

## Gender Comparisons in Mother-Child Emotion Talk: A Meta-Analysis

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## Abstract

Mother-child emotion talk is one of the main ways through which children learn about emotions. Some previous research studies have suggested that mother-child emotion talk is a gendered process, influencing how girls and boys talk about emotions. Despite inconsistent findings in establishing if mothers use different amounts of emotion talk with their daughters and sons, there is no known meta-analysis of the literature examining gender differences in the frequency of mother-child emotion talk. The aim of this comprehensive meta-analysis is to explore gender comparisons in the frequency of mother-child emotion talk as well as the moderators of these differences. Based on 34 independent group samples (samples of unique individuals) consisting of 3,649 participants, no gender differences in the frequency of emotion talk between mothers of daughters and mothers of sons were found. Using a random-effects model, the meta-analysis had a mean weighted effect size of Cohen's  $d = .04$  (95% CI =  $[-.05, .13]$ ,  $p = .36$ ). It was not heterogeneous,  $Q_w(33) = 39.36$ ,  $p = .21$ . Thus, findings of the present meta-analysis suggest that mother-child emotion talk has not been shown to be gendered, which has implications for children's socialization of emotions.

*Keywords:* mother-child, emotion talk, gender differences, meta-analysis

### Gender Comparisons in Mother-Child Emotion Talk: A Meta-Analysis

Parents engage children in conversations about emotions from a very early age. Indeed, parent-child emotion talk is one of the main ways through which parents socialize children's emotions (Fivush, 2007; Saarni, 1999; Wareham & Salmon, 2006). Through these everyday conversations children learn rules about when and how it is appropriate to display emotions (Cole, Bruschi, & Tamang, 2002; Cole, Tamang, & Shrestha, 2006) as well as develop gender-specific means of emotion expression (Demuth, 2013; Melzi & Fernandez, 2004). Some research suggests that parent-child emotion talk itself is a gendered process.

When examining gender differences between mothers' and fathers' emotion talk, both mothers and fathers tend to talk more frequently about emotions (Adams, Kuebli, Boyle, & Fivush, 1995; Fivush, 1989, Fivush, Brotman, Buckner, & Goodman, 2000; Kuebli & Fivush, 1992) and to elaborate more on emotions such as sadness and fear (Adams et al., 1995; Fivush & Buckner, 2000) with their daughters than with their sons. In addition, mothers have been found to engage more frequently in emotion talk (Aznar & Tenenbaum, 2013; Zaman & Fivush, 2013) and in a more elaborate way (Fivush et al., 2000; Zaman & Fivush, 2013) with their children than do fathers. When looking at mothers only, English- and Spanish-speaking mothers of daughters tend to mention emotions more frequently (Adams et al., 1995; Aznar & Tenenbaum, 2015; Dunn, Bretherton, & Munn, 1987; Eisenberg, 1999; Fivush, 1989; Fivush et al., 2000; Garner, Jones, Gaddy, & Rennie, 1997; Kuebli & Fivush, 1992; Kuebli, Butler, & Fivush, 1995) and to elaborate more on those emotions (Fivush, Berlin, Sales, Mennuti-Washburn, & Cassidy, 2003; Sales, Fivush, & Peterson, 2003) than do mothers of sons. These gender differences have been found in children from 1 to 12 years of age, during the completion of a variety of tasks, and with participants of different socioeconomic statuses and cultures.

Parent-child emotion talk may be a gendered process through which girls are involved in discussions with emotion words more frequently and in a more elaborate manner than are boys, which may have implications for children's emotion socialization. Specifically, if children learn that mothers talk more about emotions than fathers do and that both mothers and fathers talk more about emotions with girls than with boys, they may conclude that it is more appropriate for females to express emotions than for males. This is important because research suggests that children whose parents talk more about emotions with them tend to have a better level of emotion understanding (Aznar & Tenenbaum, 2013; Denham, Zoller, & Couchoud, 1994; Halberstadt, Crisp, & Eaton, 1999; Harris, de Rosnay, & Pons, 2005; Laible & Song, 2006; Perez Rivera & Dunsmore, 2011), and higher levels of emotion regulation skills (Garner et al., 1997; Laible & Panfile, 2009) than do those whose parents engage less frequently in emotion talk. As a result, girls might develop higher levels of emotion understanding and of emotion regulation than boys, which in turn could place boys at a disadvantage, especially given that children who have higher levels of emotion understanding tend to do better academically (Garner, 2010; Izard et al., 2001; Valiente, Swanson, & Eisenberg, 2012), tend to be more popular among their peers (Kim & Cicchetti, 2010), and tend to have lower levels of psychopathologies (Kring & Bachorowski, 1999; Suveg, Shaffer, Morelen, & Thomasin, 2011) than children with lower levels of emotion understanding do.

In contrast, however, some studies have not found gender differences in the frequency of parent-child emotion talk. When looking at mother-child emotion talk, Martin and Green (2005, with mother-child dyads in the U.S.), Perez Rivera and Dunsmore (2011, with Latinx mother-child pairs living in the U.S.), and van der Pol et al. (2015, with Dutch mother-child dyads)

found that mothers of girls and mothers of boys talked similarly about emotions. And in contrast to previous findings, Melzi and Fernandez (2004) found that Peruvian Spanish-speaking mothers of 3- and 5-year-old boys mentioned more emotion words than did mothers of same age girls.

The inconsistency in the findings could be explained by the different factors that moderate the relationship between mother-child emotion talk. For example, mother-child emotion talk has been examined in mothers and their children of different ages (mostly from age 1 to age 12 years). Second, parent-child emotion talk has been studied in a variety of settings, such as laboratories or participants' own homes, and in a variety of languages (e.g., Spanish, English, Chinese, Dutch). Third, emotion talk has been explored while mother-child dyads complete a variety of tasks, such as book reading, reminiscing, or play. Finally, the analysis of gender differences in mother-child emotion talk has been the main aim of some studies, whereas in others it has been examined as a secondary aim. All of these moderating factors might explain the inconsistencies in the findings examining gender comparisons in mother-child emotion talk. Because of this possibility, we will include these potential moderators in the present meta-analysis. We chose to examine mother-child emotion talk only because studies examining father-child emotion talk are too scant for systematic analysis.

In sum, the present meta-analysis summarizes findings on gender comparisons in the frequency of mother-child emotion talk. To the best of our knowledge, no such meta-analysis has been published to date. The primary aim of our analysis was to quantify possible gender differences in the frequency of mother-child emotion talk. The second aim of our analysis was to examine the moderators of the frequency of mother-child emotion talk.

## Method

### Study Sample

The present meta-analysis included 34 separate publications that involved 34 separate samples. Two publications used the same dataset and thus contributed one sample of children at different ages (Tamopeau & Ruffman, 2006, 2008), and another article provided data from two separate samples (Cervantes, 2002, with Mexican immigrant and Mexican-American participants). These 34 studies included a total of 3,649 participants (1,815 girls and 1,834 boys). Samples sizes ranged from 9 to 1,114 children in each study. The majority of studies were conducted in the United States ( $n = 24$ ). Studies were also conducted in Spain ( $n = 1$ ), Peru ( $n = 1$ ), China ( $n = 1$ ), New Zealand ( $n = 3$ ), Chile ( $n = 1$ ), Australia ( $n = 1$ ), the Netherlands ( $n = 1$ ), and the United Kingdom ( $n = 1$ ). (A full list of the studies that we examined in the meta-analysis can be found in the [online supplement](#) accompanying the present article.)

### Literature Search

We identified reports examining emotion and gender through a variety of sources. We searched for studies on mother-child emotion talk whether or not gender differences were examined. We included reports from as early as we could find up to and including 2017. We did not have any geographical restrictions. All articles were published in English. The earliest article identified was 1989. First, we looked for articles, book chapters, and dissertations using computerized searches of *PsycINFO*, *ERIC*, and *Dissertations Abstracts International*. Literature searches were conducted using different words (e.g., gender differences, mother-child, emotion talk, internal state talk, reminiscing) alone and in combination with other words (e.g., children, infants, parent-child, parent-child dyads, communication), which yielded 2,150 results. The abstracts were scanned for relevance (as explained in the following), which left 34 articles in the

database. Second, studies were identified from citations in articles and from forward citations in databases. Finally, we examined the conference schedules from three relevant conferences (2017 British Psychological Society (BPS) Developmental Section Conference, 2017 BPS Annual Conference, and 2017 Society for Research in Child Development Biennial Meeting).

Studies that we included in the meta-analysis met the following criteria (see Figure 1). First, they had to examine mothers' frequency of emotion words when in conversation with a daughter or a son. Second, they included typically developing children. Third, studies reported frequency of emotion talk at the speaker level and not at a dyadic level.

Exclusion criteria precluded the use of several potentially relevant studies. Studies that did not report quantitative data were excluded. Before discarding any article, authors were contacted for information that could be included in the meta-analysis. We wrote to 21 authors; 14 authors replied with information about 16 separate articles. Following recommendations by Borenstein, Hedges, Higgins, and Rothstein (2009), if a study reported no significant difference, data from that study was recorded as  $d = .00$ . There were only four studies without means and standard deviations, exact  $t$ -tests, or  $F$ -values based on the comparison between emotion talk to boys and girls whose authors did not provide additional information upon request.

### **Study Coding**

We coded for six moderators. The first of these moderators focused on child and parent characteristics and included child age and the language spoken. The mean age of the children was coded into an age group (e.g., one year, two years). Second, we coded aspects of the data collection including the setting of the interaction (e.g., lab, home) and the type of activity (e.g., book reading, free play). Finally we coded aspects of the study, such as whether it was a study focused on gender and the publication type. To examine biases in publishing, we examined first

quartile ranked (Q1) journals (e.g., *Developmental Psychology*) based on the category in which it was classed using data from Web of Science, other journals, or were unpublished. We had also wanted to code for first author gender, but all of the publications had women as first authors.

### **Effect Size Calculation**

We used CMA Version 3 (Borenstein, Hedges, Higgins, & Rothstein, 2011) to calculate effect sizes. We used a random effects model because there was variability in the design and location of studies conducted. Effects sizes were coded so that a positive effect size indicates that parents used more emotion words with daughters than with sons, whereas a negative effect size indicates that parents used more emotion words with sons than with daughters.

As the unit of analysis, group samples of studies and comparisons were considered separately. Studies as a unit of analysis referred to different participants and, thus, when we refer to studies, individual participants are not included in more than one study. In this way, multiple experiments in a single article were considered separate studies if they involve different participants. In addition, if a study reported two age groups separately, they were considered separate studies because they consisted of different participants.

Cohen's  $d$  values are reported here as calculated by the CMA program. Cohen's  $d$ s between .20 and .50 indicate a small effect size, between .50 and .80 indicate a medium effect, and greater than .80 indicate a large effect (Cohen, 1988). Of course, the effect size alone does not determine statistical significance, and we determined whether the mean effect size was within sampling error of zero.

## **Results**

A total of 34 samples examined gender differences in the frequency of emotion talk between mothers of daughters and mothers of sons. Using a random-effects model, studies



computed separately for group samples had a mean weighted effect size of Cohen's  $d = .04$  (95% CI = [-.05, .13],  $p = .36$ ) and a heterogeneity score of  $Q_w(33) = 39.36$ ,  $p = .21$ .

Without the four studies in which we imputed an effect size (Cohen's  $d$ ) of 0, the Cohen's  $d = .04$  (95% CI = [-.06, .14],  $p = .41$ ),  $Q(29) = 39.10$ ,  $p = .10$ . We also conducted sensitivity analyses to examine what the Cohen's  $d$  would be if each study was removed (Borenstein et al., 2011). The Cohen's  $d$ s ranged from .03 (95% CI = [-.02, .11]) to .05 (95% CI = [-.06, .14]). Without Yuill and Little's (2017) study with only nine participants, the Cohen's  $d$  was .04 (95% CI = [-.04/.12]). Note that all confidence intervals included zero. Thus, in not one of these analyses was there a significant effect of sample size. We also explored whether there was a significant relation between the effect size of a study and its sample size. The correlation was not statistically significant,  $r(32) = -.03$ ,  $p = .85$ .

We visually inspected the funnel plot. We found convergence toward the mean in big studies, which would suggest little publication bias (Borenstein et al., 2009). However, there were three outliers, which is more than the 5% allowed (see also Sterne et al., 2011). Without these three studies, the Cohen's  $d$  was .06 ( $p = .10$ , 95% CI = [-.01, .12]). (See Figure 1s of the [online supplement](#) for the funnel plot.)

We also examined impact publication bias on the size of the effect reported. To assess this point, we used Duval and Tweedie's (2000) Trim and Fill technique. The Trim and Fill technique removes the most extreme small studies from either the negative or positive side of the population mean. Data are trimmed until a symmetrical funnel plot is produced, which computes a new effect size based on the mean of the re-computed symmetrical funnel. At this point, the trimmed studies are filled back into the plot and a mirror image created so that the plot remains symmetrical (Borenstein et al., 2009). If the effect size change is small, once the plot has been

trimmed and imagined studies are accounted for, then the impact of publication bias in the sample is considered to be low. When we trimmed the studies from the left of the mean using a random effects model, there was no change in the effect size. The point estimate and 95% confidence interval were 0.04 and [-0.04, 0.13], respectively. When we used a random effects model and trimmed from the right side of the distribution, the imputed point estimate was 0.09 (95 % CI [-0.01, 0.18]). Note that in both cases the 95% confidence interval includes zero.

Although homogeneity analyses for the group sample indicated that the effects were not heterogeneous,  $Q_w(33) = 39.36, p = .21$ , we conducted heterogeneity analyses. The first moderator was age of child. When examining this moderator, we used subgroups as the unit of analysis. This moderator violated assumptions of independence. Using a longitudinal sample, five studies (Adams et al., 1995; Bird & Reese, 2006; Kuebli et al., 1995; Tamopeau & Ruffman, 2008; van der Pol et al., 2015) measured children's scores at more than one age. In this case, we divided the number of children in each age group by the number of age groups included so that studies with more than one comparison would not weight the study disproportionate to its sample size following procedures set out by Borenstein et al. (2009). First, neither age,  $Q_w(8) = 6.79, p = .56$ , nor language spoken,  $Q_w(4) = 3.51, p = .48$ , was a significant moderator. Second, neither setting (home or laboratory),  $Q_w(4) = 1.86, p = .76$ , nor activity (book reading, reminiscence, play),  $Q_w(4) = 1.68, p = .80$ , was a significant moderator. Finally, whether the study was designed to look at gender differences or not,  $Q_w(1) = 1.53, p = .22$ , and publication source,  $Q_w(2) = .02, p = .99$ , did not serve as significant moderators. Table 1 displays mean Cohen's *ds* by moderator.

## Discussion

Overall, our meta-analysis found no evidence of a statistically significant difference in the frequency of emotion talk between mothers of sons and mothers of daughters. This finding contrasts with the general assumption in psychology that mothers tend to be more emotionally expressive with their daughters than with their sons (Dunn et al., 1987; Fivush, 1989). However, it is important to note that whereas our meta-analysis shows no gender difference in the frequency of mother-child emotion talk, it could be that mothers' elaboration, content, or valence of the emotion conversations differ between girls and boys. To the best of our knowledge, no such meta-analysis has yet been conducted.

Further, it is important to consider that mothers also communicate with their children through nonverbal communication (Crucianelli et al., 2018). Nonverbal communication and, for example, more specifically touch play a central role in human communication and therefore it is very likely to be gendered (Hertenstein & Keltner, 2011). Thus, it is important to examine gender differences in mother-child emotion communication across both verbal and nonverbal channels to achieve a more holistic view of this field of research.

It is also important to note that the present meta-analysis only examines mother-child emotion talk. Because of the small number of studies comparing mother-child and father-child emotion talk, we could not examine gender comparisons in father-child emotion talk. It would be a mistake to assume that the lack of gender differences in mother-child emotion talk extends to father-child emotion talk. Indeed, research suggests that, in general, fathers are more likely than are mothers to socialize their children into traditional gender roles (Coltrane & Adams, 1997; Maccoby, 1998). This gender difference seems to extend to parental emotion socialization.

Fathers have been found to be more likely to respond to sons' and daughters' emotions according to gender stereotypes (Chaplin, Cole, & Zahn-Waxler, 2005; Denham, Bassett, &

Wyatt, 2010). For example, in an experimental study, Cassano and Zeman (2010) told mothers and fathers of 8–10 year-olds in the United States that their child had either managed their sadness according to norms for their age or that they had managed it worse than peers of the same age. Consistent with gender stereotypes, findings show that fathers of sons who violated the norm used more emotion dismissal than did fathers whose sons behaved as expected. There were no differences in how fathers behaved toward their daughters nor was there a difference in mothers' behaviors toward their sons and daughters. In other research examining parents' socialization of emotions, Denham et al. (2010) found that fathers acted as preschoolers' playmates, whereas mothers acted as preschoolers' emotional gatekeepers, thus implying that mothers are children's main emotion socializers. Such findings suggest that the research on mothers cannot simply be extended to fathers and that more research is needed examining fathers' socialization of children's emotions.

The present meta-analysis has three clear strengths. First, one of the common criticisms of the meta-analytic technique is variability across samples, which tends to appear because of the multiple methods of measuring the variables under examination. This variability, in turn, might obscure relevant patterns across the different studies examined (Groh et al., 2017; Halberstadt & Eaton, 2002). However, in the present meta-analysis, the heterogeneity test indicated that the variation was no greater than one would expect given the sample sizes. Another common criticism of meta-analytic reviews is the possible effect of publication bias (Sutton, Duval, Tweedie, Abrams, & Jones, 2000). We are confident that this is not the case in our study because of the 34 studies included in our meta-analysis, the central aim of 21 of them was not to examine gender differences in mother-child emotion talk. Finally, it is important to note that meta-analyses have been proposed as one of the main methods to combat the replication crisis that

psychology is experiencing (Pashler & Wagenmakers, 2012). Thus, it is particularly noteworthy that our meta-analysis did not find a difference in the frequency of mother-child emotion talk.

### **Practice Implications**

The present meta-analysis has some important implications. First, because our findings contradict the widespread assumption that mothers of daughters talk more frequently about emotions than do mothers of sons, findings of the present meta-analysis call for academics, practitioners, and the general public to carefully consider their assumptions about gender differences across different human behaviors. More specifically, there is an often-extended assumption that women are more emotional than men are. One of the reasons that has been suggested for this difference is that mothers talk more about emotions with their daughters than with their sons, and thus, through mother-child emotion talk, girls and boys learn that emotion talk is predominantly a female activity. The present meta-analysis contradicts this assumption, suggesting that if women talk more about emotions than men do, mother-child emotion talk might not be one of the reasons behind it. More research is needed in order to examine if other factors, such as genetic factors or personality differences, may play a role in gender differences in emotion talk, if and when they are found.

Finally, past work has suggested that even though there may be factors such as biology, that could explain individual differences in children's emotion understanding, the more parents include emotion in their everyday conversations with children, the more children learn about emotion (Aznar & Tenenbaum, 2013; Perez Rivera & Dunsmore, 2011). If mothers include similar amounts of emotion talk with girls and boys, it follows that girls and boys will develop similar levels of emotion understanding. Our meta-analysis may help explain why there are very

few gender differences in children's emotion understanding (Fidalgo, Tenenbaum, & Aznar, 2018).

### **Limitations and Future Research Directions**

As we previously mentioned, the present meta-analysis only examines one aspect of mother-child emotion talk: its frequency. There are, of course, other aspects of mother-child emotion talk such as its elaboration or content that are beyond the scope of our study but that need to be examined in future research. It is only by comparing all dimensions of mother-child emotion talk that we will be able to clearly establish if mothers of daughters and mothers of sons talk similarly about emotions and the impact that mother emotion talk has on children's socialization of emotions.

### **Conclusion**

The current meta-analysis provides evidence that there are little to no gender differences in the frequency of mother-child emotion talk. The present findings support the idea that there are more gender similarities than differences (Leaper, 2011). Mothers may also see similarities, which will help support the important skill of emotion understanding in girls as well as in boys.

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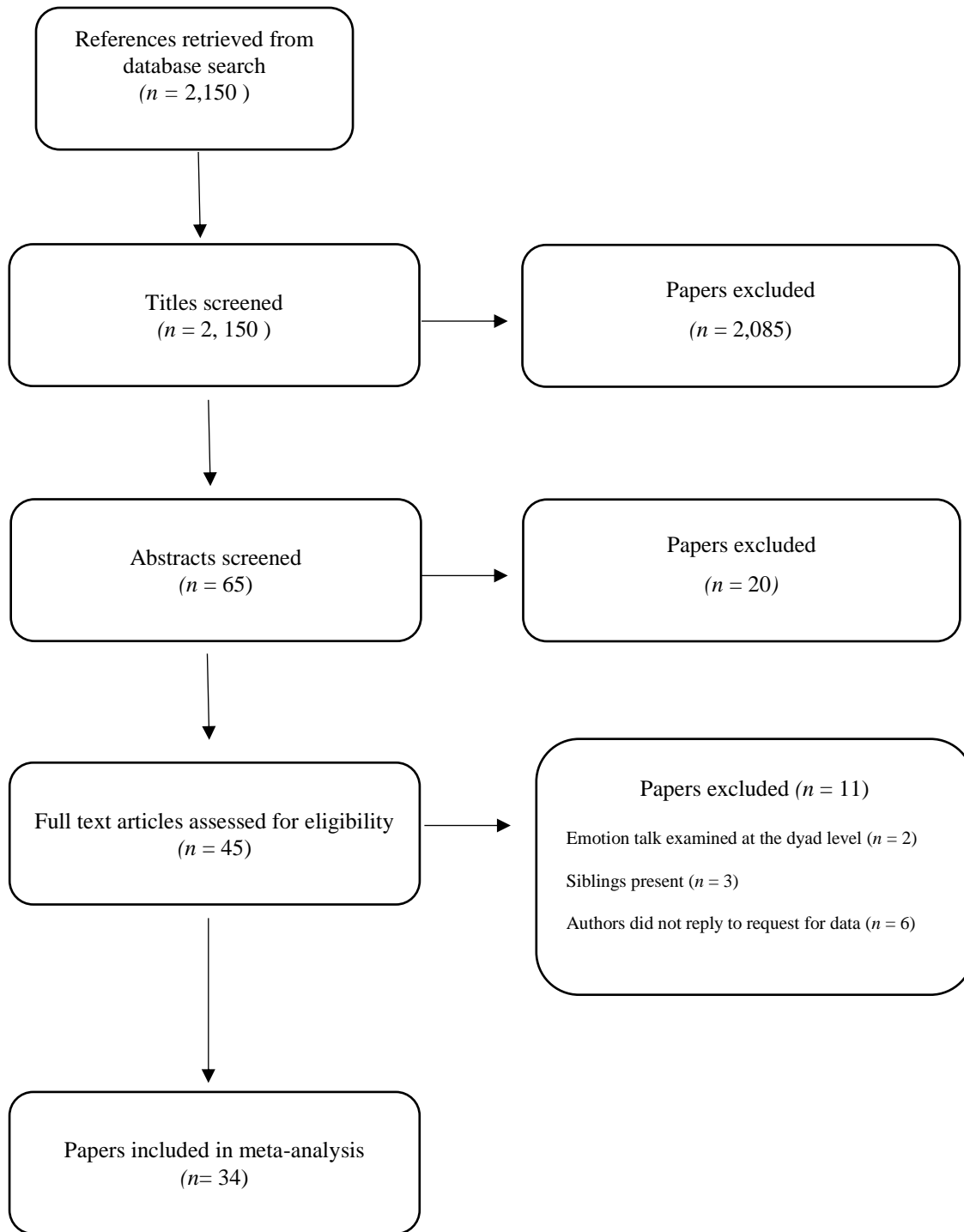


Figure 1. PRISMA checklist for systematic review of the literature

Table 1

*Frequency of Mother-Child Emotion Talk Moderator Effects*

	<i>Cohen's d</i>	95% CL	Z	<i>k</i>	Heterogeneity Q
<b>Age Group</b>					
1 years	.03	[-.46, .53]	.15	2	.05
2 years	.11	[.01/.20]	2.26*	7	4.14
3 years	.00	[-.17/.16]	-.04	12	8.54
4 years	-.01	[-.15/.14]	-.09	17	12.93
5 years	.07	[-.53/.67]	.24	5	.06
6 years	-.03	[-.76/.70]	-.08	1	0
7 years	1.65	[.13/3.17]	2.13*	1	0
11 years	.00	[-.42/.42]	.00	1	0
12 years	.13	[-.40/.65]	.48	1	0
<b>Language</b>					
Dutch	.02	[-.14/.18]	.24	1	0
English	.07	[-.02/.17]	1.47	25	27.12
English and Chinese	.32	[-.26/.90]	1.09	1	0
Spanish	-.29	[-.75/.17]	-1.24	4	6.76
Spanish and English	-.04	[-.43/.35]	-.18	3	.86
<b>Setting</b>					
Unknown	.68	[-.91/2.27]	.84	2	3.73
Both	.01	[-.42/.44]	.06	1	0
Home	.03	[-.12/.18]	.36	19	28.51
Lab	.09	[-.01/.18]	1.81	11	5.12
School	-.15	[-.64/.34]	-.61	1	0
<b>Activity</b>					
Book-reading	.08	[-.00/.15]	1.90	11	6.73
Moral	.13	[-.40/.65]	.48	1	0
PACT	.00	[-.57/.57]	0	1	0
Play	-.10	[-.37/.16]	-.75	5	1.14
Reminiscence	.06	[-.16/.27]	.51	16	29.69*



Gender study					
Yes	-.03	-.01/.18	1.75	20	20.27
No	.08	-.19/.13	-.40	14	17.02
Publication source					
First quartile	.03	-.09/.16	.55	7	2.86
Second quartile	.03	-.09/.15	.52	26	36.30
Unpublished	-.01	-.64/.62	0	1	0

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\*  $p < .05$ .

**Online supplement** for Aznar, A., and Tenenbaum, H. R. (2019). Gender comparisons in mother-child emotion talk: A meta-analysis. *Sex Roles*. Ana Aznar, University of Winchester. Email: ana.aznar@winchester.ac.uk

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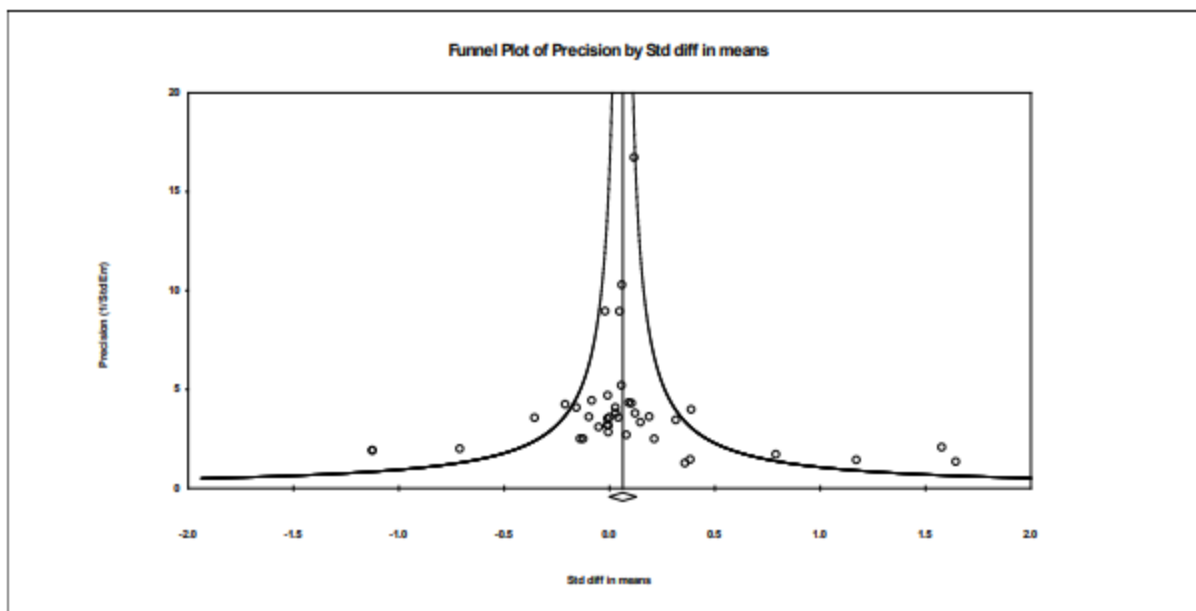


Figure 1s. Funnel plot