavior on a scale of 0 to 3 (not true, somewhat or sometimes true, very true or often true) for 113 items. The CBCL assesses both internalizing and externalizing behaviors including anxiety, depression, somatic complaints, social problems, thought problems, attention problems, rule-breaking behavior, and aggressive behavior. It took approximately 10 minutes to complete. Good reliability has been reported for the CBCL (Cronbach's alpha = .92-.94). Content validity was demonstrated by findings that all items discriminated significantly ( $p < .01$ ) between clinically-referred and non-referred children, and construct validity was demonstrated by

significant correlations with analogous scales from other instruments (e.g., Conners Parent Rating Scale-Revised, Behavior Assessment System for Children), by significant correlations with DSM criteria, and by predictions of long-term outcomes (Achenbach & Rescorla, 2001). The Total Behavior score was calculated and used in the current analyses. The CBCL was included to be a mediator in analyses examining differences between parenting groups in autonomy support, coercion, structure, and chaos. Additionally, the CBCL was the outcome measure when examining how differences in parenting dimensions are related to differences in child behavior (see Appendix D for copy of questionnaire).

***Behavior Rating Inventory of Executive Function.*** The Behavior Rating Inventory of Executive Function (BRIEF; Gioia, Isquith, Guy, & Kenworthy, 2000) is a parent-report measure of a child's executive function. It was designed for use with parents of children from 5- to 18-years-old and includes 86 items that are divided into two subcategories—behavioral regulation and metacognition. The behavioral regulation category assesses the child's inhibition, attention shifting, and emotional control. The metacognition category assesses the child's skills at initiating, planning/organizing, and monitoring as well as the child's working memory and organization of materials. For each item, parents are asked to designate how often their child exhibited a particular behavior in the past 6 months by selecting "Never," "Sometimes," or "Often." It took approximately 15 minutes to complete. The global executive composite score was calculated and used in the current analyses. Cronbach's alpha is .94 for the behavioral regulation category and .96 for the metacognition category. Construct validity was determined by significant correlations with subscales of the ADHD Rating Scale IV, the Child Behavior Checklist, and the Behavior Assessment System for Children (Gioia, Isquith, Guy, & Kenworthy, 2000). The BRIEF was included to be a mediator in analyses examining differences

between parenting groups in autonomy support and coercion (see Appendix E for copy of questionnaire).

*Parental Expectations Questionnaire.* In order to assess parents' expectations of their child, a questionnaire was created, the Parental Expectations Questionnaire (PEQ). Pilot data were collected to help with the development of this questionnaire (see Appendix L for data from the piloting phase). The following description is based on the final questionnaire after modifications were made from the piloting phase. Parental expectations were measured in three primary domains: school and work, friends and family, and independent living. The school and work domain includes 9 items. The friends and family domain includes 6 items. The independent living domain includes 15 items. Parents answered on a 5-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree). The purpose of this questionnaire was to gain a better understanding of the expectations that parents have for their child throughout their child's lifetime. It took approximately 3-5 minutes to complete. The Total Expectations score, calculated by finding the mean for each subscale and then adding the three means together, was used in the current analyses. Higher scores are indicative of greater parental expectations. The PEQ was included to be a mediator in analyses examining differences between parenting groups in autonomy support and coercion (see Appendix F for copy of questionnaire). Reliability was analyzed using the Spearman Brown split-half reliability method. This method determines internal consistency by comparing the scores from one half of the measure to the scores of the other half of the measure, in this case comparing even items and odd items. When all participants were included in the analysis, the Spearman Brown split-half reliability coefficient was .99. Additionally, when the analysis was

run on the DS group only, the Spearman Brown split-half reliability coefficient was .98, and when the analysis was run on the TD group only, it was .93.

*Parental Fears Questionnaire.* In order to assess fears that parents have about their child, a questionnaire was created, the Parental Fears Questionnaire (PFQ). Pilot data were collected to help with the development of this questionnaire (see Appendix L for data from the piloting phase). The following description is based on the final questionnaire after modifications were made from the piloting phase. Parental fears were measured in three primary domains: fear of negative child evaluation, fear of physical harm to child, and overprotective behavior due to parental fear. The fear of negative child evaluation domain includes 7 items. The fear of physical harm to child domain includes 5 items. The overprotective behavior due to parental fear domain includes 8 items. Parents answered on a 5-point Likert Scale (1 = never, 2 = seldom, 3 = some of the time, 4 = often, 5 = most of the time). The purpose of this questionnaire was to assess the fears that parents have in association to their child and the type of parenting behaviors that parents exhibit in response to these fears. It took approximately 3-5 minutes to complete. The Total Fears score, calculated by finding the mean for each subscale and then adding the three means together, was used in the current analyses. Higher scores are indicative of greater parental fear. The PFQ was included to be a mediator in analyses examining differences between parenting groups in autonomy support and coercion (see Appendix G for copy of questionnaire). Reliability was analyzed using the Spearman Brown split-half reliability method. When all participants were included in the analysis, the Spearman Brown split-half reliability coefficient was .94. Additionally, when the analysis was run on the DS group only, the Spearman Brown split-half reliability coefficient was .87, and when the analysis was run on the TD group only, it was .94.

### **Covariate measures.**

***Beck Depression Inventory.*** The Beck Depression Inventory 2<sup>nd</sup> Edition (BDI-II; Beck, Steer, Brown, 1996) is a measure of the attitudes and symptoms frequently exhibited by depressed patients and infrequently exhibited by non-depressed patients such as depressed mood, hopelessness, suicidal ideation, sleep disturbance, and appetite change. It was designed for use with individuals from 13- to 80-years-old. The BDI-II includes 21 symptoms and attitudes of depression that correspond to the DSM-IV criteria for depression. Each of these symptoms and attitudes are rated on a 0 to 3 scale based on intensity. While the BDI was originally developed to be administered by a trained interviewer, it is frequently and reliably self-administered and took approximately 5 minutes to complete. The BDI-II was scored by summing the ratings of the 21 items. The recommended cut-off scores for depression are: none or minimal depression = 0 – 13, mild depression = 14 – 19, moderate depression = 20 – 28, severe depression = 29 – 63. Internal consistency for adult psychiatric outpatients was .92 and for college students was .93. High convergent validity was demonstrated with adult psychiatric outpatients and college students, and construct validity was determined by significant correlations with related scales (e.g., Scale for Suicide Ideation, Beck Hopelessness Scale, Hamilton Psychiatric Rating Scale for Depression, Hamilton Rating Scale for Anxiety) (Beck, Steer, Brown, 1996). The Total Depression score, calculated by adding up the responses to each item, was used in the current analyses. The BDI-II was included to be used as a covariate in analyses examining differences between parenting groups in parenting styles and parenting dimensions (see Appendix H for copy of questionnaire).

***Parenting Stress Index.*** The short form of the Parenting Stress Index 4<sup>th</sup> edition (PSI-4-SF; Abidin, 1995) is a 36-item questionnaire used to measure the stress one experiences as a



parent. It was designed for use with parents of children from 0- to 12-years-old. Each item presents a statement, and in all but three of the items, participants are asked to respond on a 5-point scale from *strongly agree* to *strongly disagree*. For the other three items, participants are given a partial statement with five options to choose from for completing that statement. For example, “I feel that I am: 1. Not a very good parent; 2. A person who has some trouble being a parent; 3. An average parent; 4. A better than average parent; 5. A very good parent.” It took parents approximately 10 minutes to complete. The reported internal reliability for the PSI was .91, and the test-retest reliability was .84. Construct validity was determined by a significant correlation with the related Symptom Checklist-90-Revised and by a strong correlation (.87) between the long form and short form of the PSI (Abidin, 1995). The Total Stress Score was used in analyses with higher scores indicating higher levels of stress. The PSI-4-SF was used as a covariate in analyses examining differences between parenting groups in parenting styles and parenting dimensions. Additionally, the PSI-4-SF was used as a mediator in analyses examining differences between parenting groups in structure and chaos and a mediator in analyses examining the relationship between parenting behavior and child behavior (see Appendix I for copy of questionnaire).

## **Procedures**

Mothers/female guardians were recruited and informed consent was obtained. Participants were told that the study was examining the way in which they parent their child as well as their child’s cognitive and behavioral abilities through the use of several parent-report questionnaires. It was made very clear to the parents that all responses would be kept completely confidential. Parents had the option of having the questionnaires mailed to them, completing the questionnaires over the phone with the researcher, or having the researcher come to their house

or public location to complete the questionnaires. If the questionnaires were mailed, a pre-stamped, pre-addressed return envelope was included. Parents were asked to complete the questionnaires in a particular order, and this order was counterbalanced amongst participants. All questionnaires were completed in a random order except for three. The Background Questionnaire was always completed first, and the BDI-II and PSI-4-SF was completed last and in that order. If parents received the questionnaires through mail, then a cover letter detailed the order in which the parents should complete the questionnaires, and the questionnaires were also be included in the envelope in the desired order for completion. If parents completed the questionnaires over the phone with the researcher, then the researcher went through the questionnaires in the appropriate order. Only one mother chose to complete the questionnaires over the phone. No mother asked to meet the researcher at their home or public location to complete the questionnaires. Follow-up reminder calls and/or emails were made by the researcher to increase response rate for the questionnaires that were mailed. It took parents approximately 1 hour and 20 minutes to complete all of the questionnaires. All parents received a \$25 gift card to Walmart, Target, or Starbucks (their choice) after completing and returning the questionnaires as a thank you and compensation for participating in the study.

## CHAPTER 3

### RESULTS

#### **Preliminary Analyses**

**Missing data and outliers.** Participants left some items on the questionnaires blank. We attempted to contact the participants and get the missing items answered, but in cases where answers could not be obtained, we addressed the missing items for each questionnaire in one of four ways. First, some data were left as missing in the analyses (2 participants on the Background Questionnaire income item). Second, the item was deleted from the scale for all participants (FRI item #7 and item #12). In these instances, a large majority of participants did not answer the items (i.e., 22 participants for FRI #7 and 20 participants for FRI #12) and many explicitly marked that the item was not applicable. Consequently, we did not feel that these items were appropriate for the current sample and believed that the removal would create a more valid measurement. Third, the individual participant's scale mean was calculated without the missing item(s) (7 participants for the PSDQ; 2 participants for the FRI; 2 participants for the PEQ; 1 participant for the PFQ). In all of these cases, there were only one or two missing items for each participant, and we did not feel that the elimination of the item(s) would greatly affect the validity of that participant's data. Fourth, the scoring rules specified by the scale's manual were followed (2 participants for the CBCL- items were scored as zero; 11 participants for the BRIEF- for 10 participants, items were scored as one; for 1 participant, scale could not be scored because more than 14 items were unanswered; 1 participant for the BDI-II- item was scored as zero; 1

participant for the PSI-4-SF- the average score for the other items in the subscale was calculated and rounded up to a whole number, and the missing item was replaced with this score).

Next, all variables were examined for outliers. There was a total of 10 outliers ( $\pm 3$  standard deviations from the mean) on 9 different measures. We chose to change the outlying scores to be the point of 3 standard deviations, as supported by previous researchers (Tabachnick & Fidell, 2001). There was nothing about any of the outliers that made them appear invalid; however, we did not want the outliers to exert an undue influence on the analyses. Additionally, we did not want to lose power by removing participants, especially participants from the DS group. Therefore, the scores were transformed to be at the point of 3 standard deviations, instead of being either eliminated altogether or left as the original scores, and further analyses used these altered scores.

**Descriptive statistics and correlations.** Means, standard deviations, and ranges for all variables are listed in Table 2. Distributions of the dependent variables, covariates, and mediators were visually inspected for normality, skewness, and kurtosis. For all variables except one (the BDI-II), there were no serious violations of normality. The BDI-II displayed a significant positive skew, so the data were transformed using a logarithmic transformation. The main analyses were run using both the raw data and the transformed data, and the results remained the same. Therefore, we chose to present the results using the raw data.

**Table 2**  
**Descriptive Statistics**

	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>Range</b>	<b>Possible Range</b>
<b>TD Group</b>					
Authoritative	47	4.04	0.40	3.07 – 4.63	1.00 – 5.00
Authoritarian	47	1.96	0.36	1.20 – 2.80	1.00 – 5.00
Permissive	47	1.82	0.31	1.27 – 2.81	1.00 – 5.00
Warmth	47	4.29	0.39	3.07 – 4.92	1.00 – 5.00
Rejection	47	1.76	0.38	1.00 – 2.50	1.00 – 5.00
Structure	47	4.07	0.39	2.87 – 4.77	1.00 – 5.00
Chaos	47	1.74	0.32	1.21 – 2.78	1.00 – 5.00
Autonomy Support	47	3.23	0.65	1.67 – 4.40	1.00 – 5.00
Coercion	47	2.06	0.37	1.29 – 2.76	1.00 – 5.00
BDI-II	47	6.79	6.72	0.00 – 25.00	0.00 – 63.00
PSI-4-SF	47	68.77	16.56	38.00 – 98.00	36.00 – 180.00
CBCL	47	23.93	17.87	1.00 – 81.90	0.00 – 240.00
BRIEF	47	115.59	25.46	79.00 – 192.90	86.00 – 216.00
PFQ	47	7.44	1.81	4.20 – 12.71	3.00 – 15.00
PEQ	47	13.36	0.98	10.34 – 14.56	3.00 – 15.00
<b>DS Group</b>					
Authoritative	35	3.87	0.36	2.92 – 4.59	1.00 – 5.00
Authoritarian	35	1.93	0.35	1.40 – 2.75	1.00 – 5.00
Permissive	35	2.03	0.47	1.27 – 3.40	1.00 – 5.00
Warmth	35	4.32	0.34	3.31 – 4.85	1.00 – 5.00
Rejection	35	1.64	0.48	1.00 – 3.00	1.00 – 5.00
Structure	35	3.84	0.36	2.87 – 4.39	1.00 – 5.00
Chaos	35	1.95	0.48	1.29 – 3.40	1.00 – 5.00
Autonomy Support	35	3.11	0.70	1.83 – 4.83	1.00 – 5.00
Coercion	35	2.09	0.31	1.53 – 2.76	1.00 – 5.00
BDI-II	35	9.20	8.99	0.00 – 38.94	0.00 – 63.00
PSI-4-SF	35	81.91	22.70	36.00 – 140.00	36.00 – 180.00
CBCL	35	37.06	22.10	4.00 – 100.00	0.00 – 240.00
BRIEF	34	149.12	21.28	90.00 – 191.00	86.00 – 216.00
PFQ	35	9.51	1.49	6.77 – 13.48	3.00 – 15.00
PEQ	35	9.75	2.00	5.86 – 13.73	3.00 – 15.00

Note: BDI-II = Beck Depression Inventory, 2<sup>nd</sup> edition; PSI-4-SF = Parenting Stress Index, 4<sup>th</sup> edition, short form; CBCL = Child Behavior Checklist; BRIEF = Behavior Rating Inventory of Executive Function; PFQ = Parental Fears Questionnaire; PEQ = Parental Expectations Questionnaire.

Additionally, the correlations among all variables were analyzed separately for each group using Pearson product-moment correlation coefficients. The correlations for the TD group are listed in Table 3, and the correlations for the DS group are listed in Table 4. As would be expected, authoritative parenting was positively correlated with all three positive parenting dimensions (warmth, structure, and autonomy support), while authoritarian and permissive parenting was positively correlated with one or more of the negative parenting dimensions (rejection, chaos, and coercion) depending on the relationship being examined. Also, as expected, parenting stress was significantly correlated with all three parenting styles and with the parenting dimensions, with authoritative parenting and positive parenting dimensions being negatively correlated and authoritarian parenting, permissive parenting, and negative parenting dimensions being positively correlated. The only correlation that did not follow this pattern was parental stress and autonomy support in the DS group, which were not significantly correlated. The correlations amongst the six parenting dimensions were as expected for the TD group, with each dimension being negatively correlated with its theoretical opposite (e.g., warmth is negatively correlated with rejection). However, for the DS group, none of the dimensions were significantly correlated with the theoretically opposite dimension. Another unexpected finding was that parental depression was not significantly correlated with any of the parenting styles or dimensions except for coercion in the DS group. Parental depression was intended as a covariate in further analyses to compare groups on parenting styles and dimensions, but since it was not correlated with these variables, it was not an acceptable covariate and was not included in these analyses.

**Table 3**  
**Correlations for TD Group**

	<b>Authoritative</b>	<b>Authoritarian</b>	<b>Permissive</b>	<b>Warmth</b>	<b>Rejection</b>	<b>Structure</b>	<b>Chaos</b>	<b>Autonomy Support</b>	<b>Coercion</b>
<b>Authoritative</b>	--	--	--	--	--	--	--	--	--
<b>Authoritarian</b>	-.58**	--	--	--	--	--	--	--	--
<b>Permissive</b>	-.43**	.38**	--	--	--	--	--	--	--
<b>Warmth</b>	.88**	-.52**	-.37*	--	--	--	--	--	--
<b>Rejection</b>	-.35*	.73**	.04	-.37*	--	--	--	--	--
<b>Structure</b>	.66**	-.37*	-.57**	.54**	-.18	--	--	--	--
<b>Chaos</b>	-.40**	.52**	.95**	-.35*	.19	-.53**	--	--	--
<b>Autonomy Support</b>	.83**	-.52**	-.22	.57**	-.22	.48**	-.22	--	--
<b>Coercion</b>	-.54**	.91**	.39**	-.44**	.47**	-.33*	.49**	-.58**	--
<b>BDI-II</b>	-.11	.13	.18	-.15	.13	-.20	.26	-.15	.17
<b>PSI-4-SF</b>	-.47**	.49**	.39**	-.52**	.32*	-.31*	.44**	-.41**	.50**
<b>CBCL</b>	.04	.17	.10	-.06	.21	.04	.21	.03	.15
<b>BRIEF</b>	-.08	.41**	.16	-.06	.20	-.14	.30*	-.20	.43**
<b>PFQ</b>	.003	.25	.37*	.01	.14	-.24	.45**	.01	.33*
<b>PEQ</b>	.04	.08	-.10	.21	.15	-.09	.04	-.08	.07
<b>Child CA</b>	-.04	-.15	-.09	-.05	.001	-.11	-.08	.09	-.21
<b>Maternal Education</b>	.03	.18	-.13	.07	.21	.17	-.12	.09	.17
<b>Income</b>	-.01	.01	-.14	.03	.07	.13	-.14	.004	-.06
<b>Race</b>	.27	-.17	-.33*	.27	.07	.30*	-.28	.32*	-.30*

**Table 3 Continued**

	<b>BDI-II</b>	<b>PSI-4-SF</b>	<b>CBCL</b>	<b>BRIEF</b>	<b>PFQ</b>	<b>PEQ</b>	<b>Child CA</b>	<b>Maternal Education</b>	<b>Income</b>	<b>Race</b>
<b>BDI-II</b>	--	--	--	--	--	--	--	--	--	--
<b>PSI-4-SF</b>	.52**	--	--	--	--	--	--	--	--	--
<b>CBCL</b>	.25	.41**	--	--	--	--	--	--	--	--
<b>BRIEF</b>	.18	.51**	.63**	--	--	--	--	--	--	--
<b>PFQ</b>	.41**	.30*	.39**	.32*	--	--	--	--	--	--
<b>PEQ</b>	.09	-.12	-.05	.05	-.02	--	--	--	--	--
<b>Child CA</b>	-.25	-.08	-.05	-.29	-.22	.04	--	--	--	--
<b>Maternal Education</b>	-.32*	-.29*	-.42**	-.16	-.16	.13	.05	--	--	--
<b>Income</b>	-.35*	-.25	-.31*	-.19	-.38**	.22	.19	.46**	--	--
<b>Race</b>	-.28	-.34*	-.09	-.24	-.15	.06	.42**	.11	.43**	--

Note: \* = <.05; \*\* = <.01. BDI-II = Beck Depression Inventory, 2<sup>nd</sup> edition; PSI-4-SF = Parenting Stress Index, 4<sup>th</sup> edition, short form; CBCL = Child Behavior Checklist; BRIEF = Behavior Rating Inventory of Executive Function; PFQ = Parental Fears Questionnaire; PEQ = Parental Expectations Questionnaire; CA = chronological age.



**Table 4**  
**Correlations for DS Group**

	<b>Authoritative</b>	<b>Authoritarian</b>	<b>Permissive</b>	<b>Warmth</b>	<b>Rejection</b>	<b>Structure</b>	<b>Chaos</b>	<b>Autonomy Support</b>	<b>Coercion</b>
<b>Authoritative</b>	--	--	--	--	--	--	--	--	--
<b>Authoritarian</b>	-.21	--	--	--	--	--	--	--	--
<b>Permissive</b>	-.27	.21	--	--	--	--	--	--	--
<b>Warmth</b>	.81**	-.17	-.46**	--	--	--	--	--	--
<b>Rejection</b>	-.10	.81**	.10	-.04	--	--	--	--	--
<b>Structure</b>	.75**	-.04	-.36*	.62**	.07	--	--	--	--
<b>Chaos</b>	-.22	.26	.95**	-.45**	.15	-.25	--	--	--
<b>Autonomy Support</b>	.64**	-.09	.10	.24	-.10	.29	.08	--	--
<b>Coercion</b>	-.15	.91**	.19	-.14	.67**	.02	.23	-.11	--
<b>BDI-II</b>	-.20	.30	.28	-.33	.19	-.18	.31	-.15	.36*
<b>PSI-4-SF</b>	-.38*	.44**	.50**	-.56**	.35*	-.39*	.51**	-.05	.44**
<b>CBCL</b>	-.19	.58**	.28	-.31	.42*	-.10	.39*	-.16	.65**
<b>BRIEF</b>	-.21	.43*	.25	-.35*	.36*	-.14	.29	.001	.52**
<b>PFQ</b>	.08	.39*	.27	.01	.35*	-.05	.31	.10	.44**
<b>PEQ</b>	.10	-.21	-.19	.22	-.24	.21	-.12	-.07	-.29
<b>Child CA</b>	.12	-.04	-.11	-.01	.06	-.05	-.08	.14	.02
<b>Maternal Education</b>	-.21	-.04	-.10	-.09	.15	.05	-.14	-.26	-.15
<b>Income</b>	-.06	.04	-.12	-.06	.16	.27	-.10	-.23	.04
<b>Race</b>	-.21	.09	.03	-.07	.28	-.05	-.09	-.18	.09

**Table 4 Continued**

	<b>BDI-II</b>	<b>PSI-4-SF</b>	<b>CBCL</b>	<b>BRIEF</b>	<b>PFQ</b>	<b>PEQ</b>	<b>Child CA</b>	<b>Maternal Education</b>	<b>Income</b>	<b>Race</b>
<b>BDI-II</b>	--	--	--	--	--	--	--	--	--	--
<b>PSI-4-SF</b>	.68**	--	--	--	--	--	--	--	--	--
<b>CBCL</b>	.68**	.66**	--	--	--	--	--	--	--	--
<b>BRIEF</b>	.38*	.64**	.74**	--	--	--	--	--	--	--
<b>PFQ</b>	.48**	.57**	.55**	.46**	--	--	--	--	--	--
<b>PEQ</b>	-.32	-.57**	-.32	-.32	-.27	--	--	--	--	--
<b>Child CA</b>	.10	.03	.18	.02	.10	-.31	--	--	--	--
<b>Maternal Education</b>	-.13	-.02	-.18	.002	-.14	-.09	-.37*	--	--	--
<b>Income</b>	.14	.07	.09	.15	-.19	-.05	-.16	.55**	--	--
<b>Race</b>	.06	.13	-.09	-.03	-.02	-.35*	-.21	.46**	.23	--

Note: \* = <.05; \*\* = <.01. BDI-II = Beck Depression Inventory, 2<sup>nd</sup> edition; PSI-4-SF = Parenting Stress Index, 4<sup>th</sup> edition, short form; CBCL = Child Behavior Checklist; BRIEF = Behavior Rating Inventory of Executive Function; PFQ = Parental Fears Questionnaire; PEQ = Parental Expectations Questionnaire; CA = chronological age.

**Group differences.** Several one-way analyses of variance (ANOVA) were conducted to compare groups on demographic variables, control variables, and mediator variables. For all categorical variables, the categories were first converted to numbers in order to run the ANOVA (Appendix A shows the number that corresponds with each category). There was a significant difference in groups in child CA,  $F(1, 80) = 5.03, p = .028, \eta_p^2 = .059$ , with the DS group having a higher CA than the TD group. However, child CA was not correlated with any of the parenting styles or dimensions, and there was no theoretical reason for why this difference would affect the results of the main analyses. Therefore, we did not control for this variable in further analyses. There was not a significant difference between groups on maternal education ( $p = .521$ ), annual family income ( $p = .179$ ), or child race ( $p = .683$ ). While groups were not significantly different on annual family income, they were not equivalent either. Therefore, correlations were examined. Income was not correlated with any of the parenting styles or dimensions, so it was not controlled for in further analyses.

We expected groups to differ on measures of parental depression, parental stress, child behavior, child cognitive ability, parental fears, and parental expectations. Contrary to expectations, there was not a significant difference between groups on parental depression ( $p = .168$ ); however, the pattern of means was in the expected direction with the DS group having higher levels of parental depression than the TD group. As expected, there was a significant difference in groups on parental stress,  $F(1, 80) = 9.21, p = .003, \eta_p^2 = .103$ , with the DS group having higher levels of parental stress than the TD group. Also as expected, there were significant differences in groups on child behavior,  $F(1, 80) = 8.83, p = .004, \eta_p^2 = .099$ , and child cognitive ability,  $F(1, 79) = 39.12, p < .001, \eta_p^2 = .331$ , with the DS group having more behavioral problems and lower cognitive ability than the TD group (note that higher scores on

the BRIEF indicate lower levels of cognitive ability). Finally, there were expected significant differences in groups on parental fears,  $F(1, 80) = 30.52, p < .001, \eta_p^2 = .276$ , and parental expectations,  $F(1, 80) = 115.87, p < .001, \eta_p^2 = .592$ , with the DS group having greater fears and lower expectations than the TD group.

## **Main Analyses**

**Parenting styles.** To examine differences between groups on the three parenting styles (authoritative, authoritarian, and permissive), a one-way multivariate analysis of variance (MANOVA) was conducted. The MANOVA revealed a significant difference between groups on parenting styles, Wilks'  $\Lambda = 0.89, F(3, 78) = 3.27, p = .026, \eta_p^2 = .112$ . Univariate follow-up analyses revealed that the groups were marginally significantly different on authoritative parenting,  $F(1, 80) = 3.69, p = .058, \eta_p^2 = .044$ , were significantly different on permissive parenting,  $F(1, 80) = 6.15, p = .015, \eta_p^2 = .071$ , but did not differ on authoritarian parenting ( $p = .753$ ). The DS group was less authoritative and more permissive than the TD group.

To see if the differences between groups on authoritative parenting and permissive parenting remained after controlling for parenting stress, a multivariate analysis of covariance (MANCOVA) was conducted. The MANCOVA only included authoritative parenting and permissive parenting as dependent variables. First, the assumption of homogeneity of regression slopes was tested by examining the slope between parenting stress and the set of dependent variables across groups. A non-significant interaction was found ( $p = .271$ ), signifying that the assumption was satisfied. In the one-way MANCOVA, there was not a significant difference between groups for this set of variables ( $p = .295$ ). Consequently, after accounting for the variance associated with parenting stress, differences in parenting styles no longer existed

between the DS group and TD group, meaning that group differences in stress accounted for group differences in authoritative and permissive parenting styles.

**Parenting dimensions.** To examine differences between groups on the six parenting dimensions (warmth, rejection, structure, chaos, autonomy support, and coercion), a one-way MANOVA was conducted. The MANOVA revealed a significance difference between groups on parenting dimensions, Wilks'  $\Lambda = 0.81$ ,  $F(6, 75) = 2.89$ ,  $p = .014$ ,  $\eta_p^2 = .188$ . Univariate follow-up analyses revealed that the groups were significantly different on structure,  $F(1, 80) = 7.52$ ,  $p = .008$ ,  $\eta_p^2 = .086$ , and chaos,  $F(1, 80) = 5.50$ ,  $p = .022$ ,  $\eta_p^2 = .064$ , but were not significantly different on warmth ( $p = .791$ ), rejection ( $p = .228$ ), autonomy support ( $p = .405$ ), or coercion ( $p = .654$ ). The DS group used less structure and more chaos than the TD group.

To see if the differences between groups on structure and chaos remained after controlling for parental depression and stress, a MANCOVA was conducted. The MANCOVA only included structure and chaos as dependent variables. First, the assumption of homogeneity of regression slopes was tested by examining the slope between parenting stress and the set of dependent variables across groups. A non-significant interaction was found ( $p = .789$ ), signifying that the assumption was satisfied. In the one-way MANCOVA, there was not a significant difference between groups for this set of variables ( $p = .701$ ). Consequently, after accounting for the variance associated with parenting stress, differences in parenting dimensions no longer existed between the DS group and TD group, meaning that group differences in stress accounted for group differences in structure and chaos.

To better understand the relationship between group and parenting dimensions, mediation analyses were run following the bootstrapping guidelines as outlined by Preacher and Hayes (2008; see also Hayes, 2009). The bootstrapping method is well suited for small sample sizes.

This method calculated an estimated mediated effect by randomly sampling cases from the data set. The random sampling was replicated 5000 times, and 5000 mediation effects were created. These 5000 mediation effects were then averaged across the sample, producing a point estimate and a 95% confidence interval for this point estimate. The mediation effect was considered significant ( $p < .05$ ) if the 95% confidence interval does not include zero. Since group differences in parenting dimensions were only seen for the structure and chaos dimensions, only these two dimensions were examined in the mediation analyses. This means that the models proposed are different from the models analyzed. The model in Figure 1 was not analyzed at all. The model in Figure 2 was analyzed as is for the chaos dimension but only included parental stress as a mediator for the structure dimension.

The first mediation analysis examined group differences in structure. The proposed mediation model included both child behavior and parental stress as mediators. However, an assumption for mediation is that the mediators are correlated with the dependent variable, and child behavior is not correlated with structure ( $n = 82, r = -.12, p = .300$ ). Therefore, only parental stress was analyzed as a potential mediator. Multiple regression analyses were conducted to assess each component of the proposed mediation model. First, it was found that group (DS vs. TD) was significantly associated with structure ( $B = .23, t = 2.74, p = .008$ ). It was also found that group was significantly related to parental stress ( $B = -13.15, t = -3.03, p = .003$ ). Lastly, results indicated that the mediator, parental stress, was significantly associated with structure ( $B = -.01, t = -3.21, p = .002$ ). Since both the a-path (i.e., path from independent variable to mediator) and the b-path (i.e., path from mediator to dependent variable) were significant, mediation analyses were tested using the bootstrapping method. Results of the mediation analysis confirmed the mediating role of parental stress in the relation between group

and structure (point estimate = .09, CI = .02 to .21). In addition, results indicated that the direct effect of group on structure became non-significant ( $B = .14, t = 1.71, p = .091$ ) when controlling for parental stress, thus suggesting full mediation. This suggests that parental stress is accounting for differences in groups on structure. Figure 4 displays the results.



Figure 4. Indirect effect of group (DS vs. TD) on structure through parental stress.

Note:  $*p < .05$ ,  $**p < .01$ ,  $***p < .001$ ; values presented are the B's associated with the multiple regression analyses; value inside parentheses is direct effect and value outside of parentheses is indirect effect.

The second mediation analysis examined group differences in chaos. As proposed, child behavior and parental stress were included in the model as potential mediators. Multiple regression analyses were conducted to assess each component of the proposed mediation model. First, it was found that group was significantly associated with chaos ( $B = -.21, t = -2.34, p = .022$ ). Next, it was found that group was significantly related to child behavior ( $B = -13.12, t = -2.97, p = .004$ ) but that child behavior was not significantly related to chaos ( $B = .002, t = 0.64, p = .523$ ). Group was also significantly related to parental stress ( $B = -13.15, t = -3.03, p = .003$ ), and parental stress was significantly related to chaos ( $B = .009, t = 3.69, p < .001$ ). Next, mediation analyses were tested using the bootstrapping method. Results of the mediation analysis confirmed the combined mediating role of child behavior and parental stress in the

relation between group and chaos (point estimate =  $-.14$ , CI =  $-.26$  to  $-.05$ ). In addition, results indicated that the direct effect of group on chaos became non-significant ( $B = -.07$ ,  $t = -0.83$ ,  $p = .408$ ) when controlling for child behavior and parental stress, thus suggesting full mediation. When examining each mediator separately, results found that parental stress while controlling for the effects of child behavior was a significant mediator (point estimate =  $-.12$ , CI =  $-.27$  to  $-.04$ ) but that child behavior while controlling for the effects of parental stress was not a significant mediator (point estimate =  $-.02$ , CI =  $-.09$  to  $.03$ ). Thus, it is parental stress that was the primary mediator, not child behavior. This suggests that parental stress is accounting for differences between groups on chaos. Figure 5 displays the results.

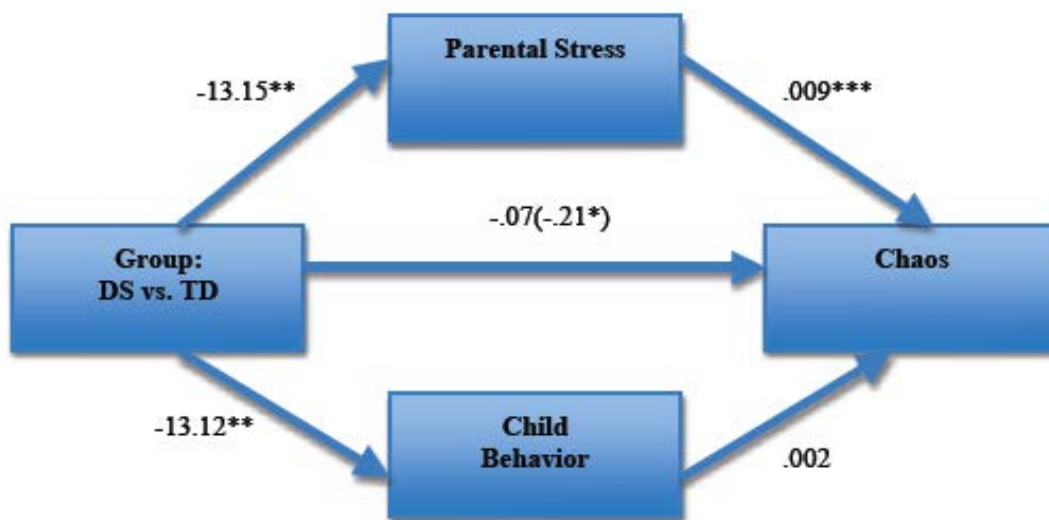


Figure 5. Indirect effect of group (DS vs. TD) on chaos through parental stress and child behavior.

Note:  $*p < .05$ ,  $**p < .01$ ,  $***p < .001$ ; values presented are the B's associated with the multiple regression analyses; value inside parentheses is direct effect and value outside of parentheses is indirect effect.

**Parenting dimensions and child behavior.** To analyze how parenting dimensions possibly influence child behavior, three two-tailed Pearson product-moment correlation



coefficients were run separately for each group. The correlations were run separately for each group instead of for the entire sample together because the pattern of results could be different for each group. The correlations analyzed the relationships between rejection and child behavior, chaos and child behavior, and coercion and child behavior. For the DS group, rejection ( $r = .42, p = .013$ ), chaos ( $r = .39, p = .019$ ), and coercion ( $r = .65, p < .001$ ) were all positively correlated with child behavior. This means that higher parental rejection, chaos, and coercion correspond to more child behavior problems in the DS group. For the TD group, rejection ( $r = .21, p = .160$ ), chaos ( $r = .21, p = .148$ ), and coercion ( $r = .15, p = .319$ ) were not significantly correlated with child behavior.

To better understand the relationship between parenting dimensions and child behavior in the DS group, mediation analyses were run following the bootstrapping guidelines. The first mediation analysis examined the relation between rejection and child behavior with parental stress as the mediator. Multiple regression analyses were conducted to assess each component of the proposed mediation model. First, it was found that rejection was significantly associated with child behavior ( $B = 19.30, t = 2.62, p = .013$ ). It was also found that rejection was significantly related to parental stress ( $B = 16.57, t = 2.12, p = .041$ ). Lastly, results indicated that the mediator, parental stress, was significantly associated with child behavior ( $B = .58, t = 4.35, p < .001$ ). Since both the a-path and b-path were significant, mediation analyses were tested using the bootstrapping method. Results of the mediation analysis did not confirm the mediating role of parental stress in the relation between rejection and child behavior (point estimate = 9.48, CI = -1.12 to 25.09). Thus, this means that parental stress did not mediate the relationship between rejection and child behavior for the DS group.

The second mediation analysis examined the relation between chaos and child behavior with parental stress as the mediator. Multiple regression analyses were conducted to assess each component of the proposed mediation model. First, it was found that chaos was significantly associated with child behavior ( $B = 18.16, t = 2.47, p = .019$ ). It was also found that chaos was significantly related to parental stress ( $B = 24.01, t = 3.38, p = .002$ ). Lastly, results indicated that the mediator, parental stress, was significantly associated with child behavior ( $B = .61, t = 4.10, p < .001$ ). Since both the a-path and b-path were significant, mediation analyses were tested using the bootstrapping method. Results of the mediation analysis confirmed the mediating role of parental stress in the relation between chaos and child behavior (point estimate = 15.20, CI = 4.16 to 31.44). In addition, results indicated that the direct effect of chaos on child behavior became non-significant ( $B = 3.55, t = 0.50, p = .618$ ) when controlling for parental stress, thus suggesting full mediation. Figure 6 displays the results.

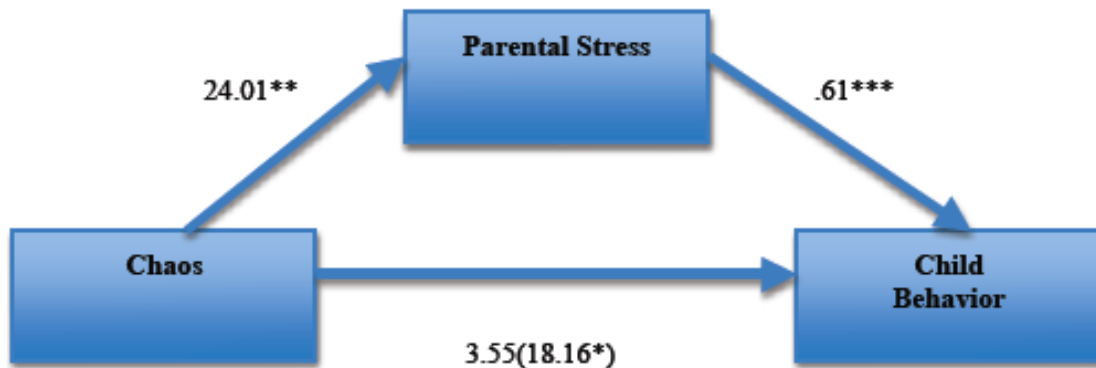


Figure 6. Indirect effect of chaos on child behavior through parental stress.

Note:  $*p < .05$ ,  $**p < .01$ ,  $***p < .001$ ; values presented are the B's associated with the multiple regression analyses; value inside parentheses is direct effect and value outside of parentheses is indirect effect.

The third mediation analysis examined the relation between coercion and child behavior with parental stress as the mediator. Multiple regression analyses were conducted to assess each

component of the proposed mediation model. First, it was found that coercion was significantly associated with child behavior ( $B = 45.46, t = 4.85, p < .001$ ). It was also found that coercion was significantly related to parental stress ( $B = 31.77, t = 2.80, p = .008$ ). Lastly, results indicated that the mediator, parental stress, was significantly associated with child behavior ( $B = .46, t = 3.78, p = .001$ ). Since both the a-path and b-path were significant, mediation analyses were tested using the bootstrapping method. Results of the mediation analysis confirmed the mediating role of parental stress in the relation between coercion and child behavior (point estimate = 14.85, CI = .62 to 33.66). However, when controlling for parental stress, the direct effect of coercion on child behavior remained significant ( $B = 30.84, t = 3.50, p = .001$ ), indicating only a partial mediation. Figure 7 displays the results.

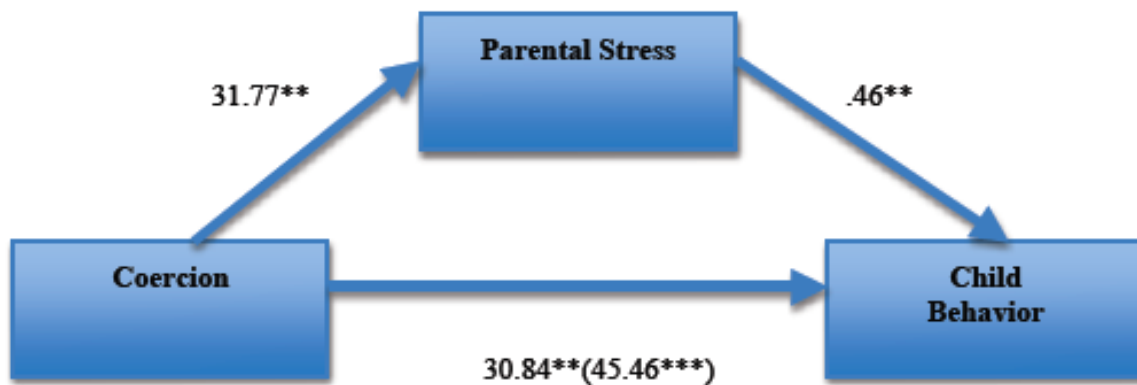


Figure 7. Indirect effect of coercion on child behavior through parental stress.

Note:  $*p < .05$ ,  $**p < .01$ ,  $***p < .001$ ; values presented are the B's associated with the multiple regression analyses; value inside parentheses is direct effect and value outside of parentheses is indirect effect.

### Additional Analyses

**Parenting styles.** While not originally proposed, we wanted to explore possible mediators for the relationship between groups and parenting styles. Since group differences in parenting styles were only seen for authoritative and permissive parenting, only these two styles

were examined in the mediation analyses. Several possible mediators were considered including parental stress, child behavior, child cognitive ability, parental expectations, and parental fears. Less authoritative parenting has been theoretically associated with increased parental stress (Woolfson & Grant, 2006), increased behavioral problems (Floyd & Phillippe, 1993), and lower expectations (Woolfson, 2004). Additionally, we theorized that parents of children with DS might use authoritative parenting less because they are too fearful of negative outcomes to offer autonomy support and because they believe that their children with DS might lack the cognitive abilities to understand the rules, the reasoning behind the rules, and their own decisions.

When examining group differences in authoritative parenting, only one of the potential mediators was correlated with authoritative parenting—parental stress. Since mediation analysis requires the mediator to be correlated with the dependent variable, parental stress was the only mediator included in the model. Multiple regression analyses were conducted to assess each component of the proposed mediation model. First, it was found that group was marginally significantly associated with authoritative parenting ( $B = .16, t = 1.92, p = .058$ ). It was also found that group was significantly related to parental stress ( $B = -13.15, t = -3.03, p = .003$ ). Lastly, results indicated that the mediator, parental stress, was significantly associated with authoritative parenting ( $B = -.01, t = -4.12, p < .001$ ). Since both the a-path and b-path were significant, mediation analyses were tested using the bootstrapping method. Results of the mediation analysis confirmed the mediating role of parental stress in the relation between group and authoritative parenting (point estimate = .11, CI = .03 to .23). In addition, results indicated that the direct effect of group on authoritative parenting became non-significant ( $B = .06, t = 0.67, p = .506$ ) when controlling for parental stress, thus suggesting full mediation. Figure 8 displays the results.

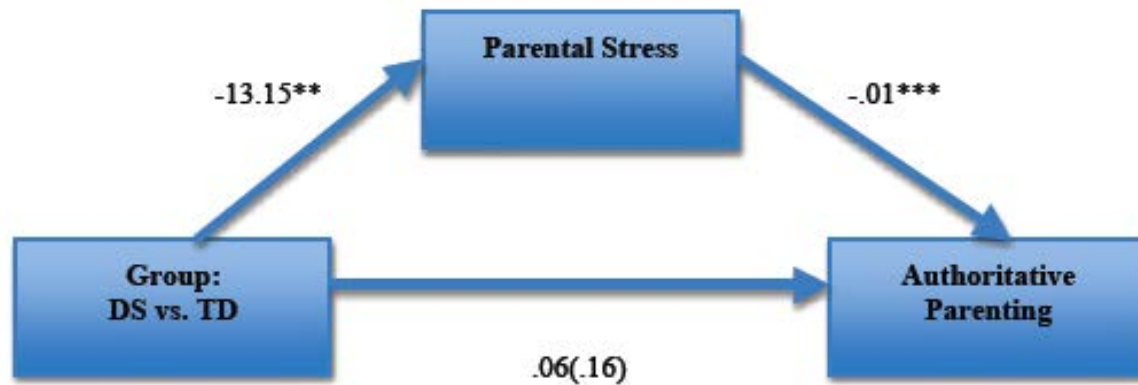


Figure 8. Indirect effect of group (DS vs. TD) on authoritative parenting through parental stress.

Note: \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ ; values presented are the B's associated with the multiple regression analyses; value inside parentheses is direct effect and value outside of parentheses is indirect effect.

When examining group differences in permissive parenting, four of the five potential mediators were significantly correlated with permissive parenting at a  $r$ -value of greater than .30—parental stress, child cognitive ability, parental fears, and parental expectations—and all four were included in the model. Multiple regression analyses were conducted to assess each component of the proposed mediation model. First, it was found that group was significantly associated with permissive parenting ( $B = -.23, t = -2.58, p = .012$ ). Next, it was found that group was significantly related to parental stress ( $B = -13.12, t = -2.98, p = .004$ ) and that parental stress was significantly related to permissive parenting ( $B = .01, t = 3.48, p = .001$ ). Group was also significantly related to child cognitive ability ( $B = -33.52, t = -6.25, p < .001$ ), but child cognitive ability was not significantly related to permissive parenting ( $B = -.002, t = -0.99, p = .326$ ). Further, group was significantly related to parental fears ( $B = -2.09, t = -5.48, p < .001$ ), but parental fears was not significantly related to permissive parenting ( $B = .04, t = 1.43, p = .157$ ). Lastly, group was significantly related to parental expectations ( $B = 3.57, t = 10.55, p < .001$ ), but parental expectations was not significantly related to permissive parenting ( $B = .008,$

$t = 0.28, p = .777$ ). Mediation analyses were tested using the bootstrapping method. Results of the mediation analyses did not find a mediating effect for the complete model (point estimate =  $-.09$ , CI =  $-.36$  to  $.17$ ). However, results did confirm the mediating role of parental stress in the relation between group and permissive parenting (point estimate =  $-.13$ , CI =  $-.27$  to  $-.03$ ). None of the other mediators in the model were significant. Thus, while there was no overall mediation, parental stress on its own did mediate significantly. Figure 9 displays the results.

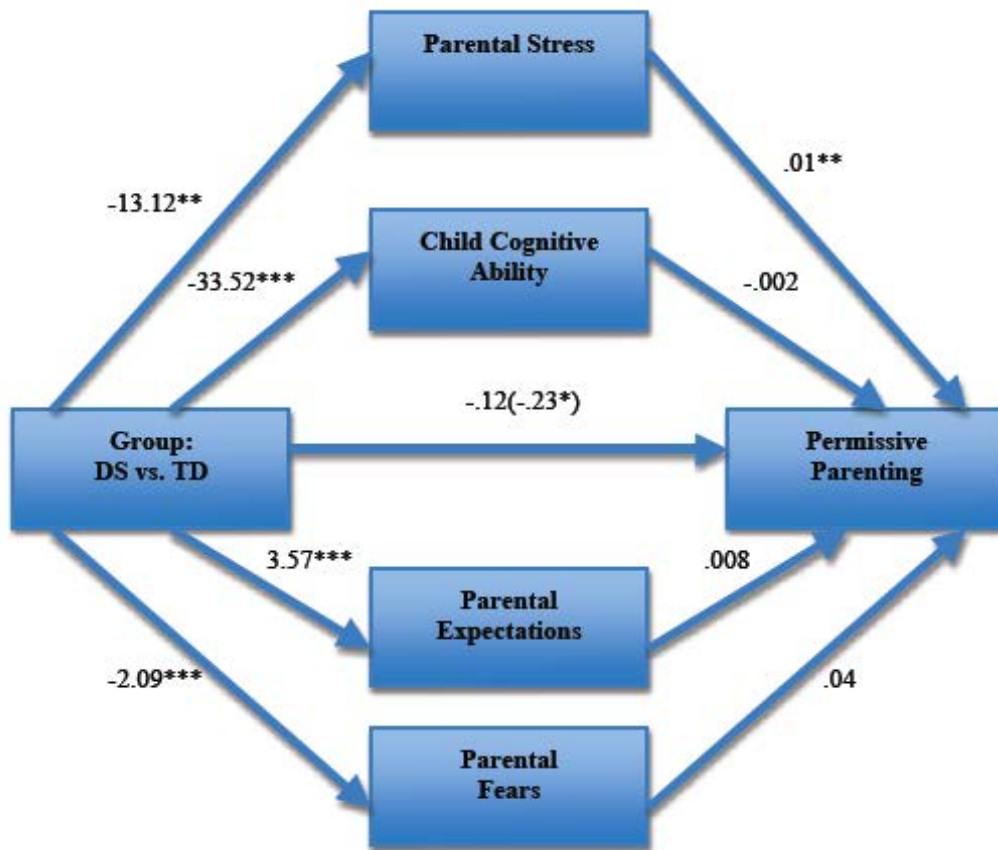


Figure 9. Indirect effect of group (DS vs. TD) on permissive parenting through parental stress, child cognitive ability, parental expectations, and parental fears.

Note:  $*p < .05$ ,  $**p < .01$ ,  $***p < .001$ ; values presented are the B's associated with the multiple regression analyses; value inside parentheses is direct effect and value outside of parentheses is indirect effect.

**Structure dimension.** To better understand the difference between groups on the structure dimension, we decided to break the structure dimension apart into its two components. The PSDQ aspect of our measure of structure addressed questions about the structure parents provided through disciplinary actions (i.e., consistent expectations and consequences, clearly outlined rules, follow through with discipline when necessary, and explanation for disciplinary actions), while the FRI aspect of our measure addressed questions about the structure parents provided through daily routines. To see if our mothers of children with DS scored lower than our mothers of TD children on one or both of these aspects of structure, we conducted two one-way ANOVAs. For the PSDQ structure dimension, there was a significant difference between groups,  $F(1, 80) = 14.99, p < .001, \eta_p^2 = .158$ , with the DS group having a lower structure score ( $M = 3.68, SD = 0.51$ ) than the TD group ( $M = 4.09, SD = 0.45$ ). For the FRI structure dimension, there was not a significant difference between groups,  $F(1, 80) = 0.16, p = .692, \eta_p^2 = .002$ . Consequently, the mothers of children with DS provided less structure to their children than mothers of TD children in terms of disciplinary action but not in terms of daily routines.

**Coercion and child behavior.** To better understand the relationship between coercion and child behavior in the DS group, an additional mediation analysis was run following the bootstrapping guidelines and including parental stress, parental depression, child cognitive ability, and parental fears as potential mediators. Multiple regression analyses were conducted to assess each component of the proposed mediation model. First, it was found that coercion was significantly associated with child behavior ( $B = 45.12, t = 4.73, p < .001$ ). Next, it was found that coercion was significantly related to parental stress ( $B = 32.05, t = 2.78, p = .009$ ) but that parental stress was not significantly related to child behavior ( $B = -.06, t = -0.38, p = .705$ ). Coercion was also significantly related to parental depression ( $B = 10.15, t = 2.16, p = .039$ ), and

parental depression was significantly related to child behavior ( $B = 1.04, t = 3.36, p = .002$ ). Further, coercion was significantly related to child cognitive ability ( $B = 34.57, t = 3.40, p = .002$ ), and child cognitive ability was significantly related to child behavior ( $B = .48, t = 3.74, p = .001$ ). Lastly, coercion was significantly related to parental fears ( $B = 2.09, t = 2.74, p = .010$ ), but parental fears was not significantly related to child behavior ( $B = .80, t = 0.48, p = .634$ ). Results of the mediation analysis confirmed the mediating effect for the complete model (point estimate = 26.87, CI = 11.02 to 53.22). However, results indicated that the direct effect of coercion on child behavior remained significant ( $B = 17.94, t = 2.36, p = .025$ ) when controlling for the mediators. Therefore, the proposed model only demonstrated partial mediation. Additionally, when examining each mediator separately, results found that parental depression while controlling for the effects of the other three mediators was a significant mediator (point estimate = 9.92, CI = .20 to 30.74) and that child cognitive ability while controlling for the effects of the other three mediators was a significant mediator (point estimate = 16.17, CI = 6.96 to 31.72). Thus, parental depression and child cognitive ability are the primary mediators in this model accounting for differences in coercion on child behavior. Figure 10 displays the results.



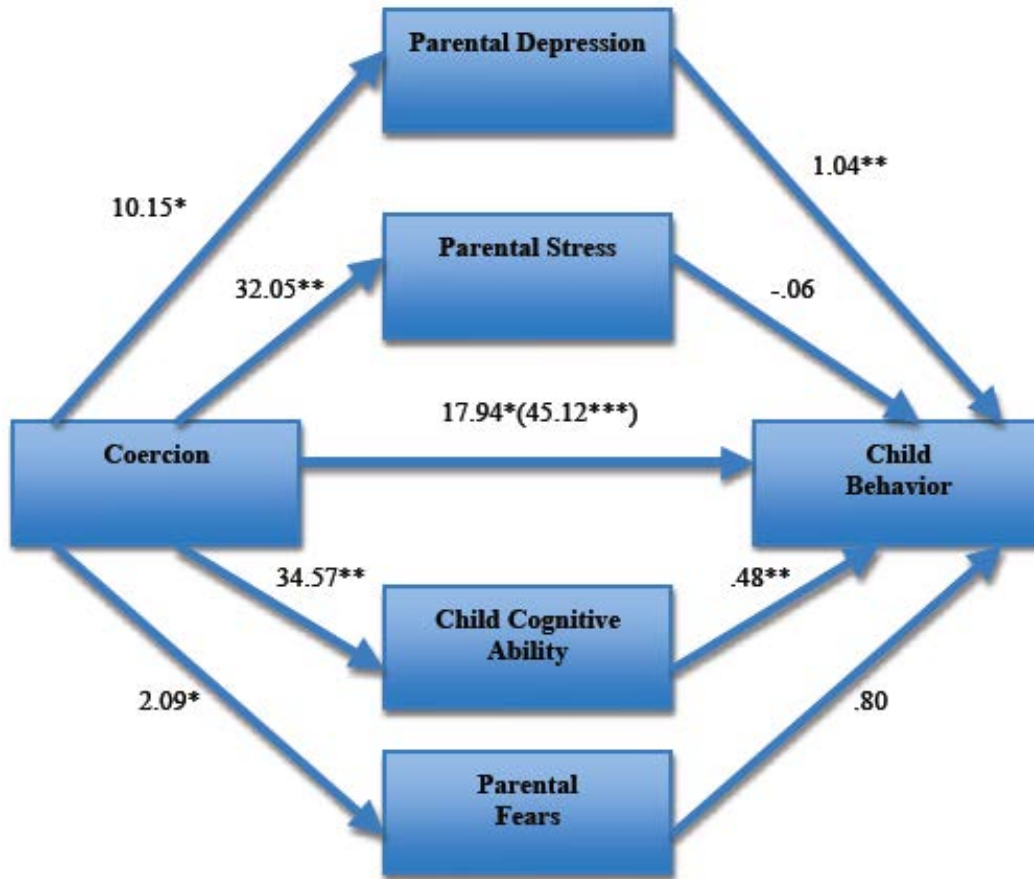


Figure 10. Indirect effect of coercion on child behavior through parental depression, parental stress, child cognitive ability, and parental fears.

Note: \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ ; values presented are the B's associated with the multiple regression analyses; value inside parentheses is direct effect and value outside of parentheses is indirect effect.

**Rejection and child behavior.** To better understand the relationship between rejection and child behavior in the DS group, an additional mediation analysis was run following the bootstrapping guidelines and including child cognitive ability and parental fears as potential mediators. Multiple regression analyses were conducted to assess each component of the proposed mediation model. First, it was found that rejection was significantly associated with child behavior ( $B = 19.23, t = 2.59, p = .014$ ). Next, it was found that rejection was significantly related to child cognitive ability ( $B = 16.08, t = 2.21, p = .034$ ) and that child cognitive ability

was significantly related to child behavior ( $B = .62, t = 4.48, p < .001$ ). Coercion was also significantly related to parental fears ( $B = 1.09, t = 2.09, p = .045$ ), and parental fears was marginally related to child behavior ( $B = 3.48, t = 1.81, p = .080$ ). Results of the mediation analysis confirmed the combined mediating role of child cognitive ability and parental fears in the relation between rejection and child behavior (point estimate = 13.73, CI = .01 to 29.10). In addition, results indicated that the direct effect of rejection on child behavior became non-significant ( $B = 5.52, t = 0.96, p = .346$ ) when controlling for child cognitive ability and parental fears, thus suggesting full mediation. This suggests that child cognitive ability and parental fears are accounting for differences in rejection on child behavior. Figure 11 displays the results.

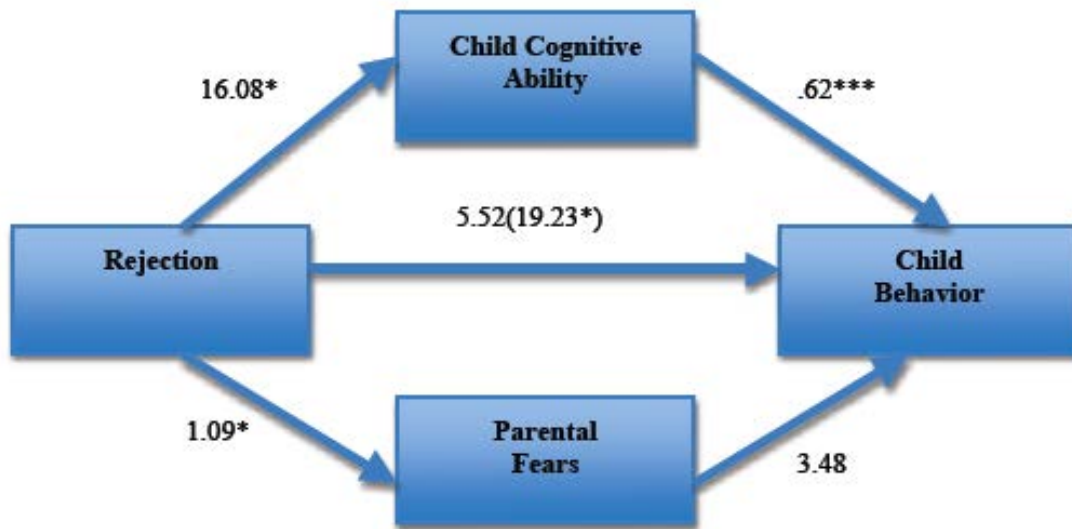


Figure 11. Indirect effect of rejection on child behavior through child cognitive ability and parental fears.

Note:  $*p < .05$ ,  $**p < .01$ ,  $***p < .001$ ; values presented are the B's associated with the multiple regression analyses; value inside parentheses is direct effect and value outside of parentheses is indirect effect.

## CHAPTER 4

### DISCUSSION

The primary goal of this study was to examine parenting styles and dimensions in mothers of children with DS. It did so through a survey design where mothers filled out questionnaires about parenting techniques, parental well-being, parental expectations and fears, child behavior, and child cognitive ability. It then compared the responses of mothers of children with DS to mothers of TD children. Based on previous research, it was expected that mothers of children with DS would utilize negative parenting styles and dimensions more than mothers of TD children. Further, it was expected that these differences in parenting styles and dimensions would remain even after statistically controlling for differences in parental stress and depression. Finally, it was expected that these negative parenting dimensions would be positively correlated with child problem behaviors within each group.

#### **Parenting Styles**

First, mothers of children with DS were compared to mothers of TD children on Baumrind's three classic parenting styles—authoritative, authoritarian, and permissive parenting. Results showed that mothers of children with DS utilized authoritative parenting less and permissive parenting more than mothers of TD children. Thus, our first hypothesis was partially supported. In addition to using permissive parenting more and authoritative parenting less, we expected mothers of children with DS to also use authoritarian parenting more. However, both groups showed exceptionally low levels of authoritarian parenting. The differences we found for authoritative parenting replicate those of Woolfson and Grant (2006) who found that parents of

children with DD between the ages of 9 and 11 years used authoritative parenting less than parents of TD children. When looking at the distribution for authoritative parenting in the DS group, we found that the mothers were not scoring at the lowest level of authoritative parenting; rather, the mothers scored at the mid to high levels of authoritative parenting. Similarly, when looking at the distribution for permissive parenting in the DS group, we found that the mothers were not scoring at the highest level of permissive parenting but scored at the low to mid levels of permissive parenting. Consequently, while mothers of children with DS used authoritative parenting significantly less and permissive parenting significantly more than mothers of TD children, they were not at the extreme low end of authoritative parenting or extreme high end of permissive parenting. Since the current study did not examine childhood outcomes, we are unable to know if the decreased use of authoritative parenting and increased use of permissive parenting resulted in negative consequences for the children with DS. To fully understand the practical implications of our findings, future work is needed on the relationship between parenting styles and childhood outcomes in children with DS.

Next, we examined whether these differences in parenting styles remained after parental stress and depression were statistically controlled. Previous research has found that mothers of children with DS have significantly greater levels of parental stress and depression (Dabrowska & Risula, 2010; Roach et al., 1999; Scott et al., 1997). However, in the current study, a significant difference between groups was only found for parental stress not parental depression. While the results were in the expected direction for parental depression, with the DS group having higher levels of depression than the TD group, significance was not reached. Further, parental depression was not correlated with the parenting styles or dimensions in either of the groups except for coercion in the DS group. With the lack of group differences and significant

correlations, parental depression was not an appropriate covariate for the planned analyses. A lack of difference between groups in the current sample might be because we were specifically examining mothers of children with DS. Parental depression is more pronounced in parents of children with non-DS ID than parents of children with DS (e.g., Abbeduto et al., 2009; Fisman et al., 1996). While differences have still been shown between parents of children with DS and parents of TD children, the differences are not as strong as differences found with other etiologies. Therefore, our lack of significant findings might be related to idiosyncrasies of our specific sample, or the differences in parental depression might be smaller than previously thought. Studies with larger sample sizes are needed to clarify the level of parental depression in this population since it is possible that we might have found significant differences with a larger sample. For the current study, though, only parental stress was used as a covariate.

When parental stress was statistically controlled, differences in parenting styles no longer existed. Further, when parental stress was entered into a mediation model, it fully mediated the relationship between group and authoritative parenting and between group and permissive parenting. This tells us that differences between mothers of children with DS and mothers of TD children in authoritative and permissive parenting can be explained by parental stress. Mothers of children with DS have higher levels of parental stress than mothers of TD children and, possibly as a result of this increased stress, use authoritative parenting less and permissive parenting more than the mothers of TD children. Previous research has repeatedly shown increased levels of stress in parents of children with ID (Baxter, Cummins, & Yiolitis, 2000; Hauser-Cram, Warfield, Shonkoss, & Krauss, 2001; Norlin & Broberg, 2013; Oelofsen & Richardson, 2006) and specifically in parents of children with DS (Dabrowska & Pisula, 2010;

Roach, Orsmond, & Barratt, 1999), but this is the first study to show that this increase in parental stress is potentially affecting parenting styles.

### **Parenting Dimensions**

Next, mothers of children with DS were compared to mothers of TD children on the six primary parenting dimensions—warmth, rejection, structure, chaos, autonomy support, and coercion. We first hypothesized that parents of children with DS would offer more warmth than parents of TD children. This hypothesis was not supported. Instead, both groups, on average, showed similarly high levels of parental warmth. Our hypothesis was based on Blacher et al.'s (2013) study showing that mothers of children with DS used more positive parenting techniques than mothers of TD children. However, a couple of key differences exist between the two studies that might help explain our null findings. First, their measurement of positive parenting was not just a measure of parental warmth; it included the assessment of positive affect, sensitivity to the child, stimulation of the child's cognition at a developmentally appropriate level, and the reverse coding of parental detachment from the child. Of these, positive affect is most closely related to parental warmth. Had the researchers examined positive affect independent of the other aspects of positive parenting, group differences might not have been found, and the results might have been similar to the present study's findings. Another difference between this study and the current study is that Blacher and colleagues' assessment of parenting was based on the coding of videotaped lab observations, while we used a parent survey. We cannot say which method is a more accurate measure of parenting. The mothers in our study might have responded more accurately to our survey since it was anonymous. On the other hand, they might have overestimated or underestimated their true use of parental warmth, and the observational method might have shown the mothers' actual utilization of parental

warmth. Future research could use both surveys and observational methods with the same sample to determine if the results from the two measurements are convergent or divergent.

We also hypothesized that parents of children with DS would offer less autonomy support and more coercion than parents of TD children. This hypothesis was not supported. We thought that these differences would emerge because of the lower cognitive abilities and higher behavioral problems of children with DS and because of lower parental expectations and higher parental fears of parents of children with DS. We did find that children with DS had significantly lower cognitive abilities and significantly higher behavioral problems than TD children and that parents of children with DS had significantly lower parental expectations and significantly higher parental fears than parents of TD children. However, even with the presence of these differences, parents still did not differ in their use of autonomy support or coercion. It is possible that our lack of differences in autonomy support were because of the specific measure used to assess autonomy support. The autonomy support items of the PSDQ asked parents about their child's input in family rules, their consideration of their child's desires and preferences, and their encouragement of their child's expression of opinions and ideas. Even if a child with DS is functioning at a much lower mental age than his/her CA, the parent could still grant autonomy in the ways described by the PSDQ. This idea is supported by the complete lack of correlation between autonomy support and child cognitive ability in the DS group ( $r = .001$ ). It is, therefore, still possible that mothers of children with DS use autonomy support less than mothers of TD children but that our measure was not sensitive enough to differentiate the autonomy granting that might only be given to higher functioning individuals. Future research could use a more sensitive measure of autonomy support to test this theory.

Similarly, the coercion dimension displayed the same pattern of results for both groups with a distribution of scores at the low to mid level. Coercion is frequently linked to authoritarian parenting, so our lack of differences in coercion did support our lack of differences between groups on authoritarian parenting. Neither of the parenting groups appears to be using the psychological control and punitive disciplinary methods that typify coercion. These results contradict Blacher et al.'s (2013) finding that parents of children with DS use more negative parenting techniques than parents of TD children. Their construct of negative parenting included items on rejection and coercion, while we examined rejection and coercion separately, and, again, their scores were based on the coding of videotaped lab observations, not parent-report as in the current study. Additionally, they only had 10 mothers of children with DS in their sample, so our significantly larger sample might be more representative of the population. Our results agree better with those of Gilmore and Cuskelly (2012) who also examined coercion in mothers of children with DS. In their measure of coercion, a mother could receive a maximum score of 56. At Time 1 of their study when the children were 4-6 years old, the mean score was 16.21, and at Time 2 of their study when the children were 11-15 years old, the mean score was 17.33. While they did not have a control group, their finding that mothers of children with DS show low levels of coercive parenting is similar to the current study's results.

There are several possibilities for why mothers of children with DS would show similarly low levels of coercion as the mothers of TD children. First, parents who are more educated are less likely to use coercive techniques than parents who are less educated (e.g., Ateah & Durrant, 2005; Fox, Platz, & Bentley, 1995). In the current sample, 80% of the mothers of children with DS earned a bachelor's degree or higher and 94.29% completed at least some college or more. These percentages are very similar to those of the mothers of TD children (76.60% earned a



bachelor's degree or higher and 97.87% completed at least some college or more), and significant differences were not found between groups on maternal education. Consequently, the lack of differences between groups on coercion cannot be accounted for by differences in education level. However, it is possible that once a certain level of education is attained, the use of coercion greatly diminishes regardless of whether or not the child has DS. In other words, the high levels of education might balance out the high levels of coercion that were expected for mothers of children with DS. If our sample included mother with lower levels of education, differences between groups might have been found. Further, the parents of children with DS might not feel the need to coerce their child to do their will; rather, they might believe that their child has the cognitive abilities to understand deductive reasoning skills. The significant correlation found between coercion and child cognitive ability in the current study's DS group ( $r = .52, p < .01$ ) supports this as a plausible explanation. The use of coercion increased as the child's cognitive abilities decreased (note: higher scores on our measure of cognitive ability indicate lower levels of cognitive ability). Also, parents of children with DS might not be coercive because of the characteristically pleasant personalities of children with DS (for review see Hodapp et al., 2001). This unique phenotype of children with DS could even result in lower levels of coercion amongst parents of children with DS compared to parents of children with non-DS ID. This could be tested in future studies that compare parents of other etiologies of ID to parents of children with DS.

Finally, we hypothesized that parents of children with DS would provide less structure and more chaos than parents of TD children. This hypothesis was supported. This hypothesis was based on two studies of mothers of children with autism spectrum disorder that showed a decreased use of structure in daily routines (Larson, 2006; Marquenie et al., 2001). Our study

appears to support and extend their findings of decreased structure and increased chaos to a sample of mothers of children with DS. However, when we divided the structure dimension to analyze disciplinary actions and daily routines separately, we found that our results actually diverge from the two previous studies. We found that mothers of children with DS used less structure for disciplinary action but used the same amount of structure in daily routines as mothers of TD children. Our results might be different due to the different populations being examined. Children with DS tend to exhibit less maladaptive behavior than children with autism spectrum disorder (e.g., Griffith, Hastings, Nash, & Hill, 2010), which could make establishing daily routines easier.

While these findings about structure were different than what we expected, the difference in terms of disciplinary action support and help clarify the differences found in authoritative and permissive parenting. A primary component of authoritative parenting is disciplinary structure, where parents provide clear guidelines, administer consistent discipline, and provide explanations for all disciplinary actions. In contrast, permissive parenting is characterized by disciplinary chaos, where parents lack consistent rules and discipline and do not follow through with disciplinary actions when needed. Consequently, the differences that we found between groups on authoritative and permissive parenting were most likely due to the use of more chaos and less structure in the DS group compared to the TD group.

We also examined possible explanations for the group differences in structure and chaos. We believed that the differences in groups on structure and chaos were due to increased child behavior problems and parental stress in the DS group (Larson, 2006; Marquenie et al., 2011). Both the MANCOVA and mediation analyses supported the explanatory power of parental stress, but not child behavior problems, in the differences between groups on structure and chaos.

When parental stress was statistically controlled, differences in parenting dimensions no longer existed. Further, when parental stress was entered into a mediation model, it mediated the relationship between group and structure and group and chaos. This tells us that differences in structure and chaos between mothers of children with DS and mothers of TD children can be potentially explained by parental stress. Mothers of children with DS have higher levels of parental stress than mothers of TD children and, possibly as a result of this increased stress, use structure less and chaos more than mothers of TD children. As with the results from parenting styles, this is the first study to show that this increase in parental stress for mothers of children with DS is potentially affecting parenting dimensions.

A particularly interesting and unexpected finding from the current study involved the correlations amongst the parenting dimensions within each group. The TD group was as expected with the positive parenting dimensions being negatively correlated with the theoretically opposite negative parenting dimensions (i.e., warmth vs. rejection, structure vs. chaos, and autonomy support vs. coercion). However, the DS group did not show the same significant correlations. All of the correlations were in the expected negative direction, but none of them reached significance. The correlations between warmth and rejection as well as autonomy support and coercion were exceptionally low with  $r$ -values of  $-.04$  and  $-.11$ , respectively, and even though the correlation between structure and chaos in the DS group ( $r = -.25$ ) was larger than the other two correlations, it was still substantially smaller than the same correlation in the TD group ( $r = -.53$ ). Our lack of significant correlations could be due to a power issue associated with the small sample in the DS group. However, it should also be reiterated that while these dimensions are theoretical opposites, they are not bipolar dimensions. Rather, Skinner and colleagues (2005) found that models of unipolar dimensions were a better fit

than models of bipolar dimensions. Therefore, it is not a necessary requirement for the theoretically opposite dimensions to be negatively correlated. Parents might not be high in one dimension and low in the other dimension; instead, they could be high in both dimensions, low in both dimensions, at the mid-level for both dimensions, or any combination of these options. For example, some of our mothers might have scored low on autonomy support and low on coercion, which would describe a mother who does not demand obedience or attempt to psychologically control her child but who also does not promote the independence or personal exploration of her child.

Since the correlations amongst the dimensions differed for the TD group and DS group, there might be something specific to having a child with DS that causes the dimensions to be less likely to be polar opposites. Children with DS are demanding in different ways, and they can cause many fluctuations in day-to-day life. It is possible that children with DS respond differently from one situation to the next more so than TD children, which could cause mothers of children with DS to respond differently based on the situation. For example, based on the variation in the child with DS's characteristics and behaviors, mothers may respond with warmth some of the time but rejection other times. Then, when mothers of children with DS responded to our parenting questionnaires, they recognized times when they responded to their child with warmth and times they responded with rejection, and just because a mother scored high in warmth did not necessarily mean that the mother scored low in rejection. Consequently, it might be that situational factors are influencing mothers of children with DS more than mothers of TD children and that these situational factors are resulting in greater variability in the dimensions that the mothers of children with DS utilize. Future research should include a measure of parental flexibility to see if mothers of children with DS are more flexible than mothers of TD

children and if this greater flexibility accounts for the lack of correlations between the parenting dimensions. Another possibility is that parents of children with DS could use a qualitatively different type of parenting than that described by the primary six dimensions for parents of TD children. Future work should determine if these six dimensions truly apply to parents of children with DS in the same way that they do for parents of TD children.

### **Parenting Dimensions and Child Behavior**

Lastly, the relationship between parenting behavior and child behavior was examined within each group. We expected to find a positive correlation between negative parenting dimensions (i.e., rejection, chaos, and coercion) and child behavior problems. As expected, significant relationships between each parenting dimension and child behavior problems were found for mothers of children with DS. This means that as the mothers increased in their use of rejection, chaos, or coercion, the behavioral problems of the child also increased. Since these results are correlational, though, we cannot determine the direction of this relationship. The negative parenting techniques could be causing an increase in the child's behavioral problems, or the child's behavioral problems could be causing an increase in the negative parenting techniques (see Floyd & Phillippe, 1993; Wiggs & Stores, 1996). Further, there could be a bidirectional relationship between the two where negative parenting techniques are influencing the child's behavior and the child's behavior is influencing the negative parenting techniques (see Hastings, 2002).

In an attempt to better explain the relationship between parenting dimensions and child behaviors in the DS group, we tested the mediating role of parental stress for each of these relationships. We found that parental stress fully explained the relationship between chaos and child behavior and partially explained the relationship between coercion and child behavior, but

that it did not explain the relationship between rejection and child behavior. This means that parents who are using chaos and coercion have higher levels of stress, and this higher stress level is a potential cause of children having greater behavioral problems. When parental stress was included in the model for chaos and child behavior, the significant relationship between chaos and child behavior was eliminated, which shows that parental stress accounted for a majority of the variance in this relationship. When parental stress was included in the model for coercion and child behavior, the significant relationship between coercion and child behavior remained, which shows that parental stress accounted for some, but not all, of the variance in this relationship. Consequently, other variables are potentially influencing the relationship between coercion and child behavior.

In our battery of measures, three other variables were significantly correlated with coercion and child behavior—parental depression, child cognitive ability, and parental fears. To see if any of these additional variables accounted for some of the remaining variance, they were included with parental stress in the mediation model. This complete model was significant, meaning that parental stress, parental depression, child cognitive ability, and parental fears together mediated the relationship between coercion and child behavior. However, when each mediator was considered separately, only parental depression and child cognitive ability were significant mediators, meaning that parental depression and child cognitive ability were the primary mediators in the relationship. Thus, an increased use of coercion was associated with increased parental depression and decreased child cognitive ability, which in turn was associated with increased child behavioral problems. Depression has been frequently associated with negative parenting practices such as coercion in the TD literature (e.g., Culp et al., 1989; Lahey et al., 1984; Simons et al., 1993), and possibly when parents are more depressed they invest less

effort into the behavioral training of their children, which results in greater child behavior problems. Further, it is possible that when parents use more psychological control and punitive disciplinary methods that children do not have the opportunity to fully develop their cognitive abilities. For example, if they are always told how to think, feel, and behave, then they never develop independent, critical thinking skills. It could then be this lack of cognitive development that leads to the increased behavioral problems. Another interesting finding in this mediation analysis was that parental stress significantly mediated the relationship when it was the only mediator in the model, but it was no longer a significant mediator when considered in the larger model. Presumably, the multicollinearity amongst the mediators resulted in parental stress' loss of significance. Further, even with the inclusion of two significant mediators, the direct relationship between coercion and child behavior remained significant after controlling for the four mediating variables. This means that these mediators were only partially accounting for the variance in this relationship and that there are still additional variables beyond those included in our battery that might explain this relationship. Future research could examine the potential mediating role of other variables such as perceived parental competency, amount of support received (both formal and informal support), type of coping strategy implemented, perceived competency and responsibility of the child, personality characteristics of the parent and/or child, and the parent's history of having received coercive parenting.

The significant relationship between rejection and child behavior in the DS group replicated the results found by Gilmore and Cuskelly (2012), but it was unexpected that parental stress did not mediate this relationship. To try and explain this relationship, we conducted another mediation analysis including child cognitive ability and parental fears, the only other variables in our battery that were correlated with rejection and child behavior. Together, these

two variables fully mediated the relationship between rejection and child behavior. Thus, an increased use of rejection was associated with decreased cognitive ability and increased parental fears, which in turn was associated with increased child behavior problems. It is possible that when parents are more hostile, critical, irritable, and harsh, children do not feel like they are important or competent. Further, when parents express a dislike or aversion to their children, the parents might be less likely to be actively engaged in their children's development. The children's personal beliefs and the parents' lack of involvement might lead to lower child cognitive abilities, which then lead to increased behavioral problems. Additionally, when parents reject their children, they might also believe that others are going to reject their children, which could cause an increase in parental fears, specifically fear of negative child evaluation. In thinking that others are going to view their children negatively, parents might feel embarrassed or disappointed in their children and might withdraw from the children. When parents are more absent from the children's lives, the children might be more likely to express internalizing and externalizing behavior problems.

In contrast with the DS group, no significant relationships between the negative parenting dimensions and child behavior were found for mothers of TD children. The majority of our mothers of TD children reported very few behavioral problems for their children, and this could account for the non-significant correlations. While the correlations were not significant, they were in the expected direction with more negative parenting techniques being associated with greater behavioral problems. If our sample included greater variance in child behavior, these correlations might have been strong enough to reach significance.



## **Parental Stress**

Throughout all of the analyses, parental stress was repeatedly highlighted as a key component in differences between groups. Not only was parental stress significantly higher in mothers of children with DS than mothers of TD children, parental stress also accounted for the differences seen between groups on parenting styles and parenting dimensions. More specifically, parental stress explained the differences in groups on authoritative parenting, permissive parenting, structure, and chaos. Further, parental stress at least partially explained the differences in chaos and coercion on child behavior problems in the DS group. Consequently, without the differences in parental stress, the DS group might not be different from the TD group in their parenting styles and dimensions.

There is a multitude of reasons why stress is elevated for mothers of children with DS. Children with DS have increased behavior problems (Cuskelly & Dadds, 1992; Roach et al., 1999) and are at-risk for many health-related problems (Van Allen, Fung, & Jurenka, 1999). Parents experience greater care-giving demands (Roach et al., 1999), increased financial burdens (Parish et al., 2004; Quine & Pahl, 1985, 1991), more issues associated with advocacy (Blacher & Hatton, 2007), limited formal and informal support (Douma et al., 2006), and decreased feelings of maternal competency (Haldy & Hanzlik, 1990). Since the increased stress for mothers of children with DS resulted in the decreased use of parenting techniques typically associated with positive child outcomes and increased use of parenting techniques typically associated with negative outcomes, it should possibly be the focus of parenting intervention efforts. If intervention could lower parental stress in parents of children with DS, then parents would possibly start using more positive parenting techniques and less negative parenting techniques and children with DS would presumably show long-term improvements in cognitive,

behavioral, social, and/or academic domains. However, since parents of children with DS are so likely to be living under stressful circumstances, which could make intervention efforts to reduce stress difficult, intervention could instead focus on improving parenting techniques despite the stress that parents experience. Parents could learn to utilize positive parenting techniques while they are living in stressful situations. Such use of positive techniques would hopefully improve the long-term outcomes for the children.

### **Limitations**

The present study has certain limitations that warrant mention. While the sample size is larger than the other studies examining parenting dimensions in parents of children with DS, the DS group still had a relatively small sample size. This potentially limited the power necessary to detect a significant difference between groups. Undetected group differences from this study might be uncovered with a larger sample. Another limitation in the present study was the potential biases in the data. First, there was a possible selection bias. Many of our mothers of children with DS were recruited from a participant registry. It is possible that families who join the participant registry only represent a subset of the population of families who have a child with DS. For instance, the families in the registry might have higher socioeconomic statuses, be more interested in research, or have greater access to resources for their children with DS than families who are not in the registry. Further, the remaining mothers of children with DS and all of our mothers of TD children were individuals who contacted us to participate in the current study. These people who volunteer to participate in research might be different in some way from people who do not volunteer. Selection bias also existed in both of our groups because they were high in socioeconomic status and maternal education. The generalizability of our results is therefore constrained, and we cannot be certain that different results would not be found if our

sample included mothers with lower socioeconomic statuses and education. Future studies with larger samples sizes and greater variability in demographic variables would allow us to feel more confident in the generalizability of our results.

A second potential bias in the data is response bias. Participants in the current study might have been responding to the questionnaires in what they deemed to be a socially desirable way. They might also have believed they were responding honestly and accurately, but their actual parenting practices might differ from their responses. Either of these options could account for the current study's relatively low scores on negative parenting techniques and relatively high scores on positive parenting techniques. Future research would benefit from including both survey and observational designs in an effort to eliminate response bias. Further, there is a possibility that the mothers in the DS group comprehended and answered the questions in a different way than the mothers in the TD group. Studies using a semi-structured interview method could allow for a greater understanding of the participant's comprehension and thought process in answering questions about their parenting techniques.

There are a few limitations that are specific to the measures used in the current study. First, two new measures were created specifically for this study—the Parental Fears Questionnaire and the Parental Expectations Questionnaire. While both of these measures have face validity, no true assessment of validity has been conducted, and such an assessment is needed. Further, this was the first time that the PSDQ has been used to assess the six parenting dimensions. When determining reliability for these dimensions, two of the Cronbach's alphas were a bit weak ( $\alpha = .57$  for coercion in the DS group and  $\alpha = .58$  for rejection in the TD group). These weaker reliabilities could be influencing our correlations and mediation analyses. The reliability for the six dimensions deserves more attention in a study with a larger sample size.

Another issue with the PSDQ was that the assessment of some dimensions was based on only a small number of items. It is possible that some of the dimensions are more complex than what the limited number of items depicted, especially for this population, and more items might allow us to gain a better understand for what each dimension truly looks like for parents of children with DS.

### **Future Directions**

Since little work has been previously conducted on parenting styles and dimensions in parents of children with DS, much of the current study was exploratory in nature, and while our results were not all as expected, they do provide a solid foundation for future work in this field. As already mentioned, future studies need to utilize multiple methods to find converging evidence. More specifically, studies could include parent-report measures, observational methods, and/or semi-structured interviews to study parenting techniques of children with DS. Also, future studies should consider matching children on mental age rather than CA to see if mothers of children with DS are parenting in a similar way as parents of TD children who are functioning at the same cognitive level.

Additionally, future work could compare parenting styles and dimensions across etiologies of ID and compare parents of children with various etiologies to parents of TD children. Even though our mothers of children with DS were fairly similar in parenting techniques to our parents of TD children, this does not mean that parents of children with non-DS ID would have the same similarities. We know that parents of children with DS are different from parents of non-DS ID in that they have lower levels of stress, depression, and pessimism (e.g., Abbeduto et al., 2004; Dumas et al., 1991; Olsson & Hwang, 2003). This “Down syndrome advantage” might account for some of our null findings, and greater differences

between parents of children with ID and parents of TD children might occur when this advantage is not there. For the same reason, difference in parenting dimensions might also be found between parents of children with DS and parents of children with non-DS ID. For instance, parents of children with non-DS ID might show lower levels of warmth than parents of children with DS because they do not have the same pleasant personalities that elicit greater warmth and affection as children with DS.

Longitudinal studies are also needed for two primary reasons. First, we need to understand the stability of parenting styles and dimensions across time for parents of children with DS. We know from the TD literature that many factors can influence the stability of parenting (for review see Holden & Miller, 1999), and we also know that stress for parents of children with DS increases as children get older (Eisenhower et al., 2005; Hauser-Cram et al., 2001; Most et al., 2006). However, we do not know how stable parenting is and if there are particular points in a child's life when parenting intervention is more greatly needed. Secondly, we need to know the effects that particular parenting styles and dimensions have on long-term outcomes for children with DS. We do not know, for instance, that permissive parenting is associated with the same negative outcomes for children with DS as it is for TD children. Before we begin to intervene with parents of children with DS who exhibit more negative parenting techniques, we need to know that these parenting techniques are in fact negative for this population.

Finally, it would be very informative to study parenting styles and dimensions in parents who have a child with DS as well as a TD child. In the current sample, only three of the children with DS were only children. It is possible that the similarities between our groups exist because the parents of children with DS are utilizing the same parenting technique with their child with

DS as they do with their TD child. Especially if the TD child was born first, they might have already established their parenting style and dimensions, and they either cannot or do not change these with the addition of their child with DS. Additionally, the elimination of between-family differences would allow for a much clearer understanding of parenting differences.

### **Conclusions**

Based on the current analyses and discussion, we conclude that mothers of children with DS are overall using similar parenting methods as mothers of TD children. All differences that do exist in parenting styles and dimensions can be accounted for by parental stress. As such, parenting interventions should be either focused on reducing parental stress in an effort to improve parenting techniques or on educating parents on how to utilize positive parenting techniques despite their stressful life circumstances, which would, in theory, improve long-term child outcomes for children with DS.

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APPENDICES

**Appendix A: Background Questionnaire**

**CONFIDENTIAL**  
**Background Questionnaire**

Child Information

Child's Birth date \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_\_ Sex (circle one): M F  
Name of School \_\_\_\_\_ Grade \_\_\_\_\_

Race (check all that apply): \_\_\_\_\_ African American \_\_\_\_\_ American Indian  
\_\_\_\_\_ Black-Hispanic \_\_\_\_\_ Asian/Pacific Islander  
\_\_\_\_\_ White-Hispanic \_\_\_\_\_ White  
\_\_\_\_\_ Other \_\_\_\_\_

Has your child ever been diagnosed with any of the following? (check all that apply)

- \_\_\_ Autism Spectrum Disorder (ASD)
- \_\_\_ Asperger's Disorder
- \_\_\_ Pervasive Developmental Disability- Not Otherwise Specified (PDD-NOS)
- \_\_\_ Attention Deficit/Hyperactivity Disorder (ADHD)
- \_\_\_ Specific Language Impairment
- \_\_\_ Learning Disability
- \_\_\_ Dyslexia
- \_\_\_ Developmental Delay\*
- \_\_\_ Mental Retardation/Intellectual Disability\*
- \_\_\_ Cerebral Palsy
- \_\_\_ Epilepsy/seizures
- \_\_\_ Tourette's/Tic Disorder
- \_\_\_ Down Syndrome
- \_\_\_ Fetal Alcohol Syndrome
- \_\_\_ Tuberos Sclerosis
- \_\_\_ Perinatal Asphyxia (low oxygen at birth)
- \_\_\_ Postnatal Asphyxia (suffocation or near drowning during infancy or childhood)
- \_\_\_ Severe Lead Poisoning
- \_\_\_ Severe Head Injury
- \_\_\_ Willams syndrome
- \_\_\_ Fragile X Syndrome
- \_\_\_ Prader-Willi Syndrome
- \_\_\_ Depression

- Bipolar Disorder  
 Anxiety Disorder  
 Other syndrome or condition \_\_\_\_\_  
 **NONE OF THE ABOVE**

\*What is the cause of your child's developmental delay, mental retardation, or intellectual disability (if known)? \_\_\_\_\_

If your child has been diagnosed with one of the above, how old was your child when he/she received the diagnosis? \_\_\_\_\_

**Circle the number that best describes YOU:**

Highest Educational Level

- 1 Less than 7<sup>th</sup> grade
- 2 Junior high school (9<sup>th</sup> grade)
- 3 Partial high school (10<sup>th</sup> or 11<sup>th</sup> grade)
- 4 High school graduate or GED
- 5 Partial college (at least 1 year or technical training)
- 6 2-year college or associate's degree
- 7 4-year college or bachelor's degree
- 8 Graduate training or degree

Marital Status

- 1 Single, never married
- 2 Living with a partner
- 3 Married
- 4 Separated
- 5 Divorced
- 6 Widowed

Annual Family Income

- 1 Less than \$10,000
- 2 \$10,000 - \$14,999
- 3 \$15,000 - \$19,999
- 4 \$20,000 - \$24,999
- 5 \$25,000 - \$29,999
- 6 \$30,000 - \$34,999
- 7 \$35,000 - \$39,999
- 8 \$40,000 - \$44,999
- 9 \$45,000 - \$49,999
- 10 \$50,000 - \$54,999
- 11 \$55,000 - \$59,999
- 12 \$60,000 - \$64,999
- 13 \$65,000 - \$69,999
- 14 \$70,000 - \$74,999
- 15 \$75,000 - \$79,999
- 16 \$80,000 - \$84,999
- 17 \$85,000 - \$89,999
- 18 \$90,000 - \$94,999
- 19 \$95,000 - \$99,999
- 20 \$100,000+

How many children do you have? \_\_\_\_\_

What are the ages of your children? \_\_\_\_\_

**Instructions:** The following questions are about you and your relationships.

Who do you get parenting advice from?

Please list up to 10 people and their relationship to you—for example: family member, friend, child’s teacher, preacher, coworker, community agency worker, child’s coach, doctor

**Person 1** \_\_\_\_\_  
Name Relationship to You

**Person 2** \_\_\_\_\_  
Name Relationship to You

**Person 3** \_\_\_\_\_  
Name Relationship to You

**Person 4** \_\_\_\_\_  
Name Relationship to You

**Person 5** \_\_\_\_\_  
Name Relationship to You

**Person 6** \_\_\_\_\_  
Name Relationship to You

**Person 7** \_\_\_\_\_  
Name Relationship to You

**Person 8** \_\_\_\_\_  
Name Relationship to You

**Person 9** \_\_\_\_\_  
Name Relationship to You

**Person 10** \_\_\_\_\_  
Name Relationship to You

How satisfied are you with the parenting advice you receive from these individuals?

	<b>Very Dissatisfied</b>	<b>Mostly Dissatisfied</b>	<b>A Little Dissatisfied</b>	<b>A Little Satisfied</b>	<b>Mostly Satisfied</b>	<b>Very Satisfied</b>
<b>Person 1</b>	1	2	3	4	5	6
<b>Person 2</b>	1	2	3	4	5	6
<b>Person 3</b>	1	2	3	4	5	6
<b>Person 4</b>	1	2	3	4	5	6
<b>Person 5</b>	1	2	3	4	5	6
<b>Person 6</b>	1	2	3	4	5	6
<b>Person 7</b>	1	2	3	4	5	6
<b>Person 8</b>	1	2	3	4	5	6
<b>Person 9</b>	1	2	3	4	5	6
<b>Person 10</b>	1	2	3	4	5	6

Have you ever been involved in a parenting training program (i.e., a program or class that offers you advice about how to parent your child)? Circle one.    **Yes**            **No**

If yes, please describe the program (program name, place/location, number of people involved in program, teacher of program, etc.) and what you were taught: \_\_\_\_\_

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## Appendix B: Parenting Styles and Dimensions Questionnaire

*Instructions:* The following pages contain a list of behaviors that parents may exhibit when interacting with their children. The questions are designed to measure how often you exhibit certain behaviors toward your child. Please write in a number response for each item.

I exhibit this behavior:

- 1 = Never
- 2 = Once in a while
- 3 = About half of the time
- 4 = Very often
- 5 = Always

- \_\_\_\_\_ 1. I encourage my child to talk about the child's troubles.
- \_\_\_\_\_ 2. I guide my child by punishment more than by reason.
- \_\_\_\_\_ 3. I know the name of my child's friends.
- \_\_\_\_\_ 4. I find it difficult to discipline my child.
- \_\_\_\_\_ 5. I give praise when my child is good.
- \_\_\_\_\_ 6. I spank when my child is disobedient.
- \_\_\_\_\_ 7. I joke and play with my child.
- \_\_\_\_\_ 8. I withhold scolding and/or criticism even when my child acts contrary to my wishes.
- \_\_\_\_\_ 9. I show sympathy when my child is hurt or frustrated.
- \_\_\_\_\_ 10. I punish by taking privileges away from my child with little if any explanations.
- \_\_\_\_\_ 11. I spoil my child.
- \_\_\_\_\_ 12. I give comfort and understanding when my child is upset.
- \_\_\_\_\_ 13. I yell or shout when my child misbehaves.
- \_\_\_\_\_ 14. I am easygoing or relaxed with my child.
- \_\_\_\_\_ 15. I allow my child to annoy someone else.

- \_\_\_\_\_ 16. I tell my child how he/she should behave.
- \_\_\_\_\_ 17. I tell my child my expectations regarding behavior before the child engages in an activity.
- \_\_\_\_\_ 18. I scold and criticize to make my child improve.
- \_\_\_\_\_ 19. I show patience with my child.
- \_\_\_\_\_ 20. I grab my child when being disobedient.
- \_\_\_\_\_ 21. I state punishments to my child and do not actually do them.
- \_\_\_\_\_ 22. I am responsive to my child's feelings or needs.
- \_\_\_\_\_ 23. I allow my child to give input into family rules.
- \_\_\_\_\_ 24. I argue with my child.
- \_\_\_\_\_ 25. I appear confident about parenting abilities.
- \_\_\_\_\_ 26. I give my child reasons why rules should be obeyed.
- \_\_\_\_\_ 27. I appear to be more concerned with my own feelings than with my child's feelings.
- \_\_\_\_\_ 28. I tell my child that I appreciate what the child tries or accomplishes.
- \_\_\_\_\_ 29. I punish by putting my child off somewhere alone with little if any explanations.
- \_\_\_\_\_ 30. I help my child to understand the impact of behavior by encouraging my child to talk about the consequences of own actions.
- \_\_\_\_\_ 31. I am afraid that disciplining my child for misbehavior will cause the child to not like me.
- \_\_\_\_\_ 32. I take my child's desires into account before asking the child to do something.
- \_\_\_\_\_ 33. I explode in anger toward my child.
- \_\_\_\_\_ 34. I am aware of problems or concerns about my child in school.
- \_\_\_\_\_ 35. I threaten my child with punishment more often than actually giving it.
- \_\_\_\_\_ 36. I express affection by hugging, kissing, and holding my child.



- \_\_\_\_\_ 37. I try to change how my child feels or thinks about things.
- \_\_\_\_\_ 38. I ignore my child's misbehaviors.
- \_\_\_\_\_ 39. I use physical punishment as a way of disciplining my child.
- \_\_\_\_\_ 40. I carry out discipline after my child misbehaves.
- \_\_\_\_\_ 41. I apologize to my child when making a mistake in parenting.
- \_\_\_\_\_ 42. I tell my child what to do.
- \_\_\_\_\_ 43. I give in to my child when the child causes a commotion about something.
- \_\_\_\_\_ 44. I talk it over and reason with my child when the child misbehaves.
- \_\_\_\_\_ 45. I slap my child when the child misbehaves.
- \_\_\_\_\_ 46. I disagree with my child.
- \_\_\_\_\_ 47. I allow my child to interrupt others.
- \_\_\_\_\_ 48. I have warm and intimate times together with my child.
- \_\_\_\_\_ 49. When two children are fighting, I discipline the children first and ask questions later.
- \_\_\_\_\_ 50. I encourage my child to freely express him/herself even when disagreeing with parents.
- \_\_\_\_\_ 51. I bribe my child with rewards to bring about compliance.
- \_\_\_\_\_ 52. I scold or criticize when my child's behavior doesn't meet my expectations.
- \_\_\_\_\_ 53. I show respect for my child's opinions by encouraging my child to express them.
- \_\_\_\_\_ 54. I set strict, well-established rules for my child.
- \_\_\_\_\_ 55. I explain to my child how I feel about the child's good and bad behavior.
- \_\_\_\_\_ 56. I use threats as punishment with little or no justification.
- \_\_\_\_\_ 57. I take into account my child's preferences in making plans for the family.

- \_\_\_\_\_ 58. When my child asks why he or she has to conform, I state: because I said so, or I am your parent and I want you to.
- \_\_\_\_\_ 59. I appear unsure of how to solve my child's misbehavior.
- \_\_\_\_\_ 60. I tell my child that his/her behavior was dumb or stupid.
- \_\_\_\_\_ 61. I explain the consequences of the child's behavior.
- \_\_\_\_\_ 62. I demand that my child do things.
- \_\_\_\_\_ 63. I channel my child's misbehavior into a more acceptable activity.
- \_\_\_\_\_ 64. I shove my child when the child is disobedient.
- \_\_\_\_\_ 65. I emphasize the reasons for rules.
- \_\_\_\_\_ 66. I tell my child he/she is not as good as I was growing up.
- \_\_\_\_\_ 67. I make my child feel guilty when my child does not meet my expectations.
- \_\_\_\_\_ 68. I want to control whatever my child does.

*Scoring Instructions:* Scores for the three parenting styles and six parenting dimensions are obtained by finding the mean of the scores within each style/dimension.

The authoritative style includes items 1, 3, 5, 7, 9, 12, 14, 17, 19, 22, 23, 26, 28, 30, 32, 34, 36, 41, 44, 48, 50, 53, 55, 57, 61, 63, and 65. The authoritarian style includes items 2, 6, 10, 13, 18, 20, 24, 27, 29, 33, 39, 42, 45, 46, 49, 52, 56, 58, 62, and 64. The permissive style includes items 4, 8, 11, 15, 21, 25, 31, 35, 38, 40, 43, 47, 51, 54, and 59 (note items 25, 40, and 54 are reverse scored).

The warmth dimension includes items 1, 3, 5, 7, 9, 12, 14, 19, 22, 28, 36, 41, and 48. The rejection dimension includes items 18, 27, 33, 52, 66, and 67. Note that items 66 and 67 are taken from the Psychological Control/Over-protecting Parenting Questionnaire (Hart, Nelson, Robinson, Olsen, & McNeilly-Choque, 1998). The structure dimension includes items 17, 26, 30, 40, 44, 54, 55, 61, and 65. The chaos dimension includes items 4, 8, 10, 11, 15, 21, 31, 35, 38, 43, 47, 51, 58, and 59. The autonomy support dimension includes items 23, 32, 50, 53, 57, and 63. The coercion dimension includes items 2, 6, 13, 16, 20, 24, 29, 37, 39, 42, 45, 49, 56, 60, 62, 64, and 68. Note that items 16, 37, 60, and 68 are taken from the Psychological Control/Over-protecting Parenting Questionnaire (Hart, Nelson, Robinson, Olsen, & McNeilly-Choque, 1998).

## Appendix C: Family Routines Inventory

*Instructions:* Please circle the number that corresponds to each of the questions below.

1. Parent(s) have sometime each day for just talking with the children.
  - a. **Is this a routine in your family?**
    - 3 Always – Every Day
    - 2 3 – 5 Times a Week
    - 1 1 – 2 Times a Week
    - 0 Almost Never
2. Parent(s) have certain things they do every morning while getting ready to start the day.
  - a. **Is this a routine in your family?**
    - 3 Always – Every Day
    - 2 3 – 5 Times a Week
    - 1 1 – 2 Times a Week
    - 0 Almost Never
3. Working parent has a regular play time with the children after coming home from work.
  - a. **Is this a routine in your family?**
    - 3 Always – Every Day
    - 2 3 – 5 Times a Week
    - 1 1 – 2 Times a Week
    - 0 Almost Never
4. Working parent takes care of the children sometime almost every day.
  - a. **Is this a routine in your family?**
    - 3 Always – Every Day
    - 2 3 – 5 Times a Week
    - 1 1 – 2 Times a Week
    - 0 Almost Never
5. Children do the same things each morning as soon as they wake up.
  - a. **Is this a routine in your family?**
    - 3 Always – Every Day
    - 2 3 – 5 Times a Week
    - 1 1 – 2 Times a Week
    - 0 Almost Never
6. Parent(s) and children play together sometime each day.
  - a. **Is this a routine in your family?**
    - 3 Always – Every Day
    - 2 3 – 5 Times a Week
    - 1 1 – 2 Times a Week
    - 0 Almost Never

7. Non-working parent (if applicable) and children do something together outside the home almost every day (e.g., shopping, walking, etc.).

**a. Is this a routine in your family?**

- 3 Always – Every Day
- 2 3 – 5 Times a Week
- 1 1 – 2 Times a Week
- 0 Almost Never

8. Family has a ‘quiet time’ each evening when everyone talks or plays quietly.

**a. Is this a routine in your family?**

- 3 Always – Every Day
- 2 3 – 5 Times a Week
- 1 1 – 2 Times a Week
- 0 Almost Never

9. Parent(s) read or tell stories to the children almost every day.

**a. Is this a routine in your family?**

- 3 Always – Every Day
- 2 3 – 5 Times a Week
- 1 1 – 2 Times a Week
- 0 Almost Never

10. Each child has some time each day for playing alone.

**a. Is this a routine in your family?**

- 3 Always – Every Day
- 2 3 – 5 Times a Week
- 1 1 – 2 Times a Week
- 0 Almost Never

11. Children take part in regular activities after school.

**a. Is this a routine in your family?**

- 3 Always – Every Day
- 2 3 – 5 Times a Week
- 1 1 – 2 Times a Week
- 0 Almost Never

12. Young children go to play-school the same days each week.

**a. Is this a routine in your family?**

- 3 Always – Every Day
- 2 3 – 5 Times a Week
- 1 1 – 2 Times a Week
- 0 Almost Never

13. Children do their homework at the same time each day or night during the week.

**a. Is this a routine in your family?**

- 3 Always – Every Day
- 2 3 – 5 Times a Week
- 1 1 – 2 Times a Week
- 0 Almost Never

14. Children have special things they do or ask for each night at bedtime.  
**a. Is this a routine in your family?**  
3 Always – Every Day  
2 3 – 5 Times a Week  
1 1 – 2 Times a Week  
0 Almost Never
15. Children go to bed at the same time almost every night.  
**a. Is this a routine in your family?**  
3 Always – Every Day  
2 3 – 5 Times a Week  
1 1 – 2 Times a Week  
0 Almost Never
16. Family eats at the same time each night.  
**a. Is this a routine in your family?**  
3 Always – Every Day  
2 3 – 5 Times a Week  
1 1 – 2 Times a Week  
0 Almost Never
17. At least some of the family eats breakfast together almost every morning.  
**a. Is this a routine in your family?**  
3 Always – Every Day  
2 3 – 5 Times a Week  
1 1 – 2 Times a Week  
0 Almost Never
18. Whole family eats dinner together almost every night.  
**a. Is this a routine in your family?**  
3 Always – Every Day  
2 3 – 5 Times a Week  
1 1 – 2 Times a Week  
0 Almost Never
19. Children do regular household chores.  
**a. Is this a routine in your family?**  
3 Always – Every Day  
2 3 – 5 Times a Week  
1 1 – 2 Times a Week  
0 Almost Never

## Appendix D: Child Behavior Checklist

### Child Behavior Checklist for Ages 6-18

*Instructions:* Below is a list of items that describe children and youths. For each item that describes your child **now or within the past 6 months**, please circle the **2** if the item is **very true or often true** of your child. Circle the **1** if the item is **somewhat or sometimes true** of your child. If the item is **not true** of your child, circle the **0**. Please answer all items as well as you can, even if some do not seem to apply to your child.

**0** = Not True (as far as you know)

**1** = Somewhat or Sometimes True

**2** = Very True or Often True

<b>0 1 2</b>	1. Acts too young for his/her age	<b>0 1 2</b>	19. Demands a lot of attention
<b>0 1 2</b>	2. Drinks alcohol without parents' approval	<b>0 1 2</b>	20. Destroys his/her own things
<b>0 1 2</b>	3. Argues a lot	<b>0 1 2</b>	21. Destroys things belonging to his/her family or others
<b>0 1 2</b>	4. Fails to finish things he/she starts	<b>0 1 2</b>	22. Disobedient at home
<b>0 1 2</b>	5. There is very little he/she enjoys	<b>0 1 2</b>	23. Disobedient at school
<b>0 1 2</b>	6. Bowel movements outside toilet	<b>0 1 2</b>	24. Doesn't eat well
<b>0 1 2</b>	7. Bragging, boasting	<b>0 1 2</b>	25. Doesn't get along with other kids
<b>0 1 2</b>	8. Can't concentrate, can't pay attention for long	<b>0 1 2</b>	26. Doesn't seem to feel guilty after misbehaving
<b>0 1 2</b>	9. Can't get his/her mind off certain thoughts; obsessions	<b>0 1 2</b>	27. Easily jealous
<b>0 1 2</b>	10. Can't sit still, restless, or hyperactive	<b>0 1 2</b>	28. Breaks rules at home, school, or elsewhere
<b>0 1 2</b>	11. Clings to adults or too dependent	<b>0 1 2</b>	29. Fears certain animals, situations, or places other than school
<b>0 1 2</b>	12. Complains of loneliness	<b>0 1 2</b>	30. Fears going to school
<b>0 1 2</b>	13. Confused or seems to be in a fog	<b>0 1 2</b>	31. Fears he/she might think or do something bad
<b>0 1 2</b>	14. Cries a lot	<b>0 1 2</b>	32. Feels he/she has to be perfect
<b>0 1 2</b>	15. Cruel to animals	<b>0 1 2</b>	33. Feels or complains that no one loves him/her
<b>0 1 2</b>	16. Cruelty, bullying, or meanness to others	<b>0 1 2</b>	34. Feels others are out to get him/her
<b>0 1 2</b>	17. Daydreams or gets lost in his/her thoughts	<b>0 1 2</b>	35. Feels worthless or inferior
<b>0 1 2</b>	18. Deliberately harms self or attempts suicide	<b>0 1 2</b>	36. Gets hurt a lot, accident-prone

0 1 2	37. Gets in many fights	0 1 2	57. Physically attacks people
0 1 2	38. Gets teased a lot	0 1 2	58. Picks nose, skin, or other parts of body
0 1 2	39. Hangs around with others who get in trouble	0 1 2	59. Plays with own sex parts in public
0 1 2	40. Hears sound or voices that aren't there	0 1 2	60. Plays with own sex parts too much
0 1 2	41. Impulsive or acts without thinking	0 1 2	61. Poor school work
0 1 2	42. Would rather be alone than with others	0 1 2	62. Poorly coordinated or clumsy
0 1 2	43. Lying or cheating	0 1 2	63. Prefers being with older kids
0 1 2	44. Bites fingernails	0 1 2	64. Prefers being with younger kids
0 1 2	45. Nervous, high-strung, or tense	0 1 2	65. Refuses to talk
0 1 2	46. Nervous movements or twitching	0 1 2	66. Repeats certain acts over and over; compulsions
0 1 2	47. Nightmares	0 1 2	67. Runs away from home
0 1 2	48. Not liked by other kids	0 1 2	68. Screams a lot
0 1 2	49. Constipated, doesn't move bowels	0 1 2	69. Secretive, keeps things to self
0 1 2	50. Too fearful or anxious	0 1 2	70. Sees things that aren't there
0 1 2	51. Feels dizzy or lightheaded	0 1 2	71. Self-conscious or easily embarrassed
0 1 2	52. Feels too guilty	0 1 2	72. Sets fires
0 1 2	53. Overeating	0 1 2	73. Sexual problems
0 1 2	54. Overtired without good reason	0 1 2	74. Showing off or clowning
0 1 2	55. Overweight	0 1 2	75. Too shy or timid
	56. Physical problems <b>without known medical cause:</b>	0 1 2	76. Sleeps less than most kids
0 1 2	a. Aches or pains ( <b>not</b> stomach or headache)	0 1 2	77. Sleeps more than most kids during day and/or night
0 1 2	b. Headaches	0 1 2	78. Inattentive or easily distracted
0 1 2	c. Nausea, feels sick	0 1 2	79. Speech problems
0 1 2	d. Problems with eyes ( <b>not</b> if corrected by glasses)	0 1 2	80. Stares blankly
0 1 2	e. Rashes or other skin problems	0 1 2	81. Steals at home
0 1 2	f. Stomachaches	0 1 2	82. Steals outside the home
0 1 2	g. Vomiting, throwing up	0 1 2	83. Stores up too many things he/she doesn't need
0 1 2	h. Other (describe):	0 1 2	84. Strange behavior

0 1 2	85. Strange ideas	0 1 2	101. Truancy, skips school
0 1 2	86. Stubborn, sullen, or irritable	0 1 2	102. Underactive, slow moving, or lacks energy
0 1 2	87. Sudden changes in mood or feelings	0 1 2	103. Unhappy, sad, or depressed
0 1 2	88. Sulks a lot	0 1 2	104. Unusually loud
0 1 2	89. Suspicious	0 1 2	105. Uses drugs for nonmedical purposes ( <b>don't</b> include alcohol or tobacco)
0 1 2	90. Swearing or obscene language	0 1 2	106. Vandalism
0 1 2	91. Talks about killing self	0 1 2	107. Wets self during the day
0 1 2	92. Talks or walks in sleep	0 1 2	108. Wets the bed
0 1 2	93. Talks too much	0 1 2	109. Whining
0 1 2	94. Teases a lot	0 1 2	110. Wishes to be of opposite sex
0 1 2	95. Temper tantrums or hot temper	0 1 2	111. Withdrawn, doesn't get involved with others
0 1 2	96. Thinks about sex too much	0 1 2	112. Worries
0 1 2	97. Threatens people		113. Please write in any other problems your child has that were not listed above:
0 1 2	98. Thumb-sucking	0 1 2	a.
0 1 2	99. Smokes, chews, or sniffs tobacco	0 1 2	b.
0 1 2	100. Trouble sleeping	0 1 2	c.



## Appendix E: Behavior Rating Inventory of Executive Function

*Instructions:* On the following pages is a list of statements that describe children. We would like to know if your child has had problems with these behaviors over the past 6 months. Please answer all the items the best that you can. Please **DO NOT SKIP ANY ITEMS**. Think about your child as you read each statement and circle your response:

<b>N</b>	if the behavior is	<b>NEVER</b> a problem
<b>S</b>	if the behavior is	<b>SOMETIMES</b> a problem
<b>O</b>	if the behavior is	<b>OFTEN</b> a problem

1. Overreacts to small problems	<b>N</b>	<b>S</b>	<b>O</b>
2. When given three things to do, remembers only the first or last	<b>N</b>	<b>S</b>	<b>O</b>
3. Is not a self-starter	<b>N</b>	<b>S</b>	<b>O</b>
4. Leaves playroom a mess	<b>N</b>	<b>S</b>	<b>O</b>
5. Resists or has trouble accepting a different way to solve a problem with schoolwork, friends, chores, etc.	<b>N</b>	<b>S</b>	<b>O</b>
6. Becomes upset with new situations	<b>N</b>	<b>S</b>	<b>O</b>
7. Has explosive, angry outbursts	<b>N</b>	<b>S</b>	<b>O</b>
8. Tries the same approach to a problem over and over even when it does not work	<b>N</b>	<b>S</b>	<b>O</b>
9. Has a short attention span	<b>N</b>	<b>S</b>	<b>O</b>
10. Needs to be told to begin a task even when willing	<b>N</b>	<b>S</b>	<b>O</b>
11. Does not bring home homework, assignment sheets, materials, etc.	<b>N</b>	<b>S</b>	<b>O</b>
12. Acts upset by a change in plans	<b>N</b>	<b>S</b>	<b>O</b>
13. Is disturbed by change of teacher or class	<b>N</b>	<b>S</b>	<b>O</b>
14. Does not check work for mistakes	<b>N</b>	<b>S</b>	<b>O</b>
15. Has good ideas but cannot get them on paper	<b>N</b>	<b>S</b>	<b>O</b>
16. Has trouble coming up with ideas for what to do in play or free time	<b>N</b>	<b>S</b>	<b>O</b>
17. Has trouble concentrating on chores, schoolwork, etc.	<b>N</b>	<b>S</b>	<b>O</b>
18. Does not connect doing tonight's homework with grades	<b>N</b>	<b>S</b>	<b>O</b>
19. Is easily distracted by noises, activity, sights, etc.	<b>N</b>	<b>S</b>	<b>O</b>
20. Becomes tearful easily	<b>N</b>	<b>S</b>	<b>O</b>
21. Makes careless errors	<b>N</b>	<b>S</b>	<b>O</b>
22. Forgets to hand in homework, even when completed	<b>N</b>	<b>S</b>	<b>O</b>
23. Resists change of routine, foods, places, etc.	<b>N</b>	<b>S</b>	<b>O</b>
24. Has trouble with chores or tasks that have more than one step	<b>N</b>	<b>S</b>	<b>O</b>
25. Has outbursts for little reason	<b>N</b>	<b>S</b>	<b>O</b>
26. Mood changes frequently	<b>N</b>	<b>S</b>	<b>O</b>
27. Needs help from an adult to stay on task	<b>N</b>	<b>S</b>	<b>O</b>
28. Gets caught up in details and misses the big picture	<b>N</b>	<b>S</b>	<b>O</b>
29. Keeps room messy	<b>N</b>	<b>S</b>	<b>O</b>
30. Has trouble getting used to new situations (classes, groups, friends)	<b>N</b>	<b>S</b>	<b>O</b>
31. Has poor handwriting	<b>N</b>	<b>S</b>	<b>O</b>
32. Forgets what he/she was doing	<b>N</b>	<b>S</b>	<b>O</b>

33. When sent to get something, forgets what he/she is supposed to get	N	S	O
34. Is unaware of how his/her behavior affects or bothers others	N	S	O
35. Has good ideas but does not get job done (lacks follow-through)	N	S	O
36. Becomes overwhelmed by large assignments	N	S	O
37. Has trouble finishing tasks (chores, homework)	N	S	O
38. Acts wilder or sillier than others in groups (birthday parties, recess)	N	S	O
39. Thinks too much about the same topic	N	S	O
40. Underestimates time needed to finish tasks	N	S	O
41. Interrupts others	N	S	O
42. Does not notice when his/her behavior causes negative reactions	N	S	O
43. Gets out of seat at the wrong times	N	S	O
44. Gets out of control more than friends	N	S	O
45. Reacts more strongly to situations than other children	N	S	O
46. Starts assignments or chores at the last minute	N	S	O
47. Has trouble getting started on homework or chores	N	S	O
48. Has trouble organizing activities with friends	N	S	O
49. Blurts things out	N	S	O
50. Mood is easily influenced by the situation	N	S	O
51. Does not plan ahead for school assignments	N	S	O
52. Has poor understanding of own strengths and weaknesses	N	S	O
53. Written work is poorly organized	N	S	O
54. Acts too wild or "out of control"	N	S	O
55. Has trouble putting the brakes on his/her actions	N	S	O
56. Gets in trouble if not supervised by an adult	N	S	O
57. Has trouble remembering things, even for a few minutes	N	S	O
58. Has trouble carrying out the actions needed to reach goals (saving money for special item, studying to get a good grade)	N	S	O
59. Becomes too silly	N	S	O
60. Work is sloppy	N	S	O
61. Does not take initiative	N	S	O
62. Angry or tearful outbursts are intense but end suddenly	N	S	O
63. Does not realize that certain actions bother others	N	S	O
64. Small events trigger big reactions	N	S	O
65. Talks at the wrong time	N	S	O
66. Complains there is nothing to do	N	S	O
67. Cannot find things in room or school desk	N	S	O
68. Leaves a trail of belongings wherever he/she goes	N	S	O
69. Leaves messes that others have to clean up	N	S	O
70. Becomes upset too easily	N	S	O
71. Lies around the house a lot ("couch potato")	N	S	O
72. Has a messy closet	N	S	O
73. Has trouble waiting for turn	N	S	O
74. Loses lunch box, lunch money, permission slips, homework, etc.	N	S	O
75. Cannot find clothes, glasses, shoes, toys, books, pencils, etc.	N	S	O
76. Tests poorly even when knows correct answers	N	S	O

77. Does not finish long-term projects	<b>N</b>	<b>S</b>	<b>O</b>
78. Has to be closely supervised	<b>N</b>	<b>S</b>	<b>O</b>
79. Does not think before doing	<b>N</b>	<b>S</b>	<b>O</b>
80. Has trouble moving from one activity to another	<b>N</b>	<b>S</b>	<b>O</b>
81. Is fidgety	<b>N</b>	<b>S</b>	<b>O</b>
82. Is impulsive	<b>N</b>	<b>S</b>	<b>O</b>
83. Cannot stay on the same topic when talking	<b>N</b>	<b>S</b>	<b>O</b>
84. Gets stuck on one topic or activity	<b>N</b>	<b>S</b>	<b>O</b>
85. Says the same things over and over	<b>N</b>	<b>S</b>	<b>O</b>
86. Has trouble getting through morning routine in getting ready for school	<b>N</b>	<b>S</b>	<b>O</b>

## Appendix F: Parental Expectations Questionnaire

*Instructions:* For each of the following items, please select which option best describes your feelings:

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Neither Agree Nor Disagree
- 4 = Agree
- 5 = Strongly Agree

1	2	3	4	5	1. I expect my child to graduate from high school (i.e., high school diploma or equivalent).
1	2	3	4	5	2. I expect my child to go to college.
1	2	3	4	5	3. I expect my child to earn an Associate's degree or a degree from a technical college.
1	2	3	4	5	4. I expect my child to graduate from college (i.e., Bachelor's degree).
1	2	3	4	5	5. I expect my child to earn an advanced degree (e.g., M.A., Ph.D., M.D., J.D., etc.).
1	2	3	4	5	6. I expect my child to have a volunteer job (e.g., full-time, part-time, or occasional involvement) one day where he/she is not paid.
1	2	3	4	5	7. I expect my child to have a paying job one day.
1	2	3	4	5	8. I expect my child to have a high-paying job one day.
1	2	3	4	5	9. I expect my child to be a boss or supervisor one day.
1	2	3	4	5	10. I expect my child to have friends at school.
1	2	3	4	5	11. I expect my child to make friends that are friends for life.
1	2	3	4	5	12. I expect my child to go on dates one day.
1	2	3	4	5	13. I expect my child to have a boyfriend or girlfriend one day.
1	2	3	4	5	14. I expect my child to get married one day.
1	2	3	4	5	15. I expect my child to raise children one day.
1	2	3	4	5	16. I expect my child to move out of my house one day.
1	2	3	4	5	17. I expect my child to live in an apartment by himself/herself or with a roommate one day.
1	2	3	4	5	18. I expect my child to buy a house one day.
1	2	3	4	5	19. I expect my child to get dressed by himself/herself.
1	2	3	4	5	20. I expect my child to be able to ask others for help by himself/herself.
1	2	3	4	5	21. I expect my child to be able to make phone calls by himself/herself.
1	2	3	4	5	22. I expect my child to be able to take the bus or train by himself/herself one day.
1	2	3	4	5	23. I expect my child to purchase his/her own clothes one day.
1	2	3	4	5	24. I expect my child to be able to prepare a meal for himself/herself one day.
1	2	3	4	5	25. I expect my child to be able to do his/her own laundry one day.
1	2	3	4	5	26. I expect my child to drive a car one day.
1	2	3	4	5	27. I expect my child to pay his/her own bills by himself/herself one day.

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	28. I expect my child to travel to other states by himself/herself or with peers one day.
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	29. I expect my child to travel to other countries by himself/herself or with peers one day.
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	30. I expect my child to be completely independent one day.

*Scoring Instructions:* The Total Expectations score is obtained by finding the mean of each subscale and then adding the three means together.

The school and work domain includes items 1, 2, 3, 4, 5, 6, 7, 8, and 9. The family and friends domain includes items 10, 11, 12, 13, 14, and 15. The independent living domain includes items 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, and 30.

## Appendix G: Parental Fears Questionnaire

*Instructions:* For each of the following items, please circle which option best describes your *current* feelings that you have about your child:

- 1 = Never
- 2 = Seldom
- 3 = Some of the Time
- 4 = Often
- 5 = Most of the Time

1	2	3	4	5	1. I worry that others will say mean things to my child.
1	2	3	4	5	2. I worry that my child will get physically hurt.
1	2	3	4	5	3. I step in to help if there is a chance my child will not succeed at something.
1	2	3	4	5	4. I worry that others will say mean things about my child to someone else.
1	2	3	4	5	5. I worry that children will hit, kick, or use other physical attacks to hurt my child.
1	2	3	4	5	6. I stop my child from playing rough games or doing things that may result in getting hurt.
1	2	3	4	5	7. I worry that others will not like my child.
1	2	3	4	5	8. I worry that someone will sexually abuse my child.
1	2	3	4	5	9. I think it is important to closely watch my child.
1	2	3	4	5	10. I worry that others will think poorly of my child.
1	2	3	4	5	11. I worry that my child will be physically hurt in an accident (e.g., while playing with friends).
1	2	3	4	5	12. I try to stop my child from trying new things if there is a chance my child will not succeed.
1	2	3	4	5	13. I worry that others will make fun of my child.
1	2	3	4	5	14. I let my child depend upon me for most things.
1	2	3	4	5	15. I step in to help when my child is having difficulties.
1	2	3	4	5	16. I worry that children will call my child mean names or use words to tear my child down.
1	2	3	4	5	17. I allow my child to make decisions without my input (e.g., what to wear, what to eat, what to do for fun, who to be friends with, etc.).
1	2	3	4	5	18. I worry when my child tries to do something new or difficult.
1	2	3	4	5	19. I worry about my child's health.
1	2	3	4	5	20. If I were to see someone say or do mean things to my child, I would speak up and defend him/her.

*Scoring Instructions:* The Total Fears score is obtained by finding the mean of each subscale and then adding the three means together.

The fear of negative child evaluation domain includes items 1, 4, 7, 10, 13, 16, and 18. The fear of physical harm to child domain includes items 2, 5, 8, 11, and 19. The overprotective behavior due to parental fear domain includes items 3, 6, 9, 12, 14, 15, 17 (reverse scored), and 20.

## Appendix H: Beck Depression Inventory

*Instructions:* This questionnaire consists of 21 groups of statements. Please read each group of statements carefully, and then pick out the **one statement** in each group that best describes the way you have been feeling during the **past two weeks, including today**. Circle the number beside the statement you have picked. IF several statements in the group seem to apply equally well, circle the highest number for the group. Be sure that you do not choose more than one statement for any group, including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

### Category I

- 0 I do not feel sad.
- 1 I feel sad much of the time.
- 2 I am sad all of the time.
- 3 I am so sad or unhappy that I can't stand it.

### Category II

- 0 I am not discouraged about the future.
- 1 I feel more discouraged about the future than I used to be.
- 2 I do not expect things to work out for me.
- 3 I feel my future is hopeless and will only get worse.

### Category III

- 0 I do not feel like a failure.
- 1 I have failed more than I should have.
- 2 As I look back, I see a lot of failures.
- 3 I feel I am a total failure as a person.

### Category IV

- 0 I get as much pleasure as I ever did from the things I enjoy.
- 1 I don't enjoy things as much as I used to.
- 2 I get very little pleasure from the things I used to enjoy.
- 3 I can't get any pleasure from the things I used to enjoy.

### Category V

- 0 I don't feel particularly guilty.
- 1 I feel guilty over many things I have done or should have done.
- 2 I feel quite guilty most of the time.
- 3 I feel guilty all of the time.



### **Category VI**

- 0 I don't feel I am being punished.
- 1 I feel I may be punished.
- 2 I expect to be punished.
- 3 I feel I am being punished.

### **Category VII**

- 0 I feel the same about myself as ever.
- 1 I have lost confidence in myself.
- 2 I am disappointed in myself.
- 3 I dislike myself.

### **Category VIII**

- 0 I don't criticize or blame myself more than usual.
- 1 I am more critical of myself than I used to be.
- 2 I criticize myself for all my faults.
- 3 I blame myself for everything bad that happens.

### **Category IX**

- 0 I don't have any thoughts of killing myself.
- 1 I have thoughts of killing myself, but I would not carry them out.
- 2 I would like to kill myself.
- 3 I would kill myself if I had the chance.

### **Category X**

- 0 I don't cry any more than I used to.
- 1 I cry more than I used to.
- 2 I cry over every little thing.
- 3 I feel like crying, but I can't.

### **Category XI**

- 0 I am no more restless or wound up than usual.
- 1 I feel more restless or wound up than usual.
- 2 I am so restless or agitated that it's hard to stay still.
- 3 I am so restless or agitated that I have to keep moving or doing something.

### **Category XII**

- 0 I have not lost interest in other people or activities.
- 1 I am less interested in other people or things than before.
- 2 I have lost most of my interest in other people or things.
- 3 It's hard to get interest in anything.

### **Category XIII**

- 0 I make decisions about as well as ever.
- 1 I find it more difficult to make decisions than usual.
- 2 I have much greater difficulty in making decisions than I used to.
- 3 I have trouble making any decisions.

### **Category XIV**

- 0 I do not feel I am worthless.
- 1 I don't consider myself as worthwhile and useful as I used to.
- 2 I feel more worthless as compared to other people.
- 3 I feel utterly worthless.

### **Category XV**

- 0 I have as much energy as ever.
- 1 I have less energy than I used to have.
- 2 I don't have enough energy to do very much.
- 3 I don't have enough energy to do anything.

### **Category XVI**

- 0 I have not experienced any changes in my sleeping pattern.
- 1a I sleep somewhat more than usual.
- 1b I sleep somewhat less than usual.
- 2a I sleep a lot more than usual.
- 2b I sleep a lot less than usual.
- 3a I sleep most of the day.
- 3b I wake up 1-2 hours early and can't get back to sleep.

### **Category XVII**

- 0 I am no more irritable than usual.
- 1 I am more irritable than usual.
- 2 I am much more irritable than usual.
- 3 I am irritable all the time.

### **Category XVIII**

- 0 I have not experienced any changes in my appetite.
- 1a My appetite is somewhat less than usual.
- 1b My appetite is somewhat greater than usual.
- 2a My appetite is much less than before.
- 2b My appetite is much greater than usual.
- 3a I have no appetite at all.
- 3b I crave food all the time.

### **Category XIX**

- 0 I can concentrate as much as ever.
- 1 I can't concentrate as well as usual.
- 2 It's hard to keep my mind on anything for very long.
- 3 I find I can't concentrate on anything.

### **Category XX**

- 0 I am no more tired or fatigued than usual.
- 1 I get more tired or fatigued more easily than usual.
- 2 I am too tired or fatigued to do a lot of the things I used to do.
- 3 I am too tired or fatigued to do most of the things I used to do.

### **Category XXI**

- 0 I have not noticed any recent change in my interest in sex.
- 1 I am less interested in sex than I used to be.
- 2 I am much less interested in sex now.
- 3 I have lost interest in sex completely.

## Appendix I: Parenting Stress Index

*Instructions:* This questionnaire contains 36 statements. Reach each statement carefully. For each statement, please focus on the child you are most concerned about, and circle the response that best represents your opinion. While you may not find a response that exactly states your feelings, please circle the response that comes closest to describing how you feel. YOUR FIRST REACTION TO EACH QUESTION SHOULD BE YOUR ANSWER. Circle only one response for each statement, and respond to all statements.

SA = Strongly Agree    A = Agree    NS = Not Sure    D = Disagree    SD = Strongly Disagree

1. I often have the feeling that I cannot handle things very well.	SA	A	NS	D	SD
2. I find myself giving up more of my life to meet my children's needs than I ever expected.	SA	A	NS	D	SD
3. I feel trapped by my responsibilities as a parent.	SA	A	NS	D	SD
4. Since having this child, I have been unable to do new and different things.	SA	A	NS	D	SD
5. Since having a child, I feel that I am almost never able to do things that I like to do.	SA	A	NS	D	SD
6. I am unhappy with the last purchase of clothing I made for myself.	SA	A	NS	D	SD
7. There are quite a few things that bother me about my life.	SA	A	NS	D	SD
8. Having a child has caused more problems than I expected in my relationship with my spouse (or male/female friend).	SA	A	NS	D	SD
9. I feel alone and without friends.	SA	A	NS	D	SD
10. When I go to a party, I usually expect not to enjoy myself.	SA	A	NS	D	SD
11. I am not as interested in people as I used to be.	SA	A	NS	D	SD
12. I don't enjoy things as I used to.	SA	A	NS	D	SD
13. My child rarely does things for me that make me feel good.	SA	A	NS	D	SD
14. Sometimes I feel my child doesn't like me and doesn't want to be close to me.	SA	A	NS	D	SD
15. My child smiles at me much less than I expected.	SA	A	NS	D	SD
16. When I do things for my child, I get the feeling that my efforts are not appreciated very much.	SA	A	NS	D	SD
17. When playing, my child doesn't often giggle or laugh.	SA	A	NS	D	SD
18. My child doesn't seem to learn as quickly as most children.	SA	A	NS	D	SD
19. My child doesn't seem to smile as much as most children.	SA	A	NS	D	SD
20. My child is not able to do as much as I expected.	SA	A	NS	D	SD
21. It takes a long time and it is very hard for my child to get used to new things.	SA	A	NS	D	SD
For the next statement, choose your response from the choices "1" to "5" below.	1	2	3	4	5
22. I feel that I am:					
1. not very good at being a parent					
2. a person who has some trouble being a parent					
3. an average parent					

4. a better than average parent 5. a very good parent					
23. I expected to have closer and warmer feelings for my child than I do and this bothers me.	SA	A	NS	D	SD
24. Sometimes my child does things that bother me just to be mean.	SA	A	NS	D	SD
25. My child seems to cry or fuss more than most children.	SA	A	NS	D	SD
26. My child generally wakes up in a bad mood.	SA	A	NS	D	SD
27. I feel that my child is very moody and easily upset.	SA	A	NS	D	SD
28. My child does a few things which bother me a great deal.	SA	A	NS	D	SD
29. My child reacts very strongly when something happens that my child doesn't like.	SA	A	NS	D	SD
30. My child gets upset easily over the smallest thing.	SA	A	NS	D	SD
31. My child's sleeping or eating schedule was much harder to establish than I expected.	SA	A	NS	D	SD
For the next statement, choose your response from the choices "1" to "5" below. 32. I have found that getting my child to do something or stop doing something is: 1. much harder than I expected 2. somewhat harder than I expected 3. about as hard as I expected 4. somewhat easier than I expected 5. much easier than I expected	1	2	3	4	5
For the next statement, choose your response from the choices "10+" to "1-3." 33. Think carefully and count the number of things which your child does that bother you. For example: dawdles, refuses to listen, overactive, cries, interrupts, fights, whines, etc.	10+	8-9	6-7	4-5	1-3
34. There are some things my child does that really bother me a lot.	SA	A	NS	D	SD
35. My child turned out to be more of a problem than I had expected	SA	A	NS	D	SD
36. My child makes more demands on me than most children.	SA	A	NS	D	SD

## Appendix J: Parental Expectations Questionnaire- Pilot Testing

*Instructions:* For each of the following items, please select which option best describes your feelings:

- 1 = Strongly Disagree
- 2 = Disagree
- 3 = Neither Agree Nor Disagree
- 4 = Agree
- 5 = Strongly Agree

After answering the item, please provide any comments about how you think this item could be made better. If the item was difficult to answer or hard to understand, please make note of that.

1   2   3   4   5	1. I expect my child to graduate from high school (i.e., high school diploma or equivalent).
Comments:	
1   2   3   4   5	2. I expect my child to go to college.
Comments:	
1   2   3   4   5	3. I expect my child to graduate from college (i.e., Bachelor's degree).
Comments:	
1   2   3   4   5	4. I expect my child to earn an advanced degree (e.g., M.A., Ph.D., M.D., J.D., etc.).
Comments:	
1   2   3   4   5	5. I expect my child to have a volunteer job or participate in volunteer service one day where he/she is not paid.
Comments:	

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	6. I expect my child to have a paying job one day.
Comments:					
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	7. I expect my child to have a high-paying job one day.
Comments:					
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	8. I expect my child to be a boss or supervisor one day.
Comments:					
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	9. I expect my child to have friends at school.
Comments:					
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	10. I expect my child to make friends that are friends for life.
Comments:					
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	11. I expect my child to go on dates one day.
Comments:					
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	12. I expect my child to have a romantic partner one day.
Comments:					

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	13. I expect my child to get married one day.
Comments:					
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	14. I expect my child to raise children one day.
Comments:					
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	15. I expect my child to move out of my house one day.
Comments:					
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	16. I expect my child to live in an apartment one day.
Comments:					
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	17. I expect my child to buy a house one day.
Comments:					
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	18. I expect my child to get dressed by himself/herself.
Comments:					
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	19. I expect my child to be able to ask others for help by himself/herself.
Comments:					



<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	20. I expect my child to be able to make phone calls by himself/herself.
Comments:					
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	21. I expect my child to be able to take the bus or train by himself/herself one day.
Comments:					
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	22. I expect my child to purchase his/her own clothes one day.
Comments:					
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	23. I expect my child to be able to prepare a meal for himself/herself one day.
Comments:					
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	24. I expect my child to be able to do his/her own laundry one day.
Comments:					
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	25. I expect my child to drive a car one day.
Comments:					
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	26. I expect my child to pay his/her own bills by himself/herself one day.
Comments:					

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	27. I expect my child to travel to other states without me one day.
Comments:					
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	28. I expect my child to travel to other countries without me one day.
Comments:					

Do you have any additional comments on how this questionnaire could be better for parents to answer?

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## Appendix K: Parental Fears Questionnaire- Pilot Testing

*Instructions:* For each of the following items, please circle which option best describes your feelings:

- 0 = Never
- 1 = Seldom
- 2 = Some of the Time
- 3 = Often
- 4 = Most of the Time

After answering the item, please provide any comments about how you think this item could be made better. If the item was difficult to answer or hard to understand, please make note of that.

<b>0 1 2 3 4</b>	1. I worry that others will say mean things to my child.
Comments:	
<b>0 1 2 3 4</b>	2. I worry that my child will get physically hurt.
Comments:	
<b>0 1 2 3 4</b>	3. I step in to help if there is a chance my child will not succeed at something.
Comments:	
<b>0 1 2 3 4</b>	4. I worry that others will say mean things about my child to someone else.
Comments:	
<b>0 1 2 3 4</b>	5. I worry that children at school will hit, kick, or use other physical attacks to hurt my child.
Comments:	

0 1 2 3 4	6. I stop my child from playing rough games or doing things that may result in getting hurt.
Comments:	
0 1 2 3 4	7. I worry that others will not like my child.
Comments:	
0 1 2 3 4	8. I worry that someone will physically take advantage of my child.
Comments:	
0 1 2 3 4	9. I think it is important to closely watch my child at all times.
Comments:	
0 1 2 3 4	10. I worry that others will think poorly of my child.
Comments:	
0 1 2 3 4	11. I worry that my child will be physically hurt in an accident (e.g., while playing with friends).
Comments:	
0 1 2 3 4	12. I try to stop my child from trying new things if there is a chance my child will not succeed.
Comments:	

<b>0 1 2 3 4</b>	13. I worry that others will make fun of my child.
Comments:	
<b>0 1 2 3 4</b>	14. I like my child to depend upon me for most things.
Comments:	
<b>0 1 2 3 4</b>	15. I step in to help when my child is having difficulties.
Comments:	
<b>0 1 2 3 4</b>	16. I worry that children at school will call my child mean names or use words to tear my child down.
Comments:	
<b>0 1 2 3 4</b>	17. I do not allow my child to make many decisions without my input (e.g., what to wear, what to eat, what to do for fun, who to be friends with, etc.).
Comments:	
<b>0 1 2 3 4</b>	18. I worry when my child tries to do something new or difficult.
Comments:	
<b>0 1 2 3 4</b>	19. I worry about my child's health.
Comments:	



## **Appendix L: Pilot Study**

### **Purpose**

The purpose of this phase was to pilot the Parental Expectations Questionnaire and the Parental Fears Questionnaire, the two questionnaires that were created for the proposed study. The chief objective of the pilot phase was to get feedback from parents about the understandability and answerability of the items in the questionnaires as well as to verify that the questionnaires provided enough variability in both the TD group and ID group. Pilot testing took place in three stages (1) A panel of experts reviewed the items on the questionnaires, (2) Five parents of children with ID (ages 13 years and up) completed the questionnaires and provided feedback, and (3) Five parents of TD children (ages 5 – 12 years) and five parents of children with ID (ages 5 – 12 years) completed the questionnaires and provided feedback.

### **Method**

#### **Participants**

**Panel of experts.** The experts who reviewed the questionnaires included two University of Alabama psychology faculty members, one University of Alabama human development faculty member, and one post-doc at the University of California-Davis.

**Parents of TD children.** Five parents of TD children completed the questionnaires and provided feedback. Their children ranged in age from 6-years-old to 12-years-old.

**Parents of children with ID.** Five parents of older children with ID completed the questionnaires and provided feedback. Their children ranged in age from 13-years-old to 25-years-old. Additionally, five parents of younger children with ID completed the questionnaires and provided feedback. Their children ranged in age from 6-years-old to 12-years-old.

## Measures

**Parental Expectations Questionnaire.** In order to assess parents' expectations of their child, a questionnaire was created. Parental expectations were measured in three primary domains: school and work, friends and family, and independent living. The school and work domain includes 8 items. The friends and family domain includes 6 items. The independent living domain includes 14 items. Parents answered on a 5-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree). After each item, there was a comment box for parents to provide feedback about the understandability and answerability of the item. At the end of the questionnaire, parents were asked if they had any additional comments on how the questionnaire could be made better. The purpose of this questionnaire was to gain a better understanding of the expectations that parents have for their child throughout their child's lifetime. It took approximately 10 minutes for parents to complete the questionnaire and provide feedback. The Total Expectations score, calculated by finding the mean for each subscale and then adding the three means together, was used in the data analyses. Higher scores are indicative of greater parental expectations (see Appendix J for copy of questionnaire used for pilot testing).

**Parental Fears Questionnaire.** In order to assess fears that parents have about their child, a questionnaire was created. Parental fears were measured in three primary domains: fear of negative child evaluation, fear of physical harm to child, and overprotective behavior due to parental fear. The fear of negative child evaluation domain includes 7 items. The fear of physical harm to child domain includes 5 items. The overprotective behavior due to parental fear domain includes 8 items. Parents answered on a 5-point Likert Scale (0 = never, 1 = seldom, 2 = some of the time, 3 = often, 4 = most of the time). After each item, there was a comment box for



parents to provide feedback about the understandability and answerability of the item. At the end of the questionnaire, parents were asked if they had any additional comments on how the questionnaire could be made better. The purpose of this questionnaire was to assess the fears that parents have in association to their child and the type of parenting behaviors that parents exhibit in response to these fears. It took approximately 10 minutes for parents to complete the questionnaire and provide feedback. The Total Fears score, calculated by finding the mean for each subscale and then adding the three means together, was used in the data analyses. Higher scores are indicative of greater parental fear (see Appendix K for copy of questionnaire used for pilot testing).

### **Procedure**

After making the modifications to the questionnaires suggested by the panel of experts, parents were recruited and informed consent was obtained. Parents of children with ID were recruited from the University of Alabama Intellectual Disabilities Participant Registry, and parents of TD children were recruited from a participant list in the researcher's lab. Parents either completed the questionnaires over the phone with the researcher or completed the questionnaires through email.

## **Results and Recommendations**

### **Feedback from Panel of Experts**

The feedback received from the panel of experts was incorporated into the questionnaires before parents were recruited. Such feedback included better structuring and conceptualization of the subscales, standardization of the statement stems, lowering the reading level, changing the wording to make certain items clearer, intermixing the items from each subscale, and adding additional items to create a more comprehensive evaluation of these parenting domains.

## **Modifications Based on Parent Feedback**

Overall, parents felt that the questionnaires were fairly straightforward, were easy to answer, and were a good length. However, several of the items caused some confusion that resulted in modifications to the questionnaires.

**Parental Expectations Questionnaire.** Using the comments and feedback provided by the parents, the following edits were made to the Parental Expectations Questionnaire:

1. Item 3 (“I expect my child to graduate from college (i.e., Bachelor’s degree.”): Some parents made a distinction between “Bachelor’s degree” and “Associate’s degree” or “technical degree.” Some parents said that they did expect their child to graduate from college with either an Associate’s degree or a technical degree but that they did not expect them to earn a Bachelor’s degree. To better assess parents’ expectations for academics, an additional item was added that says, “I expect my child to earn an Associate’s degree or a degree from a technical college.”
2. Item 5 (“I expect my child to have a volunteer job or participate in volunteer service one day where he/she is not paid.”): Several parents questioned whether this was a full-time or part-time position and if this could occur in conjunction with another paying job. Therefore, we clarified this by adding in, “(e.g., full-time, part-time, or occasional involvement)” and deleting the phrase “or participate in volunteer service.”
3. Item 12 (“I expect my child to have a romantic partner one day.”): Some parents were confused by the term “romantic partner.” They felt that this directly implied a sexual relationship. To clarify that we mean a committed relationship that is more intimate but not necessarily sexual, we changed “romantic partner” to “boyfriend or girlfriend.”

4. Item 16 (“I expect my child to live in an apartment one day.”): Parents were confused about whether this item simply meant that their child would live in an apartment one day or if they would live in an apartment by themselves one day. To clarify, we added the phrase “by himself/herself or with a roommate.”
5. Item 27 (“I expect my child to travel to other states without me one day.”): Many parents were confused about the phrase “without me.” They were unsure if this meant that the child was traveling alone, with peers, with a school group, with other family members, or under another adult’s supervision. To clarify, we changed “without me” to “by himself/herself or with peers.”
6. Item 28 (“I expect my child to travel to other countries without me one day.”): The same problem occurred with the phrase “without me.” Again, this was changed to “by himself/herself or with peers.”
7. General Comment: Parents felt that an overall question at the end asking how independent they expect their child to be might more directly answer the overall issue being assessed. This item was added as an additional item to the independent living domain.
8. General Comment: Parents with older children with ID had a more difficult time answering these items because the items are phrased “I expect...” but for many of them, the expectations being asked about had already occurred. This really showed us that this questionnaire would not be applicable to parents with older children.

**Parental Fears Questionnaire.** Using the comments and feedback provided by the parents, the following edits were made to the Parental Fears Questionnaire:

1. Instructions: Parents questioned whether they were responding based on what they worried/feared would currently happen to their child (e.g., worry about their child currently getting hurt) or on what could ever possibly happen throughout their child's life (e.g., worry that their child might be hurt at some point in the future). To clarify this, the instructions were altered to say, "For each of the following items, please circle which option best describes the *current* feelings that you have about your child."
2. Scale: To make the scales from the two questionnaires consistent, this scale was changed from 0 – 4 to 1 – 5.
3. Item 5 ("I worry that children at school will hit, kick, or use other physical attacks to hurt my child."): Some children are homeschooled, so the phrase "at school" is not very applicable. Therefore, this phrase was removed.
4. Item 8 ("I worry that someone will physically take advantage of my child."): The phrase "taken advantage of" was interpreted many different ways by the parents (e.g., sexual abuse, older children bullying younger children, physically taking something like money from the child, getting a child to do something that they do not want to do, getting a child to do something that the parent would not want them to do). To clarify the meaning of this item, it was re-phrased to specifically address sexual abuse.
5. Item 9 ("I think it is important to closely watch my child at all times."): The phrase "at all times" made it difficult to answer the question based on the frequency scale provided. Therefore, this phrase was removed.
6. Item 14 ("I like my child to depend upon me for most things."): This item was very difficult for many parents to answer. They had a difficult time distinguishing between what they like and what is reality (i.e., they may not like for their child to be dependent

upon them, but reality is that their child is dependent upon them). Additionally, this item is a part of the overprotective behavior due to parental fear domain, but it does not directly address a behavior. Therefore, this item was changed to, “I let my child depend upon me for most things.”

7. Item 16 (“I worry that children at school will call my child mean names or use words to tear my child down.”): Some children are homeschooled, so the phrase “at school” is not very applicable. Therefore, this phrase was removed.
8. Item 17 (“I do not allow my child to make many decisions without my input (e.g., what to wear, what to eat, what to do for fun, who to be friends with, etc.)”): This item was very challenging for parents to answer because the negative phrasing of the item. To make this item easier to answer, “do not” was deleted, making the item now positively phrased. When scoring, this item will now be reverse-coded.
9. Item 20 (“I speak up and defend my child when he/she is being teased or bullied.”): Several parents have never encountered this situation, so they were unsure how to respond. Also, parents said that they are not typically present when this happens. If they had been present, they would intervene, but they are not going to try to intervene at a later time. Finally, they struggled with the inclusion of “teased” and “bullied” in the same item because they felt that these were very different degrees of mistreatment (e.g., a parent may decide to intervene if their child is getting bullied, but they may not decide to intervene if their child is being teased.). To address all of these issues, this item was changed to, “If I were to see someone say or do mean things to my child, I would speak up and defend him/her.”

## Data Analysis

**Parental Expectations Questionnaire.** Frequencies were run on all of the items separately for each group. There were no items that lacked variability in all three groups. However, there were some items that showed no variability in each individual group. In the TD group, all parents responded with a “5” (strongly agree) on items 1, 6, 15, 21, 22, 23, 24, 25, and 26. The lack of variability here is really prevalent in the Independent Living domain, which is not surprising since parents of TD children would expect their child to be fairly independent as an adult. In the older ID group, all parents responded with a “5” (strongly agree) on item 18. In the younger ID group, all parents responded with a “5” (strongly agree) on items 9, 10, and 18. Next, means were created for each of the three domains—school and work, friends and family, and independent living—and these three means were added together to create a Total Expectations score. Means, standard deviations, and range for each group’s domain means and Total Expectations score are listed in Table L.1. As shown, even though the Independent Living domain showed little variability for the TD group, the Total Expectations score, which will be used in analyses, did show variability. Finally, a two-independent samples t-test was conducted to compare Total Expectations scores in the TD group and the younger ID group. Results found that, as expected, the younger ID group showed significantly lower expectations ( $M = 10.70$ ) than the TD group ( $M = 13.14$ ),  $t(8) = 2.44$ ,  $p = .041$ . However, such results should be interpreted with caution due to the small sample size. No modifications to the questionnaire were made based on these analyses.

**Parental Fears Questionnaire.** Frequencies were run on all of the items separately for each group. All of the items showed at least some variability in all three groups. Next, means were created for each of the three domains—fear of negative child evaluation, fear of physical

harm to child, and overprotective behavior due to parental fears—and these three means were added together to create a Total Fears score. Means, standard deviations, and range for each group’s domain means and Total Fears score are listed in Table L.2. Finally, a two-independent samples t-test was conducted to compare Total Fears scores in the TD group and the younger ID group. Results found that the younger ID group ( $M = 5.98$ ) and the TD group ( $M = 4.27$ ) did not have significantly different fears scores,  $t(8) = -1.45$ ,  $p = .184$ . While these results were not what we expected, the mean differences are in the correct direction, with the ID group showing greater fear than the TD group, and these differences may become significant with a larger sample size. No modifications to the questionnaire were made based on these analyses.

### **Conclusion**

In general, parents felt that the Parental Expectations Questionnaire and the Parental Fears Questionnaire were understandable and answerable. The panel of experts and the parents provided exceptionally useful suggestions for how to make the questionnaires better, and these modifications were implemented for the final versions of the questionnaires. Further, both of the questionnaires showed adequate variability in all three groups—the TD group, the older ID group, and the younger ID group. As a whole, the Parental Expectations Questionnaire and the Parental Fears Questionnaire seem to be good measures, and they will be used in the proposed study.

**Table L.1**  
**Parental Expectations Questionnaire: Descriptive Statistics**

	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>Range</b>
<b>Older ID Group</b>				
School & Work	5	2.70	1.04	1.88 – 4.50
Friends & Family	5	3.20	1.06	2.50 – 5.00
Independent Living	5	3.31	1.05	2.36 – 5.00
Total Score	5	9.21	3.09	6.98 – 14.50
<b>Younger ID Group</b>				
School & Work	5	3.23	0.57	2.75 – 4.13
Friends & Family	5	3.80	0.52	3.33 – 4.67
Independent Living	5	3.67	0.85	2.64 – 5.00
Total Score	5	10.70	1.82	9.06 – 13.79
<b>TD Group</b>				
School & Work	5	4.10	0.57	3.25 – 4.75
Friends & Family	5	4.40	0.72	3.33 – 5.00
Independent Living	5	4.64	0.21	4.43 – 4.93
Total Score	5	13.14	1.31	11.64 – 14.30



**Table L.2**  
**Parental Fears Questionnaire: Descriptive Statistics**

	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>Range</b>
<b>Older ID Group</b>				
Negative Evaluation	5	1.83	1.22	0.43 – 3.43
Physical Harm	5	2.12	0.83	1.20 – 3.00
Overprotective	5	2.40	0.56	1.63 – 2.88
Total Score	5	6.35	2.54	3.25 – 9.30
<b>Younger ID Group</b>				
Negative Evaluation	5	1.91	0.48	1.29 – 2.57
Physical Harm	5	2.12	1.03	1.20 – 3.80
Overprotective	5	1.95	0.95	0.63 – 3.13
Total Score	5	5.98	2.37	3.11 – 9.50
<b>TD Group</b>				
Negative Evaluation	5	0.80	0.77	0.29 – 2.00
Physical Harm	5	1.24	0.70	0.40 – 2.20
Overprotective	5	2.23	0.62	1.38 – 3.00
Total Score	5	4.27	1.17	3.49 – 6.33

## Appendix M: IRB Approval

Office for Research  
Institutional Review Board for the  
Protection of Human Subjects

THE UNIVERSITY OF  
**ALABAMA**  
R E S E A R C H

June 19, 2013

Allyson Phillips  
College of Arts and Sciences  
Dept. of Psychology  
Box 870348

Re: IRB # 13-OR-217, "A comparison of parenting dimensions between mothers of children with intellectual disability and mothers of typically developing children"

Dear Ms. Phillips:

The University of Alabama Institutional Review Board has granted approval for your proposed research.

Your application has been given expedited approval according to 45 CFR part 46. You have also been granted the requested waiver of written documentation of informed consent. Approval has been given under expedited review category 7 as outlined below:

*(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.*

Your application will expire on June 16, 2014. If your research will continue beyond this date, please complete the relevant portions of the IRB Renewal Application. If you wish to modify the application, please complete the Modification of an Approved Protocol form. Changes in this study cannot be initiated without IRB approval, except when necessary to eliminate apparent immediate hazards to participants. When the study closes, please complete the Request for Study Closure form.

Please use reproductions of the IRB approved stamped consent forms to obtain consent from your participants.

Should you need to submit any further correspondence regarding this proposal, please include the above application number.

Good luck with your research.

Sincerely,

Stuart Usdan, Ph.D.  
Chair, Non-Medical IRB  
The University of Alabama

UNIVERSITY OF ALABAMA INSTITUTIONAL REVIEW BOARD FOR THE  
 PROTECTION OF HUMAN SUBJECTS  
 REQUEST FOR APPROVAL OF RESEARCH INVOLVING HUMAN SUBJECTS

**I. Identifying information**

	<b>Principal Investigator</b>	<b>Second Investigator</b>	<b>Third Investigator</b>
Name:	B. Allyson Phillips	Frances Conners	Mary Liz Curtner-Smith
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Title of Research Project: A comparison of parenting dimensions between mothers of children with intellectual disability and mothers of typically developing children

Date Printed: 5/12/13

Funding Source: None

Type of Proposal:	<input checked="" type="checkbox"/> New	<input type="checkbox"/> Revision	<input type="checkbox"/> Renewal	<input type="checkbox"/> Completed	<input type="checkbox"/> Exempt
		Attach a renewal application Attach a continuing review of studies form			
Please enter the original IRB # at the top of the page					

UA faculty or staff member signature:

**II. NOTIFICATION OF IRB ACTION** (to be completed by IRB):

Type of Review:  Full board  Expedited

**IRB Action:**

<input type="checkbox"/> Rejected	Date: _____
<input type="checkbox"/> Tabled Pending Revisions	Date: _____
<input type="checkbox"/> Approved Pending Revisions	Date: _____

Approved—this proposal complies with University and federal regulations for the protection of human subjects.

Approval is effective until the following date: 6/16/14  
 Items approved:  Research protocol: dated 6/17/13

Informed consent: dated 6/7/13  
 Recruitment materials: dated 6/7/13  
 Other: dated