



# Child Psychological Adjustment in Planned Gay Father Families: A Meta-analysis

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## Abstract

**Introduction** The increase in gay fatherhood through adoption, surrogacy, and coparenting arrangements (i.e., “planned gay father families”) worldwide has turned a spotlight onto the impact of parental gender and sexual orientation on children’s psychological adjustment. The present meta-analysis compared the scores of children of gay fathers on standardized indexes of psychological adjustment with normative data and examined possible differences in children’s psychological adjustment between planned gay father families and heterosexual parent families.

**Methods** Following PRISMA guidelines, the databases PsycInfo, PsycArticles, Scopus, and ProQuest were searched for peer-reviewed articles and grey literature (e.g., dissertations) in the English language that were published (or made available, in the case of grey literature) in or before October 2023 (with a further check in July 2024). From a total of 1993 results, 17 papers assessing children’s adjustment using the Strengths and Difficulties Questionnaire or the Child Behavior Checklist were reviewed. Collectively, these papers provided 54 effect sizes estimated across 1509 participants ( $n = 628$  children of gay fathers;  $n = 881$  children of heterosexual parents).

**Results** All children scored below the clinical range for psychopathological symptoms when compared with normative data. Also, regardless of the path to parenthood, children of gay fathers displayed significantly better adjustment than children of heterosexual parents (Hedges’  $g = -0.20$ , 95% CI  $[-0.29, -0.10]$ ,  $p < .001$ ). Child’s assigned sex at birth ( $p = .048$ ) and age ( $p = .005$ ), as well as parent education ( $p = .003$ ), were significant moderators.

**Conclusions** Planned gay father families constitute a healthy context for children to flourish, disconfirming widespread assumptions that gay fathers are less suited to parenthood than heterosexual parents.

**Policy Implication** The results emphasize to policymakers and practitioners that supportive environments and reduced discrimination at both interpersonal and institutional levels are crucial for the healthy psychological adjustment of children of gay fathers.

**Keywords** Gay fathers · Surrogacy · Adoption · Coparenting · Psychological adjustment · Meta-analysis

## Introduction

In recent decades, an increasing number of people with minoritized sexual identities<sup>1</sup> (e.g., lesbian women, gay men) have begun to plan their parenthood and have children within their couple. In the United States, alone, the number of families headed by parents with minoritized sexual

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<sup>1</sup> We use the term “people/parents with minoritized sexual identities” instead of “sexual minority people/parents” to emphasize the ongoing social construction of subordination. This choice also challenges the idea that people/parents with non-normative identities should necessarily be considered a separate and distinct category of people/parents (e.g., Hammack et al., 2013; Wingrove-Haugland & McLeod, 2021). Finally, we use “parents with minoritized sexual identities” and “gay fathers” interchangeably throughout the paper.

identities increased threefold between 2000 and 2021, with such families now accounting for 1.8% of couple households. Similar trends have been observed in Canada, Australia, and Europe (Rault, 2023), fostered by a more favorable global acceptance of couples with minoritized sexual identities and the legalization of same-sex marriage, as well as technological advancements in reproductive medicine and more inclusive access to diverse paths to parenthood (e.g., adoption, surrogacy, coparenting arrangements) (Patterson et al., 2021).

Within the wide set of families headed by parents with minoritized sexual identities across the globe, gay father families are prominent. This has turned a spotlight onto the impact of parental gender and sexual orientation on children's psychological adjustment, in both the scientific and the social communities (for a discussion, see Carneiro et al., 2017). Whereas it was previously common for children of gay fathers to be born in the context of a heterosexual relationship and then raised by their gay father following his coming-out, it is now more prevalent for children of gay fathers to be raised in planned gay father families from the start, through foster care, domestic or international adoption, or surrogacy (Berkowitz, 2020; Farr & Grotevant, 2019). A minority of gay men also engage in coparenting arrangements with single women or lesbian couples with whom they are not sexually involved (Bos, 2010).

Concerns around planned gay father families center on worries that, in comparison to children of heterosexual, married, and genetically related parents, children of gay fathers may exhibit psychological difficulties, develop atypical gender and sexual identities (Biblarz & Stacey, 2010; Tasker, 2010), and endure strained peer relationships due to stigma related to their family structure (Carone et al., 2022; Farr et al., 2016). Also, to the extent that gay fathers experience high rates of stigma associated with their fatherhood (Perrin et al., 2019), some believe that this may affect their parental psychological health and the adjustment of their children, either directly through stress (e.g., Gamarel et al., 2014) or indirectly via parenting. In the specific case of gay father families through surrogacy, a further preoccupation relates to the potential negative effect of surrogacy on children's access to knowledge about and perceptions of their origins, though evidence runs contrary to this concern (Carone et al., 2018a). Similarly, studies on adoptive families headed by parents with minoritized sexual identities have suggested that children's adjustment may be impacted by parents' degree of comfort in communicating with their children about their family diversity, rather than their adoptive status, per se (Farr & Vázquez, 2020; Wyman Battalen et al., 2019).

Overall, families headed by two fathers are considered relatively more controversial among the new family forms, as it remains rare for fathers to be primary caregivers (Golombok, 2015). In this vein, gay fathers challenge

widespread assumptions that women are naturally more nurturing and better suited to parenthood than are fathers (Biblarz & Stacey, 2010) and that mothers and fathers fulfil different parental functions. Fagan et al. (2014) reviewed the available literature on this topic and concluded that, regardless of parents' gender, the impact of qualitative and quantitative parenting dimensions on child adjustment is comparable. However, it remains the case that, although mothers and fathers often share ideals and values about the needs of their children (with respect to, e.g., children's survival, protection, education, and self-fulfillment) (Lansford, 2022), they seldom prioritize these ideals and values equally (for a review, see Palkovitz et al., 2014). Rather, mothers and fathers frequently enact different roles, strategies, and patterns of interaction with their children to carry out convergent parenting aims (Yaffe, 2023).

Over the last five decades, research with families headed by parents with minoritized sexual identities has focused on the question of whether family structure (with respect to, e.g., parents' sexual orientation and gender) or family and contextual processes matter most for child adjustment. While this research has involved lesbian mothers since the 1980s and produced abundant evidence for the different routes they follow to become parents (Bos & Gartrell, 2020), it has only recently begun to consider gay father families, as it is only since the millennium that a substantial number of gay couples have begun to raise children together (Riggs & Due, 2014).

Before the millennium, early research on gay fathers concentrated on men who had previously been involved in heterosexual relationships that resulted in divorce or separation (Bozett, 1989). Such studies reported inconsistent and conflicting results, due to several limitations. First, the relatively small sample sizes did not allow for any generalization of the results. Second, the divorced fathers who took part in these studies rarely had child custody or visiting rights. Third, the studies generally compared children of divorced gay fathers with those of non-divorced heterosexual parent families, suggesting that the results for child adjustment may have been affected by the divorce, rather than parents' sexual orientation or gender, alone.

Miller et al. (2017) made one of the first attempts to summarize the literature on the psychological adjustment of children of gay fathers in comparison with those of heterosexual parents. The authors adopted a meta-analytic approach to evaluate child psychological adjustment by parent sexual orientation, reviewing 10 published and unpublished studies conducted between 2005 and 2015, generating a total of 35 standardized mean differences. The results indicated significantly better outcomes for children of gay fathers compared to children of heterosexual parents, suggesting that both demographic factors (e.g., gay fathers' higher socioeconomic status) and individual characteristics (e.g., gay

fathers' higher levels of coparenting and better preparedness for fatherhood as a response to stigma) played a protective role. However, although this meta-analysis had the merit of focusing on gay father families, only (i.e., without merging them with lesbian mother families, as in other meta-analyses; Fedewa et al., 2015; Suárez et al., 2023; Zhang et al., 2023), it included both planned gay father families (e.g., through adoption, surrogacy, or coparenting arrangements) and gay father families with children born into previous heterosexual relationships before the fathers came out as gay. This prevented any isolation of the potential effects of path to parenthood or divorce on children's psychological adjustment.

For these reasons, the present meta-analysis aimed at systematically assessing the psychological adjustment of children raised in planned gay father families (i.e., through adoption/foster care, surrogacy, or coparenting arrangements). The first objective was to compare the scores of children of gay fathers on standardized indexes of psychological adjustment with normative data. The second objective was to examine possible differences in children's psychological adjustment between planned gay father families and heterosexual parent families. Consistent with previous meta-analyses (Fedewa et al., 2015; Miller et al., 2017; Suárez et al., 2023; Zhang et al., 2023), we expected that the psychological adjustment of children of gay fathers would fall within the normal range and be significantly higher than that of children of heterosexual parents. The potentially moderating roles played by demographic variables (e.g., sample mean age, children's assigned sex at birth, geographic area, conception method, group differences for income, group differences for education) were also explored.

## Methods

The present study was conducted in accordance with the PRISMA guidelines for systematic reviews and meta-analyses (Page et al., 2021), and the selection process was implemented in compliance with the PRISMA flow diagram.

### Database Search Strategy

An electronic database search was conducted on the major databases in the field of health and social sciences: PsycInfo, PsycArticles, Scopus, and ProQuest. These databases were searched for scientific publications until October 31, 2023 (with a further check on July 5, 2024), employing a predetermined search string with the following keywords: ([gay father\* OR same sex parenting OR gay parenting OR male headed famil\* OR same sex couple\*] AND [parent-child relation\* OR child development OR developmental outcome\* OR internalizing problem\* OR externalizing problem\* OR self-esteem OR depression OR

anxiety OR emotional adjustment OR sexual identity OR mental health OR behavioral adjustment\* OR stigmatization OR psychological health]). The search was applied on article titles and abstracts, and mesh terms were used where appropriate.

### Literature Search Strategy and Study Eligibility

Once an initial set of articles was found using the search algorithm, all duplicates were eliminated. The titles and abstracts of all remaining papers were scrutinized to weed out any irrelevant content. The remaining publications were then evaluated based on previously established inclusion and exclusion criteria. In more detail, the inclusion criteria mandated that the studies (a) report on planned gay father families through adoption, surrogacy, or coparenting arrangements; (b) report distinct statistics for children of gay fathers; (c) be quantitative in nature; (d) use children of heterosexual parents as a control sample or provide population normative data; and (e) assess children's adjustment using the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997) or the Child Behavior Checklist (CBCL; Achenbach & Rescorla, 2001).

The SDQ and CBCL measures were specifically selected for three reasons. First, their cross-cultural valid psychometric properties allow for comparison between international samples (e.g., De Groot et al., 1994; Woerner et al., 2004). Second, their scores are highly correlated and equally able to provide indices of psychological adjustment and are thus comparable (Goodman & Scott, 1999). Third, they are widely used in the parenting research field. The exclusion criteria were as follows: (a) case reports, reviews, letters to the editor, commentaries, book chapters, study protocols, or seminars; (b) studies written in a language other than English; and (c) any article not available as a full text.

To attenuate the risk of publication bias, relevant grey literature (e.g., dissertations, unpublished data) was collected through October 31, 2023 (with a further check on July 5, 2024), and evaluated according to the inclusion and exclusion criteria, consistent with previous meta-analyses on similar topics (see, e.g., Miller et al., 2017; Suárez et al., 2023; Zhang et al., 2023). Additionally, the most relevant peer-reviewed journals in the LGBTQ+ and parenting fields (i.e., *Child Development*, *Developmental Psychology*, *Family Process*, *Family Relations*, *Journal of Child and Family Studies*, *Journal of Family Psychology*, *LGBTQ+ Family: An Interdisciplinary Journal*, *Parenting: Research and Practice*, *Psychology of Sexual Orientation and Gender Diversity*, *Sexuality Research and Social Policy*) were examined.

After applying the inclusion and exclusion criteria, we checked the reference lists of the remaining articles to search for additional pertinent literature. Where such literature was identified, the publications were once again subjected to the

study eligibility criteria. Two independent raters carried out the entire selection process. In the event of a dispute, raters discussed their opinions until agreement was achieved. Interrater agreement was good, with Cohen's  $k = .92$ .

## Data Extraction and Moderator Analysis

The following information was extracted from the final set of publications: (a) authors and publication year, (b) children sample size, (c) children sample mean age, (d) children sample gender (i.e., percentage of female participants), (e) geographic area, (f) conception method, (g) group differences for income, (h) group differences for education, and (i) child adjustment measure. For the moderation analysis, we required a minimum of four studies for each subgroup. While categorical moderators were input as grouping variables in the effect size calculations, continuous moderators were assessed using meta-regression.

## Study Quality Assessment

An adapted version of the Newcastle–Ottawa Scale (Wells et al., 2011) was used to create an index of the quality of the selected studies, with a maximum score of seven stars. The quality assessment of each study was independently assessed by the second and third authors to ensure interrater reliability (Cohen's  $k = 0.79$ ). Disagreements on quality scoring were discussed and resolved among them, and no studies were excluded on the basis of the quality evaluation. Supplemental Tables 1 and 2A present a detailed description of the quality assessment process.

## Meta-analytic Procedure

Data analyses were conducted using the software ProMeta, version 3.0 (Internovi). Both fixed-effects and random-effects models were run. Fixed-effects models are most suitable for comparing studies in which samples are assumed to stem from the same homogeneous population. In contrast, random-effects models are more frequently used to compare samples that are assumed to be heterogeneous, since they consider the variance derived from the differences among participants, both within and between associations.

Hedges'  $g$  effect size was calculated for each relevant comparison in all of the investigated studies, using means and standard deviations. Conventionally, Hedges'  $g$  scores of 0.20, 0.50, and 0.80 are considered small, medium, and large, respectively (Cohen, 1988). Additionally, the point estimates of the 95% confidence intervals (CI) of the effect sizes were determined.  $Q$  and  $I^2$  statistics were used to evaluate between-study heterogeneity, with a significant  $Q$  value indicating considerable between-study heterogeneity and  $I^2$

values of 0.25, 0.50, and 0.75 indicating low, moderate, and high between-comparison heterogeneity, respectively.

Publication bias was evaluated formally using Begg and Mazumdar's rank correlations and Egger's regression intercept test, as well as informally, utilizing a funnel plot of effect size against standard error to measure asymmetry.

## Results

### Descriptive Overview of the Studies

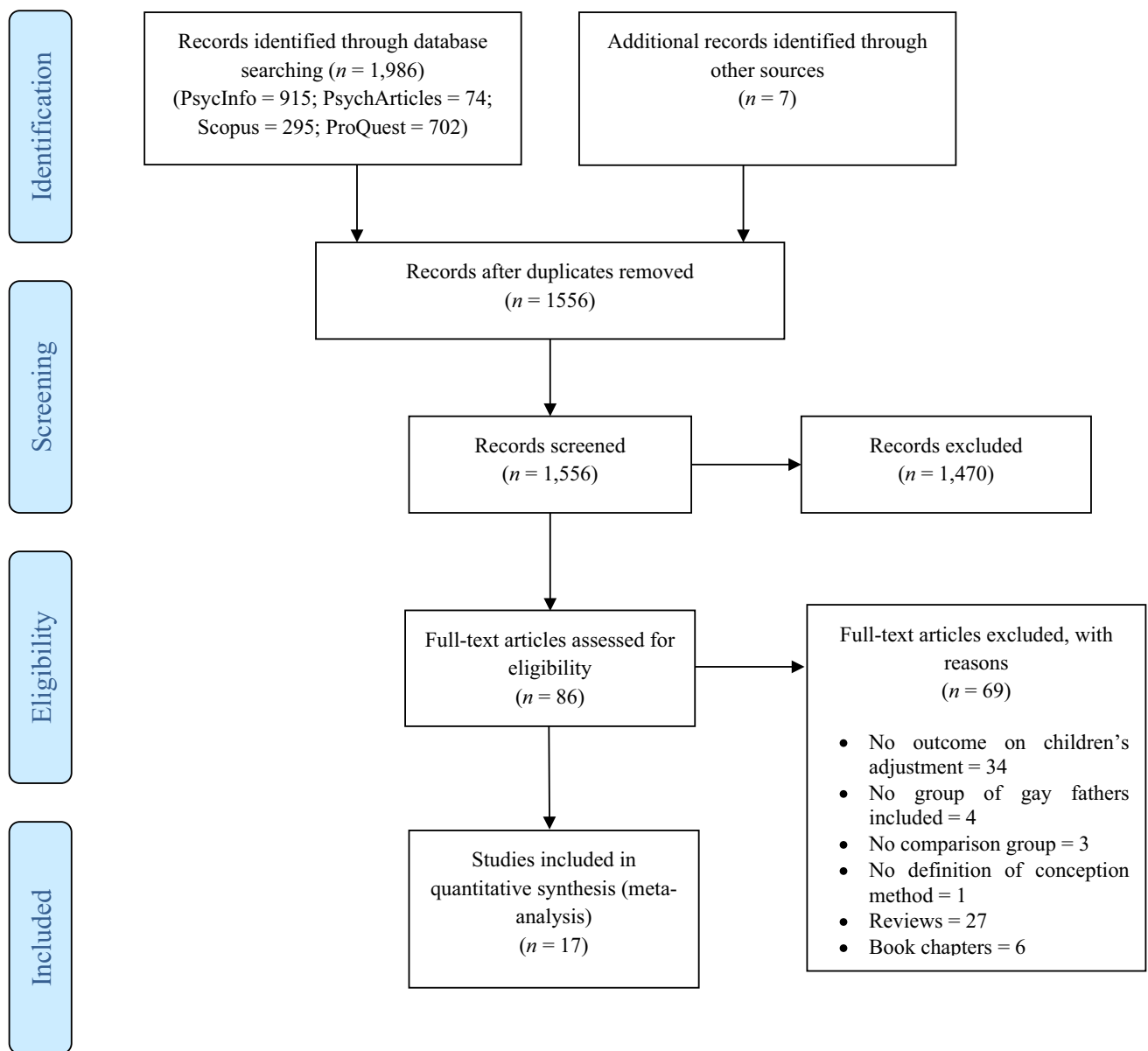
The search strategy generated 1986 potentially eligible records through the database search, and seven additional papers through the review of reference lists. After duplicates were removed, the titles and abstracts of 1556 articles underwent a first screening, resulting in a further full-text assessment of 90 papers, which were subsequently subjected to the inclusion and exclusion criteria. Of these, 17 were included in the present meta-analysis, generating a total of 54 effect sizes estimated across 1509 participants ( $n = 628$  children of gay fathers;  $n = 881$  children of heterosexual parents). Figure 1 depicts the entire screening process. Table 1 displays the characteristics of the included articles.

### Children of Gay Fathers and Normative Data

The mean SDQ (Goodman et al., 2010) and CBCL (Achenbach & Rescorla, 2001) scores of children in the included studies were used to perform a comparative analysis with the standardized normative data for those measures. For the SDQ data interpretation, we followed the original three-band categorization (i.e., normal, borderline, abnormal), and for the CBCL, we used the three ranges of normal, borderline clinical, and clinical. This analysis aimed at not only deepening the information that could be drawn from the studies but also reducing the risk of bias associated with sampling processes, sample characteristics, and heterogeneity in the study methodologies. Based on parent and teacher ratings, children's psychological adjustment was within the normal range in all of the included studies for both the SDQ (i.e., single scale scores, total scale scores, internalizing/externalizing scores) and the CBCL (i.e., total scores, internalizing/externalizing scores).

### Comparison Between Children of Gay Fathers and Children of Heterosexual Parents on Psychological Adjustment

Figure 2 displays the estimated differences for the fixed- and random-effects models. Both the fixed-effects (Hedges'  $g = -0.23$ , 95% CI  $[-0.29, -0.16]$ ,  $p < 0.001$ ) and the random-effects (Hedges'  $g = -0.20$ , 95% CI



**Fig. 1** PRISMA flow diagram for the meta-analysis of children's psychological adjustment in planned gay father families

$[-0.29, -0.10]$ ,  $p < 0.001$ ) models showed significant differences. The negative directionality indicated a significantly higher adjustment for children of gay fathers than children of heterosexual parents. Significant heterogeneity was also found across studies ( $Q = 104.90$ ,  $p < 0.001$ ;  $I^2 = 49.48$ ), suggesting that the random-effects model was most appropriate.

Concerning publication bias, the funnel plot analysis did not provide strict evidence of asymmetry (Fig. 3). Nevertheless, the formal assessment of publication bias presented mixed results, with Egger's linear regression test suggesting the presence of publication bias (intercept = 1.21,  $t = 2.11$ ,  $p = 0.040$ ) and Begg and Mazumdar's rank correlation test

pointing to no publication bias (Kendall's tau =  $-0.35$ ,  $p = 0.726$ ).

Regarding the moderator analysis, significant effects of the percentage of female participants (intercept = 0.45, slope =  $-0.01$ ,  $p = 0.048$ ), participants' mean age (intercept =  $-0.54$ , slope = 0.00,  $p = 0.005$ ), and parent education ( $p = 0.003$ ) were found, pointing to stronger negative effect sizes as the percentage of female participants increased, participants' age decreased, and the education level of gay father families rose significantly higher than that of heterosexual parents. Said differently, daughters of gay fathers showed better psychological adjustment than daughters of heterosexual parents; also, improved psychological adjustment was



**Table 1** Characteristics of the studies included in the meta-analysis and comparisons used to derive effect sizes

| Study                | Children of gay fathers                 |                             | Children of heterosexual parents        |                             | Geographic area | Conception background                                  | Group differences for income | Group differences for education | Type of publication | Children's adjustment measure | Children of gay fathers: $M \pm SD$ | Children of heterosexual parents: $M \pm SD$ | Comparative analysis: children of gay fathers vs. standardized normative data |
|----------------------|-----------------------------------------|-----------------------------|-----------------------------------------|-----------------------------|-----------------|--------------------------------------------------------|------------------------------|---------------------------------|---------------------|-------------------------------|-------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------|
|                      | Sample size (assigned females at birth) | $M_{age}$ (months) $\pm$ SD | Sample size (assigned females at birth) | $M_{age}$ (months) $\pm$ SD |                 |                                                        |                              |                                 |                     |                               |                                     |                                              |                                                                               |
| Baiocco et al., 2015 | 20 (11)                                 | 41.75 $\pm$ 16.74           | 40 (21)                                 | 45.95 $\pm$ 17.30           | Europe          | Surrogacy                                              | Not reported                 | No differences                  | Journal article     | SDQ—hyperactivity             | 2.60 $\pm$ 2.04                     | 2.80 $\pm$ 2.30                              | Within the normal range                                                       |
|                      |                                         |                             |                                         |                             |                 |                                                        |                              |                                 |                     | SDQ—peer problems             | 1.15 $\pm$ 1.53                     | 1.78 $\pm$ 1.54                              | Within the normal range                                                       |
|                      |                                         |                             |                                         |                             |                 |                                                        |                              |                                 |                     | SDQ—prosocial behavior        | 8.55 $\pm$ 1.82                     | 8.53 $\pm$ 1.75                              | Within the normal range                                                       |
|                      |                                         |                             |                                         |                             |                 |                                                        |                              |                                 |                     | SDQ—total difficulties        | 7.05 $\pm$ 4.65                     | 8.90 $\pm$ 5.26                              | Within the normal range                                                       |
| Baiocco et al., 2018 | 70 (34)                                 | 46.80 $\pm$ 19.56           | 195 (104)                               | 52.44 $\pm$ 20.88           | Europe          | Surrogacy                                              | Higher for gay fathers       | Higher for gay fathers          | Journal article     | SDQ—prosocial behavior        | 4.77 $\pm$ 2.46                     | 5.33 $\pm$ 2.81                              | Within the normal range                                                       |
|                      |                                         |                             |                                         |                             |                 |                                                        |                              |                                 |                     | SDQ—total difficulties        | 6.43 $\pm$ 4.31                     | 8.14 $\pm$ 4.72                              | Within the normal range                                                       |
| Bos, 2010            | 36 (17)                                 | 81.00 $\pm$ 33.48           | 36 (17)                                 | 78.96 $\pm$ 31.08           | Europe          | Coparenting arrangements                               | Not reported                 | Higher for gay fathers          | Journal article     | SDQ—emotional problems        | 1.19 $\pm$ 0.50                     | 1.26 $\pm$ 0.27                              | Within the normal range                                                       |
|                      |                                         |                             |                                         |                             |                 |                                                        |                              |                                 |                     | SDQ—conduct problems          | 1.18 $\pm$ 0.33                     | 1.19 $\pm$ 0.25                              | Within the normal range                                                       |
|                      |                                         |                             |                                         |                             |                 |                                                        |                              |                                 |                     | SDQ—hyperactivity             | 1.53 $\pm$ 0.50                     | 1.60 $\pm$ 0.48                              | Within the normal range                                                       |
|                      |                                         |                             |                                         |                             |                 |                                                        |                              |                                 |                     | SDQ—prosocial behavior        | 2.67 $\pm$ 0.33                     | 2.67 $\pm$ 0.28                              | Within the normal range                                                       |
| Bos et al., 2018     | 52 (13)                                 | 135.48 $\pm$ 47.16          | 95 (45)                                 | 136.44 $\pm$ 44.76          | Europe          | Surrogacy and/or coparenting arrangements <sup>†</sup> | Not reported                 | No differences                  | Journal article     | SDQ—total difficulties        | 5.94 $\pm$ 5.38                     | 5.20 $\pm$ 4.24                              | Within the normal range                                                       |

**Table 1** (continued)

| Study               | Children of gay fathers                 |                             | Children of heterosexual parents        |                             | Geographic area | Conception background | Group differences for income | Group differences for education | Type of publication | Children's adjustment measure              | Children of gay fathers: $M \pm SD$ | Children of heterosexual parents: $M \pm SD$ | Comparative analysis: children of gay fathers vs. standardized normative data |
|---------------------|-----------------------------------------|-----------------------------|-----------------------------------------|-----------------------------|-----------------|-----------------------|------------------------------|---------------------------------|---------------------|--------------------------------------------|-------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------|
|                     | Sample size (assigned females at birth) | $M_{age}$ (months) $\pm$ SD | Sample size (assigned females at birth) | $M_{age}$ (months) $\pm$ SD |                 |                       |                              |                                 |                     |                                            |                                     |                                              |                                                                               |
| Carone et al., 2020 | 45 (22)                                 | 72.49 $\pm$ 24.92           | 45 (20)                                 | 73.62 $\pm$ 24.95           | Europe          | Surrogacy             | Not reported                 | No differences                  | Journal article     | SDQ—internalizing problems                 | 1.93 $\pm$ 1.71                     | 1.87 $\pm$ 1.62                              | Within the normal range                                                       |
|                     |                                         |                             |                                         |                             |                 |                       |                              |                                 |                     | SDQ—externalizing problems                 | 3.98 $\pm$ 2.46                     | 3.91 $\pm$ 2.58                              | Within the normal range                                                       |
|                     |                                         |                             |                                         |                             |                 |                       |                              |                                 |                     | SDQ—internalizing problems (teacher-rated) | 1.90 $\pm$ 1.70                     | 1.91 $\pm$ 1.67                              | Within the normal range                                                       |
|                     |                                         |                             |                                         |                             |                 |                       |                              |                                 |                     | SDQ—externalizing problems (teacher-rated) | 4.23 $\pm$ 3.42                     | 4.34 $\pm$ 2.79                              | Within the normal range                                                       |

**Table 1** (continued)

| Study               | Children of gay fathers                 |                             | Children of heterosexual parents        |                             | Geographic area | Conception background | Group differences for income |                              | Type of publication | Children's adjustment measure              | Children of gay fathers: $M \pm SD$ | Children of heterosexual parents: $M \pm SD$ | Comparative analysis: children of gay fathers vs. standardized normative data |
|---------------------|-----------------------------------------|-----------------------------|-----------------------------------------|-----------------------------|-----------------|-----------------------|------------------------------|------------------------------|---------------------|--------------------------------------------|-------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------|
|                     | Sample size (assigned females at birth) | $M_{age}$ (months) $\pm$ SD | Sample size (assigned females at birth) | $M_{age}$ (months) $\pm$ SD |                 |                       |                              |                              |                     |                                            |                                     |                                              |                                                                               |
| Carone et al., 2021 | 31 (14)                                 | 98.61 $\pm$ 22.08           | 30 (15)                                 | 97.27 $\pm$ 19.49           | Europe          | Surrogacy             | Higher for gay fathers       | No differences for education | Journal article     | SDQ—internalizing problems                 | 2.00 $\pm$ 1.90                     | 2.13 $\pm$ 1.83                              | Within the normal range                                                       |
|                     |                                         |                             |                                         |                             |                 |                       |                              |                              |                     | SDQ—externalizing problems                 | 3.97 $\pm$ 2.29                     | 4.00 $\pm$ 3.32                              | Within the normal range                                                       |
|                     |                                         |                             |                                         |                             |                 |                       |                              |                              |                     | SDQ—internalizing problems (teacher-rated) | 1.81 $\pm$ 1.42                     | 2.03 $\pm$ 2.04                              | Within the normal range                                                       |
|                     |                                         |                             |                                         |                             |                 |                       |                              |                              |                     | SDQ—externalizing problems (teacher-rated) | 3.32 $\pm$ 2.01                     | 3.47 $\pm$ 2.73                              | Within the normal range                                                       |



**Table 1** (continued)

| Study               | Children of gay fathers                 |                             | Children of heterosexual parents        |                             | Geographic area | Conception background | Group differences for income | Group differences for education | Type of publication | Children's adjustment measure              | Children of gay fathers: $M \pm SD$ | Children of heterosexual parents: $M \pm SD$ | Comparative analysis: children of gay fathers vs. standardized normative data |
|---------------------|-----------------------------------------|-----------------------------|-----------------------------------------|-----------------------------|-----------------|-----------------------|------------------------------|---------------------------------|---------------------|--------------------------------------------|-------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------|
|                     | Sample size (assigned females at birth) | $M_{age}$ (months) $\pm$ SD | Sample size (assigned females at birth) | $M_{age}$ (months) $\pm$ SD |                 |                       |                              |                                 |                     |                                            |                                     |                                              |                                                                               |
| Carone et al., 2024 | 25 (11)                                 | 101.80 $\pm$ 23.26          | 21 (12)                                 | 101.95 $\pm$ 27.09          | Europe          | Surrogacy             | Higher for gay fathers       | Higher for gay fathers          | Journal article     | SDQ—internalizing problems                 | 2.10 $\pm$ 1.88                     | 3.12 $\pm$ 2.56                              | Within the normal range                                                       |
|                     |                                         |                             |                                         |                             |                 |                       |                              |                                 |                     | SDQ—externalizing problems                 | 4.80 $\pm$ 2.66                     | 5.10 $\pm$ 2.81                              | Within the normal range                                                       |
|                     |                                         |                             |                                         |                             |                 |                       |                              |                                 |                     | SDQ—internalizing problems (teacher-rated) | 1.75 $\pm$ 2.91                     | 1.88 $\pm$ 2.30                              | Within the normal range                                                       |
|                     |                                         |                             |                                         |                             |                 |                       |                              |                                 |                     | SDQ—externalizing problems (teacher-rated) | 2.81 $\pm$ 4.72                     | 1.25 $\pm$ 1.75                              | Within the normal range                                                       |

**Table 1** (continued)

| Study                | Children of gay fathers                 |                             | Children of heterosexual parents        |                             | Geographic area | Conception background | Group differences for income | Group differences for education | Type of publication | Children's adjustment measure | Children of gay fathers: $M \pm SD$ | Children of heterosexual parents: $M \pm SD$ | Comparative analysis: children of gay fathers vs. standardized normative data |
|----------------------|-----------------------------------------|-----------------------------|-----------------------------------------|-----------------------------|-----------------|-----------------------|------------------------------|---------------------------------|---------------------|-------------------------------|-------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------|
|                      | Sample size (assigned females at birth) | $M_{age}$ (months) $\pm$ SD | Sample size (assigned females at birth) | $M_{age}$ (months) $\pm$ SD |                 |                       |                              |                                 |                     |                               |                                     |                                              |                                                                               |
| Costa et al., 2021   | 8 (0)                                   | Not reported                | 20 (9)                                  | Not reported                | Europe          | Adoption              | Higher for gay fathers       | No differences                  | Journal article     | SDQ—externalizing problems    | 1.96 $\pm$ 0.48                     | 2.06 $\pm$ 0.47                              | Within the normal range                                                       |
|                      |                                         |                             |                                         |                             |                 |                       |                              |                                 |                     | SDQ—internalizing problems    | 1.72 $\pm$ 0.46                     | 1.77 $\pm$ 0.49                              | Within the normal range                                                       |
|                      |                                         |                             |                                         |                             |                 |                       |                              |                                 |                     | SDQ—negative affect           | 2.41 $\pm$ 1.01                     | 2.50 $\pm$ 1.04                              | Within the normal range                                                       |
|                      |                                         |                             |                                         |                             |                 |                       |                              |                                 |                     | SDQ—prosocial behavior        | 2.18 $\pm$ 0.53                     | 2.24 $\pm$ 0.53                              | Within the normal range                                                       |
|                      |                                         |                             |                                         |                             |                 |                       |                              |                                 |                     | SDQ—positive affect           | 3.39 $\pm$ 0.83                     | 3.36 $\pm$ 0.78                              | Within the normal range                                                       |
| D'Amore et al., 2023 | 67 (31)                                 | 42.24 $\pm$ 25.44           | 67 (31)                                 | 43.44 $\pm$ 24.84           | Europe          | Surrogacy             | Higher for gay fathers       | Higher for gay fathers          | Journal article     | CBCL—internalizing            | 3.40 $\pm$ 2.57                     | 6.43 $\pm$ 5.86                              | Within the normal range                                                       |
|                      |                                         |                             |                                         |                             |                 |                       |                              |                                 |                     | CBCL—externalizing            | 4.58 $\pm$ 3.73                     | 10.30 $\pm$ 7.46                             | Within the normal range                                                       |

**Table 1** (continued)

| Study             | Children of gay fathers                 |                             | Children of heterosexual parents        |                             | Geographic area | Conception background | Group differences for income | Group differences for education | Type of publication | Children's adjustment measure      | Children of gay fathers: $M \pm SD$ | Children of heterosexual parents: $M \pm SD$ | Comparative analysis: children of gay fathers vs. standardized normative data |
|-------------------|-----------------------------------------|-----------------------------|-----------------------------------------|-----------------------------|-----------------|-----------------------|------------------------------|---------------------------------|---------------------|------------------------------------|-------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------|
|                   | Sample size (assigned females at birth) | $M_{age}$ (months) $\pm SD$ | Sample size (assigned females at birth) | $M_{age}$ (months) $\pm SD$ |                 |                       |                              |                                 |                     |                                    |                                     |                                              |                                                                               |
| Farr et al., 2010 | 29 (10)                                 | 35 $\pm$ 13                 | 50 (26)                                 | 36 $\pm$ 16                 | North America   | Adoption              | No differences               | No differences                  | Journal article     | CBCL—internalizing                 | 43.19 $\pm$ 10.31                   | 44.03 $\pm$ 9.39                             | Within the normal range                                                       |
|                   |                                         |                             |                                         |                             |                 |                       |                              |                                 |                     | CBCL—externalizing                 | 46.76 $\pm$ 9.76                    | 47.21 $\pm$ 8.31                             | Within the normal range                                                       |
|                   |                                         |                             |                                         |                             |                 |                       |                              |                                 |                     | CBCL—total                         | 44.60 $\pm$ 9.93                    | 46.29 $\pm$ 9.54                             | Within the normal range                                                       |
|                   |                                         |                             |                                         |                             |                 |                       |                              |                                 |                     | CBCL—internalizing (teacher-rated) | 46.20 $\pm$ 8.19                    | 45.66 $\pm$ 8.97                             | Within the normal range                                                       |
|                   |                                         |                             |                                         |                             |                 |                       |                              |                                 |                     | CBCL—externalizing (teacher-rated) | 50.05 $\pm$ 8.03                    | 50.72 $\pm$ 9.48                             | Within the normal range                                                       |
|                   |                                         |                             |                                         |                             |                 |                       |                              |                                 |                     | CBCL—total (teacher-rated)         | 48.20 $\pm$ 8.19                    | 48.84 $\pm$ 8.76                             | Within the normal range                                                       |
|                   |                                         |                             |                                         |                             |                 |                       |                              |                                 |                     | CBCL—total                         | 47.89 $\pm$ 12.52                   | 48.02 $\pm$ 10.46                            | Within the normal range                                                       |
|                   |                                         |                             |                                         |                             |                 |                       |                              |                                 |                     | CBCL—total (teacher-rated)         | 51.62 $\pm$ 7.62                    | 48.46 $\pm$ 7.90                             | Within the normal range                                                       |
|                   |                                         |                             |                                         |                             |                 |                       |                              |                                 |                     | CBCL—externalizing                 | 50.02 $\pm$ 10.04                   | 49.50 $\pm$ 9.18                             | Within the normal range                                                       |
| Farr et al., 2019 | 29 (11)                                 | 98.52 $\pm$ 17.64           | 41 (21)                                 | 100.44 $\pm$ 21.24          | North America   | Adoption              | Higher for gay fathers       | Not reported                    | Journal article     |                                    |                                     |                                              |                                                                               |

**Table 1** (continued)

| Study                  | Children of gay fathers                 |                             | Children of heterosexual parents        |                             | Geographic area | Conception background | Group differences for income | Group differences for education | Type of publication | Children's adjustment measure | Children of gay fathers: $M \pm SD$ | Children of heterosexual parents: $M \pm SD$ | Comparative analysis: children of gay fathers vs. standardized normative data |
|------------------------|-----------------------------------------|-----------------------------|-----------------------------------------|-----------------------------|-----------------|-----------------------|------------------------------|---------------------------------|---------------------|-------------------------------|-------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------|
|                        | Sample size (assigned females at birth) | $M_{age}$ (months) $\pm$ SD | Sample size (assigned females at birth) | $M_{age}$ (months) $\pm$ SD |                 |                       |                              |                                 |                     |                               |                                     |                                              |                                                                               |
| Goldberg & Smith, 2013 | 35 (15)                                 | 26.40 $\pm$ 6.24            | 45 (26)                                 | 28.92 $\pm$ 7.32            | North America   | Adoption              | No differences               | No differences                  | Journal article     | CBCL—internalizing            | 40.78 $\pm$ 1.26                    | 42.57 $\pm$ 1.02                             | Within the normal range                                                       |
|                        |                                         |                             |                                         |                             |                 |                       |                              |                                 |                     | CBCL—externalizing            | 45.93 $\pm$ 1.42                    | 45.86 $\pm$ 1.14                             | Within the normal range                                                       |

**Table 1** (continued)

| Study                 | Children of gay fathers                 |                             | Children of heterosexual parents        |                             | Geographic area | Conception background | Group differences for income |              | Group differences for education | Type of publication | Children's adjustment measure          | Children of gay fathers: $M \pm SD$ | Children of heterosexual parents: $M \pm SD$ | Comparative analysis: children of gay fathers vs. standardized normative data |
|-----------------------|-----------------------------------------|-----------------------------|-----------------------------------------|-----------------------------|-----------------|-----------------------|------------------------------|--------------|---------------------------------|---------------------|----------------------------------------|-------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------|
|                       | Sample size (assigned females at birth) | $M_{age}$ (months) $\pm$ SD | Sample size (assigned females at birth) | $M_{age}$ (months) $\pm$ SD |                 |                       | Not reported                 | Not reported |                                 |                     |                                        |                                     |                                              |                                                                               |
| Golombok et al., 2014 | 41 (9)                                  | 73.12 $\pm$ 17.52           | 49 (24)                                 | 72.00 $\pm$ 16.60           | Europe          | Adoption              |                              |              |                                 | Journal article     | SDQ—conduct problems                   | 2.12 $\pm$ 2.10                     | 2.90 $\pm$ 1.80                              | Within the normal range                                                       |
|                       |                                         |                             |                                         |                             |                 |                       |                              |              |                                 |                     | SDQ—hyperactivity                      | 4.61 $\pm$ 2.40                     | 5.18 $\pm$ 2.79                              | Within the normal range                                                       |
|                       |                                         |                             |                                         |                             |                 |                       |                              |              |                                 |                     | SDQ—emotional problems                 | 1.83 $\pm$ 2.49                     | 1.98 $\pm$ 1.77                              | Within the normal range                                                       |
|                       |                                         |                             |                                         |                             |                 |                       |                              |              |                                 |                     | SDQ—peer problems                      | 1.61 $\pm$ 1.73                     | 1.51 $\pm$ 1.68                              | Within the normal range                                                       |
|                       |                                         |                             |                                         |                             |                 |                       |                              |              |                                 |                     | SDQ—conduct problems (teacher-rated)   | 1.62 $\pm$ 2.26                     | 1.82 $\pm$ 2.38                              | Within the normal range                                                       |
|                       |                                         |                             |                                         |                             |                 |                       |                              |              |                                 |                     | SDQ—hyperactivity (teacher-rated)      | 4.75 $\pm$ 2.79                     | 4.95 $\pm$ 3.31                              | Within the normal range                                                       |
|                       |                                         |                             |                                         |                             |                 |                       |                              |              |                                 |                     | SDQ—emotional problems (teacher-rated) | 1.34 $\pm$ 1.53                     | 2.05 $\pm$ 2.36                              | Within the normal range                                                       |
|                       |                                         |                             |                                         |                             |                 |                       |                              |              |                                 |                     | SDQ—peer problems (teacher-rated)      | 1.78 $\pm$ 2.53                     | 2.12 $\pm$ 1.76                              | Within the normal range                                                       |

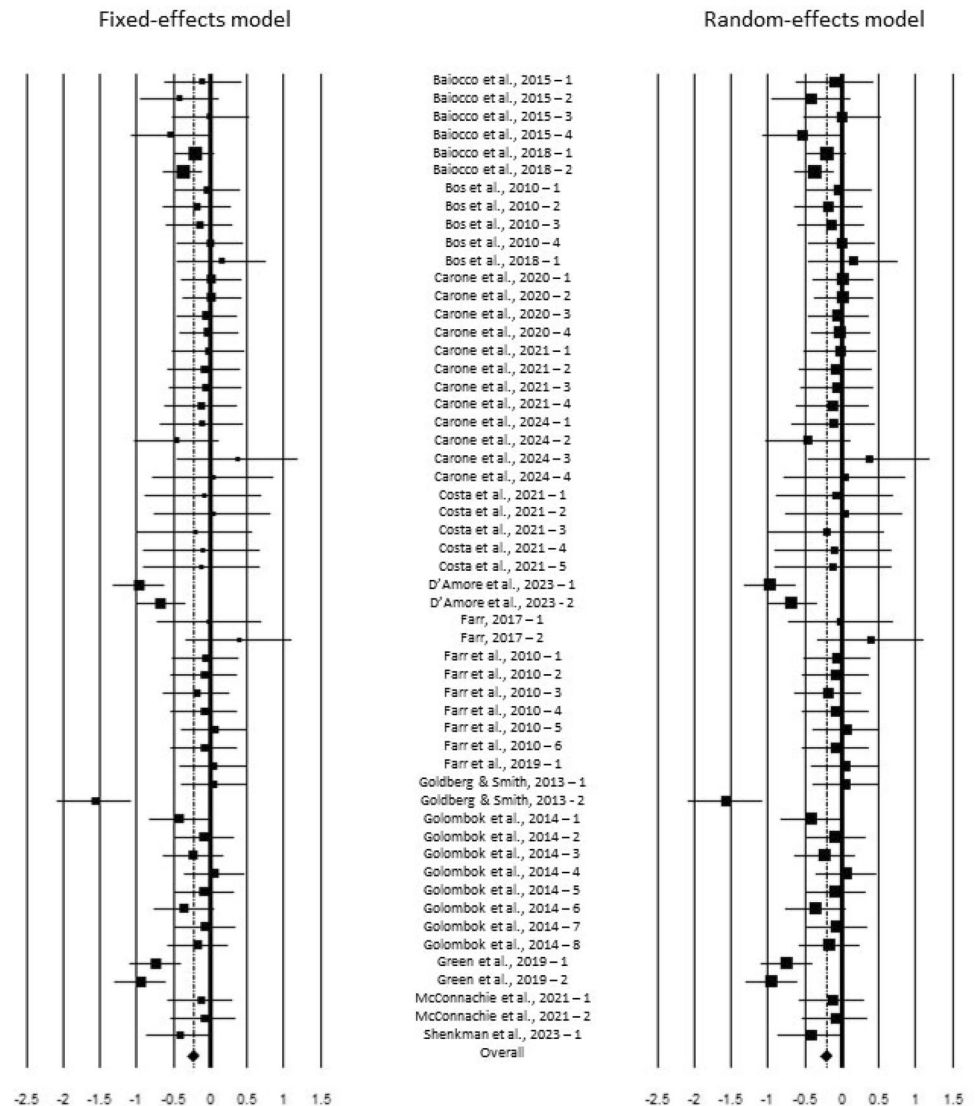
**Table 1** (continued)

| Study                    | Children of gay fathers                 |                             | Children of heterosexual parents        |                             | Geographic area | Conception background | Group differences for income |                        | Type of publication | Children's adjustment measure | Children of gay fathers: $M \pm SD$ | Children of heterosexual parents: $M \pm SD$ | Comparative analysis: children of gay fathers vs. standardized normative data |
|--------------------------|-----------------------------------------|-----------------------------|-----------------------------------------|-----------------------------|-----------------|-----------------------|------------------------------|------------------------|---------------------|-------------------------------|-------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------|
|                          | Sample size (assigned females at birth) | $M_{age}$ (months) $\pm$ SD | Sample size (assigned females at birth) | $M_{age}$ (months) $\pm$ SD |                 |                       | Not reported                 | Not reported           |                     |                               |                                     |                                              |                                                                               |
| Green et al., 2019       | 68 (36)                                 | 50.88 $\pm$ 26.64           | 68 (36)                                 | 50.88 $\pm$ 26.64           | North America   | Surrogacy             | Not reported                 | Not reported           | Journal article     | CBCL—internalizing            | 41.76 $\pm$ 10.02                   | 50.56 $\pm$ 8.61                             | Within the normal range                                                       |
| McConnachie et al., 2021 | 33 (6)                                  | 141.24 $\pm$ 13.20          | 43 (20)                                 | 139.20 $\pm$ 12.60          | Europe          | Adoption              | Not reported                 | No differences         | Journal article     | SDQ—internalizing problems    | 5.16 $\pm$ 3.85                     | 5.40 $\pm$ 1.56                              | Within the normal range                                                       |
| Shenkman et al., 2023    | 39 (16)                                 | 71.40 $\pm$ 23.90           | 36 (20)                                 | 74.80 $\pm$ 26.00           | Asia            | Surrogacy             | Higher for gay fathers       | Higher for gay fathers | Journal article     | SDQ—externalizing problems    | 8.22 $\pm$ 4.40                     | 8.96 $\pm$ 6.68                              | Within the normal range                                                       |
|                          |                                         |                             |                                         |                             |                 |                       |                              |                        |                     | SDQ—externalizing problems    | 5.40 $\pm$ 3.86                     | 6.90 $\pm$ 3.21                              | Within the normal range                                                       |

$M$  mean,  $SD$  standard deviation,  $SDQ$  Strengths and Difficulties Questionnaire,  $CBCL$  Child Behavior Checklist. Children's adjustment measures were parent-rated unless otherwise reported. To facilitate the use of age as a moderator variable, sample age (reported in years) in the retrieved studies was converted into months. From the article: "For the male same-sex parents, since there were no adopted, step-, or foster children in our study sample, two possibilities exist: The fathers became parents through surrogacy, or they shared child rearing with a woman or women who became pregnant with their sperm. In Dutch law, there are numerous barriers to surrogacy. For example, it is illegal to advertise that one seeks a surrogate, or for agencies to mediate between the intended gay parent, a surrogate, and an egg donor (Margalit, in press). Therefore, Dutch men who desire parenthood through surrogacy must have the financial resources to go to other countries where surrogacy is allowed (Curry-Sumner & Vonk, 2013). Due to the exorbitant costs of such arrangements, many participating fathers from same-sex parent households in the current study may be involved in a co-parenting construction with the mother(s) of the child" (p. 161)



**Fig. 2** Forest plots for the fixed-effects (left) and random-effects (right) models. *Note.* Black squares represent the effect size of each comparison, with size representing the relative comparison weight. Horizontal lines depict each comparison's 95% confidence interval (CI). Studies represented on the left and right of the vertical line (y-axis) reported higher adjustment scores for children of gay fathers and heterosexual parents, respectively. Studies that cross the y-axis found no difference between these groups. The diamond at the bottom of the forest plot displays the overall effect size and confidence interval from combining all individual comparisons



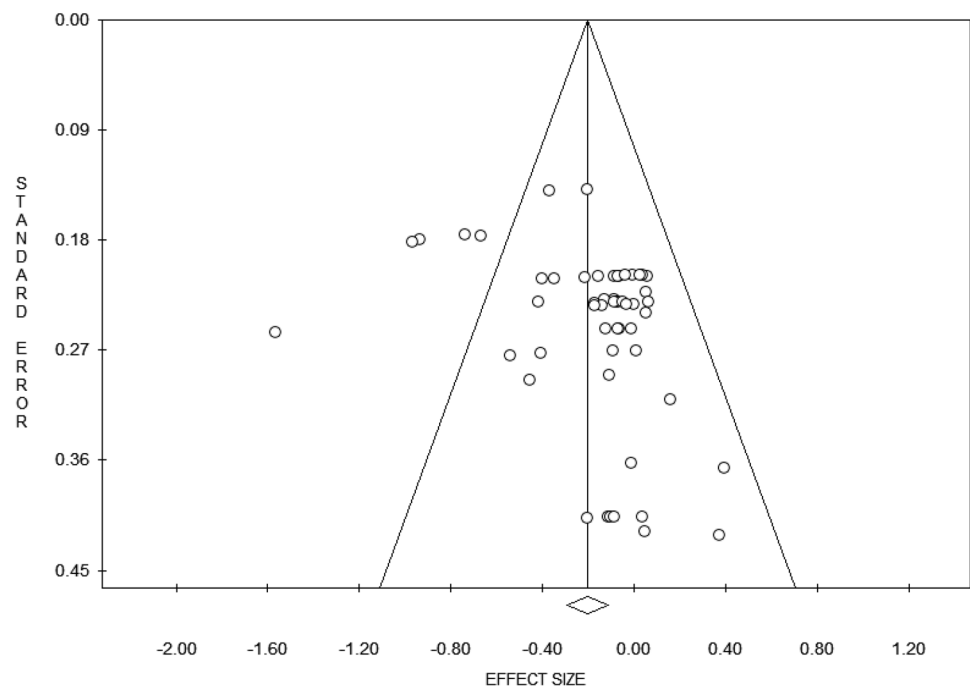
more noticeable among children of gay fathers, particularly in samples with a greater proportion of younger children and gay fathers who were more educated than their heterosexual counterparts. No effects of publication year ( $p=0.178$ ), geographic area ( $p=0.535$ ), conception method ( $p=0.258$ ), group differences for income ( $p=0.974$ ), publication type ( $p=0.639$ ), quality assessment ( $p=0.129$ ), or psychological adjustment measure ( $p=0.125$ ) were found. Regarding publication type, the moderator analysis could not be performed because the grey literature identified through the screening process (Carone et al., 2024; D'Amore et al., 2023) has been peer-reviewed and published as journal articles while the present work was being written. Therefore, it was included as peer-reviewed material.

## Discussion

The present meta-analysis aimed at assessing the psychological adjustment of children raised in planned gay father families, in comparison with normative data and data related to children

raised in heterosexual parent households. Consistent with our hypotheses and previous evidence (Fedewa et al., 2015; Miller et al., 2017; Suárez et al., 2023; Zhang et al., 2023), the results indicated that, for all the included studies, the psychological adjustment of children raised in planned gay father families fell into the normal range, when compared with normative data. Also, children of gay fathers displayed significantly better adjustment than children of heterosexual parents. Finally, the moderator analysis yielded significant results for the potential roles played by children's assigned sex at birth and age, as well as parental education, while detecting no differences based on the path to parenthood (surrogacy versus adoption/foster care). More specifically, better psychological adjustment in children of gay fathers was more appreciable for samples with a higher percentage of female children, younger children, and gay fathers reporting a higher educational level than their heterosexual counterparts. Taken together, these findings confirm the results of previous studies indicating that, regardless of the path to parenthood, planned gay father families constitute a healthy context for children to flourish (e.g.,

**Fig. 3** Funnel plot. *Note.* Each dot represents a single effect size. The standard errors of the effect estimates are represented on the y-axis, with larger studies positioned near the top. The effect sizes for each comparison are shown on the x-axis. When bias and between-study heterogeneity are absent, the scatter is only caused by sampling variance and the figure resembles a symmetrical inverted funnel



Bos, 2010; Carone et al., 2018b; Costa et al., 2021; Farr, 2017; Golombok et al., 2018; Green et al., 2019).

Several possible factors may have contributed to explaining these results. Because parenthood is not a common choice for gay men, becoming a parent may be considered a triumphant departure from the prevailing notion that gay men are not meant to be parents (Armesto, 2002). This sense of triumph may shape their parenting and positively impact the psychological well-being of their children. Additionally, due to the intentional and carefully planned nature of gay fathers' journey to parenthood, the narrative surrounding how their children "came to be" (e.g., who and what processes were involved) is likely to become a significant topic of communication, culture, and lore within gay father families (Farr & Tornello, 2022).

Moreover, the absence of constraints associated with traditional family roles may allow for innovation and creativity in gay father families, with respect to the negotiation of family responsibilities and coparenting tasks (Cao et al., 2016). In their navigation of the coparenting tasks, gay coparents have been shown to exhibit supportive behaviors (e.g., cooperation, warmth) associated with better child adjustment (e.g., Carone et al., 2017; Farr et al., 2019), while avoiding those considered detrimental (e.g., competition, coldness). However, it cannot be excluded that gay men's embrace of fatherhood may involve adherence to conventional heterosexual gendered parental roles, potentially fostering a sense of belonging, social acceptance, and support from friends and family members. This, in turn, could positively influence the adjustment of their children (Leal et al., 2021; Sumontha et al., 2016).

Despite legal disparities that may limit their family status (e.g., Patterson et al., 2021), gay fathers often go to great lengths to ensure emotional and practical security for their children and families by establishing safeguards such as shared last names and documented parental wishes (Wheeler et al., 2018). These dynamics have been connected to stronger parent–child relationships, with positive cascade effects for children's psychological adjustment. Similar to other parents with minoritized sexual identities, gay fathers may employ unique socialization practices that equip their children with specific skills, such as the skills needed to disclose their unique family structure to others, affirm their family diversity, and effectively respond to microaggressions and discrimination (Carone et al., 2022; Shenkman et al., 2023; Simon & Farr, 2022). In doing so, gay fathers may instill values of pride, acceptance, and inclusivity, offering their children stability, a sense of belonging, and protection against societal and interpersonal stigma (Oakley et al., 2017).

Finally, previous research has shown that growing up in families headed by parents with minoritized sexual identities may expose children to a more open and democratic home environment with a less formal enactment of traditional role models (Bos & Gartrell, 2020). In these families, parents frequently model open-mindedness and critical thinking in conversations with children about gender, sex, and sexuality, and they often teach thoughtful engagement in religious, civic, and political discourse (Farr et al., 2022). This flexibility, openness, and critical thinking are beneficial to all children (American Psychological Association, 2020).

The present meta-analysis also explored the possible moderating role played by several demographic variables in the comparison of children's adjustment in gay and heterosexual parent families. Child gender was a significant moderator: among samples with a higher proportion of female children, children of gay fathers showed better adjustment than children of heterosexual parents (as also found by Green et al., 2019). It has been suggested that daughters are more sensitive to parental mental health issues than sons (e.g., Bouma et al., 2008). Considering previous evidence that gay fathers are characterized by higher levels of subjective well-being in comparison to heterosexual parents (Erez & Shenkman, 2016; Golombok et al., 2014), it is possible that daughters of gay fathers may benefit more (in terms of psychological adjustment) from parental positive mental health than sons. Also, considering that mothers tend to be more emotionally expressive and supportive of children's negative emotions than fathers (Brown et al., 2015), it cannot be excluded that differences in child psychological adjustment by child gender may also relate to the socialization of emotional expression experienced by children of heterosexual mothers in their family.

A further significant moderator was child age, as differences in the psychological adjustment of children of gay fathers were less appreciable as they aged, relative to children of heterosexual parents. In accordance with the psychosocial theory of adjustment to adoption (Brodzinsky, 1987), we may suggest that older children and their gay fathers had successfully acknowledged and managed the unique set of psychosocial tasks related to their conception background, with positive consequences for their psychological adjustment. This idea aligns with previous evidence indicating that both adoptive gay fathers and gay fathers through surrogacy tend to start the disclosure process of their children's conception background when their children are quite young (Blake et al., 2016; Carone et al., 2018a; Mellish et al., 2013), thereby offering them more time to familiarize themselves with this information and integrate it into their identity.

A third significant moderator variable was group differences for education, with greater differences in children's psychological adjustment observed when gay fathers' education was significantly higher than that of heterosexual parents. Several mechanisms have been hypothesized to link parents' educational level with children's adjustment, including the theory that parents with lower educational levels are likely to have fewer resources available to children, which may have negative effects for their healthy development (Bradley & Corwyn, 2002). Moreover, lower parental education is more likely to be associated with poorer social and cognitive stimulation, which can also be detrimental for child adjustment (Romeo et al., 2018; Rosen et al., 2018). Finally, it is worth noting that families headed by parents

with minoritized sexual identities often report higher socioeconomic status (Gates, 2012). However, in the present meta-analysis, parent income had no significant moderating effect for family group differences, even though educational level and income are typically highly correlated (Blanden, 2013). Thus, further research is needed to disentangle the role of different socioeconomic factors in promoting child adjustment in gay father families.

Some limitations of the present meta-analysis should be considered when interpreting the results. First, the studies included only families from Western, Educated, Industrialized, Rich, and Democratic (WEIRD) or Westernized countries (e.g., Israel). Therefore, the results may not account for several sociocultural aspects (e.g., parents' class and socioeconomic status, education level, parents and children's race/ethnic background) that shape the experiences of gay father families and, in turn, the well-being of their children. To the extent that studies in non-WEIRD countries are not as scarce as can be expected (Costa & Shenkman, 2020), future meta-analyses should adopt a culturally situated approach and put every effort to include such studies, (e.g., considering also qualitative studies and those published in Spanish or Portuguese) to encompass the realities of families headed by parents with minoritized identities and understand the impact of their unique history and political climate on the children's psychological adjustment.

Second, the retention rates were neither included nor discriminated in the outcome analysis, nor were the agreement levels between teachers and parents (where available) about children's psychological adjustment. Also, the final number of studies was limited to 17. Since research on the psychological adjustment of children raised in planned gay father families is only recent (having been initiated approximately two decades ago), the available literature is still limited. In addition, several articles provided undistinguished data for same-gender parent families, treating lesbian mother and gay father families as one group. As our goal was to include as many relevant articles as possible, we contacted the authors of these studies and asked them to provide separate data for gay father families. However, it was not always possible to retrieve this information. Another factor contributing to the small number of included articles was the choice of the SDQ and CBCL as specific measures of psychological adjustment. As discussed, these measures were selected based on their psychometric properties and high comparability. Also, during the selection process, no article was excluded for having employed a different measure of children's psychological adjustment, thereby suggesting that the SDQ and CBCL are the most frequently used questionnaires in the considered population.

A further limitation regards the presence of a publication bias. Publication bias has often been observed across meta-analyses on similar topics (Miller et al., 2017; Suárez et al.,

2023; Zhang et al., 2023). However, to reduce the impact of this bias, the present meta-analysis also included data from the grey literature in the initial screening process. Nevertheless, it must be noted that, at the time of writing this article, the initially included grey literature (Carone et al., 2024; D'Amore et al., 2023) had undergone the peer-review process. Therefore, it was included as peer-reviewed journal articles, which did not allow for a moderator analysis on publication type. Also, to determine possible sources of publication bias, specific moderators (e.g., publication year, geographic area, publication type, quality assessment score) were analyzed, and none yielded a significant effect. Finally, given the small number of available data, it was not possible to assess differences between gay fathers and heterosexual parents on single aspects of children's psychological adjustment (e.g., internalizing vs. externalizing behaviors, emotional vs. conduct problems). As the research on planned gay father families increases and more data become available, more adequate and statistically generalizable analyses will become possible. Relatedly, although not specified in all the included studies, it is likely that in the comparison group of heterosexual parent families, children were born through unassisted conception. Future studies could compare children's psychological adjustment of planned gay fathers and planned heterosexual parent families who had children through the same paths (e.g., adoption/foster care, surrogacy).

## Conclusions

The present meta-analysis offers a fully up-to-date overview of the differences in psychological adjustment between children raised in planned gay father families and children raised in heterosexual parent families. It has been recommended that it is crucial to shift LGBTQ+ parenting research away from a deficit-oriented, comparison-based approach (e.g., examining whether children of gay fathers experience more behavior problems than those of heterosexual parents) to promote deeper investigation into the unique strengths, resiliencies, and family practices and processes that contribute to positive child outcomes in these families (Farr et al., 2022; Fish & Russell, 2018).

However, numerous state and national contexts have anti-LGBTQ+ family building bills under review, and surrogacy and adoption as legally viable paths to parenthood are available to gay men in only a few geographic contexts worldwide. Thus, further research aimed at identifying and documenting disparities in the family lives of parents with minoritized sexual identities and their children, alongside the detrimental effects of these disparities and anti-LGBTQ+ political rhetoric propaganda (Salvati et al., 2020, 2024a, 2024b) on child adjustment, is needed. In this vein, the results of this meta-analysis offer empirical evidence contradicting the notion that gay fathers through adoption or surrogacy are unfit to

raise children. Instead, the evidence shows that gay fathers are at least “as suitable as” heterosexual parents, thereby justifying their worthiness of legal recognition.

The present results also have implications for communities, schools, psychotherapists, and other practitioners who interact with planned gay father families, as they may contribute (even unintentionally) to overt or covert stigmatization. Research suggests that LGBTQ+ training for teachers (Bochicchio et al., 2019) and mental health practitioners (Carone et al., 2023) may effectively combat stigma against these families. Moreover, there is a need to support and uphold the legal rights of gay couples' pursuit of parenthood through diverse routes. Finally, programs are needed to encourage and assist prospective gay fathers who may have doubts about their parenting abilities.

Recognizing that supportive environments are undeniably positive for children of gay fathers, it is crucial to reduce discrimination at both interpersonal and institutional levels (Patterson et al., 2021). Thus, policymakers, practitioners, and the scientific community must collaborate to support families headed by parents with minoritized sexual identities. It is imperative to gain more insight into the ways in which communities worldwide can foster the positive development of children in these families, irrespective of their conception background, and how legal and policy contexts impact the lives of planned gay fathers and their children.

**Supplementary Information** The online version contains supplementary material available at <https://doi.org/10.1007/s13178-024-01007-1>.

**Author Contribution** N.C., G.C., and V.L.: conception and design. G.C. and M.Q: data curation and qualitative assessment. G.C.: data analyses. N.C. and G.C.: first draft. M.Q., R.B., and V.L.: revisions of following drafts. All authors read and approved the final manuscript.

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**Data Availability** Data are available upon reasonable request from the corresponding author.

## Declarations

**Competing Interests** The authors declare no competing interests.

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