



Positive parenting of children with developmental disabilities: A meta-analysis

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ABSTRACT

Although a large body of literature exists supporting the relationship between positive parenting and child outcomes for typically developing children, there are reasons to analyze separately the relevant literature specific to children with developmental disabilities. However, that literature has not been synthesized in any systematic review. This study examined the association between positive parenting attributes and outcomes of young children with developmental disabilities through meta-analytic aggregation of effect sizes across 14 studies including 576 participants. The random effects weighted average effect size was $r = .22$ ($SE = .06$, $p < .001$), indicative of a moderate association between positive parenting attributes and child outcomes. Publication bias did not appear to be a substantial threat to the results. There was a trend for studies with more mature parents to have effect sizes of higher magnitude than studies with young parents. The results provide support for efforts to evaluate and promote effective parenting skills when providing services for young children with disabilities.

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1. Introduction

For more than 40 years researchers have examined the relationship between parenting styles and child development outcomes. Many of these studies have been based on the work of Baumrind (1966, 1971, 1989) and her typological approach describing authoritative, authoritarian, and permissive parenting styles. The authoritative parenting style or features of authoritative parenting, considered “positive” forms of parenting, have uniformly been associated with positive child development outcomes (Baumrind, 1989; Gray & Steinberg, 1999; Hart, Newell, & Olsen, 2003).

Although a large body of literature now exists supporting the relationship between positive parenting and child outcomes for typically developing children, fewer studies have examined the association between positive parenting and child

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outcomes for children with developmental disabilities such as Down syndrome, intellectual disabilities, and autism. Positive parenting of children with disabilities is a particularly relevant area of investigation due to the many stressors these parents experience (Dabrowska & Pisula, 2010; Gray, 2006; Kersh, Hedvat, Hauser-Cram, & Warfield, 2006), which may impact their parenting. Furthermore, the relevant literature is fragmented and has not been synthesized in any systematic review.

Consequently, a meta-analytic study examining the relationship between positive parenting and child development outcomes for children with developmental disabilities is warranted. The present meta-analysis is intended to address the following research questions: (a) Is positive parenting reliably related to child development outcomes for children with developmental disabilities? (b) What child and study variables moderate the association between positive parenting and child development outcomes?

2. Conceptual underpinnings of the association between positive parenting and child outcomes

The prototypes of three distinct parenting styles emerged in the 1960s, when Baumrind (1966) investigated permissive, authoritative, and authoritarian parenting. A permissive parenting style is one that is non-punitive, accepting, and non-demanding. On the opposite end of the spectrum is an authoritarian parenting style where parents attempt to influence and control the child in order to maintain obedience and respect for authority. An authoritative parenting style is described as one that is rational and respects the child's self-will balanced with disciplined conformity. This parenting style results in more positive child outcomes than the other two styles.

We begin this discussion by defining positive parenting. Next, we discuss how positive parenting is related to child development outcomes in typically developing children. Finally, in an effort to synthesize the relevant literature on this topic, we examine the literature on positive parenting of children with disabilities, focusing on possible mediators and moderators of the relationship between positive parenting and outcomes for children with developmental disabilities.

2.1. Positive parenting

We define *positive parenting* as parenting that is authoritative in nature or parenting that includes features of authoritative parenting. While there is no agreement in the literature as to what constitutes positive parenting (Russell & Russell, 1996), features of positive parenting have been described using different terms, including accepting, warm, involved, sensitive, responsive, caring, and empathetic; social-emotional and cognitive growth fostering; and directive (Baumrind, 1989; Bornstein, 2003; Hart, Nelson, Robinson, Olsen, & McNeilly-Choque, 1998; Maccoby & Martin, 1983; Russell, 1997).

Three broad classifications have been used to subsume most positive dimensions of parenting: (a) parental support or connection, (b) behavioral regulation, and (c) respect for individuality (Barber & Olsen, 1997; Barber, Stolz, & Olsen, 2005; Hart et al., 1998). Parental support or connection is characterized by interactions between parents and children that are positive, warm, sensitive, affectionate, predictable, and supportive (Barber et al., 2005). Behavioral regulation is the feature of authoritative parenting related to how parents establish structure around the child's behavior (Barber et al., 2005) that includes setting limits, reasoning, and applying consequences. Parents' respect for individuality includes acknowledging the child's development by avoiding intrusive, exploitive, and manipulative parenting behaviors.

2.2. Positive parenting and child development outcomes

The literature suggests authoritative parenting is related to a number of positive child outcomes. These include children's prosocial behavior such as responsible independence, psychosocial maturity, cooperation with peers and adults, self-regulation, and compliance (Baumrind, 1971, 1989; Dix, 1991; Grusec & Goodnow, 1994; Eisenberg et al., 2005; Hart et al., 2003; Karreman, van Tuijl, van Aken, & Dekovic, 2006; Robinson, Mandlco, Olsen, & Hart, 1995). Other research has demonstrated the association between authoritative parenting styles and characteristics such as empathy (Krevan & Gibbs, 1996), child attachment (De Wolff & van Ijzendoorn, 1997), and emotional expression (Barber, 1996, 2002).

Components of authoritative parenting have also been demonstrated to be related to skills for school success. Evidence is found in skills such as student achievement (Luster, Lekskul, & Oh, 2004; Rosenzweig, 2000), receptive language skills (Luster et al., 2004) and cognitive-language development (Hart et al., 1998; Landry, Smith, Miller-Loncar, & Swank, 1997).

Authoritative or positive parenting is also related to lower levels of maladaptive social skills such as externalizing behavior (Eisenberg et al., 2005; Kuczynski & Kochanska, 1995; Rothbaum & Weisz, 1994). Conversely, the absence of an authoritative parenting style is related to childhood depression and childhood anxiety (McLeod, Weisz, & Wood, 2007; McLeod, Wood, & Weisz, 2007), and antisocial behavior (relational and physical aggression) for both young children and adolescents (Barber, 1996, 2002).

3. Positive parenting of children with disabilities

While research exists regarding parenting styles of caregivers of children with developmental disabilities (Pino, 2000), the literature is scarce when parenting styles are investigated in light of children's functional outcomes. The extant literature is also limited to a small range of participants. Most of the research has investigated parenting styles of mothers rather than fathers. Also, few studies exist which include children with disabilities other than Down syndrome.

Although the research is limited, associations have been found between parental connection and positive outcomes for children with developmental disabilities. Parental connection such as maternal sensitivity, responsiveness, and interactions is associated with positive play behaviors, language gains, and increases in daily living and socialization skills of children with Down syndrome (Atkinson et al., 1999; Cielinski, Vaughn, Seifer, & Contreras, 1995; Harris, 1994; Hauser-Cram et al., 1999). Maternal responsiveness is related to social interaction in children with Autism Spectrum Disorders (ASD) and in children with developmental delays (Girolametto, Verbey, & Tannock, 1994; Mahoney & Perales, 2003).

Some relationships exist between parental behavior regulation and outcomes of children with disabilities. This research, however, focuses primarily on children with Down syndrome, who express less pride in their ability to complete a task when their mothers are directive (Hughes & Kasari, 2000). When mothers are more directive, preschoolers with developmental delays communicate less during their interaction (Girolametto & Tannock, 1994). On the other hand, mothers of toddlers with Down syndrome who directly attempt to lead their child's behavior have children who engage in an increased proportion of social and object play, better quality play, intentional communication, and vocalization (Cielinski et al., 1995; Roach, Barratt, Miller, & Leavitt, 1998).

Although literature exists regarding the relationship between positive parenting practices and functional outcomes for children with developmental disabilities, it is limited. Also, the magnitude of the association needs to be determined, and factors that moderate the association need to be identified. For instance, it is possible that parenting behaviors differ across children of different ages, gender, and ability. Hence, the purposes of the present meta-analysis were to quantitatively aggregate the existing data to yield an overall estimate of the association and to analyze several variables that likely impact that association, based upon the following research questions: (a) Is positive parenting reliably related to child development outcomes for children with developmental disabilities? and (b) What child and study variables moderate the association between positive parenting and child development outcomes?

4. Method

4.1. Literature search

In order to obtain published and unpublished studies (journal articles, book chapters, doctoral dissertations, and master's theses) that examined the association of positive parenting behaviors with outcomes of children with developmental disabilities, we conducted extensive searches using the following electronic databases: Academic Search Premier, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Education Resources Information Center (ERIC) databases, Family and Society Studies Worldwide, Health Source, Medline, PsychINFO, and Social Sciences Citation Index (Web of Knowledge). In all databases we sought manuscripts that had all three concepts of parenting, children, and disabilities. To identify as many manuscripts as possible, we used lists of synonyms separated by the Boolean "or" operator (with word stems to identify all word variants), including: (a) parent, mother, father, caregiver, and family for the concept of parenting; (b) child, infant, baby, youth, adolescent, and teen for the concept of children; and (c) exceptional, disab*, impair*, special, autism*, handicap, impair*, special need, special education, Down syndrome, and developmental delay for the concept of disability. Most of the hits were not quantitative research reports. We therefore narrowed hits to those involving quantitative data by using a long list of inclusion terms, such as: data, participants, research, results, statistic, subjects, findings, quantitative, study, analyze, method, measure, assessment, questionnaire, collect, random, or participants. To ensure that we located as many articles as possible, we searched the electronic databases three times using distinct search terms and keywords. Citations of coded studies were also searched manually to identify additional studies for inclusion.

Studies selected for inclusion in the meta-analysis were written in English between 1990 and 2008 and provided quantitative data evaluating the association between positive aspects of parenting and an aspect of functioning of children with developmental disabilities. The manuscript had to explicitly state that the children met criteria for diagnosis of a developmental disability that results in substantial functional limitations in at least three major areas of life activity (e.g., self-care; receptive and expressive language; learning; capacity for independent living), and thereby requires lifelong or extended services and supports. For the purpose of this research, we considered developmental disabilities to include (but not limited to) autism spectrum disorders, developmental delay, Down syndrome, intellectual disability, and multiple disabilities. We did not include studies with children whose disabilities did not significantly impede at least three life activity areas, such as those with academic-related disabilities (e.g., attention deficit disorder, reading disability) or with strictly physical disabilities (e.g., cerebral palsy without intellectual deficits; hearing impairments; visual impairments). We also included only studies in which an explicitly positive parenting behavior was evaluated. Positive parenting behaviors included those that fostered connection between the parent and child (e.g., joint attention, engagement during play, mother-child interaction, maternal responsiveness, praise, expressed emotion), behavior regulation (e.g., maternal directive behavior, turn-taking control, topic control), and respect for the individuality of the child (e.g., avoiding intrusive, exploitive, and manipulative parental behaviors). Measures of authoritative parenting style were considered as aspects of positive parenting, but other parenting styles (autocratic, permissive, and uninvolved) were not. Measurement based on observations (e.g., frequency counts and ratings) and on self-report (e.g., questionnaires) were included in the analyses.

Members of the research team initially reviewed titles and abstracts to verify that the manuscript was specific to parenting children of disabilities. Full manuscripts were then reviewed to verify that effect sizes could be extracted. We did not exclude unpublished research or exclude reports based on subjective evaluations of research quality because none of the

reports appeared to be of such poor quality as to be excluded and because we were interested in describing the entire corpus of literature available on the topic (Glass, McGaw, & Smith, 1981; Rosenthal, 1991). Case studies, single-subject designs, qualitative research articles, analog studies in which no actual parent–child interactions occurred, and conceptual/theoretical papers were excluded because meaningful effect sizes could not be extracted from such studies.

4.2. Data coding

Coding teams of two members each were established to help verify the accuracy of coding and data entry. Each article was coded twice by separate teams of trained coders, with the second coding team having access to the data of the first team for purposes of verification and correction of inaccuracies. Coders extracted independent and identifiable characteristics from each study. These characteristics included: (a) the source of the study (e.g., journal article, dissertation); (b) the number of child participants and their age, gender, and type of disability; (c) the age and gender of the parent(s) involved in the study; (d) the type of positive parenting behavior evaluated; and (e) the research design.

Adequate inter-rater agreement was obtained for categorical variables (average Cohen's Kappa value of .83) and for continuous variables (average intraclass correlation value of .96 using one-way random effects models for single measures). Discrepancies across coding teams were resolved through further scrutiny of the manuscript to the point of consensus among coders.

4.3. Computation of effect size estimates

Among the studies included in this meta-analysis, several different statistics were reported: correlations, analyses of variance (ANOVAs), *t*-tests, odds ratios, chi-squares, means and standard deviations, and *p*-values. In order to compare these data across studies, the statistics reported were transformed into the metric of a correlation coefficient (Pearson's *r*) using the Meta-analysis Calculator software (Lyons, 1996). When an analysis was reported to be "statistically significant" but no statistic was provided, the *r*-value was determined by the corresponding *alpha* level (assuming two-tailed $\alpha = .05$ unless reported otherwise). Analyses that reported results as "non-significant" but gave no additional information were set to effect size $r = 0.0$. These procedures yielded conservative effect size estimates. The direction of all effect sizes was coded uniformly, such that positive values indicated a comparatively greater benefit to the child from the positive parenting behavior and negative values indicated a deleterious effect upon the child as a result of the positive parenting behavior.

Several studies reported data on multiple outcome measures. For example, some studies assessed child responsiveness as well as aspects of symptom reduction. According to the assumption of statistically independent samples, there would be a greater likelihood of non-independence in the data should each effect size be used in the omnibus analysis (Cooper, 1998; Cooper & Hedges, 1994; Hedges & Olkin, 1985). Therefore, we averaged the effect sizes within each study (weighted by the number of participants included in the analysis) to compute an aggregate effect size (Mullen, 1989), such that each study contributed only one data point in the analyses. We used random effects models to analyze the data (weighting effect sizes by the inverse of their variance) because the effects of parenting are not fixed (i.e., parenting behaviors vary) and because random effects models are more likely to generalize beyond the studies located than fixed effects models (Field, 2005).

5. Results

5.1. Descriptive characteristics

Statistically non-redundant effect sizes were extracted from 14 studies, with a total of 576 participants (Table 1). Across studies, the average age of children at initial evaluation was 3.2 years (range = 1.6–6.4), with an average of 41% being female. Seven studies (50%) involved children with Down syndrome, two studies (14%) involved children with developmental delays, two studies (14%) involved children with diagnosed autism, one study (7%) involved children with cerebral palsy with accompanying intellectual deficits, and two studies (14%) involved children with multiple types of developmental disabilities. The average age of parents involved in the studies was 31.3 years, with 11 studies (79%) investigating only mothers and 3 studies (21%) investigating all caregivers.

Studies included in this meta-analysis typically involved an observation of parent–child interactions, with ratings/counts of parent and child behaviors. For example, relationships were investigated such as maternal sensitivity and child attachment security (Atkinson et al., 1999), maternal helping behaviors and child play (Boyce, 1999), maternal topic control and child language gains (Harris, 1994). Most studies evaluated multiple aspects of positive parenting behaviors, such as praise/reward-giving, engagement/responsiveness, guidance/facilitation, empathy/understanding, and affection/warmth. The type of child outcome measures used differed only slightly across studies, with 12 (86%) evaluating child play/social behaviors and the remaining studies evaluating either child adaptive behavior or self-concept. Seven of the studies involved longitudinal research designs, and seven studies evaluated associations between parenting behaviors and immediate child responses. Although the specific procedures differed across studies, a typical cross-sectional study involved observation of parent behaviors and subsequent child behaviors, with longitudinal studies measuring child behavior at a subsequent point in time.

Table 1
Overview of studies included in the meta-analysis.

Author(s)	N	Child age ^a	Child condition	Research design	Effect size ^b
Atkinson et al. (1999)	53	1.6	Down syndrome	Longitudinal	0.39
Boyce (1999)	19	1.6	Developmental delays	Cross-sectional	0.04
Cielinski et al. (1995)	33	3.9	Down syndrome	Cross-sectional	0.12
Girolametto and Tannock (1994)	20	2.3	Developmental delays and Down syndrome	Cross-sectional	0.00
Guralnick, Neville, Connor, and Hammond (2003)	74	5.2	Developmental delays	Cross-sectional	0.03
Harris (1994)	28	3.0	Down syndrome	Longitudinal	0.25
Hauser-Cram et al. (1999)	54	5.1	Down syndrome	Longitudinal	0.24
Hughes and Kasari (2000)	20	6.4	Down syndrome	Cross-sectional	0.00
Legerstee, Varghese, and Van Beek (2002)	21	1.7	Down syndrome	Longitudinal	0.13
Roach et al. (1998)	28	1.9	Down syndrome	Cross-sectional	0.13
Siller and Sigman (2002)	53	3.6	Autism	Longitudinal	0.60
Siller and Sigman (2008)	20	3.8	Autism	Longitudinal	0.63
Sommer et al. (2000)	121	3.0	Developmental delays	Longitudinal	0.06
Walsh (2003)	32	2.4	Cerebral palsy	Cross-sectional	0.16

^a Average child age at first assessment.

^b Random effects weighted correlation.

5.2. Omnibus analysis

Across all 14 studies, the random effects weighted average effect size was $r = .22$, with a 95% confidence interval of $r = .09$ to $r = .33$ ($p < .001$). Effect sizes ranged from $r = .00$ to $r = .63$, with the index of heterogeneity reaching statistical significance ($Q_{(13)} = 26.5$, $p = .01$; $I^2 = 51\%$). Thus the magnitude of the association between positive parenting behaviors and child variables was moderately inconsistent across studies.

5.3. Assessment of publication bias

To evaluate whether the omnibus results were biased against the null hypothesis, we conducted several procedures to detect possible publication bias, also called the *file drawer effect* (Rosenthal, 1979). Publication bias can occur in a meta-analysis because studies with statistically significant results are more likely to be published than are studies with statistically non-significant results. Because published studies tend to be located more readily than unpublished studies, a meta-analysis that disproportionately includes published results may be characterized by excessively high estimates of the actual effects. However, in the present study, the magnitude of the effect sizes obtained from the 11 published studies ($r = .21$) did not significantly differ ($p = .76$) from the effect sizes obtained from the 3 unpublished studies ($r = .16$). A funnel-plot of the effect sizes (x -axis) by the number of participants in the study (y -axis) did not indicate the presence of missing studies (Begg, 1994). Egger's regression test was non-significant, and the omnibus effect size remained the same when subjected to trim and fill analyses (Duvall & Tweedie, 2000). Thus, publication bias does not appear to be a substantial threat to the results obtained in this meta-analysis.

5.4. Moderation by participant characteristics

Given the heterogeneity of effect sizes, it was important to ascertain whether differences in findings were attributable to participant characteristics across studies. Specifically, plausible differences in parenting could occur across parent age and child age, gender, and disability type. We therefore evaluated whether the association between child functioning and positive parenting behaviors varied as a function of average parent and child age, child gender, and type of child disability.

In order to establish whether differences in the age of the sample accounted for significant between-studies variance, the effect sizes from the 14 studies were correlated with the average age of the child participants within each study. The resulting random effects weighted correlation was $-.11$ ($p = .71$), indicating no difference in effect sizes across child age. Similarly, the mothers' average age in each study was correlated with the corresponding effect size, with the resulting random effects weighted coefficient being $r = .60$ ($p = .09$). Overall, studies with relatively more mature parents tended to have effect sizes of higher magnitude than studies with younger parents.

To evaluate the possible association of child gender, the effect sizes from the studies were correlated with percentage of female participants in the study. The resulting random effects weighted correlation was $-.13$ ($p = .68$), indicating no association between participant gender composition and study outcome.

We next calculated differences across samples with children having different types of disabilities. Because Down syndrome was the only type of disability that occurred with sufficient frequency across studies to conduct comparative analyses, we contrasted studies with children with Down syndrome to studies with children having other types of disabilities. The results did not indicate a statistically significant difference, with the studies involving children with Down syndrome having the same average effect sizes ($r = .20$) as studies with children having another form of disability ($r = .20$).

5.5. Moderation by study characteristics

It was also important to investigate whether effect size heterogeneity could be attributed to the research design used within reports. Studies in which the association between positive parenting behaviors and child variables was measured at one time (in cross-sectional designs) had an average effect size of $r = .07$, whereas effect sizes within longitudinal studies averaged $r = .29$ ($p = .03$). The strength of the association was greater when parenting behaviors were measured first and child responses were measured at a later time.

6. Discussion

The results of this meta-analysis demonstrated an overall beneficial effect of positive parenting upon the functional outcomes of young children with developmental disabilities. Across all 14 studies reviewed, the random effects weighted average effect size was $r = .22$, indicating a moderate, statistically significant association. When the complexity of the variables and their associated limitations of measurement are taken into account, the clinical significance appears substantive. Hundreds of variables influence child development, so for any single variable such as parenting style, imprecisely measured at a given point in time, to consistently correlate with child development is not only noteworthy but deserving of sustained research attention.

These results are similar to a meta-analysis comparing positive dimensions of maternal behavior on infants' secure attachment where the size of the correlation we obtained is similar to those observed with typically developing children. Specifically, De Wolff and van Ijzendoorn (1997) found an overall correlation of .17 across 123 studies evaluating different types of positive maternal behaviors. All studies included samples of typically developing children with the exception of one study that involved children with autism. The overall results across our studies with children with disabilities differs only a little ($r = .22$), which supports the assumption that positive parenting is equivalently impactful across children, regardless of whether or not the child has a disability that impacts their mental functioning.

The overall magnitude of the results did not differ across child disability type. However, the children in these studies tended to be very young, and this finding remains to be confirmed through future research. For instance, in two studies the large average correlation observed among children with autism was quite high ($r = .60$; see Table 1) and warrants additional attention. It appears that interventions to promote positive parenting could be optimally effective for children with autism spectrum disorders who have notable social impairment. Hypotheses such as this can be tested through future observational research.

The fact that the results obtained were actually stronger among longitudinal studies than cross-sectional studies is remarkable. This finding might suggest the effects of parenting are time-sequential: current parenting responses are more predictive of child future responses than immediate child responses. Child behavior over time appears to be a function of aggregate parenting practices which typically remain constant over time.

6.1. Limitations

Several limitations to this study exist, but these limitations provide possible avenues for future research. First, the limited number of studies (14) located for analysis restricts the likelihood that these results will generalize to other populations. Additional research is clearly needed in this area. Second, the studies most often investigated mothers' behaviors. Because mothers' interactions differ from fathers' interactions (Lamb, 2004), the current absence of research on fathers' influence should be rectified. Third, most of the studies located involved very young children, at least half of whom had Down syndrome. Other populations should be evaluated in the future. Fourth, we collapsed all types of child outcome in the analyses because we located only 14 studies for analysis. However, it seems likely that the impact of positive parenting will vary as a function of the child outcome measured. In a previous review with studies utilizing typically developing children, Rothbaum and Weisz (1994) found an overall correlation of .24 across 47 studies while examining only child externalizing behaviors, but Karreman et al. (2006) found an overall correlation of only .08 across 31 studies examining only child self-regulation. Hence, the size of the effect of parenting behaviors depends largely upon the child outcome variable being evaluated. We would predict that the same trends would apply to children with disabilities. Fifth, the studies typically included fewer than 100 participants, so the results are subject to sampling error and limited external validity; studies with more participants are warranted.

6.2. Implications for future research

In order to further address the issue of parenting styles and behaviors of parents with children with disabilities, additional research is needed. With the broad range and severity of physical, social/emotional, and intellectual disabilities, research needs to further examine specific parenting behaviors that are elicited by the varying disabilities. The interaction between parents and children is bidirectional (versus unidirectional) where children's temperament and personality elicit, evoke, and shape parents' behaviors and their style of parenting. Research suggests that children's temperament and personality are related to certain parenting styles and behaviors (Barber, 2002; Boström, Broberg, & Bodin, 2011). Therefore, because developmental disabilities may influence temperament and personality, it would be important to closely examine how

certain disabilities evoke and elicit unique parental responses as well as the unique impact of parenting behaviors on children with various disabilities. For example, disabilities that highly impact social relationships such as autism, Asperger syndrome, and emotional/behavioral disorders are likely to elicit unique parental responses compared to children with Down syndrome or other intellectual disabilities. Parents may find it harder to feel connected, and to respect individuality with children whose behaviors are not very responsive to traditional positive parenting behaviors. Parents may need to adopt other parenting behaviors or thought processes related to certain behavioral disabilities in order to avoid developing patterns of negative parenting that can further harm the child. Similar to research that has found consistent results of the impact of parenting styles and behaviors across varying cultures, the same type of analyses needs to occur across the broad range of children's disabilities.

Furthermore, research is warranted regarding parenting styles in various family compositions. Are positive parenting behaviors more or less prevalent in homes with children with and without disabilities, or in homes with only one child (or multiple children) with disabilities? Do parents differentiate their parenting styles when interacting with their children with, compared to their children without disabilities? What relationships exist between parenting styles and birth order when one child has a disability? The extant literature has yet to yield answers to these and other related questions.

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Conflict of interest

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⁵ References marked with an asterisk indicate studies included in the meta-analysis.

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