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Parenting behavior and the risk of becoming a victim and a bully/victim: A meta-analysis study

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Declaration of interest: None.

Abstract

Objective: Being bullied has adverse effects on children's health. Children's family experiences and parenting behavior before entering school help shape their capacity to adapt and cope at school and have an impact on children's peer relationship, hence it is important to identify how parenting styles and parent-child relationship are related to victimization in order to develop intervention programs to prevent or mitigate victimization in childhood and adolescence.

Method: We conducted a systematic review of the published literature on parenting behavior and peer victimization using MEDLINE, PsychINFO, Eric and EMBASE from 1970 through the end of December 2012. We included prospective cohort studies and cross-sectional studies that investigated the association between parenting behavior and peer victimization.

Results: Both victims and those who both bully and are victims (bully/victims) were more likely to be exposed to negative parenting behavior including abuse and neglect and maladaptive parenting. The effects were generally small to moderate for victims (Hedge's g range: 0.10 to 0.31) but moderate for bully/victims (0.13 to 0.68). Positive parenting behavior including good communication of parents with the child, warm and affectionate relationship, parental involvement and support, and parental supervision were protective against peer victimization. The protective effects were generally small to moderate for both victims (Hedge's g : range: -0.12 to -0.22) and bully/victims (-0.17 to -0.42).

Conclusions: Negative parenting behavior is related to a moderate increase of risk for becoming a bully/victim and small to moderate effects on victim status at school. Intervention programs against bullying should extend their focus beyond schools to include families and start before children enter school.

Keywords: Bullying, victimization, meta-analysis, harsh parenting, parenting behavior

Parenting behavior and the risk of becoming a victim and a bully/victim: A meta-analysis study

Victims of bullying are repeatedly exposed to aggressive behavior, perpetrated by an individual or peer group with more power than the victim (Olweus, 1993, 2002; Wang, Nansel, & Iannotti, 2011). Bullying is a global problem with an average of 32% of children being bullied across 38 countries/regions (World Health Organization, 2012). Victims more often develop physical health problems (Gini & Pozzoli, 2009; Wolke, Woods, Bloomfield, & Karstadt, 2001), a range of mental health difficulties including anxiety and depression (Arseneault, Bowes, & Shakoor, 2010; Woods & White, 2005; Zwierzyńska, Wolke, & Lereya, 2013), psychotic symptoms, (Schreier et al., 2009) and borderline personality symptoms (Wolke, Schreier, Zanarini, & Winsper, 2012). They are also at highly increased risk of self-harm, suicidal ideation, and attempting and completing suicides (Fisher et al., 2012; Klomek et al., 2009; Winsper, Lereya, Zanarini, & Wolke, 2012). The targets of bullying are victims (Haynie et al., 2001; Wolke, Woods, Bloomfield, & Karstadt, 2000), and those who both bully others and are victims of bullying are called bully/victims (Wolke & Samara, 2004; Wolke et al., 2000). Bully/victims usually display the highest level of conduct, school, and peer relationship problems (Juvonen, Graham, & Schuster, 2003; Wolke & Samara, 2004) and may come from the most adverse family backgrounds (Smokowski & Kopasz, 2005).

Children's family experiences before entering school help shape their capacity to adapt and cope at school and have an impact on children's peer relationships (Ladd, 1992). Thus, it is important to identify which parenting styles and parent-child relationships are related to victimization in order to develop intervention programs to prevent or mitigate victimization in childhood and adolescence. From a social learning perspective, it has been argued that external environment contributes to acquiring and maintaining aggression

(Bandura, 1973, 1986), and parents' child rearing behavior may serve as a model upon which children base their behavior and expectations of future relationships (Ladd, 1992). It was found that maladaptive parenting, marked by high levels of hostility, hitting and shouting, was related to increased risk of peer victimization at school (e.g. Ahmed & Braithwaite, 2004). On the other hand, children of authoritative parents (high on demanding and high on responsiveness) was found to do better at school and have less adjustment problems (e.g. Baumrind, 1991; Hay & Meldrum, 2010).

However, global parenting styles may fail to identify distinct aspects of parenting that are associated with childhood adjustments (Linver & Silverberg, 1997). The examination of individual parenting characteristics enable the exploration of relative independent effects of these characteristics on child outcomes (Grolnick & Ryan, 1989). For example, previous research identified several factors that are important for the socialization of children. These include the extent of supervision (Georgiou, 2008), warmth (Booth, 1994; Fine, Voydanoff, & Donnelly, 1993) and overprotection (Finnegan, Hodges, & Perry, 1998). Knowing which parenting factors increase or decrease the risk of victimization is necessary in order to develop prevention or intervention programs that go beyond the school context.

The objective of this meta-analysis is to systematically investigate the type and strength of the association between parenting behavior (i.e., parent-child communication, authoritative parenting, parental involvement and support, supervision, warmth and affection of the parents, abuse and neglect, maladaptive parenting, overprotection) on being bullied. Analyses are conducted separately for victims and bully/victims.

Method

The present meta-analysis was conducted according to the MOOSE guidelines for systematic reviews of observational studies (see supplementary Table 1; Brugha et al., 2012; Stroup et al., 2000).

Search Strategy

We conducted a literature search for cross-sectional and longitudinal studies of the association between parenting behavior and peer victimization published between January 1970, when the influential work of Olweus on bullying appeared, and the end of December 2012. The following electronic databases were searched: MEDLINE, PsychINFO, Eric and EMBASE. The following keywords were used ‘bully*’, ‘bulli*’ and ‘victim*’ in conjunction with ‘parent*’, ‘authoritarian’, ‘authoritative’, ‘permissive’, ‘hostility’, ‘warmth’, ‘punitive’, ‘indulgent’, ‘neglectful’, ‘overprotection’, ‘discipline’, ‘control’, ‘dominance’, ‘accept*’, ‘reject*’, ‘sensitive’, ‘insensitive’, ‘communication’, ‘affect*’, ‘encouragement’, ‘interaction’, ‘monitor*’, ‘responsive’, ‘family’, and ‘famili*’. The parenting keywords were chosen from Holden and Miller’s meta-analysis (1999) on enduring parents’ child rearing styles.

Study Inclusion and Exclusion Criteria

The online MEDLINE search yielded 6,123 articles, the PsychINFO yielded 4,401 articles, Eric yielded 2,104 articles and EMBASE yielded 4,039 articles. The overall systematic literature search included 16,667 articles. There was an overlap of 4,926 articles. Duplicate articles were excluded from subsequent searches and the final literature search included 11,741 articles (see Figure 1).

In order to be included in the analysis, the study had to meet three criteria. Firstly, the study had to include measures of peer victimization at school and parenting behavior that was directly related to the child. Guided by previous meta-analyses on peer victimization (Hawker & Boulton, 2000; Nakamoto & Schwartz, 2010; Reijntjes, Kamphuis, Prinzie, & Telch, 2010) studies that assessed relational, physical, verbal and/or cyber victimization were included. The studies could use self-report (Ahmed & Braithwaite, 2004), peer nominations (Cenkseven Onder & Yurtal, 2008), or teacher (Shin & Kim, 2008) or parent reports (Bowes et al., 2009). Secondly, the authors should report (or provide after request) sufficient statistical information (correlations, means and standard deviations, odds ratio, *F* or *t* values) in order to allow the use of meta-analytic techniques. Finally, the studies needed to come from published sources in English, such as journals, book chapters, or books. Studies were excluded for the following reasons: (1) the sample was from a clinical population; (2) it was a qualitative study; (3) it was an experimental study; (4) it included only distal family variables that are indirectly related to the child (e.g. domestic violence); or (5) there was not sufficient statistical information for the computation of effects and it was not provided by the authors despite being contacted.

We reviewed the titles and abstracts of all articles found (N=11,741), resulting in 291 full text articles for additional review. Two of the authors independently screened the full-text articles according to the selection and inclusion criteria. A total of 72 articles were further excluded. For studies where data were missing, authors were contacted to obtain information about the relationship between victimization and parenting factors or moderator variables. However, some authors were not able to provide missing data (e.g. Baldry, 2003; Rigby, 1993; Shields & Cicchetti, 2001), could not be reached (e.g. Lowenstein, 1977, 1978) or did not reply (e.g. Curtner-Smith, 2000). These studies were, therefore, not included in the meta-

analysis. Finally, 70 studies (N=119 samples for victims; N=55 samples for bully/victims) were included in the meta-analysis and are shown in Table 1. The final meta-analytic sample contained a total of 208,778 children with an age range of 4 to 25 years.

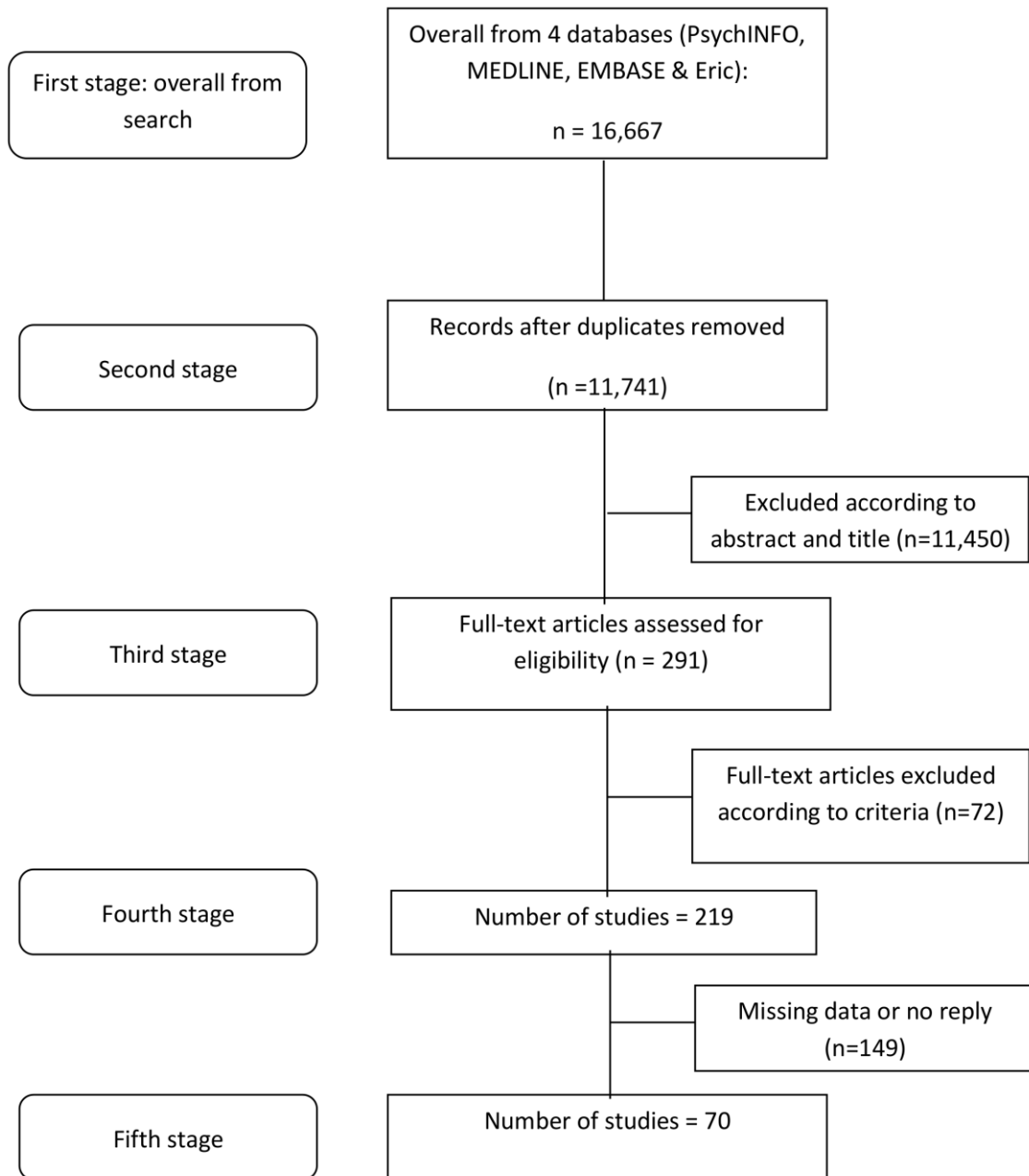


Figure 1. Description of the systematic review

Selection of Parenting Behavior Variables and Coding

Two coders independently constructed categories for the parenting variables that were then jointly reviewed and decided with the help of a senior reviewer. Because, merging variables into very few categories might have obstructed any systematic patterns or too many categories that might reveal insufficient data for the analysis, considerable attention was given to determine the appropriate categories (Holden & Miller, 1999). Eight categories of parenting behavior were created (see supplementary Table 2 for rationale behind the categories): *positive parenting behavior*: authoritative parenting, parent-child communication, parental involvement and support, supervision, warmth and affection; *negative parenting behavior*: abuse/neglect, maladaptive parenting, and overprotection.

Then, the two coders independently placed 117 parenting variables into the 8 categories (see supplementary Table 2 for variables in each category). Cohen's kappa was computed for the constructs and results revealed very good inter-rater agreements; all kappa's exceeded 0.84. All discrepancies were discussed and resolved by the coders. Three of the 117 variables did not match any of the categories. These variables (i.e. family problem solving, family general control and parental responsibility) were not classified into any of the suggested constructs and thus were not included in the analyses. In several instances, two or more variables used in a study were merged and classified into the same categories (e.g. tracking and knowledge [Marini, Dane, Bosacki, & Ylc, 2006] were placed in the supervision category). In such cases, the effect sizes from the two (or more) variables were averaged to form one measure per study as recommended by Rosenthal to maintain independent samples in the meta-analysis (Rosenthal, 1991). If more than one study was published using the same data set, the paper with the most information and parenting factors was chosen (e.g. Bowes et al., 2009; Shakoor et al., 2012). With regards to sample characteristics, age was broken down

into the following categories: early childhood (4-7 years), middle childhood (7.5-12 years) and adolescence (older than 12 years). Assessment method of peer victimization (e.g., self-report, peer nomination, teacher or mixed), continent (Europe, America and other) and whether the study was cross-sectional or longitudinal were also coded (Table 1).

Table 1: Summary of studies examining parenting behavior and peer victimization

Study	Year	N	Age range^a	Victimization informants^b	Victimization subtypes	Victimization status	Design^c	National Setting^d	Parenting Behavior Variable
Accordino & Accordino	(2011)	124	7.5-12	Self-Report	General & Cyber	Victim	Cross-Sectional	America	Warmth & Affection
Ahmed & Braithwaite	(2004)	610	7.5-12	Self-Report	General	Victim Bully/victim	Cross-Sectional	Other	Authoritative Parenting, Maladaptive Parenting
Alikasifoglu et al.	(2007)	3,519	12+	Self-Report	General	Victim Bully/victim	Cross-Sectional	Europe	Communication
Aman-Back & Björkqvist	(2007)	773	7.5-12	Self-Report	General	Victim	Cross-Sectional	Europe	Authoritative Parenting, Communication
Baldry	(1998)	238	12+	Self-Report	General	Bully/victim	Cross-Sectional	Europe	Authoritative Parenting, Maladaptive Parenting, Parental Involvement & Support
Baldry	(2004)	661	12+	Self-Report	Overt & Relational	Victim	Cross-Sectional	Europe	Parental Involvement & Support
Baldry & Farrington	(2005)	679	12+	Self-Report	General	Victim	Cross-Sectional	Europe	Authoritative Parenting, Maladaptive Parenting, Parental Involvement & Support
Bender and Lösel	(2011)	1,163	12+	Self-Report	General	Victim	Cross-Sectional	Europe	Maladaptive Parenting
Beran	(2009)	4,293	12+	Self-Report	General	Victim	Cross-Sectional	Other	Warmth & Affection, Maladaptive Parenting
Beran et al.	(2008)	2,084	7.5-12	Self-Report	General	Victim	Cross-Sectional	Other	Parental Involvement & Support
Bowes et al.	(2009)	2,232	4-7	Mixed	General	Victim Bully/victim	Longitudinal	Europe	Abuse & Neglect, Warmth & Affection

^{a,b,c,d} Moderators. Please note study design was defined on the base of how the included articles analyzed the data; a longitudinal study analyzing data in a cross-sectional manner was deemed as cross-sectional

Table 1: Summary of studies examining parenting behavior and peer victimization cont.

Study	Year	N	Age range^a	Victimization informants^b	Victimization subtypes	Victimization status	Design^c	National Setting^d	Parenting Behavior Variable
Brighi et al.	(2012)	2,326	12+	Self-Report	Direct, Indirect, & Cyber	Victim	Cross-Sectional	Europe	Warmth & Affection
Burk et al.	(2008)	238	7.5-12	Mixed	General	Victim Bully/victim	Longitudinal	America	Maladaptive Parenting, Parental Involvement & Support
Cassidy	(2009)	461	12+	Self-Report	General	Victim	Cross-Sectional	Europe	Maladaptive Parenting, Parental Involvement & Support
Cava et al.	(2007)	1,319	12+	Self-Report	Overt	Victim	Cross-Sectional	Europe	Communication, Parental Involvement & Support
Cenkseven & Yurtal	(2008)	273	12+	Peer Nomination	General	Victim	Cross-Sectional	Europe	Communication, Parental Involvement & Support Warmth & Affection
Centers for Disease Control & Prevention	(2011)	5,807	12+	Self-Report	General	Victim Bully/victim	Cross-Sectional	America	Maladaptive Parenting
Chaux et al.	(2009)	53,316	12+	Self-Report	Overt	Victim Bully/victim	Cross-Sectional	Other	Maladaptive Parenting
Cheng et al.	(2008)	712	12+	Self-Report	General	Victim	Cross-Sectional	Other	Parental Involvement & Support
Cheng et al.	(2010)	9,015	12+	Self-Report	General	Victim	Cross-Sectional	Other	Parental Involvement & Support
Coleman	(2003)	67	7.5-12	Self-Report	Overt	Victim	Cross-Sectional	America	Warmth & Affection
Dehue et al.	(2012)	1,184	7.5-12	Self-Report	General & Cyber	Victim Bully/victim	Cross-Sectional	Europe	Authoritative Parenting, Abuse & Neglect, Maladaptive Parenting

^{a,b,c,d} Moderators. Please note study design was defined on the base of how the included articles analyzed the data; a longitudinal study analyzing data in a cross-sectional manner was deemed as cross-sectional

Table 1: Summary of studies examining parenting behavior and peer victimization cont.

Study	Year	N	Age range^a	Victimization informants^b	Victimization subtypes	Victimization status	Design^c	National Setting^d	Parenting Behavior Variable
Demanet & Van Houtte	(2012)	11,872	12+	Peer Nomination	General	Victim Bully/victim	Cross-Sectional	Europe	Parental Involvement & Support Warmth & Affection
Demaray & Malecki	(2003)	499	12+	Self-Report	General	Victim Bully/victim	Cross-Sectional	America	Parental Involvement & Support
Duong et al.	(2009)	211	7.5-12	Peer Nomination	General	Victim	Cross-Sectional	Other	Maladaptive Parenting
Fanti et al.	(2012)	1,416	12+	Self-Report	General & Cyber	Victim Bully/victim	Longitudinal	Europe	Parental Involvement & Support
Finnegan et al.	(1998)	184	7.5-12	Peer Nomination	General	Victim	Cross-Sectional	America	Maladaptive Parenting, Overprotection, Warmth & Affection
Franic et al.	(2011)	803	12+	Self-Report	General	Victim	Cross-Sectional	Europe	Maladaptive Parenting, Parental Involvement & Support, Warmth & Affection
Hay and Meldrum	(2010)	426	12+	Self-Report	General & Cyber	Victim	Cross-Sectional	America	Authoritative Parenting
Hazemba et al.	(2008)	2,348	12+	Self-Report	General	Victim	Cross-Sectional	Other	Supervision
Helweg-Larsen et al.	(2012)	3,707	12+	Self-Report	Cyber	Victim	Cross-Sectional	Europe	Maladaptive Parenting, Supervision
Herba et al.	(2008)	1,526	12+	Peer Nomination	General	Victim Bully/victim	Cross-Sectional	Europe	Maladaptive Parenting
Holt & Espelage	(2007)	1,501	12+	Self-Report	General	Victim Bully/victim	Cross-Sectional	America	Parental Involvement & Support

^{a,b,c,d} Moderators. Please note study design was defined on the base of how the included articles analyzed the data; a longitudinal study analyzing data in a cross-sectional manner was deemed as cross-sectional

Table 1: Summary of studies examining parenting behavior and peer victimization cont.

Study	Year	N	Age range ^a	Victimization informants ^b	Victimization subtypes	Victimization status	Design ^c	National Setting ^d	Parenting Behavior Variable
Holt et al.	(2009)	205	7.5-12	Self-Report	General	Victim	Cross-Sectional	America	Supervision
Jimenez et al.	(2009)	565	12+	Self-Report	Verbal, Physical & Relational	Victim	Cross-Sectional	Europe	Communication
Johnson et al.	(2011)	832	12+	Self-Report	Verbal, Relational & Cyber	Victim	Cross-Sectional	America	Warmth & Affection
Kelleher et al.	(2008)	211	12+	Mixed	General	Victim	Cross-Sectional	Europe	Abuse & Neglect
Kokkinos & Panayiotou	(2007)	186	7.5-12	Self-Report	General	Victim Bully/victim	Cross-Sectional	Europe	Maladaptive Parenting
Lemstra et al.	(2012)	4,197	7.5-12	Self-Report	General	Victim	Cross-Sectional	Other	Maladaptive Parenting
Ma et al.	(2009)	776	7.5-12	Self-Report	General	Victim	Longitudinal	America	Warmth & Affection
Ma & Bellmore	(2012)	831	12+	Peer Nomination	Overt & Relational	Victim	Cross-Sectional	America	Maladaptive Parenting
Ma	(2001)	13,751	12+	Self-Report	General	Victim	Cross-Sectional	Other	Parental Involvement & Support
Marini et al.	(2006)	7,290	12+	Self-Report	Overt & Relational	Victim Bully/victim	Cross-Sectional	Other	Parental Involvement & Support, Supervision, Warmth & Affection
Mesch	(2009)	935	12+	Self-Report	Cyber	Victim	Cross-Sectional	America	Supervision
Mishna et al.	(2012)	2,186	12+	Self-Report	Cyber	Victim Bully/victim	Cross-Sectional	Other	Supervision

^{a,b,c,d} Moderators. Please note study design was defined on the base of how the included articles analyzed the data; a longitudinal study analyzing data in a cross-sectional manner was deemed as cross-sectional

Table 1: Summary of studies examining parenting behavior and peer victimization cont.

Study	Year	N	Age range^a	Victimization informants^b	Victimization subtypes	Victimization status	Design^c	National Setting^d	Parenting Behavior Variable
Mohr	(2006)	733	12+	Self-Report	General	Victim Bully/victim	Cross-Sectional	Europe	Abuse & Neglect, Warmth & Affection
Muula et al.	(2009)	2,249	12+	Self-Report	General	Victim	Cross-Sectional	Other	Supervision
Murray-Harvey & Slee	(2010)	888	12+	Self-Report	General	Victim	Cross-Sectional	Other	Parental Involvement & Support
Perren & Hornung	(2005)	1,107	12+	Self-Report	General	Victim Bully/victim	Cross-Sectional	Europe	Parental Involvement & Support
Rigby et al.	(2007)	1,432	12+	Self-Report	General	Victim	Cross-Sectional	Other	Overprotection, Warmth & Affection
Rothon et al.	(2011)	2,790	12+	Self-Report	General	Victim	Cross-Sectional	Europe	Parental Involvement & Support
Rudatsikira et al.	(2008)	7,338	12+	Self-Report	General	Victim	Cross-Sectional	Other	Supervision
Rudatsikira et al.	(2007)	1,197	12+	Self-Report	General	Victim	Cross-Sectional	America	Parental Involvement & Support
Rudatsikira et al.	(2008)	2,111	12+	Self-Report	General	Victim	Cross-Sectional	Other	Supervision
Rudatsikira et al.	(2007)	6,283	12+	Self-Report	General	Victim	Cross-Sectional	Other	Supervision
Schwartz et al.	(1997)	198	7.5-12	Peer Nomination	General	Victim Bully/victim	Longitudinal	America	Maladaptive Parenting
Schwartz et al. (Study 1)	(2000)	389	7.5-12	Peer Nomination	General	Victim	Longitudinal	America	Abuse & Neglect, Maladaptive Parenting
Schwartz et al. (Study 2)	(2000)	243	7.5-12	Peer Nomination	General	Victim	Longitudinal	America	Maladaptive Parenting

^{a,b,c,d} Moderators. Please note study design was defined on the base of how the included articles analyzed the data; a longitudinal study analyzing data in a cross-sectional manner was deemed as cross-sectional

Table 1: Summary of studies examining parenting behavior and peer victimization cont.

Study	Year	N	Age range^a	Victimization informants^b	Victimization subtypes	Victimization status	Design^c	National Setting^d	Parenting Behavior Variable
Segrin et al.	(2012)	111	12+	Self-Report	General	Victim	Cross-Sectional	America	Communication
Shin & Kim	(2008)	297	4-7	Teacher Report	General	Victim	Cross-Sectional	Other	Abuse & Neglect, Maladaptive Parenting, Warmth & Affection
Spriggs et al.	(2007)	11,033	12+	Self-Report	General	Victim Bully/victim	Cross-Sectional	America	Communication, Parental Involvement & Support
Stevens et al.	(2002)	1,719	7.5-12	Mixed	General	Victim Bully/victim	Cross-Sectional	Europe	Communication, Maladaptive Parenting, Overprotection, Parental Involvement & Support, Warmth & Affection
Tanigawa et al.	(2011)	544	12+	Self-Report	General	Victim	Cross-Sectional	America	Parental Involvement & Support
Totura et al.	(2009)	2,506	12+	Self-Report	General	Victim Bully/victim	Cross-Sectional	America	Parental Involvement & Support
Veenstra et al.	(2005)	1,065	7.5-12	Peer Nomination	General	Victim Bully/victim	Cross-Sectional	Europe	Maladaptive Parenting, Overprotection, Warmth & Affection
Wang et al.	(2009)	7,182	12+	Self-Report	Physical, Relational, Verbal & Cyber	Victim Bully/victim	Cross-Sectional	America	Parental Involvement & Support
Wilson et al.	(2012)	1,427	12+	Self-Report	General	Victim	Cross-Sectional	Other	Parental Involvement & Support
Windle et al.	(2010)	598	7-12	Self-Report	General	Victim	Cross-Sectional	America	Supervision, Warmth & Affection

^{a,b,c,d} Moderators. Please note study design was defined on the base of how the included articles analyzed the data; a longitudinal study analyzing data in a cross-sectional manner was deemed as cross-sectional

Table 1: Summary of studies examining parenting behavior and peer victimization cont.

Study	Year	N	Age range^a	Victimization informants^b	Victimization subtypes	Victimization status	Design^c	National Setting^d	Parenting Behavior Variable
Winsper et al.	(2012)	6,043	7-12	Mixed	General	Victim Bully/victim	Longitudinal	Europe	Maladaptive Parenting
Yabko et al.	(2008)	242	12+	Self-Report	General	Victim	Cross- Sectional	America	Maladaptive Parenting
Ybarra & Mitchell	(2004)	1,501	12+	Self-Report	Cyber	Victim	Cross- Sectional	America	Supervision, Warmth & Affection, Maladaptive Parenting

^{a,b,c,d} Moderators. Please note study design was defined on the base of how the included articles analyzed the data; a longitudinal study analyzing data in a cross-sectional manner was deemed as cross-sectional

Data Analysis

Studies provided different data and Hedge's g , a dimensionless effect size, defined as the difference between the means of the two compared groups (e.g., victims versus neutrals) divided by the pooled standard deviation, was used (Cooper & Hedges, 1994). The outcomes of studies reporting correlations were transformed to Hedges g using the Comprehensive Meta-Analysis (CMA) program (Borenstein, Hedges, Higgins, & Rothstein, 2011). Hedge's g with 95% confidence intervals for each study comparing the individual study's effect size to the overall weighted effect size across studies for each parenting category are reported (see Figures 2, 3, 4 and 5). Effect size may be interpreted using Cohen's convention of small (0.20), medium (0.50) and large (0.80) effects (Cohen, 1988).

Mean effect sizes for the total sample were calculated for those studies reporting separate effect sizes for two or more independent groups of participants. If different effect sizes were derived from self-, mother-, teacher-, and peer- reports of victimization, these were combined into one effect size. Similarly, very few studies provided separate effect sizes for males and females; hence, if an effect size was given separately for males and females, they were combined.

Effect sizes were analyzed using the random effects model. Error term is composed of variation originating from both within-study variability and between study differences (Cooper & Hedges, 1994). Hence, the generalization extends beyond the specific studies to other studies considered to be part of the same population (Rosenthal, 1995). The distribution of effect sizes was examined using tests of heterogeneity. Significant heterogeneity indicates that differences across effect sizes are likely due to factors other than sampling error, such as different study characteristics (Borenstein et al., 2011). *Moderator analyses* were then conducted to explain variability in effect sizes across studies. Categorical moderator tests are

analogous to analysis of variance (ANOVA) and yield homogeneity estimates, a within groups Q (Q_w) and a between groups Q (Q_b). A significant value for Q_w indicates that the effect sizes within a category of the moderator variable are heterogeneous, whereas a significant value for Q_b indicates that the effect sizes are significantly different across different categories of the moderator variable (Borenstein et al., 2011).

We examined the potential for publication bias by using four methods. First, we computed Rosenthal's failsafe number (FSN; i.e., the number of studies that would be required to nullify the observed effect) for each combined effect size, separately to address the "file drawer problem" (Rosenthal, 1991). A tolerance level around a failsafe N equal to 5 times the number of effect size (k) plus 10 ("5k+10" benchmark; Rosenthal, 1979) was calculated. Satisfactoriness is established if the fail-safe ratio exceeds Rosenthal's threshold at 1.00, i.e., when the fail-safe number consistently exceeds the 5k+10 benchmark then there is no need for additional research to establish the phenomenon. Secondly, biases according to study size were assessed with use of the Begg and Mazumdar rank correlation test (Kendall's tau b ; Begg & Mazumdar, 1994). Hence, if small studies with controversial results were less likely to be published, the correlation between variance and effect size would be high. Conversely, lack of significant correlation can be seen as absence of publication bias. Thirdly, Egger's test was used to assess whether there is a tendency for selective publication of studies based on the nature and direction of results. In the linear regression analysis, the intercept value provides a measure of asymmetry; the larger its deviation from zero, the more pronounced the asymmetry (Egger, Smith, Schneider, & Minder, 1997). Lastly, Duval and Tweedie's Trim and Fill method was used. This method initially trims the asymmetric studies from one side to identify the unbiased effect, and then fills the plot by re-inserting the trimmed studies as well as their imputed counterparts.

Results

The Hedge's g for each parenting behavior category is shown in Figures 2 to 5. The studies included in the analysis with their descriptions are shown in supplementary Tables 3 and 4.

Positive Parenting Behavior (Figures 2 and 4): The combined effect size showed that victims and bully/victims were significantly less likely to have authoritative parents (victims: Hedge's $g = -0.19$, 95% CI: $-0.28, -0.11$; $z = -4.42$; $p < 0.001$; bully/victims: Hedge's $g = -0.39$, 95% CI: $-0.61, -0.18$; $z = -3.55$; $p < 0.001$), good parent-child communication (victims: Hedge's $g = -0.12$; 95% CI, $-0.20, -0.05$; $z = -3.13$; $p < 0.01$; bully/victims: Hedge's $g = -0.17$, 95% CI: $-0.30, -0.04$; $z = -2.62$; $p < 0.01$), parents that were involved and supportive (victims: Hedge's $g = -0.22$; 95% CI, $-0.29, -0.15$; $z = -5.97$; $p < 0.001$; bully/victims: Hedge's $g = -0.30$, 95% CI: $-0.40, -0.20$; $z = -5.82$; $p < 0.001$), receive supervision (victims: Hedge's $g = -0.16$, 95% CI: $-0.21, -0.12$; $z = -6.81$; $p < 0.001$; bully/victims: Hedge's $g = -0.34$, 95% CI: $-0.54, -0.14$; $z = -3.31$; $p < 0.01$) and warm and affective parents (victims: Hedge's $g = -0.22$; 95% CI, $-0.30, -0.14$; $z = -5.17$; $p < 0.001$; bully/victims: Hedge's $g = -0.42$, 95% CI: $-0.54, -0.31$; $z = -7.21$; $p < 0.001$). Overall, both victims and bully/victims were less likely to live in a family with positive parenting (victims: Hedge's $g = -0.19$; 95% CI, $-0.23, -0.15$; $z = -9.65$ $p < 0.001$; bully/victims: Hedge's $g = -0.33$; 95% CI: $-0.41, -0.26$; $z = -9.07$; $p < 0.001$).

Negative Parenting Behavior (Figures 3 and 5): The combined effect size showed that victims and bully/victims were significantly more likely to have been abused or neglected (victims: Hedge's $g = 0.31$; 95% CI, $0.18-0.44$; $z = 4.53$; $p < 0.001$; bully/victims: Hedge's $g = 0.68$, 95% CI: $0.44-0.92$; $z = 5.57$; $p < 0.001$), or to have experienced maladaptive parenting (victims: Hedge's $g = 0.27$; 95% CI, $0.15-0.40$; $z = 4.31$; $p < 0.001$; bully/victims: Hedge's $g = 0.49$, 95% CI: $0.23-0.75$; $z = 3.74$; $p < 0.001$). In addition, victims were more likely to have

overprotective parents (Hedge's $g = 0.10$; 95% CI, 0.03-0.17; $z = 2.63$; $p < 0.01$). Overall, both victims and bully/victims were found to experience negative parenting more often (victims: Hedge's $g = 0.26$; 95% CI, 0.16-0.36; $z = 4.90$; $p < 0.001$; bully/victims: Hedge's $g = 0.48$ 95% CI: 0.26-0.70; $z = 4.23$; $p < 0.001$).

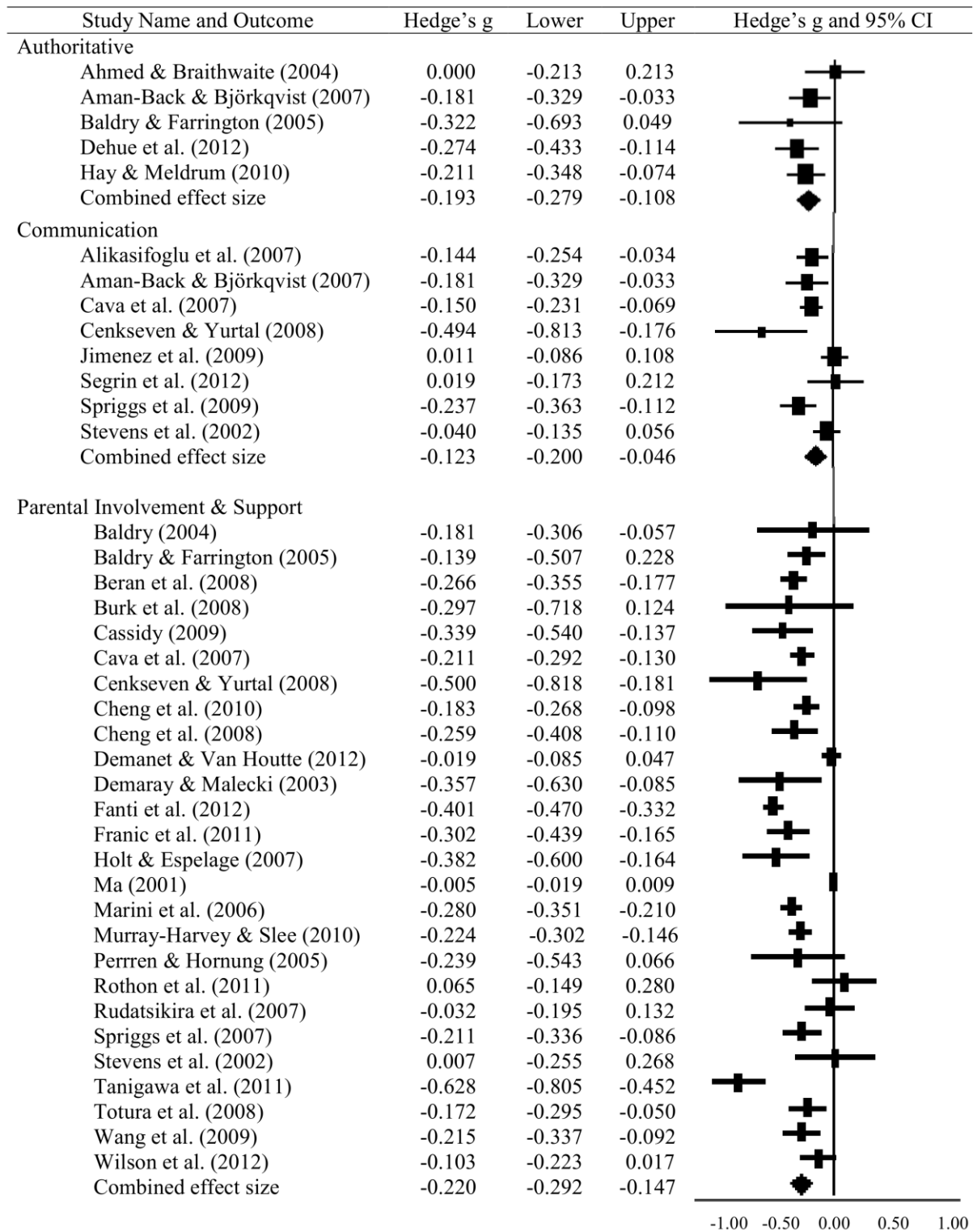


Figure 2: Peer Victimization and Positive Parenting Behavior

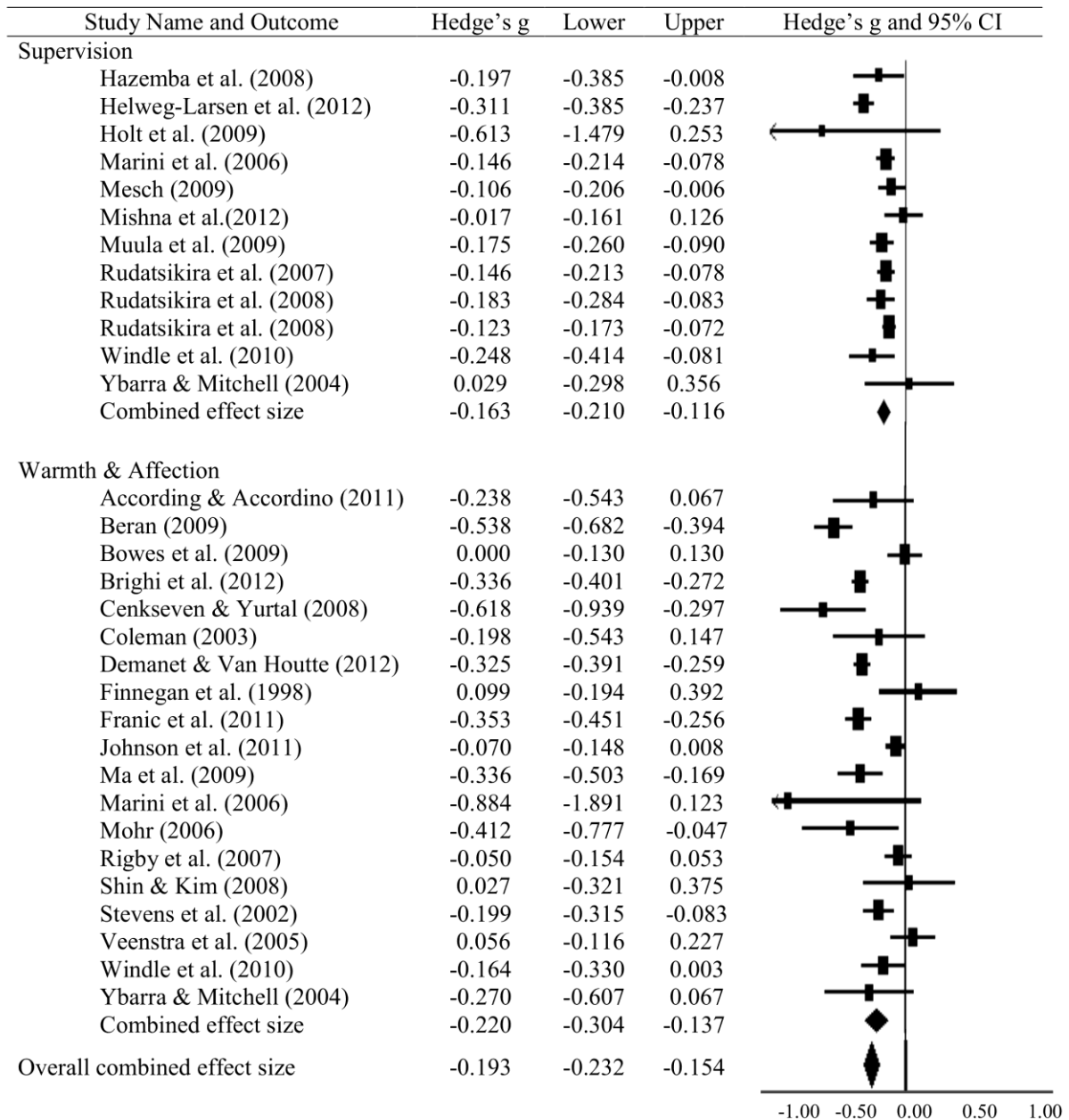


Figure 2: Peer Victimization and Positive Parenting Behavior Cont.

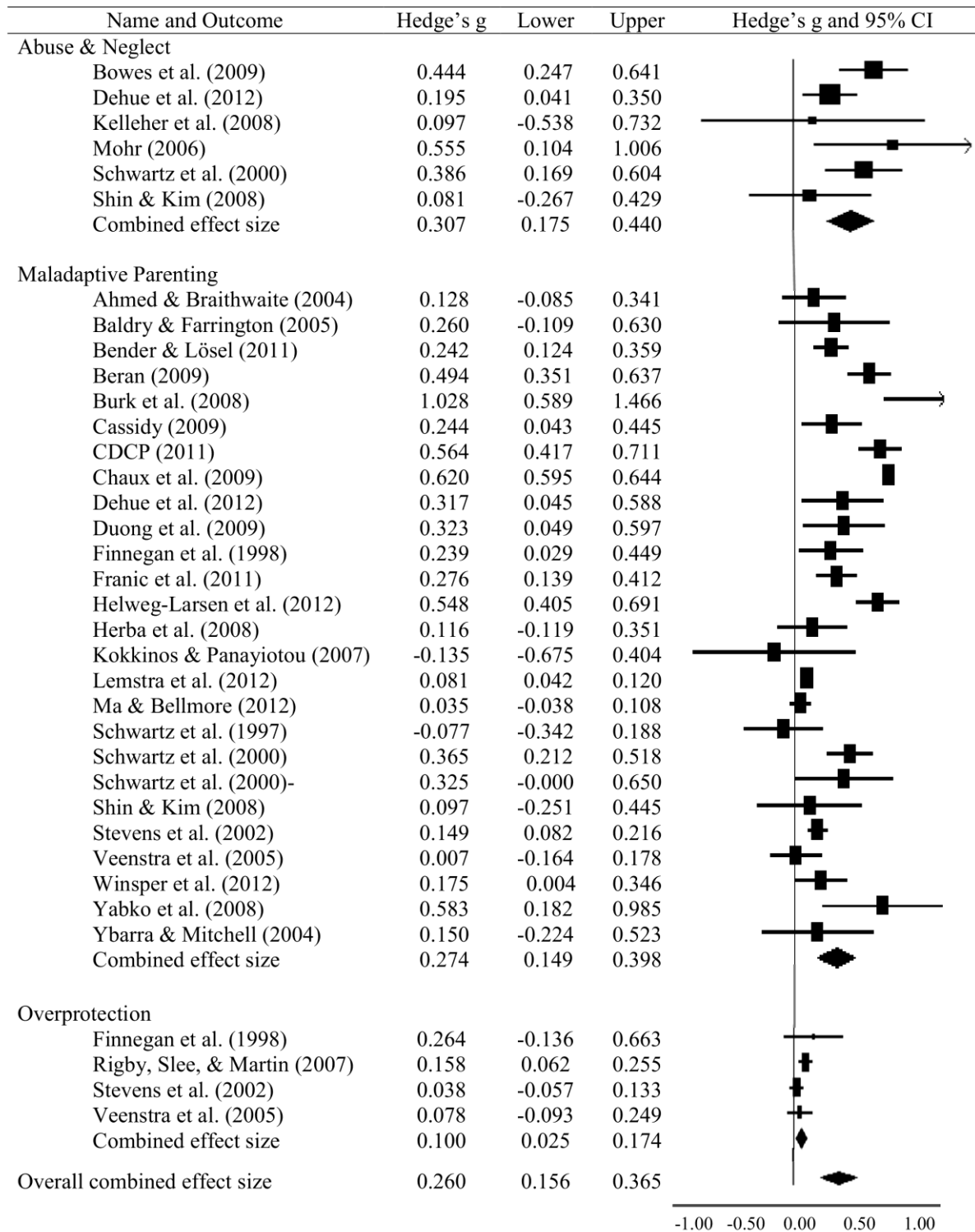


Figure 3: Peer Victimization and Negative Parenting Behavior

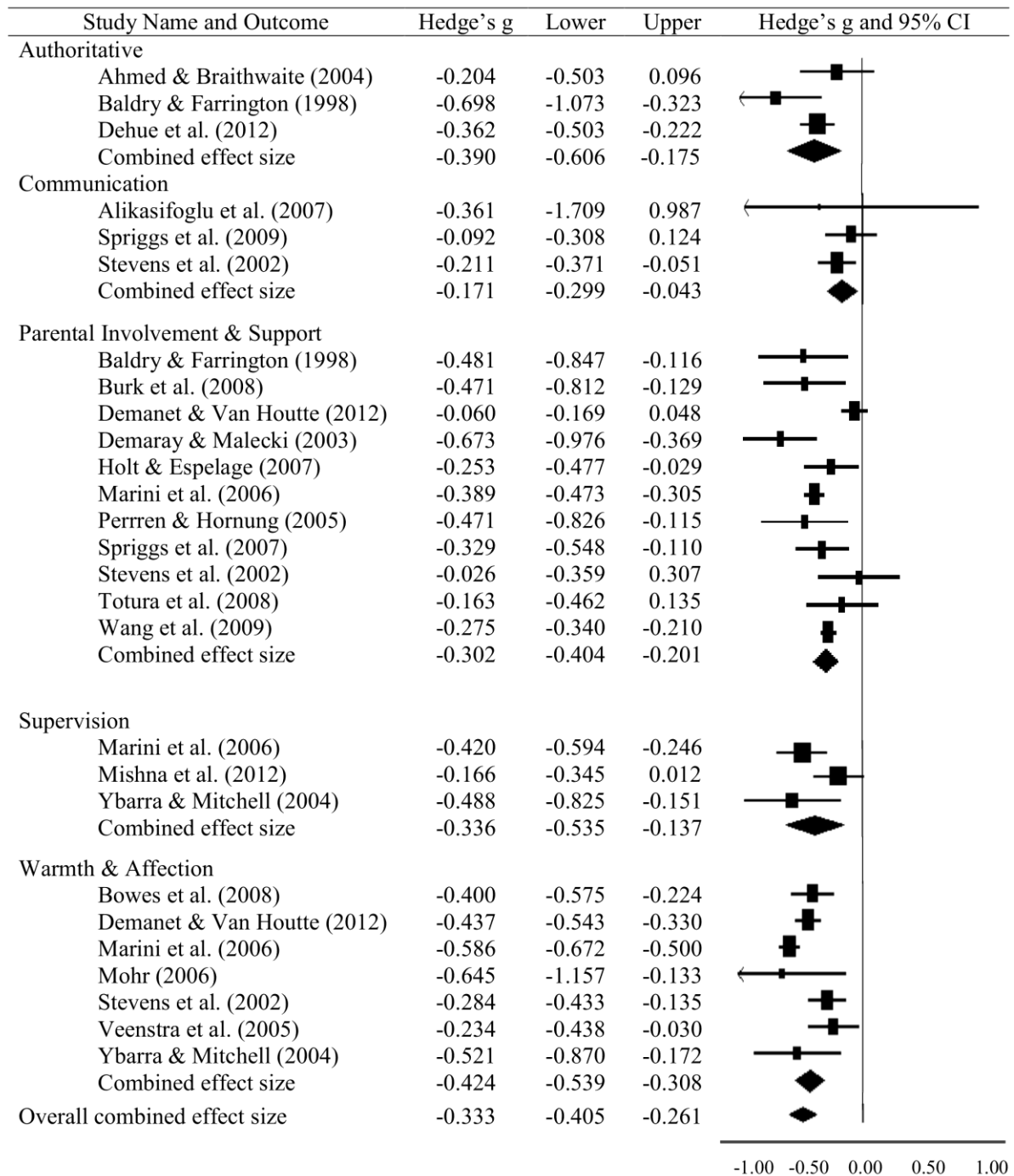


Figure 4: Bully/victims and Positive Parenting Behavior

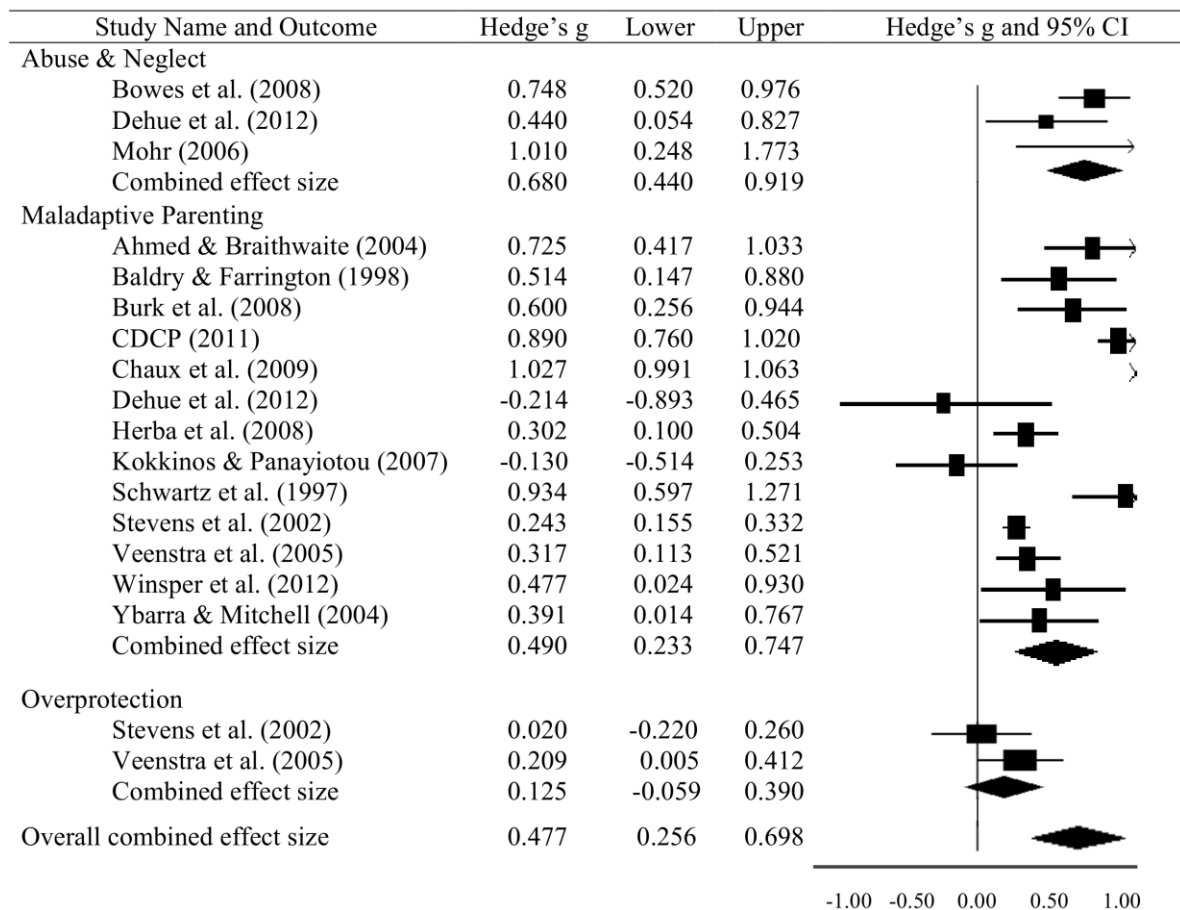


Figure 5: Bully/victims and Negative Parenting Behavior

Potential Moderator Variables

The heterogeneity analyses for some of the categories were significant (see supplementary Table 3 and 4) indicating potential moderating. Meta-ANOVAs of continent (Europe, America or other), age (4-7, 7.5-12 or over 12 years), assessment method (self, peer, teacher or mixed) and design (cross-sectional versus longitudinal) were employed for each parenting behavior category where moderation effects were detected. Supplementary Tables 5 and 6 shows all moderation effects.

Victims: Communication showed a significant moderating effect according to the assessment method as indicated by the Q_b heterogeneity coefficient ($Q_b = 6.741$; $p < 0.05$) suggesting that studies using peer nomination showed lower levels of communication

between the parent and the child (Mean ES = -0.494; $p < 0.01$; $N = 1$). Warmth and affection category showed significant moderating effects according to the age group ($Q_b = 7.193$; $p < 0.05$). Children aged 12 years or more were less likely to have warm and affectionate families (Mean ES = -0.305; $p < 0.001$; $N = 11$) compared to the other age groups. Lastly, supervision category showed moderating effects according to continent ($Q_b = 16.862$; $p < 0.001$) with European studies finding less supervision for victims (Mean ES = -0.311; $p < 0.001$; $N = 1$).

Bully-victims: Parental involvement and support showed significant moderator effects according to the assessment method ($Q_b = 7.03$; $p < 0.05$) suggesting that children who self-reported victimization (Mean ES = -0.35; $p < 0.001$; $N = 8$) were less likely to have parents who are involved and supportive. Warmth and affection showed significant moderator effects according to continent ($Q_b = 6.678$; $p < 0.05$), assessment method ($Q_b = 13.651$; $p < 0.01$) and age group ($Q_b = 10.704$; $p < 0.01$). Children from other continents (Mean ES = -0.59; $p < 0.001$; $N = 1$), who self-reported victimization (Mean ES = -0.58; $p < 0.001$; $N = 3$) or were over 12 years old (Mean ES = -0.52; $p < 0.001$; $N = 4$) had parents with less warmth and affection. Moreover, maladaptive parenting and overall negative parenting behavior showed significant moderating effects according to continent (maladaptive parenting: $Q_b = 32.326$; $p < 0.001$; overall negative parenting: $Q_b = 20.124$; $p < 0.001$), other continents showed strongest maladaptive parenting and overall negative parenting behavior (maladaptive parenting: mean ES = 0.94, $p < 0.001$; $N = 2$; overall negative parenting behavior: mean ES = 0.92, $p < 0.001$; $N = 2$).

Publication bias

A failsafe N and the “5k+10” benchmark were calculated for all categories (see Tables 2 and 3). For victims, the meta-analysis of authoritative parenting and overprotection did not exceed the benchmark suggesting effects are open for future disconfirmations. The Begg and

Mazumdar rank correlation results for overall negative parenting behavior showed that controversial results from small studies were less likely to be published. Egger's test showed significant results for parental involvement and support and overall positive and negative parenting behavior suggesting that publication bias might have influenced the estimates. Duval & Tweedie's trim and fill procedure resulted in slightly different effect sizes for supervision, warmth and affection, overall positive parenting behavior, maladaptive parenting, overprotection and overall negative parenting behavior. For bully/victims, authoritative parenting, communication and supervision categories did not exceed the "5k+10" benchmark suggesting that the effect may change with future studies. The Begg and Mazumdar rank correlation results for all categories were not significant. Egger's test showed significant results for communication, maladaptive parenting and overall negative parenting behavior suggesting that publication bias might have influenced the estimates. Duval & Tweedie's trim and fill procedure resulted in slightly different effect sizes for parental involvement and support, overall positive parenting behavior, and abuse and neglect.

Table 2: Publication Bias Analyses for Victims

	Fail Safe N ^a r = 0.05	“5k + 10” benchmark ^b	Kendall’s tau ^c	Egger’s Test ^d	Trim-and-fill (95% CI) ^e
Victims					
Authoritative	24	35	0.00 p = 0.50	$\beta = 0.22$ (-5.94, 6.38) p = 0.46	-0.19 (-0.27, -0.11)
Communication	57	50	-0.25 p = 0.19	$\beta = -1.93$ (-6.53, 2.67) p = 0.17	-0.12 (-0.20, -0.05)
Parental Involvement & Support	1896	140	0.19 p = 0.09	$\beta = -3.34$ (-4.76, -1.91) p < 0.001	-0.22 (-0.29, -0.15)
Supervision	354	70	-0.17 p = 0.23	$\beta = -0.21$ (-2.44, 2.02) p = 0.42	-0.16 (-0.21, -0.12)
Warmth & Affection	821	105	-0.02 p = 0.14	$\beta = 0.39$ (-1.90, 2.68) p = 0.36	-0.22 (-0.30, -0.13)
Overall Positive Parenting Behavior	10003	355	0.09 p = 0.13	$\beta = -2.45$ (-3.29, -1.61) p < 0.001	-0.17 (-0.21, -0.13)
Abuse & Neglect	42	40	0.00 p = 0.50	$\beta = 0.09$ (-3.69, 3.87) p = 0.47	0.31 (0.17, 0.44)
Maladaptive Parenting	3622	140	0.20 p = 0.07	$\beta = -2.48$ (-5.50, 0.54) p = 0.05	0.31 (0.19, 0.43)
Overprotection	6	30	0.17 p = 0.37	$\beta = 0.76$ (-5.93, 7.44) p = 0.34	0.09 (0.03, 0.16)
Overall Negative Parenting Behavior	4837	185	0.26 p = 0.01	$\beta = -2.39$ (-4.74, -0.04) p = 0.02	0.30 (0.20, 0.39)

^a Rosenthal’s failsafe number: the number of the studies that would be required to nullify the observed effect; ^b Tolerance level around a failsafe N (5 times the number of effect sizes plus 10); ^c Begg and Mazumdar rank correlation test; ^d Egger’s regression intercept; ^e Duval and Tweedie’s trim and fill method (trims the studies from one side to identify the unbiased effect).

Table 3: Publication Bias Analyses for Bully/victims

	Fail Safe N ^a r = 0.05	“5k + 10” benchmark ^b	Kendall’s tau ^c	Egger’s Test ^d	Trim-and-fill (95% CI) ^e
Bully/Victims					
Authoritative Parenting	24	25	0.00 p = 0.50	$\beta = -0.97$ (-35.36, 33.41) p = 0.39	-0.39 (-0.61, -0.17)
Communication	2	25	0.00 p = 0.50	$\beta = -0.07$ (-13.13, 12.99) p = 0.02	-0.17 (-0.30, -0.04)
Parental Involvement & Support	347	65	-0.11 p = 0.32	$\beta = -0.49$ (-2.76, 1.79) p = 0.48	-0.26 (-0.37, -0.16)
Supervision	20	25	0.00 p = 0.50	$\beta = -2.17$ (-59.82, -55.48) p = 0.36	-0.34 (-0.54, -0.14)
Warmth & Affection	354	45	0.00 p = 0.50	$\beta = 1.27$ (-2.66, 5.20) p = 0.22	-0.41 (-0.52, -0.30)
Overall Positive Parenting Behavior	2065	140	-0.21 p = 0.07	$\beta = -0.15$ (-1.64, 1.34) p = 0.42	-0.27 (-0.35, -0.19)
Abuse & Neglect	30	25	0.00 P=0.50	$\beta = 0.12$ (-27.96, 28.19) p = 0.48	0.64 (0.41, 0.88)
Maladaptive Parenting	2568	75	0.11 p = 0.29	$\beta = -4.29$ (-8.07, -0.51) p = 0.02	0.49 (0.23, 0.75)
Overall Negative Parenting Behavior	3306	100	0.04 p = 0.41	$\beta = -4.15$ (-7.00, -1.31) p < 0.001	0.48 (0.26, 0.70)

^a Rosenthal’s failsafe number: the number of the studies that would be required to nullify the observed effect; ^b Tolerance level around a failsafe N (5 times the number of effect sizes plus 10); ^c Begg and Mazumdar rank correlation test; ^d Egger’s regression intercept; ^e Duval and Tweedie’s trim and fill method (trims the studies from one side to identify the unbiased effect).

Discussion

This review finds that both victims and bully/victims are more likely to be exposed to negative parenting. Although the effect sizes were usually small for increasing the risk of being a victim, the effects of negative parenting were moderate for bully/victims. Abuse and neglect and maladaptive parenting were the best predictors of victim or bully/victim status at school. Furthermore, high parental involvement and support, and warm and affectionate relationships were most likely to protect children and adolescents against peer victimization followed by good family communication and supervision. However, protection by positive parenting for becoming a victim of peer bullying was small and at best moderate for bully/victims. These effects were found independent of whether reported by children themselves, parents, teachers or mixed method. The effects of parenting were found to be generally stronger for bully/victims than victims. Bully/victims have been shown to display the highest level of conduct, school, and peer relationship problems (Juvonen et al., 2003; Kumpulainen & Rasanen, 2000) and have the greatest risk of developing multiple psychopathologic behaviors compared to pure bullies, pure victims or children who are not involved in bullying behavior (Kim, Leventhal, Koh, Hubbard, & Boyce, 2006). The reason behind developing such problems may be partly due to exposure to harsher parenting rather than being a bully and victim simultaneous.

Through their experiences with primary caregivers, children may learn rules and constructs of relationships. According to social learning theories (Bandura, 1978), family-relational schema (Perry, Hodges, & Egan, 2001), and attachment theory (Bowlby, 1973), children who grow up in a socially adverse environment where they are exposed to violence may be at particular risk for learning negative relationship patterns. Moreover, research indicates that abused children experience multiple victimization during their lives (Duncan,

1999). Certain characteristics of the victimized children may make them more likely to be targets of other forms of assault. For example, some maltreated and abused children may adopt a submissive and ingratiating posture with their parents in an effort to maintain their safety in violent and/or chaotic homes (Finkelhor & Browne, 1985; Koenig, Cicchetti, & Rogosch, 2000). Moreover, children who are exposed to negative parenting may learn that they are powerless, have less-confidence and become less able to assert their needs (Duncan, 2004); they may generalize such behavior to extra familial interactions; and peers may regard them as easy targets for bullying (Schwartz, Dodge, & Coie, 1993; Wolke & Samara, 2004). On the other hand, some maltreated children display heightened levels of aggression (Shields & Cicchetti, 1998) and antisocial acts (Kaufman & Cicchetti, 1989), which suggests that they may be more inclined towards bullying behavior. Adverse parenting has also been shown to alter brain and stress reactions that in turn may make children more likely to be targets of bullying (Belsky & de Haan, 2011). On the other hand, protective factors, such as positive parenting, may strengthen the child's self-concept and help to acquire adaptive coping strategies that reduce the chance of peer victimization (Kochenderfer-Ladd & Skinner, 2003) and make the child more resilient (Rutter, 1987). Although parental involvement and support and high supervision decrease the chances of children involving in bullying behavior, for victims, overprotection increased this risk. It is possible that children with overprotective parents may not develop qualities such as autonomy and assertion (Finnegan et al., 1998), and hence, they may become easy targets for bullies. It could also be that parents of victims may become overprotective of their children.

Several limitations should be considered when interpreting these findings. First, the cross-sectional nature (N=62) of most studies does not allow to differentiate cause and effect. The relationship between parenting and child characteristics is bidirectional (Eisenberg et al.,

1999; Lengua, 2006; i.e., a bullied child may be difficult and thus lead to maladaptive parenting, or maladaptive parenting could lead to being bullied by peers). However, the few available prospective studies (N=8) provide tentative evidence for temporal priority, i.e., parenting behaviors are precursors of being bullied. Secondly, only studies published in English were used in the analysis. However, the analysis revealed no publication bias in most of the categories. Thirdly, some of the studies used the same informant (e.g., both being bullied and parenting characteristics are self-reported by children); hence the results might be inflated by common method variance. However, studies that used different informants revealed similar results and there were no significant differences between assessment methods with regards to parenting behavior variables. Fourthly, most of the studies included did not measure different forms of victimization separately (i.e., physical and relational bullying). Although these two forms of bullying are often both experienced (Wolke et al., 2000), they may be differentially related to personal adjustment (Crick & Bigbee, 1998). Fifthly, although previous studies showed that the parents treat their daughters and sons differently (Starrels, 1994) and the effects of parenting is different for boys and girls (Chang, Schwartz, Dodge, & McBride-Chang, 2003), we were not able to analyze the effect sizes separately as most studies did not measure the relationships between parenting and bullying involvement separately for boys and girls. Finally, substantial heterogeneity was detected within the parenting categories. This may be due to our classification of the various parenting concepts into the eight categories.

In conclusion, our review of 70 studies finds evidence that parenting has small to moderate associations with being bullied, in particular if the child is both a victim and bullies others (bully/victim). Bullying is a substantial problem (World Health Organization, 2012) and involvement in bullying as a victim has long-term mental health and life course

consequences (Arseneault et al., 2010; Wolke, Copeland, Angold, & Costello, in press). Moreover, previous research has shown that children involved in bullying behavior as bully/victims are at a greater risk for developing behavioral and psychological problems (Juvonen et al., 2003; Kumpulainen & Rasanen, 2000; Wolke et al., in press). Partly, the reason behind developing such problems may be due to exposure to harsher parenting rather than being a bully and victim simultaneously. Recent evidence indicates that although bully/victims come from harsher family environments, this difference may by itself only partly explain adverse long-term consequences (Copeland, Wolke, Angold, & Costello, 2013). However, future studies on bullying need to take into account parenting and family adversity when investigating the associations between victimization role and outcomes. General practitioners should routinely enquire about parent-child and peer relationships. Intervention programs that target children who are exposed to harsh or abusive parenting, may prevent peer victimization. Specific parental training programs may be necessary to strengthen supportive involvement and warm and affectionate parenting to improve family relationships and prevent or reduce victimization by peers (Samara & Smith, 2008).

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Supplementary Table S1: MOOSE Reporting Checklist

Reporting of background		
√	Problem definition	p.3
√	Hypothesis statement	p.3
√	Description of study outcomes	Table 1
√	Type of exposure	p.3
√	Type of study designs used	p.3
√	Study population	p.3

Reporting of search strategy should include		
√	Qualifications of searchers	p.4
√	Search strategy, including time period included in the synthesis and keywords	p.4
√	Databases and registries searched	p.4
√	Search software used, name and version, including special features	p.4
√	Use of hand searching	Not used
√	List of citations located and those excluded, including justifications	Figure 1
√	Method of addressing articles published in languages other than English	p.5
√	Method of handling abstracts and unpublished studies	Not included
√	Description of any contact with authors	p.5

Supplementary Table S1: MOOSE Reporting Checklist Cont.

Reporting of methods should include		
√	Description of relevance or appropriateness of studies assembled for assessing the hypothesis to be tested	Table 1
√	Rationale for the selection and coding of data	p. 5-6
√	Assessment of confounding	
√	Assessment of study quality, including blinding of quality assessors; stratification or regression on possible predictors of study results	Na
√	Assessment of heterogeneity	p.10
√	Description of statistical methods in sufficient detail to be replicated	p.7
√	Provision of appropriate tables and graphics	Figure 2, 3, 4 and 5
Reporting of results should include		
√	Graph summarizing individual study estimates and overall estimate	Figure 2, 3, 4 and 5
√	Table giving descriptive information for each study included	Table 1
√	Results of sensitivity testing	p.12
√	Indication of statistical uncertainty of findings	Supplementary table 2 and 3
Reporting of discussion should include		
√	Quantitative assessment of bias	p. 11
√	Justification for exclusion	Studies were excluded based on the pre-defined inclusion criteria
√	Assessment of quality of included studies	p.11
Reporting of conclusions should include		
√	Consideration of alternative explanations for observed results	p.12 – p.13
√	Generalization of the conclusions	p.15
√	Guidelines for future research	p.15
√	Disclosure of funding source	None

Supplementary Table S2: The 8 parenting behavior categories used in the meta-analysis derived from 117 individual parenting behavior variables in the 70 studies¹

Categories	Rationale/definition of Variables	Variables
Authoritative	Authoritative parenting was defined as practices that include responsiveness, demandingness and balanced child rearing.	Authoritative parenting, getting along with parents
Communication	Communication was coded as the expressiveness of the child to parents	Talking to mother/father is hard; Communication; (-) Negative family expressiveness
Parental Involvement and Support	Parental involvement and support was defined as parents who are supportive, involved in their children's lives and trusts their children	Supportive parents; Family support; Parental support; Family school involvement; Parental involvement to school; Family cohesion (involvement within the family); Father's involvement; Involvement with family; Parent connection; Parental trust; Emotional bond; Understanding parents
Warmth and Affection	Warmth and affection was defined as parents who show affective responsiveness, closeness and warmth	Warmth; Emotional warmth; Maternal warmth; Affective responsiveness; Positive relationships; Affectionate contact; Mother/father attachment; (-) Negative parent child interaction; Parental nurturance; Care; Personal relationship; (-) Alienation; (-) Loneliness in relationship with parents
Supervision	Supervision was coded as parental monitoring, supervision and parents knowledge of child's friends and leisure activities	Parental monitoring; Parental tracking; Parental supervision
Abuse/Neglect	Abuse and neglect included child abuse, neglect, and child maltreatment	Child maltreatment; Physical abuse; Neglectful parenting; Parental rejection; Abuse
Maladaptive Parenting	Maladaptive parenting was defined as parenting practices that include authoritarian style, punishment, hostility, hitting, coercion, threat of rejection, and inconsistency	Authoritarian parenting; Punishment; Control; Parental control; Punitive parenting; Restrictive discipline; Maternal hostility; Maternal physical discipline; Physical coercion; Physical Discipline; Hit; Inappropriate discipline; Coercion; Threat of rejection; Coercive parenting; Frequent discipline; Rejection; Rejection at home; Family undemocratic climate, Inconsistent parenting
Overprotection	Overprotection was defined as parents who are overprotective towards their children	Overprotection; Overprotectiveness; Control; (-) Autonomy

¹ Three parenting behavior variables were excluded: family problem solving, family general control and parental responsibility

Supplementary Table S3: Victims and Parenting Behavior

Outcome	Study Name	Country	Sample Sizes	Hedges's g	Lower limit	Upper limit	Z-value	P-value	Q value	Df (Q)	P-value (Q)	I-squared
Authoritative Parenting												
	Ahmed & Braithwaite, 2004	Australia	610	0.00	-0.21	0.21	0.00	1.000				
	Aman-Back & Bjorkqvist, 2007	Finland	773	-0.18	-0.33	-0.03	-2.39	0.017				
	Baldry & Farrington, 2005	Italy	679	-0.32	-0.69	0.05	-1.70	0.089				
	Dehue et al., 2012	Netherlands	1200	-0.27	-0.43	-0.11	-3.37	0.001				
	Hay & Meldrum, 2010	US	426	-0.21	-0.35	-0.07	-3.01	0.003				
	<i>Overall Authoritative Parenting</i>		3688	-0.19	-0.28	-0.11	-4.42	0.000	4.688	4	0.321	14.684
Communication												
	Alikasifoglu et al., 2007	Turkey	3519	-0.14	-0.25	-0.03	-2.57	0.010				
	Aman-Back & Bjorkqvist, 2007	Finland	773	-0.18	-0.33	-0.03	-2.39	0.017				
	Cava et al., 2007	Spain	1319	-0.15	-0.23	-0.07	-3.64	0.000				
	Cenkseven & Yurtal, 2008	Turkey	3519	-0.49	-0.81	-0.18	-3.04	0.002				
	Jimenez et al., 2009	Spain	565	0.01	-0.09	0.11	0.22	0.824				
	Segrin et al., 2012	US	111	0.02	-0.17	0.21	0.20	0.845				
	Spriggs et al., 2007	US	11033	-0.24	-0.36	-0.11	-3.71	0.000				
	Stevens et al., 2002	Belgium	1719	-0.04	-0.14	0.06	-0.81	0.415				
	<i>Overall Communication</i>		22447	-0.12	-0.20	-0.05	-3.13	0.002	21.592	7	0.003	67.581

Supplementary Table S3: Victims and Parenting Behavior Cont.

Outcome	Study Name	Country	Sample Sizes	Hedges's g	Lower limit	Upper limit	Z-value	P-value	Q value	Df (Q)	P-value (Q)	I-squared
Parental Involvement and Support												
	Baldry, 2004	Italy	661	-0.18	-0.31	-0.06	-2.86	0.004				
	Baldry & Farrington, 2005	Italy	679	-0.14	-0.51	0.23	-0.74	0.457				
	Beran, Hughes, & Lupart, 2008	Canada	2084	-0.27	-0.35	-0.18	-5.86	0.000				
	Burk et al., 2008	US	238	-0.30	-0.72	0.12	-1.38	0.167				
	Cassidy, 2009	UK	461	-0.34	-0.54	-0.14	-3.30	0.001				
	Cava et al., 2007	Spain	1319	-0.21	-0.29	-0.13	-5.12	0.000				
	Cenkseven & Yurtal, 2008	Turkey	273	-0.50	-0.82	-0.18	-3.07	0.002				
	Cheng, Cheung, & Cheung, 2008	Hong Kong	712	-0.26	-0.41	-0.11	-3.41	0.001				
	Cheng et al., 2010	China	9015	-0.18	-0.27	-0.10	-4.22	0.000				
	Demanet & Van Houtte, 2012	Belgium	11872	-0.02	-0.09	0.05	-0.56	0.579				
	Demaray & Malecki, 2003	US	499	-0.36	-0.63	-0.09	-2.57	0.010				
	Fanti, Demetriou, Hawa, 2012	Cyprus	1416	-0.40	-0.47	-0.33	-11.46	0.000				
	Franic et al., 2011	Croatia	803	-0.30	-0.44	-0.17	-4.31	0.000				
	Holt & Espelage, 2007	US	784	-0.38	-0.60	-0.16	-3.44	0.001				
	Ma, 2001	Canada	13751	-0.01	-0.02	0.01	-0.71	0.480				
	Marini et al., 2006	Canada	7290	-0.28	-0.35	-0.21	-7.84	0.000				
	Murray-Harvey & Slee, 2010	Australia	888	-0.22	-0.30	-0.15	-5.66	0.000				
	Perren & Hornung, 2005	Switzerland	1107	-0.24	-0.54	0.07	-1.54	0.125				
	Rothon et al., 2011	UK	2790	0.07	-0.15	0.28	0.60	0.551				
	Rudatsikira et al., 2007	US	1197	-0.03	-0.20	0.13	-0.38	0.703				
	Spriggs et al., 2007	US	11033	-0.21	-0.34	-0.09	-3.30	0.001				
	Stevens et al., 2002	Belgium	1719	0.01	-0.26	0.27	0.05	0.961				
	Tanigawa et al., 2011	US	544	-0.63	-0.80	-0.45	-6.98	0.000				
	Totura et al., 2008	US	2359	-0.17	-0.30	-0.05	-2.76	0.006				
	Wang et al., 2009	US	7182	-0.22	-0.34	-0.09	-3.43	0.001				
	Wilson et al., 2012	Seychelles	1427	-0.10	-0.22	0.02	-1.69	0.092				
<i>Overall Involvement and Support</i>			80906	-0.22	-0.29	-0.15	-5.97	0.000	363.750	25	0.000	93.127

Supplementary Table S3: Victims and Parenting Behavior Cont.

Outcome	Study Name	Country	Sample Sizes	Hedges's g	Lower limit	Upper limit	Z-value	P-value	Q value	Df (Q)	P-value (Q)	I-squared
Supervision												
	Hazemba et al., 2008	China	2348	-0.20	-0.39	-0.01	-2.05	0.041				
	Helweg-Larsen et al., 2012	Denmark	3707	-0.31	-0.39	-0.24	-8.18	0.000				
	Holt et al., 2009	US	205	-0.61	-1.48	0.25	-1.39	0.165				
	Marini et al., 2006	Canada	7290	-0.15	-0.21	-0.08	-4.19	0.000				
	Mesch, 2009	US	935	-0.11	-0.21	-0.01	-2.07	0.038				
	Mishna et al., 2012	Canada	2186	-0.02	-0.16	0.13	-0.24	0.811				
	Muula et al., 2009	Venezuela	2249	-0.18	-0.26	-0.09	-4.03	0.000				
	Rudatsikira et al., 2007	Namibia	6283	-0.15	-0.21	-0.08	-4.22	0.000				
	Rudatsikira et al., 2008	Chile	2011	-0.18	-0.28	-0.08	-3.58	0.000				
	Rudatsikira et al., 2008	Philippines	7338	-0.12	-0.17	-0.07	-4.76	0.000				
	Windle et al., 2010	US	650	-0.25	-0.41	-0.08	-2.91	0.004				
	Ybarra & Mitchell, 2004	US	1501	0.03	-0.30	0.36	0.17	0.862				
<i>Overall Supervision</i>			36703	-0.16	-0.21	-0.12	-6.81	0.000	26.984	11	0.005	59.236

Supplementary Table S3: Victims and Parenting Behavior Cont.

Outcome	Study Name	Country	Sample Sizes	Hedges's g	Lower limit	Upper limit	Z-value	P-value	Q value	Df (Q)	P-value (Q)	I-squared	
Warmth & Affection													
	Accordino & Accordino, 2011	US	124	-0.24	-0.54	0.07	-1.53	0.126					
	Beran, 2009	Canada	4293	-0.54	-0.68	-0.39	-7.31	0.000					
	Bowes et al., 2009	UK	2232	0.00	-0.13	0.13	0.00	1.000					
	Brighi et al., 2012	Italy	2326	-0.34	-0.40	-0.27	-10.27	0.000					
	Cenkseven & Yurtal, 2008	Turkey	3519	-0.62	-0.94	-0.30	-3.77	0.000					
	Coleman, 2003	US	67	-0.20	-0.54	0.15	-1.13	0.261					
	Demagnet & Van Houtte, 2012	Belgium	11872	-0.32	-0.39	-0.26	-9.67	0.000					
	Finnegan et al., 1998	US	184	0.10	-0.19	0.39	0.66	0.508					
	Franic et al., 2011	Croatia	803	-0.35	-0.45	-0.26	-7.08	0.000					
	Johnson et al., 2011	US	832	-0.07	-0.15	0.01	-1.75	0.080					
	Ma et al., 2009	USA	776	-0.34	-0.50	-0.17	-3.95	0.000					
	Marini et al., 2006	Canada	7290	-0.88	-1.89	0.12	-1.72	0.085					
	Mohr, 2006	Germany	733	-0.41	-0.78	-0.05	-2.22	0.027					
	Rigby et al., 2007	Australia	1432	-0.05	-0.15	0.05	-0.95	0.340					
	Shin & Kim, 2008	Korea	297	0.03	-0.32	0.38	0.15	0.880					
	Stevens et al., 2002	Belgium	1719	-0.20	-0.32	-0.08	-3.37	0.001					
	Veenstra et al., 2005	Netherlands	1065	0.06	0.12	0.23	0.64	0.524					
	Windle et al., 2010	US	650	-0.16	-0.33	0.00	-1.93	0.054					
	Ybarra & Mitchell, 2004	US	1501	-0.27	-0.61	0.07	-1.57	0.116					
<i>Overall Warmth & Affection</i>			41765	-0.22	-0.30	-0.14	-5.17	0.000	109.968	18	0.000	83.632	
<i>Overall Positive Parenting Behavior</i>					-0.19	-0.23	-0.15	-9.65	0.000	633.076	68	0.000	89.259

Supplementary Table S3: Victims and Parenting Behavior Cont.

Outcome	Study Name	Country	Sample Sizes	Hedges's g	Lower limit	Upper limit	Z-value	P-value	Q value	Df (Q)	P-value (Q)	I-squared
Abuse and Neglect												
	Bowes et al., 2009	UK	2232	0.44	0.25	0.64	4.42	0.000				
	Dehue et al., 2012	Netherlands	1200	0.20	0.04	0.35	2.48	0.013				
	Kelleher et al., 2008	Ireland	211	0.10	-0.54	0.73	0.30	0.764				
	Mohr, 2006	Germany	733	0.56	0.10	1.01	2.42	0.016				
	Schwartz et al., 2000	US	389	0.39	0.17	0.60	3.48	0.001				
	Shin & Kim, 2008	Korea	297	0.08	-0.27	0.43	0.46	0.647				
	<i>Overall Abuse and Neglect</i>		5062	0.31	0.18	0.44	4.53	0.000	7.558	5	0.182	33.848
Overprotection												
	Finnegan et al., 1998	US	184	0.26	-0.14	0.66	1.29	0.196				
	Stevens et al., 2002	Belgium	1719	0.04	-0.06	0.13	0.78	0.437				
	Rigby et al., 2007	Australia	1432	0.16	0.06	0.26	3.22	0.001				
	Veenstra et al., 2005	Netherlands	1065	0.08	-0.09	0.25	0.89	0.373				
	<i>Overall Overprotection</i>		4400	0.10	0.03	0.17	2.63	0.009	3.76	3	0.289	20.12

Outcome	Study Name	Country	Sample Sizes	Hedges's g	Lower limit	Upper limit	Z-value	P-value	Q value	Df (Q)	P- (Q)	I-squared	
Maladaptive Parenting													
	Ahmed & Braithwaite, 2004	Australia	610	0.13	-0.09	0.34	1.18	0.240					
	Baldry & Farrington, 2005	Italy	679	0.26	-0.11	0.63	1.38	0.167					
	Beran, 2009	Canada	4293	0.49	0.35	0.64	6.75	0.000					
	Bender & Lösel, 2011	Germany	1163	0.24	0.12	0.36	4.04	0.000					
	Burk et al., 2008	US	238	1.03	0.59	1.47	4.59	0.000					
	Cassidy, 2009	UK	461	0.24	0.04	0.44	2.38	0.017					
	Chaux et al., 2009	Colombia	53316	0.62	0.60	0.64	49.98	0.000					
	Centers for Disease Control	US	5807	0.56	0.42	0.71	7.53	0.000					
	Dehue et al., 2012	Netherlands	1200	0.32	0.05	0.59	2.29	0.022					
	Duong et al., 2009	Hong Kong	211	0.32	0.05	0.60	2.31	0.021					
	Finnegan et al., 1998	US	184	0.24	0.03	0.45	2.23	0.026					
	Franic et al., 2011	Croatia	803	0.28	0.14	0.41	3.96	0.000					
	Helweg-Larsen et al., 2012	Denmark	3707	0.55	0.41	0.69	7.52	0.000					
	Herba et al., 2008	Netherlands	1526	0.12	-0.12	0.35	0.97	0.332					
	Kokkinos & Panayiotou, 2007	Greece	186	-0.14	-0.68	0.40	-0.49	0.623					
	Lemstra et al., 2012	Canada	4197	0.08	0.04	0.12	4.10	0.000					
	Ma & Bellmore, 2012	US	813	0.03	-0.04	0.11	0.93	0.351					
	Schwartz et al., 1997	US	198	-0.08	-0.34	0.19	-0.57	0.568					
	Schwartz et al., 2000	US	389	0.37	0.21	0.52	4.68	0.000					
	Schwartz et al., 2000	US	243	0.33	-0.00	0.65	1.96	0.050					
	Shin & Kim, 2008	Korea	297	0.10	-0.25	0.45	0.55	0.584					
	Stevens et al., 2002	Belgium	1719	0.15	0.08	0.22	4.37	0.000					
	Veenstra et al., 2005	Netherlands	1065	0.01	-0.16	0.18	0.08	0.934					
	Winsper et al., 2012	UK	6043	0.18	0.00	0.35	2.01	0.044					
	Yabko et al., 2008	US	242	0.58	0.18	0.98	2.85	0.004					
	Ybarra & Mitchell, 2004	US	1501	0.15	-0.22	0.52	0.79	0.432					
<i>Overall Maladaptive Parenting</i>			91091	0.27	0.15	0.40	4.31	0.000	816.571	25	0.000	96.938	
<i>Overall Negative Parenting Behavior</i>					0.26	0.16	0.36	4.90	0.000	910.843	34	0.000	96.267

Supplementary Table S4: Bully/victims and Parenting Behavior

Outcome	Study Name	Country	Sample Sizes	Hedges's g	Lower limit	Upper limit	Z-value	P-value	Q value	Df (Q)	P-value (Q)	I-squared
Authoritative Parenting												
	Ahmed & Braithwaite, 2004	Australia	610	-0.20	-0.50	0.10	-1.33	0.182				
	Baldry & Farrington, 1998	Italy	238	-0.70	-1.07	-0.32	-3.65	0.000				
	Dehue et al., 2012	Netherlands	1200	-0.36	-0.50	-0.22	-5.05	0.000				
	<i>Overall Authoritative Parenting</i>		2048	-0.39	-0.61	-0.18	-3.55	0.000	4.140	2	0.126	51.694
Communication												
	Alikasifoglu et al., 2007	Turkey	3519	-0.36	-1.71	0.99	-0.53	0.600				
	Spriggs et al., 2007	US	11033	-0.09	-0.31	0.12	-0.83	0.405				
	Stevens et al., 2002	Belgium	1719	-0.21	-0.37	-0.05	-2.59	0.010				
	<i>Overall Communication</i>		16271	-0.17	-0.30	-0.04	-2.62	0.009	0.837	2	0.658	0.000
Parental Involvement and Support												
	Baldry & Farrington, 1998	Italy	238	-0.48	-0.85	-0.12	-2.58	0.010				
	Burk et al., 2008	US	238	-0.47	-0.81	-0.13	-2.70	0.007				
	Demanet & Van Houtte, 2012	Belgium	11872	-0.06	-0.17	0.05	-1.09	0.275				
	Demaray & Malecki, 2003	US	499	-0.67	-0.98	-0.37	-4.34	0.000				
	Holt & Espelage, 2007	US	784	-0.25	-0.48	-0.03	-2.21	0.027				
	Marini et al., 2006	Canada	7290	-0.39	-0.47	-0.31	-9.05	0.000				
	Perren & Hornung, 2005	Switzerland	1107	-0.47	-0.83	-0.12	-2.60	0.009				
	Spriggs et al., 2007	US	11033	-0.33	-0.55	-0.11	-2.95	0.003				
	Stevens et al., 2002	Belgium	1719	-0.03	-0.36	0.31	-0.15	0.878				
	Totura et al., 2008	US	2359	-0.16	-0.46	0.14	-1.07	0.284				
	Wang et al., 2009	US	7182	-0.28	-0.34	-0.21	-8.33	0.000				
	<i>Overall Involvement and Affection</i>		44321	-0.30	-0.40	-0.20	-5.82	0.000	35.103	10	0.000	71.512

Supplementary Table S4: Bully/victims and Parenting Behavior

Outcome	Study Name	Country	Sample Sizes	Hedges's g	Lower limit	Upper limit	Z-value	P-value	Q value	Df (Q)	P-value (Q)	I-squared
Supervision												
	Marini et al., 2006	Canada	7290	-0.42	-0.59	-0.25	-4.72	0.000				
	Mishna et al., 2012	Canada	2186	-0.17	-0.34	0.01	-1.83	0.068				
	Ybarra & Mitchell, 2004	US	1501	-0.49	-0.83	-0.15	-2.84	0.005				
	<i>Overall Supervision</i>		10977	-0.34	-0.54	-0.14	-3.31	0.001	5.064	2	0.079	60.507
Warmth & Affection												
	Bowes et al., 2009	UK	2232	-0.40	-0.58	-0.22	-4.47	0.000				
	Demanet & Van Houtte, 2012	Belgium	11872	-0.44	-0.54	-0.33	-8.05	0.000				
	Marini et al., 2006	Canada	7290	-0.59	-0.67	-0.50	-13.32	0.000				
	Mohr, 2006	Germany	733	-0.65	-1.16	-0.13	-2.47	0.013				
	Stevens et al., 2002	Belgium	1719	-0.28	-0.43	-0.14	-3.74	0.000				
	Veenstra et al., 2005	Netherlands	1065	-0.23	-0.44	-0.03	-2.25	0.025				
	Ybarra & Mitchell, 2004	US	1501	-0.52	-0.87	-0.17	-2.93	0.003				
	<i>Overall Warmth & Affection</i>		30705	-0.42	-0.54	-0.31	-7.21	0.000	19.549	6	0.003	69.308
	<i>Overall Positive Parenting Behavior</i>			-0.33	-0.41	-0.26	-9.07	0.000	94.728	25	0.000	73.609
Abuse and Neglect												
	Bowes et al., 2009	UK	2232	0.75	0.52	0.98	6.42	0.000				
	Dehue et al., 2012	Netherlands	1200	0.44	0.05	0.83	2.23	0.025				
	Mohr, 2006	Germany	733	1.01	0.25	1.77	2.60	0.009				
	<i>Overall Abuse and Neglect</i>		4165	0.68	0.44	0.92	5.57	0.000	2.53	2	0.282	20.895

Supplementary Table S4: Bully/victims and Parenting Behavior Cont.

Outcome	Study Name	Country	Sample Sizes	Hedges's g	Lower limit	Upper limit	Z-value	P-value	Q value	Df (Q)	P-value (Q)	I-squared	
Maladaptive Parenting													
	Ahmed & Braithwaite, 2004	Australia	610	0.73	0.42	1.03	4.61	0.000					
	Baldry & Farrington, 1998	Italy	238	0.51	0.15	0.88	2.75	0.006					
	Burk et al., 2008	US	238	0.60	0.26	0.94	3.42	0.001					
	Centers for Disease Control	US	5807	0.89	0.76	1.02	13.37	0.000					
	Chaux et al., 2009	Colombia	53316	1.03	0.99	1.06	55.84	0.000					
	Dehue et al., 2012	Netherlands	1200	-0.21	-0.89	0.47	-0.62	0.537					
	Herba et al., 2008	Netherlands	1526	0.30	0.10	0.50	2.93	0.003					
	Kokkinos & Panayiotou, 2007	Greece	186	-0.13	-0.51	0.25	-0.67	0.506					
	Schwartz et al., 1997	US	198	0.93	0.60	1.27	5.43	0.000					
	Stevens et al., 2002	Belgium	1719	0.24	0.16	0.33	5.36	0.000					
	Veenstra et al., 2005	Netherlands	1065	0.32	0.11	0.52	3.04	0.002					
	Winsper et al., 2012	UK	6043	0.48	0.02	0.93	2.07	0.039					
	Ybarra & Mitchell, 2004	US	1501	0.39	0.01	0.77	2.03	0.042					
<i>Overall Maladaptive Parenting</i>			67604	0.49	0.23	0.75	3.74	0.000	373.944	12	0.000	96.791	
Overprotection													
	Stevens et al., 2002	Belgium	1719	0.02	-0.22	0.26	1.62	0.872					
	Veenstra et al., 2005	Netherlands	1065	0.21	0.01	0.41	2.01	0.045					
<i>Overall Overprotection</i>			2784	0.13	-0.06	0.31	1.34	0.182	1.384	1	0.240	27.72	
<i>Overall Negative Parenting Behavior</i>					0.48	0.26	0.70	4.23	0.000	463.230	17	0.000	96.330

Supplementary Table S5: Moderator Analysis for Victims

Outcome	Moderator	Q_b	K	Mean ES	Q_w
Communication	Design	0.000			21.592**
	Cross-sectional		8	-0.123**	21.592**
	Longitudinal		0	---	---
	Continent	0.011			20.519**
	Europe		6	-0.122**	15.727**
	America		2	-0.132	4.792*
	Other		0	---	---
	Assessment method	6.741*			11.982*
	Self-report		5	-0.134**	11.694*
	Peer Nomination		1	-0.494**	0.000
	Teacher		0	---	---
	Mixed		2	-0.020	0.288
	Age Group	0.877			20.906**
	4-7 years		0	---	---
7.5 – 12 years		2	-0.101	2.466	
12+ years		6	-0.134**	18.440**	
Parental Involvement and Support	Design	0.082			362.556***
	Cross-sectional		25	-0.218***	362.556***
	Longitudinal		1	-0.297	0.000
	Continent	0.340			227.344***
	Europe		10	-0.193**	75.724***
	America		10	-0.242***	144.603***
	Other		6	-0.222**	7.016
	Assessment method	0.473			363.208***
	Self-report		22	-0.229***	353.374***
	Peer Nomination		2	-0.192	8.396**
	Teacher		0	---	----
	Mixed		2	-0.111	1.438
	Age Group	0.089			345.522***
	4-7 years		0	---	---
7.5 – 12 years		3	-0.185	3.804	
12+ years		23	-0.223***	341.717***	
Warmth & Affection	Design	0.288			105.118***
	Cross-sectional		17	-0.229***	95.417***
	Longitudinal		2	-0.160	9.701**
	Continent	0.519			94.101***
	Europe		8	-0.233**	43.840***
	America		7	-0.179*	14.050
	Other		4	-0.259**	36.211***
	Assessment method	2.816			97.803***
	Self-report		12	-0.272***	65.605***
	Peer Nomination		4	-0.188	27.160***
	Teacher		1	0.027	0.000
	Mixed		2	-0.101	5.038*
	Age Group	7.193*			85.618***
	4-7 years		2	0.009	0.020
7.5 – 12 years		6	-0.135	13.841*	
12+ years		11	-0.305***	71.757***	

Supplementary Table S5: Moderator Analysis for Victims Cont.

Outcome	Moderator	Q_b	K	Mean ES	Q_w
Supervision	Design	0.000			26.984**
	Cross-sectional		12	-0.163***	26.984**
	Longitudinal		0	---	0.000
	Continent	16.862***			9.232
	Europe		1	-0.311***	0.000
	America		5	-0.142***	4.237
	Other		6	-0.140***	4.995
	Assessment method	0.572			25.733***
	Self-report		11	-0.169***	25.733***
	Peer Nomination		0	---	---
	Teacher		0	---	---
	Mixed		1	-0.106	0.000
	Age Group	1.128			25.526**
	4-7 years		0	---	---
7.5 – 12 years		2	-0.266**	0.660	
12+ years		10	-0.156***	24.866**	
Overall Positive Parenting Behavior	Design	0.014			632.432***
	Cross-sectional		66	-0.193***	622.138***
	Longitudinal		3	-0.181	10.294**
	Continent	0.007			435.383***
	Europe		26	-0.191***	163.118***
	America		26	-0.194***	204.986***
	Other		17	-0.190***	67.278***
	Assessment method	4.874			630.200***
	Self-report		55	-0.210***	590.829***
	Peer Nomination		6	-0.183*	30.436***
	Teacher		1	0.027	0.000
	Mixed		7	-0.075	8.935
	Age Group	3.627			617.290***
	4-7 years		2	0.009	0.020
7.5 – 12 years		16	-0.157***	33.677**	
12+ years		51	-0.209***	583.593***	
Maladaptive Parenting	Design	0.169			810.242***
	Cross-sectional		21	0.261***	789.394***
	Longitudinal		5	0.329*	20.848***
	Continent	0.771			653.978***
	Europe		10	0.205*	33.409***
	America		9	0.335**	69.911***
	Other		7	0.296*	550.658***
	Assessment method	1.803			614.906***
	Self-report		14	0.327***	576.336***
	Peer Nomination		8	0.163	23.518**
	Teacher		1	0.097	0.000
	Mixed		3	0.378*	15.052**
	Age Group	0.802			723.056***
	4-7 years		1	0.097	0.000
7.5 – 12 years		12	0.229**	32.942***	
12+ years		13	0.324***	690.114***	

Supplementary Table S5: Moderator Analysis for Victims Cont.

Outcome	Moderator	Q_b	K	Mean ES	Q_w
Overall Negative Parenting Behavior	Design	0.749			909.001***
	Cross-sectional		28	0.237***	885.376***
	Longitudinal		7	0.354**	23.626
	Continent	0.983			717.931***
	Europe		16	0.212**	54.055***
	America		10	0.338**	72.794***
	Other		9	0.261*	717.931***
	Assessment method	2.007			681.670***
	Self-report		18	0.311***	622.534***
	Peer Nomination		10	0.176	29.769***
	Teacher		2	0.089	0.004
	Mixed		5	0.311*	29.363***
	Age Group	0.940			770.774***
	4-7 years		3	0.225	4.869
	7.5 – 12 years		16	0.212**	45.182***
12+ years		16	0.315***	720.724***	

Q_b = homogeneity for test of variation across subgroups: indicates that the effects sizes are significantly different across different categories of the moderator variable; K = number of studies; Mean ES = weighted ES (d); Q_w = test of variation within subgroup: indicates that the effect sizes within a category of the moderator variable are heterogeneous; *p<.05; **p<.01; ***p<.001.

Supplementary Table S6: Moderator Analysis for Bully/victims

Outcome	Moderator	Q_b	K	Mean ES	Q_w
Parental Involvement and Support	Design	0.643			33.917***
	Cross-sectional		10	-0.292	33.917**
	Longitudinal		1	-0.471	0.000
	Continent	2.054			17.260**
	Europe		4	-0.196*	8.959*
	America		6	-0.336***	8.301
	Other		1	-0.389**	0.000
	Assessment method	7.033*			15.765*
	Self-report		8	-0.349***	12.428
	Peer Nomination		1	-0.060	0.000
	Mixed		2	-0.244	3.337
	Age Group	0.165			34.994***
4 -7 years		0	---	---	
7.5 – 12 years		2	-0.245	3.337	
12+ years		9	-0.311***	31.657***	
Warmth & Affection	Design	0.026			19.011**
	Cross-sectional		6	-0.428***	19.011**
	Longitudinal		1	-0.400*	0.000
	Continent	6.678*			5.719
	Europe		5	-0.366***	5.719
	America		1	-0.521**	0.000
	Other		1	-0.586***	0.000
	Assessment method	13.651**			4.150
	Self-report		3	-0.584***	0.182
	Peer Nomination		2	-0.390*	2.995
	Mixed		2	-0.333***	0.973
	Age Group	10.704**			4.923
4-7 years		1	-0.400***	0.000	
7.5 – 12 years		2	-0.265***	0.153	
12+ years		4	-0.524***	4.770	
Overall Positive Parenting Behavior	Design	0.495			93.571***
	Cross-sectional		24	-0.326***	93.441***
	Longitudinal		2	-0.425**	0.131
	Continent	0.791			68.384***
	Europe		12	-0.302***	29.959**
	America		9	-0.333***	14.544
	Other		5	-0.380***	23.881***
	Assessment method	5.446			66.277***
	Self-report		9	-0.375***	58.203***
	Peer Nomination		2	-0.131	2.161
	Mixed		5	-0.284***	5.193
	Age Group	1.494			91.558***
4-7 years		1	-0.400*	0.000	
7.5 – 12 years		7	-0.262***	5.876	
12+ years		18	-0.360***	85.683***	

Q_b = homogeneity for test of variation across subgroups: indicates that the effects sizes are significantly different across different categories of the moderator variable; K = number of studies; Mean ES = weighted ES (d); Q_w = test of variation within subgroup: indicates that the effect sizes within a category of the moderator variable are heterogeneous; *p<.05; **p<.01; ***p<.001

Supplementary Table S6: Moderator Analysis for Bully/victims Cont.

Outcome	Moderator	Q_b	K	Mean ES	Q_w
Maladaptive Parenting	Design	0.559			371.720***
	Cross-sectional		10	0.436***	368.615***
	Longitudinal		3	0.677**	3.105
	Continent	32.326***			20.920
	Europe		7	0.261***	9.162
	America		4	0.756***	8.106*
	Other		2	0.939***	3.652
	Assessment method	0.343			86.077***
	Self-report		7	0.552***	70.229***
	Peer Nomination		3	0.494**	11.172**
	Mixed		3	0.418*	4.676
	Age Group	1.953			99.788***
4-7 years		0	---	---	
7.5 – 12 years		8	0.400***	32.865***	
12+ years		5	0.655**	66.923***	
Overall Negative Parenting Behavior	Design	1.023			461.268***
	Cross-sectional		14	0.414**	458.094***
	Longitudinal		4	0.696**	3.175
	Continent	20.124***			46.598***
	Europe		12	0.310***	34.840***
	America		4	0.739***	8.106*
	Other		2	0.917***	3.652
	Assessment method	1.036			116.788***
	Self-report		9	0.568***	78.010***
	Peer Nomination		4	0.418**	13.692**
	Mixed		5	0.404**	25.086***
	Age Group	5.743			106.267***
4-7 years		1	0.748**	0.000	
7.5 – 12 years		11	0.343***	39.340***	
12+ years		6	0.685***	66.927***	

Q_b = homogeneity for test of variation across subgroups: indicates that the effects sizes are significantly different across different categories of the moderator variable; K = number of studies; Mean ES = weighted ES (d); Q_w = test of variation within subgroup: indicates that the effect sizes within a category of the moderator variable are heterogeneous; *p<.05; **p<.01; ***p<.001