



# Assisted Conception Socialization Self-Efficacy Among Israeli Lesbian, Gay, and Heterosexual Parent Families and its Association with Child Externalizing Problems

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## Abstract

This questionnaire-based study compared 36 Israeli lesbian mother families ( $n = 72$  lesbian mothers) formed by donor insemination, 39 Israeli gay father families ( $n = 78$  gay fathers) formed by gestational surrogacy, and 36 Israeli heterosexual parent families ( $n = 72$  heterosexual parents) formed by assisted reproduction (without donated gametes), all with a target child aged 3–10 years. The families were examined for parents' assisted conception socialization self-efficacy, depression, negative and positive affect, life satisfaction, positivity, resilience, social support, and child externalizing problems. Multiple factors associated with child externalizing problems were also examined. Multilevel modeling analyses indicated that parents' assisted conception socialization self-efficacy did not differ between family groups; however, lesbian mothers and gay fathers reported fewer child externalizing problems and greater social support, relative to heterosexual parents. Also, lesbian mothers—but not gay fathers—reported lower levels of depression, greater life satisfaction, and more positivity than did heterosexual parents. Finally, irrespective of family type, greater assisted conception socialization self-efficacy was associated with fewer parent-reported child externalizing problems. Findings are interpreted in light of the cultural socialization framework and Israel's familistic and pronatalist environment. Implications for health professionals, educators, and policymakers working with diverse family forms are discussed.

**Keywords** Parental self-efficacy · Child externalizing problems · Same-sex parents · Lesbian · Gay

## Highlights

- Parents' assisted conception socialization self-efficacy and child externalizing problems were compared between lesbian, gay, and heterosexual parent families.
- Parents' assisted conception socialization self-efficacy did not differ between family groups.
- Lesbian mothers and gay fathers reported fewer child externalizing problems and greater social support, relative to heterosexual parents.
- Irrespective of family type, greater assisted conception socialization self-efficacy was associated with fewer parent-reported child externalizing problems.

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Worldwide, the number of families comprised of lesbian or gay parents with children conceived via assisted reproduction is growing (Berkowitz, 2020; Bos & Gartrell, 2020). Alongside this increase, a more liberal legal climate is emerging around sexual and gender minority civil rights, attitudes towards diverse family forms are becoming more accepting, and access to assisted reproduction technologies is expanding (Goldberg et al., 2018). In this vein, a corpus of research across various socio-cultural contexts has documented that neither parents' sexual orientation nor assisted conception has a detrimental effect on the adjustment of

sexual minority parents and their children (Carneiro et al., 2017; Costa et al., 2021; Golombok, 2020; Shenkman et al., 2020). However, researchers have underscored the need to focus more attention on family processes characterizing sexual minority parent families, which may be associated with child adjustment (Golombok, 2020; Patterson, 2017).

Children of sexual minority parents are vulnerable to experiences of difference and microaggression from peers (Carone et al., 2022; Farr et al., 2016a, 2016b). However, their parents are likely to speak with them early about the uniqueness and challenges associated with being raised in a sexual minority parent family (Carone et al., 2020b; Oakley et al., 2017; Wyman Battalen et al., 2019). Studies on adoptive sexual minority parent families have shown that the extent to which parents fare well and feel confident in their ability to effectively communicate about family diversity is essential, and can impact children's adjustment (Farr & Vázquez, 2020; Wyman Battalen et al., 2019). While less is known about the influence of parents' mental health and socialization self-efficacy among families formed via assisted reproduction, many international scholars (Carone et al., 2021a; Goldberg et al., 2016; Golombok, 2020) have marked this issue as a recommended research agenda. Therefore, the current study investigated the effects of parents' mental health and assisted conception socialization self-efficacy on child externalizing problems, among Israeli lesbian, gay, and heterosexual parent families formed by assisted reproduction. In light of evidence of associations between child externalizing problems and parents' self-efficacy and mental health, the former was chosen as an indicator of child adjustment (Albanese et al., 2019; Johnston et al., 2019; Jones & Prinz, 2005; Mäntymaa et al., 2012; Mouton et al., 2018).

Of note, most studies on the adjustment of lesbian and gay parents and their children have been conducted in Euro-American, industrialized contexts, generally comparing sexual minority parent families with heterosexual parent families (Costa & Shenkman, 2020). Such a between-group approach is likely to overlook nuanced family dynamics and unique family processes that are specific to sexual minority parent families (Fish & Russell 2018). However, the between-group approach remains essential for identifying and documenting health and well-being disparities among sexual minority parents and their children, and for securing fundamental rights for these families (e.g., marital and parental rights; American Psychological Association et al., 2015). Therefore, it remains essential to compare lesbian mothers, gay fathers, and heterosexual parents on their assisted conception socialization self-efficacy, depression, negative and positive affect, life satisfaction, positivity, resilience, social support, and reports of child externalizing problems. Such comparisons are especially needed in contexts outside of Europe and the United States, as, in these contexts, the legal

rights of sexual minority parent families are less secured (Costa & Shenkman, 2020).

## The Israeli Context

The current study was conducted in Israel, which represents a unique and rich environment for studying assisted conception socialization among diverse family forms. The Israeli society is familistic and pronatalist (Birenbaum-Carmeli & Dirnfeld, 2008), and Israel has one of the highest fertility rates of all Organisation for Economic Co-operation and Development (OECD) countries (OECD, 2019), as well as the world's highest rate of in vitro fertilization (IVF) clinics per capita (Birenbaum-Carmeli, 2016). Biblical commandments to “be fruitful and multiply,” recurrent wars, Jewish religious openness to assisted reproductive technology, and the traumas of the Holocaust have all been proposed as contributing factors to this culture (Birenbaum-Carmeli, 2016; Shenkman et al., 2021).

However, Israeli legislation places significant restrictions on sexual minority people—and especially gay men—who wish to become parents. In particular, adoption opportunities for sexual minority people are extremely curtailed (Gross, 2014). Furthermore, prior to the Supreme Court's extension of access to surrogacy to gay couples (and single men) in July 2021, surrogacy services were illegal for same-sex couples in Israel (Costa & Shenkman, 2020; Shenkman, 2021), and only permitted for heterosexual couples or single women who were otherwise unable to have a child. Therefore, gay men who wanted to conceive via surrogacy were forced to turn to international surrogacy services, usually in only a few locations within the United States (e.g., California, Oregon). Notably, in 2020, Israel's Supreme Court ruled that these surrogacy laws were discriminatory, because they blocked single men and gay couples from forming a family through surrogacy; it therefore gave the Knesset (i.e., the Israeli Parliament) a year to pass a new and non-discriminatory law (Yosef-Yamin, 2021). The Israeli Knesset argued that the Parliament could not pass the new law due to political disagreement, and it invited the Supreme Court to take action independently. As a result, the Supreme Court ruled that, as of July 2021, all legal definitions that prevented gay men's access to surrogacy services would be changed within 6 months (Bendel & Peleg, 2021).

## The Adjustment of Children Born Through Assisted Reproduction Among Diverse Family Forms

Prior research has generally established that child adjustment is unrelated to parents' sexual orientation or

conception method (e.g., Carone et al., 2020a; Carone et al., 2021b; Farr, 2017; Golombok, 2020). However, exceptions to these findings have pointed to better adjustment in the children of sexual minority parents compared to those of heterosexual parents (e.g., Baiocco et al., 2018; Bos & Gartrell, 2020; Fedewa et al., 2015; Patterson, 2017). For example, in the United States National Longitudinal Lesbian Family Study, the 10-year-old daughters of lesbian mothers scored significantly lower on externalizing problems relative to girls from a normative sample (Gartrell et al., 2005). Further international studies found that the children of lesbian mothers conceived through donor insemination and the children of gay fathers conceived through surrogacy showed fewer adjustment problems than the children of heterosexual parents (Baiocco et al., 2018; Carone et al., 2018b; Green et al., 2019). All of these studies measured child adjustment via parent reports. While it may be the case that these parents reported an optimistic picture, studies based on the self-report of children of lesbian mothers have found similar findings. For example, in a Dutch study, adolescent children raised in lesbian two-mother families scored higher on self-esteem and lower on conduct problems than their counterparts raised in mother–father families (Bos et al., 2015). Similarly, lower levels of depression, anxiety, and hostility have been reported among children of lesbian mothers, compared to children of heterosexual mothers in early adulthood (Golombok & Badger, 2010). In light of these findings, we hypothesized that lesbian and gay parents would report fewer externalizing problems in children than would heterosexual parents. Besides looking at the adjustment of the children, we also explored parents' mental health.

## Parents' Mental Health as a Function of Sexual Orientation

It has been commonly found that sexual minority parents do not report worse mental health (e.g., parental stress, depression, anxiety) relative to heterosexual parents (Bos et al., 2004; Carneiro et al., 2017; Van Rijn-van Gelderen et al., 2018). This is an interesting finding, as a corpus of literature shows that minority stress (i.e., chronic stress due to stigma and discrimination) can impair lesbian women's and gay men's mental health, due to their sexual minority status (Frost, 2011; King et al., 2008; Meyer, 2013). It may be that parenthood serves as a protective factor for mental health among sexual minority people (Shenkman & Shmotkin, 2014, 2020). Lesbian and gay parenthood may be considered a triumph over the widespread idea that lesbian women and gay men should not become parents (Armesto, 2002). This sense of triumph, alongside the successful navigation of legal, social, and financial

difficulties along the journey to parenthood, might result in better mental health outcomes among lesbian and gay parents (Erez & Shenkman, 2016). Moreover, it has been suggested that, in the Israeli familistic and pronatalist environment, where the current study was conducted, being a parent (irrespective of one's sexual orientation and/or conception method) represents an important step towards acceptance and social support (Tsfati & Ben-Ari, 2019).

Accordingly, Israeli investigations have found that, compared to heterosexual fathers, gay fathers report better subjective well-being and life meaning (Erez & Shenkman, 2016; Shenkman et al., 2018a, 2018b, 2020). Likewise, a higher self-perceived parental role (i.e., subjective assessments parents make regarding their self-efficacy, competence, and investment in parenthood) has been shown to be associated with less adverse mental health indicators (i.e., depressive symptoms, neuroticism, negative emotions) among gay—but not heterosexual—fathers (Shenkman & Shmotkin, 2020). Similarly, higher satisfaction of basic needs in the couple relationship has been shown to be associated with more personal growth among lesbian—but not heterosexual—mothers (Shenkman, 2018). In light of these findings in the Israeli context, we expected that lesbian and gay parents would report better mental health outcomes than heterosexual parents.

In the current study the focus was on mental health as the outcome variable. We were especially interested in negative aspects of mental health, such as depression and negative affect, and positive aspects, such as life satisfaction and positive affect. Operationalizing mental health into these negative and positive indicators is quite common (e.g., Shenkman & Shmotkin, 2020; Shenkman et al., 2018a, 2018b). Also, as the study was conducted during the Covid-19, we further included resilience and positivity as crucial positive mental health indicators to account for individuals' strengths (Davydov et al., 2010; Thartori et al., 2021).

## Parents' Assisted Conception Socialization Self-Efficacy

Parents' assisted conception socialization self-efficacy refers to parents' sense of confidence regarding practices enacted to socialize their child about their conception (e.g., conversations with their child about their feelings regarding the assisted reproduction and the meaning of being born through assisted reproduction). Parental self-efficacy is grounded in Bandura's social-cognitive theory (Bandura, 1977) and defined as parents' appraisal of their own parenting skills and competence. There is evidence that high general parental self-efficacy is positively associated with overall family functioning and positive child development

(Carless et al., 2015; Johnston et al., 2019; Jones & Prinz, 2005; Mouton et al., 2018).

More specific constructs of parents' beliefs about assisted conception socialization—and their perceived self-efficacy regarding such practices—have been adapted from recent research on the relationship between socialization and family structure in adoptive sexual minority parent families (Oakley et al., 2017; Wyman Battalen et al., 2019). Such research has been based on a cultural socialization framework (Lee, 2003), adapted from works on racial socialization. In more detail, these works have examined sexual minority parenting practices aimed at teaching children coping skills to manage bias and discrimination and instilling children with pride in their identity (Oakley et al., 2017).

Prior research on adoptive sexual minority parent families has explored the protective and proactive parenting behaviors that promote children's awareness of their diverse family structure and prepare them for potential stigma-related experiences, such as teasing or victimization (Goldberg et al., 2016; Oakley et al., 2017; Wyman Battalen et al., 2019). For example, Wyman Battalen et al. (2019) found that adoptive lesbian and gay parents endorsed unique socialization practices with respect to their family structure and generally felt confident engaging in these practices. In turn, parents' socialization self-efficacy was positively associated with the endorsement of socialization practices.

To date, no study has focused on parents' self-efficacy socialization practices with respect to conception method, or the role of such practices in promoting child adjustment in sexual minority parent families formed by assisted reproduction. Of relevance, parents' confidence in their ability to effectively communicate about assisted conception to their child can have a significant impact on their child—especially when the parents are sexual minority people. Children of sexual minority parents are often questioned by their peers about how they came into the world. Parents' assisted conception socialization self-efficacy may promote adaptive reactions to such questions, as well as to teasing and unwelcome or hostile comments.

The disclosure of conception method to children in gay two-father or lesbian two-mother families is typically straightforward, and it tends to occur earlier than the disclosure of conception method to children in heterosexual two-parent families formed by assisted reproduction; this is likely due to the visible absence of a mother in two-father families through surrogacy and the absence of a father in two-mother families through sperm donation (Faccio et al., 2019; Tallandini et al., 2016). Some studies have explored parental decisions about the disclosure of children's assisted conception origins in heterosexual and sexual minority parent families (e.g., Blake et al., 2016; Brewaeys et al., 1993; Carone et al., 2018a). One study found that

supportive and sensitive parental conversations about surrogacy conception in gay father families were associated with greater curiosity in children about their origins; this effect was especially pronounced amongst children who perceived higher security in the attachment relationship with their fathers (Carone et al., 2020b).

Investigation of the potential association between parents' assisted conception socialization self-efficacy and child adjustment may be particularly relevant when children are at preschool age. In Israel, children enter the education system at the age of 3 years. At this stage, children born through assisted reproduction are likely to confront family types that significantly differ from their own (e.g., heterosexual two-parent families through spontaneous conception), and this may lead them to examine what their family form means to them and to others. Additionally, they may be questioned by their peers and other parents about the uniqueness of their family, in terms of both the absence of a mother/father and their conception by assisted reproduction, such as surrogacy or sperm donation.

At around 7 years of age, children begin to grasp the significance of the biological concept of family and the implications of (non)biological relatedness with one's parents (Solomon et al., 1996; Williams & Smith, 2010). For children born to lesbian mothers through sperm donation and children born to gay fathers through surrogacy, such knowledge may raise questions about the nature of their conception (e.g., “Children told me that there is no way I don't have a father/mother. Why?”) and biological origins (e.g., “Who am I biologically related to?” and “Whose body did I grow in?”), making parents' assisted conception socialization (and self-efficacy with respect to this socialization) pertinent and relevant for child adjustment.

In light of the prominent role played by assisted conception socialization among lesbian and gay parents, as well as evidence that heterosexual parents are more likely to conceal their use of assisted reproduction from their children (Tallandini et al., 2016), we expected that lesbian and gay parents would report higher assisted conception socialization self-efficacy in comparison with heterosexual parents. Also, in consideration of the literature reviewed above, showing an association between racial socialization and child adjustment (Mohanty et al., 2007), and between parental self-efficacy and child adjustment (Jones & Prinz, 2005; Mouton et al., 2018), we expected higher assisted conception socialization self-efficacy to be associated with fewer externalizing behaviors in children.

## Research Hypotheses

The aims and hypotheses of the present research were derived from the literature reviewed above. The Israeli

societal context, which demonstrates both familistic and pronatalist values and a history of discriminatory policies against sexual minority people in their quest for parenthood, was also taken into account. The first aim was to explore differences in child externalizing behaviors and parents' assisted conception socialization self-efficacy, social support, parental depression, positive and negative affect, life satisfaction, resilience, and positivity across family types. We hypothesized that lesbian and gay parents would report fewer child externalizing problems and score higher on both assisted conception socialization self-efficacy and mental health indicators, compared to heterosexual parents.

The second aim was to identify the effects of family type and parents' assisted conception socialization self-efficacy, social support, and parental mental health on child externalizing problems. We hypothesized that both family type and parents' assisted conception socialization self-efficacy would be associated with child externalizing behaviors, such that fewer externalizing problems would be reported by lesbian and gay parents in comparison with heterosexual parents, and higher scores of parents' assisted conception socialization self-efficacy would be associated with fewer externalizing problems.

## Method

### Sample description

Participants were 36 Israeli lesbian mother families formed by donor insemination, 39 Israeli gay father families formed by gestational surrogacy, and 36 Israeli heterosexual parent families formed by assisted reproduction (without donated gametes). All parents were cisgender and had a target child aged 3–10 years. In each family, both parents participated, resulting in a final sample of 78 gay fathers, 72 lesbian mothers, and 72 heterosexual parents. The three family types significantly differed on several socio-demographics. Following convention in the field, significant differences in socio-demographics (categorical data) were interpreted based on adjusted residuals (ARs)  $\leq 1.96$  or  $\geq 1.96$  as indicating that the number of cases in that cell was, respectively, significantly smaller or larger than would be expected if the null hypothesis were true, with a significance level of 0.05 (Haberman, 1973). For the sake of brevity, only the significant group differences in socio-demographics are described below, while the statistics and the full sample description are reported in Table 1.

Children of lesbian mothers were younger than children of heterosexual parents, estimate =  $-0.73$ ,  $SE = 0.23$ ,  $p = 0.002$ ; considering the number of children, gay fathers were more likely to have two children relative to lesbian mothers (ARs = 3.2), whereas lesbian mothers were more likely to

have one child relative to gay fathers (ARs = 2.9). Also, gay fathers were less likely to be religious (ARs =  $-2.1$ ) and more likely to be educated (ARs = 2.5) than heterosexual parents, as well as they were more likely to report a personal income of 20,001 shekel or more (ARs = 4.6) and less likely to have a part-time employment (ARs =  $-2.6$ ) than lesbian mothers and heterosexual parents. Conversely, heterosexual parents were less likely to be unemployed (ARs =  $-2.0$ ) than lesbian mothers and gay fathers. Finally, lesbian mothers were less likely to be married or in a civil partnership (ARs =  $-2.4$ ) and reported relationships of shorter duration, estimate =  $-0.75$ ,  $SE = 0.23$ ,  $p = 0.001$ , than heterosexual parents.

### Procedure

Participants were recruited via announcements placed on Israeli Internet forums pertaining to IVF and LGB parenting, social media, and the websites of surrogacy agencies and local LGBTQ+ organizations. Specifically, gay fathers through surrogacy, lesbian mothers through sperm donation, and heterosexual parents through assisted reproduction were asked whether they consented to voluntarily participate in a survey about parenthood among Israeli parents who had used assisted reproduction, across diverse family forms. The study only included parenting couples. To ensure that members from the same couple could be identified, each participant was asked to create a password using the first letters of the target child's name and the numbers of the target child's birth date. This allowed us to match the reports of each parent in each family.

The inclusion criteria for parents were as follows: (a) self-identifying as a lesbian, gay, or heterosexual cisgender parent; (b) having a child born through assisted reproduction (i.e., sperm donation for lesbian mothers, surrogacy for gay fathers, assisted reproduction without donated gametes for heterosexual parents), aged 3–10 years, who did not suffer from any physical and/or mental illness or disability; and (c) residing in Israel. In this vein, participating couples who filled in the questionnaire considering different target children in the family were omitted, since their responses could not be matched. Also, parents who indicated a method of conception (e.g., sexual intercourse) that differed from that which was required for the lesbian, gay, and heterosexual parents in our announcement were excluded. The final sample was comprised of 222 parents, nested in 111 families.

The questionnaires were administered in Israel between December 2019 and February 2021, using two main sources: personal email, with the questionnaire included as an attached Word document to be completed and emailed back to the researcher; and a Qualtrics link, which 443 people visited. Completion method determined no differences



**Table 1** Socio-demographic information of participating families ( $N = 111$ )

Individual characteristics ( $N = 222$ )	Full sample	Lesbian mothers ( $n = 72$ )	Gay fathers ( $n = 78$ )	Heterosexual parents ( $n = 72$ )	$X^2(df)$	$p$
	$N$ (%)	$n$ (%)	$n$ (%)	$n$ (%)		
Parent educational level <sup>a</sup>					6.93 (2)	0.031
Less than a bachelor's degree	53 (23.9)	19 (26.4)	11 (14.1)	23 (31.9)		
Bachelor's degree or higher	169 (76.1)	53 (73.6)	67 (85.9)	49 (68.1)		
Parent working status (full-time)					10.43 (4)	0.034
Not working <sup>b</sup>	26 (11.7)	10 (13.9)	12 (15.4)	4 (5.6)		
Working part-time <sup>c</sup>	25 (11.3)	12 (16.7)	3 (3.8)	10 (13.9)		
Working full-time	171 (77.0)	50 (69.4)	63 (80.8)	58 (80.6)		
Personal income (monthly gross, in shekel) <sup>d</sup>					21.20 (2)	<0.001
20,000₪ or less	149 (67.1)	57 (79.2)	37 (47.4)	55 (76.4)		
20,001₪ or more	73 (32.9)	15 (20.8)	41 (52.6)	17 (23.6)		
Religion <sup>e</sup>					6.87 (2)	0.032
Yes	17 (7.7)	5 (6.9)	2 (2.6)	10 (13.9)		
No	205 (92.3)	67 (93.1)	76 (97.4)	62 (86.1)		
	$M$ ( $SD$ )	$M$ ( $SD$ )	$M$ ( $SD$ )	$M$ ( $SD$ )	$F$ ( $df$ )	$p$
Parent age (in years)	41.10 (6.23)	39.70 (5.15)	41.20 (5.49)	42.60 (7.58)	2.55 (2108)	0.083
Family characteristics ( $N = 111$ )	Full sample	Lesbian mother families ( $n = 36$ )	Gay father families ( $n = 39$ )	Heterosexual parent families ( $n = 36$ )	$X^2(df)$	$p$
	$N$ (%)	$n$ (%)	$n$ (%)	$n$ (%)		
Child gender					2.98 (2)	0.223
Boy	62 (55.9)	23 (63.9)	23 (59.0)	16 (44.4)		
Girl	49 (44.1)	13 (36.1)	16 (41.0)	20 (55.6)		
Number of children					15.10 (4)	0.004
1 <sup>f</sup>	20 (18.0)	12 (33.3)	3 (7.7)	5 (13.9)		
2 <sup>g</sup>	66 (59.5)	16 (44.4)	31 (79.5)	19 (52.8)		
3 or more	25 (22.5)	8 (22.2)	5 (12.8)	12 (33.3)		
Marital status <sup>h</sup>					8.67 (2)	0.013
Cohabiting (not married/no civil partnership)	13 (11.7)	8 (22.2)	5 (12.8)	0 (0.0)		
Married/civil partnership/contract	98 (88.3)	28 (77.8)	34 (87.2)	36 (100.0)		
	$M$ ( $SD$ )	$M$ ( $SD$ )	$M$ ( $SD$ )	$M$ ( $SD$ )	$F$ ( $df$ )	$p$
Child age at visit <sup>i</sup> (in months)	67.60 (25.00)	56.50 (21.70)	71.40 (23.90)	74.80 (26.00)	5.93 (2108)	0.004
Relationship duration <sup>j</sup> (in years)	12.70 (4.42)	10.90 (4.01)	13.10 (4.43)	14.20 (4.19)	5.66 (2108)	0.005

Note. Percentages may not equal to 100, due to rounding.  $n$  number of participants,  $X^2$  chi-square test statistic,  $F$  Fisher's distribution statistic,  $df$  degrees of freedom,  $p$   $p$  value, ARs adjusted residuals

<sup>a</sup>Gay fathers > heterosexual parents (ARs = -2.5)

<sup>b</sup>Heterosexual Parents < lesbian mothers and gay fathers (ARs = -2.0)

<sup>c</sup>Gay fathers < lesbian mothers and heterosexual parents (ARs = -2.6)

<sup>d</sup>Gay fathers > lesbian mothers and heterosexual parents (ARs = 4.6)

<sup>e</sup>Gay fathers < heterosexual parents (ARs = -2.1)

<sup>f</sup>Lesbian mothers > gay fathers (ARs = 2.9)

<sup>g</sup>Gay fathers > lesbian mothers (ARs = 3.2)

<sup>f</sup>Lesbian mothers > gay fathers (ARs = 2.9)

<sup>h</sup>Lesbian mothers < heterosexual parents

<sup>i</sup>Lesbian mothers < heterosexual parents,  $p = 0.001$

<sup>j</sup>Lesbian mothers < heterosexual parents,  $p = 0.001$

across family types on any of the study variables. The majority of the parents (i.e., 69 lesbian mothers, 72 gay fathers, 62 heterosexual parents) completed the questionnaire during the first or second wave of COVID-19 and its related restrictions, including lockdowns. However, no differences were found across family types in the number of parents who completed the questionnaire before or during the COVID-19 pandemic,  $X^2(df) = 3.38 (2), p = 0.184$ . Similarly, the period of completion determined no differences across family types on any of the study variables. All participants were informed that their participation was voluntarily, and they all provided consent to participate in the study. Participants were invited to contact the principal researcher, if desired, to receive a more thorough debriefing. Prior to data collection, the study was reviewed and approved by the Institutional Review Board of the Interdisciplinary Center (IDC) Herzliya, for compliance with the standards for the ethical treatment of human participants.

## Measures

### Child Externalizing Problems

In each family, both parents completed the 5-item hyperactivity/inattention subscale (e.g., “restless, overactive, cannot stay still for long”; “Easily distracted, concentration wanders”) and the 5-item conduct problems subscale (e.g., “Often has temper tantrums”; “Often fights with other children or bullies them”) of the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997) on a 3-point Likert scale, ranging from 0 (*not true*) to 2 (*true*). Following Goodman et al. (2010) recommendations for studying low-risk samples, scores on both subscales were combined to generate a child externalizing total problems score, with higher scores indicating more problems. Cronbach’s alphas were 0.71, 0.77, and 0.61 for lesbian mothers, gay fathers, and heterosexual parents, respectively.

### Assisted Conception Socialization Self-Efficacy

Parents’ assisted conception socialization self-efficacy was assessed using the 8-item version of the Sexual Minority Parents’ Socialization Self-Efficacy scale, modified for assisted conception (Berbery & O’Brien, 2011; Wyman Battalen et al., 2019). This scale consists of eight items, rated on a 5-point Likert scale ranging from 1 (*not at all confident*) to 5 (*highly confident*), with higher total scores indicating greater parental confidence in the ability to do each item (i.e., “Teach my child how to confront the stereotypes that people may have about assisted conception”; “Talk with my child about their feelings regarding being born through assisted conception”; “Speak out against any remarks against assisted conception made in my child’s

presence”). Cronbach’s alphas were 0.94, 0.91, and 0.95 for lesbian mothers, gay fathers, and heterosexual parents, respectively.

### Social Support

Social support from three sources (i.e., family, friends, significant others) was assessed using the Multidimensional Scale of Perceived Social Support (MSPSS; Zimet et al., 1988). The MSPSS is a 12-item measure rated on a 7-point Likert scale ranging from 1 (*very strongly disagree*) to 7 (*very strongly agree*). In the current study, a total score was calculated for each participant, with higher values representing higher perceived social support. Cronbach’s alphas were 0.93, 0.94, and 0.93 for lesbian mothers, gay fathers, and heterosexual parents, respectively.

### Positive Aspects of Mental Health

Four positive aspects of mental health were examined. Parents’ global life satisfaction was assessed using the Satisfaction with Life Scale (SWLS; Diener et al., 1985). The SWLS is comprised of 5 items (e.g., “The conditions of my life are excellent”) rated on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). In the current study, a total score was calculated for each participant, with higher values representing greater life satisfaction. Cronbach’s alphas were 0.81, 0.81, and 0.83 for lesbian mothers, gay fathers, and heterosexual parents, respectively.

Parents’ positive affect was assessed by 5 positive items of the Affect Balance Scale (ABS; Bradburn, 1969) (e.g., “Pleased about having accomplished something”). Respondents reported the frequency with which they experienced each affect during the prior week on a scale of 1 (*never*) to 4 (*often*). In the current study, total scores were calculated for each participant, with higher values representing higher positive affect. Cronbach’s alphas were 0.83, 0.71, and .82 for lesbian mothers, gay fathers, and heterosexual parents, respectively.

Parents’ tendency to view their life and experiences positively was assessed using the Positivity Scale (POS; Caprara et al., 2012). The POS is comprised of 8 items (e.g., “I feel I have lots of things to be proud of”; “I look to the future with hope and optimism”), rated on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). In the current study, a total score was calculated for each participant, with higher values reflecting greater positivity. Cronbach’s alphas were 0.82, 0.86, and 0.83 for lesbian mothers, gay fathers, and heterosexual parents, respectively.

Parents’ ability to cope with difficulties was assessed using the Brief Resilience Scale (BRS; Smith et al., 2008).

The BRS is comprised of 6 items (e.g., “I tend to bounce back quickly after hard times”; “It does not take me long to recover from a stressful event”) rated on a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). In the current study, a total score was calculated for each participant, with higher values reflecting greater resilience. Cronbach’s alphas were 0.85, 0.85, and 0.82 for lesbian mothers, gay fathers, and heterosexual parents, respectively.

### Negative Aspects of Mental Health

Two negative aspects of mental health were examined. Self-reported symptoms associated with depression were assessed using the Center for Epidemiologic Studies Depression Scale (CESD-S; Radloff, 1977). This 20-item measure asked parents to report the frequency with which, over the prior week, they experienced symptoms associated with depression (e.g., “I felt that I could not shake off the blues even with help from my family or friends”; “I felt hopeful about the future”), on a scale ranging from 1 (*rarely or none of the time*) to 4 (*most or all of the time*). In the current study, a total score was calculated for each participant, with higher values representing more depressive symptoms. Cronbach’s alphas were 0.86, 0.89, and 0.88 for lesbian mothers, gay fathers, and heterosexual parents, respectively.

Parents’ negative affect was assessed using the 5 negative affect items of the Affect Balance Scale (ABS; Bradburn, 1969) (e.g., “So restless that you couldn’t sit long in a chair”). Respondents reported the frequency with which they experienced each affect during the prior week on a scale of 1 (*never*) to 4 (*often*). A total score on negative affect was calculated for each participant, with higher values representing higher negative affect. Cronbach’s alphas were 0.67, 0.58, and 0.73 for lesbian mothers, gay fathers, and for heterosexual parents.

### Individual, Couple, and Family COVID-19 Experiences

Parents who completed the questionnaire during the first or second wave of COVID-19 and the associated lockdowns in Israel were asked to indicate the extent to which COVID-19 had impacted eight individual, couple, and family domains (i.e., financial strain, work-related stress, homeschooling-related stress, personal frustration, worry about loved ones, couple tension, family tension, worry about the future) on a 4-point Likert scale ranging from 0 (*not at all*) to 3 (*very much*). A total score was calculated for this 8-item scale, with higher scores indicating more negative experiences. Cronbach’s alphas were 0.74, 0.78, and 0.82 for lesbian mothers, gay fathers, and heterosexual parents, respectively.

### Data Analysis

All analyses were performed using the statistical software jamovi (The jamovi project, 2021). Effects that were significant at  $p < 0.05$  were interpreted. The outlier analysis was conducted with the interquartile range method; no outliers were identified. Data distribution was checked with skewness and kurtosis values. All study variables fell into the acceptable values for skewness ( $\pm 2$ ) and kurtosis ( $\pm 7$ ) (West et al., 1995), indicating that the data were normally distributed. Preliminary chi-square tests (for categorical data) and mixed models (for continuous data) were run to compare potential differences in individual and family socio-demographic variables between lesbian, gay, and heterosexual parent families (see Sample description). Multilevel correlations were also performed to identify associations among socio-demographic variables and child externalizing problems, as well as parents’ assisted conception socialization self-efficacy, social support, depression, life satisfaction, positive and negative affect, resilience, and positivity, while accounting for within-couple dependency. Mixed models and multilevel correlations were used to account for the nested data structure, that is two parents participating in each family. Also, multilevel modeling has the advantages of enhancing estimation of models and standard errors, providing a more accurate estimation of between- and within-couple variance (Smith et al., 2020).

Potential differences between family types in individual, couple, and family COVID-19 experiences were examined in a preliminary mixed model. Where no differences were detected, subsequent analyses did not control for those experiences. To compare differences in parents’ assisted conception socialization self-efficacy, social support, depression, positive and negative affect, life satisfaction, resilience, and positivity across family types (hypothesis 1), eight mixed models were conducted. Given the wide age range of the sample, child age was entered as a covariate. Also, given prior evidence of gender differences in externalizing problems (Rescorla et al., 2007), a further mixed model was performed with the addition of child gender as a covariate, in order to compare variations in child externalizing problems across family types. Regarding other potential covariates, parents’ age, educational level, personal income, working status, marital status, relationship duration, and number of children were entered into the model only if they significantly differed between family types and were associated with the outcome of interest. This conservative approach resulted in the inclusion of only parents’ personal income as a covariate with the outcome of life satisfaction. Finally, to identify the effects of family type and parents’ assisted conception socialization self-efficacy, social support, and parental mental health on child externalizing behaviors while controlling for child age (hypothesis 2), one further mixed model was computed.



**Table 2** Multilevel correlations among socio-demographic variables, child externalizing problems, and parents' assisted conception socialization self-efficacy, social support, depression, life satisfaction, positive affect, negative affect, resiliency, and positivity

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
1. Child age	1														
2. Parent age	0.02	1													
3. Number of children	-0.12	-0.06	1												
4. Relationship duration	0.04	0.03	-0.01	1											
5. Parent education	0.01	0.08	0.04	0.04	1										
6. Parent income	-0.20	0.26*	0.05	0.12	0.23*	1									
7. Child externalizing problems	-0.22†	0.04	-0.24*	-0.01	-0.13	<0.01	1								
8. AC-SES	0.11	-0.10	0.06	-0.06	<0.01	-0.08	-0.15	1							
9. Social support	0.05	-0.07	0.03	-0.13	0.06	-0.01	-0.03	0.22†	1						
10. Parent depression	0.06	-0.05	-0.05	0.02	0.04	-0.17	0.05	-0.08	-0.40***	1					
11. Parent life satisfaction	-0.19	0.04	0.23†	0.06	0.02	0.19	-0.10	0.14	0.38***	-0.54***	1				
12. Parent positive affect	-0.05	-0.05	0.07	-0.18	-0.14	-0.04	-0.01	0.11	0.28***	-0.40***	0.40***	1			
13. Parent negative affect	-0.11	-0.01	0.03	0.05	0.01	0.02	0.13	-0.11	-0.30***	0.54***	-0.29**	0.01	1		
14. Parent resilience	-0.07	0.06	0.07	0.06	-0.01	0.13	-0.04	0.06	0.21	-0.21	0.25*	0.20	-0.14	1	
15. Parent positivity	0.02	0.05	0.19	0.08	0.01	0.10	-0.10	0.03	0.21	-0.17	0.26**	0.26**	-0.09	0.82***	1

Note. AC-SES = Parent assisted conception socialization self-efficacy

† $p < 0.08$ ; \* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$

**Table 3** Means and standard deviations of child externalizing problems and parents' assisted conception socialization self-efficacy, social support, positive and negative mental health, and COVID-19 experiences, by family type ( $N = 222$  parents nested within 111 families)

	Lesbian mothers ( $n = 72$ ) $M$ ( $SD$ )	Gay fathers ( $n = 78$ ) $M$ ( $SD$ )	Heterosexual parents ( $n = 72$ ) $M$ ( $SD$ )
AC-SES (total score range: 5–25)	29.60 (7.37)	30.70 (6.48)	30.60 (8.28)
Social support (total score range: 12–84)	73.40 (11.10)	73.40 (11.70)	67.60 (13.50)
<i>Parent positive mental health</i>			
Life satisfaction (total score range: 5–35)	27.60 (4.24)	27.80 (4.44)	25.80 (5.52)
Positive affect (total score range: 5–20)	13.80 (3.04)	13.30 (2.55)	13.20 (3.41)
Resilience (total score range: 6–30)	21.00 (6.30)	19.10 (6.97)	18.80 (8.29)
Positivity (total score range: 8–40)	30.60 (7.46)	27.80 (9.24)	26.20 (10.90)
<i>Parent negative mental health</i>			
Depression (total score range: 20–80)	29.10 (6.54)	30.60 (7.94)	32.20 (8.82)
Negative affect (total score range: 5–20)	8.11 (2.54)	8.88 (2.54)	8.92 (3.32)
COVID-19 experiences (total score range: 0–24)	9.71 (5.14)	9.90 (4.52)	11.00 (4.25)
Child externalizing problems (total score range: 0–20)	4.75 (2.99)	5.40 (3.86)	6.90 (3.21)
Girls ( $n = 13, 16, 20$ , respectively)	4.08 (2.99)	4.97 (3.51)	6.47 (3.07)
Boys ( $n = 23, 23, 16$ , respectively)	5.13 (2.95)	5.70 (4.10)	7.44 (3.35)

Note.  $n$  number of participants,  $M$  mean,  $SD$  standard deviation, AC-SES parent assisted conception socialization self-efficacy

Of note, in order to provide a detailed descriptive picture of the study variables, each single mental health indicator was used when providing means and standard deviations, exploring associations between variables, and testing potential differences in mental health across family types. Then, these multiple indicators of mental health were entered in a principal components analysis with oblimin rotation to reduce overlap in variance and to retain greater power for the analyses, when examining factors associated with child externalizing problems. Oblimin rotation was chosen because there were theoretical and empirical reasons to expect correlations between the component factors (Tabachnick & Fidell, 2007). Parallel analysis extracted two composite variables: positive (e.g., life satisfaction, positive affect, positivity, resilience) and negative (e.g., depression, negative affect) mental health, each explaining 61.7 and 80.7% of the variance, respectively. Both factor loadings were above 0.70. Higher scores on the positive and negative mental health variables reflected more positive and negative mental health, respectively. The correlation between the positive and negative mental health factors ( $r = -0.63$ ,  $p < 0.001$ ) was significantly negative.

## Results

### Associations Among Parental, Family Socio-Demographic, and Study Variables

Table 2 displays the full significant and non-significant multilevel associations among parental, family socio-demographic,

and study variables. Parents having more children reported significant fewer externalizing problems in their target child ( $r = -0.24$ ,  $p = 0.032$ ), as well as parents who were more affluent also were older ( $r = 0.26$ ,  $p = 0.011$ ), and more educated ( $r = 0.23$ ,  $p = 0.039$ ). Parents perceiving greater social support also were more satisfied with their life ( $r = 0.38$ ,  $p < 0.001$ ), felt less depressed ( $r = -0.40$ ,  $p < 0.001$ ), and reported lower negative affect ( $r = -0.30$ ,  $p < 0.001$ ), and greater positive affect ( $r = 0.28$ ,  $p = 0.002$ ). Furthermore, parents showing greater life satisfaction also showed lower negative affect ( $r = -0.29$ ,  $p = 0.001$ ), and depression ( $r = -0.54$ ,  $p < 0.001$ ), as well as greater positive affect ( $r = 0.40$ ,  $p < 0.001$ ), positivity ( $r = 0.26$ ,  $p = 0.006$ ), and resilience ( $r = 0.25$ ,  $p = 0.018$ ). Finally, parents feeling more depressed also reported greater negative affect ( $r = 0.54$ ,  $p < 0.001$ ), and lower positive affect ( $r = -0.40$ ,  $p < 0.001$ ); whereas parents who reported more positivity also were more resilient ( $r = 0.82$ ,  $p < 0.001$ ), and showed greater positive affect ( $r = 0.26$ ,  $p = 0.007$ ).

### Differences in Individual, Couple, and Family COVID-19 Experiences Across Family Types

A preliminary mixed model was conducted to identify potential differences across family types related to individual, couple, and family COVID-19 experiences. The findings indicated that lesbian mothers and gay fathers reported similar low levels of COVID-19-related negative experiences in the individual, couple, and family domains, relative to heterosexual parents (lesbian mothers versus heterosexual parents: estimate =  $-0.17$ ,  $SE = 0.12$ ,  $p = 0.173$ ; gay fathers versus

heterosexual parents: estimate =  $-0.14$ ,  $SE = 0.12$ ,  $p = 0.233$ ). For this reason, subsequent analyses did not control for individual, couple, and family COVID-19 experiences.

### Differences in Child Externalizing Problems and Parents' Assisted Conception Socialization Self-Efficacy, Social Support, and Mental Health Across Family Types

Table 3 reports the means and standard deviations of child externalizing problems and parents' assisted conception socialization self-efficacy, social support, depression, life satisfaction, positive and negative affect, resilience, and positivity, by family type. The mixed model analysis indicated that heterosexual parents reported more externalizing problems in their children than did both lesbian mothers and gay fathers (heterosexual parents versus lesbian mothers: estimate =  $-0.73$ ,  $SE = 0.22$ ,  $p = 0.001$ ; heterosexual parents versus gay fathers: estimate =  $-0.47$ ,  $SE = 0.20$ ,  $p = 0.022$ ). However, neither child age nor child gender were significant covariates (child age: estimate =  $-0.07$ ,  $SE = 0.09$ ,  $p = 0.450$ ; child gender: estimate =  $-0.27$ ,  $SE = 0.17$ ,  $p = 0.113$ ). Likewise, the interaction between child gender and family type was not significant for lesbian mothers versus heterosexual parents, or for gay fathers versus heterosexual parents (lesbian mothers versus heterosexual parents: estimate =  $-0.02$ ,  $SE = 0.42$ ,  $p = 0.962$ ; gay fathers versus heterosexual parents: estimate =  $0.12$ ,  $SE = 0.41$ ,  $p = 0.782$ ). Neither lesbian mothers nor gay fathers differed in their assisted conception socialization self-efficacy relative to heterosexual parents (lesbian mothers versus heterosexual parents: estimate =  $-0.09$ ,  $SE = 0.16$ ,  $p = 0.577$ ; gay fathers versus heterosexual parents: estimate =  $0.02$ ,  $SE = 0.15$ ,  $p = 0.901$ ). Furthermore, child age had no significant effect, estimate  $< 0.01$ ,  $SE < 0.01$ ,  $p = 0.427$ . Conversely, social support differed between family types, with both lesbian mothers and gay fathers perceiving greater social support than heterosexual parents (lesbian mothers versus heterosexual parents: estimate =  $0.55$ ,  $SE < 0.01$ ,  $p = 0.004$ ; gay fathers versus heterosexual parents: estimate =  $0.50$ ,  $SE = 0.18$ ,  $p = 0.005$ ). Child age was not significant, estimate  $< 0.01$ ,  $SE < 0.01$ ,  $p = 0.243$ .

Regarding parents' mental health, a few differences were found as a function of family type, all favoring lesbian mothers over heterosexual parents. Specifically, lesbian mothers, but not gay fathers, reported lower levels of depression than heterosexual parents (lesbian mothers versus heterosexual parents: estimate =  $-0.18$ ,  $SE = 0.07$ ,  $p = 0.012$ ; gay fathers versus heterosexual parents: estimate =  $-0.08$ ,  $SE = 0.07$ ,  $p = 0.252$ ). Child age was not significant, estimate  $< 0.01$ ,  $SE < 0.01$ ,  $p = 0.166$ . In a similar vein, lesbian mothers, but not gay fathers, reported more life satisfaction than heterosexual parents (lesbian mothers

versus heterosexual parents: estimate =  $0.53$ ,  $SE = 0.17$ ,  $p = 0.003$ ; gay fathers versus heterosexual parents: estimate =  $0.21$ ,  $SE = 0.17$ ,  $p = 0.209$ ). Additionally, both child age and personal income were significant covariates (child age: estimate =  $0.01$ ,  $SE < 0.01$ ,  $p = 0.001$ ; personal income: estimate =  $0.14$ ,  $SE = 0.05$ ,  $p = 0.004$ ). Finally, regarding positivity, lesbian mothers, but not gay fathers, tended to perceive their life and experiences more positively than did heterosexual parents (lesbian mothers versus heterosexual parents: estimate =  $0.29$ ,  $SE = 0.11$ ,  $p = 0.009$ ; gay fathers versus heterosexual parents: estimate =  $0.03$ ,  $SE = 0.10$ ,  $p = 0.781$ ). However, child age had no significant effect, estimate  $< 0.01$ ,  $SE < 0.01$ ,  $p = 0.130$ . Conversely, regarding positive affect, neither lesbian mothers nor gay fathers differed from heterosexual parents, with all reporting high average levels (lesbian mothers versus heterosexual parents: estimate =  $0.16$ ,  $SE = 0.11$ ,  $p = 0.165$ ; gay fathers versus heterosexual parents: estimate =  $0.03$ ,  $SE = 0.11$ ,  $p = 0.791$ ). Furthermore, child age had no significant effect, estimate  $< 0.01$ ,  $SE < 0.01$ ,  $p = 0.297$ . Likewise, both lesbian mothers and gay fathers reported similar (low) average levels of negative affect, compared to heterosexual parents (lesbian mothers versus heterosexual parents: estimate =  $-0.18$ ,  $SE = 0.11$ ,  $p = 0.104$ ; gay fathers versus heterosexual parents: estimate =  $-0.01$ ,  $SE = 0.10$ ,  $p = 0.925$ ). Again, child age was not a significant covariate, estimate  $< 0.01$ ,  $SE < 0.01$ ,  $p = 0.589$ . Finally, parents' resilience was similarly high across family types, with no differences between lesbian mothers and gay fathers in comparison to heterosexual parents (lesbian mothers versus heterosexual parents: estimate =  $0.04$ ,  $SE = 0.14$ ,  $p = 0.761$ ; gay fathers versus heterosexual parents: estimate =  $-0.13$ ,  $SE = 0.13$ ,  $p = 0.343$ ). Child age was not significant, estimate  $< 0.01$ ,  $SE < 0.01$ ,  $p = 0.347$ .

### Associations Between Child Externalizing Problems and Parents' Assisted Conception Socialization Self-Efficacy and Mental Health, Across Family Types

To examine the significant variables related to child externalizing problems, child age, family type, and parents' assisted conception socialization, social support, and parental mental health, one further mixed model was performed, to account for shared variance within couples. Given the differences in assisted conception methods between family types, the interaction between family type and parents' assisted conception socialization was also included in the model. Child gender was not included, since no significant effects were detected in the previous analyses. For the sake of brevity, only the significant effects are described in the text, while the full statistics are displayed in Table 4. Both family type and parents' assisted conception socialization were associated with child externalizing

**Table 4** Factors associated with child externalizing problems, as rated by both parents ( $n = 222$  parents nested within 111 families)

	Child externalizing problems			
	Estimate (SE)	Confidence interval [2.5%, 97.5%]	df	p
Fixed effects				
Intercept	0.03 (0.09)	−0.14, 0.20	95	0.711
Child age	−0.08 (0.09)	−0.26, 0.10	97	0.408
Lesbian mothers vs. Heterosexual parents	−0.72 (0.23)	−1.17, −0.28	99	0.002
Gay fathers vs. Heterosexual parents	−0.43 (0.21)	−0.85, −0.01	98	0.047
AC-SES	−0.12 (0.06)	−0.24, −0.01	143	0.040
Social support	0.07 (0.07)	−0.07, 0.20	149	0.351
Parent positive mental health	−0.01 (0.08)	−0.17, 0.15	156	0.888
Parent negative mental health	0.07 (0.08)	−0.08, 0.22	151	0.355
Lesbian mothers vs. heterosexual parents * AC-SES	0.09 (0.13)	−0.17, 0.35	146	0.519
Gay fathers vs. heterosexual parents * AC-SES	−0.19 (0.13)	−0.45, 0.07	134	0.161
Random effects				
Intercept (within-couple variance)	SD 0.78	Variance 0.61	ICC 0.63	p < 0.001
Residual	0.59	0.35		
R <sup>2</sup> conditional (explained variance) 0.67				

Note. SE standardized error, df degrees of freedom, p p value, SD standard deviation, ICC intraclass coefficient, AC-SES Parent assisted conception socialization self-efficacy

problems. Specifically, both the children of lesbian mothers and the children of gay fathers were reported to have fewer externalizing problems than the children of heterosexual parents. Also, irrespective of family type, parents who felt more effective in socializing their children about their assisted conception reported fewer child externalizing problems. Overall, the model explained 67% of the variance ( $R^2$  conditional = 0.67).

## Discussion

The current study was one of the first to explore both child and parent adjustment in the context of parents' assisted conception socialization self-efficacy, in three groups of families reflecting diverse parental sexual orientations and assisted conception methods. Contrary to our first hypothesis, lesbian and gay parents were not found to differ from heterosexual parents on assisted conception socialization self-efficacy. However, lesbian mothers (but not gay fathers) reported lower levels of depression, greater life satisfaction, and more positivity than did heterosexual parents. Also, both lesbian mothers and gay fathers reported higher levels of social support, relative to heterosexual parents. Nonetheless, no differences were found between family types with respect to parents' positive and negative affect and resilience. Moreover, and consistent with our hypothesis, lesbian and gay parents reported fewer

child externalizing problems than did heterosexual parents. Furthermore, higher scores of assisted conception socialization self-efficacy were associated with fewer externalizing problems.

Of relevance, the consistent levels of assisted conception socialization self-efficacy among lesbian mothers, gay fathers, and heterosexual parents contrasts with the study's hypothesis of greater assisted conception socialization among sexual minority parents. The rationale for this hypothesis held that, because children in lesbian and gay parent families are often asked about their origins (Carone et al., 2018a), parents may be more likely to initiate socialization regarding conception. Moreover, heterosexual parents who have conceived by assisted reproduction may successfully conceal the conception method from their child, given the visible presence of two different-sex parents in the family (Tallandini et al., 2016); thus, assisted conception socialization self-efficacy might be less developed in these families.

Our findings may be explained by the Israeli context, which is significantly pronatalist and open to the use of assisted reproductive technology to achieve parenthood (Birenbaum-Carmeli, 2016). For that reason, Israel is also called an "IVF-nation" (Yeshua-Katz, 2018). In this vein, it could be argued that discourse on assisted conception is fairly open within the general Israeli population. Thus, in this context, it may be less surprising that lesbian, gay, and heterosexual parents showed no differences in their assisted

conception socialization self-efficacy. Nonetheless, this potential explanation should be further explored in future research in different cultural contexts.

In the current study, both lesbian mothers and gay fathers reported more social support than did heterosexual parents, and lesbian mothers (but not gay fathers) reported lower levels of depression, greater life satisfaction, and more positivity than did heterosexual parents. The more favorable mental health outcomes for sexual minority parents, especially amongst lesbian mothers, align with prior findings in the Israeli context, suggesting that lesbian and gay parenthood likely represent a triumph over both the prejudice against sexual minority parents and the legal, social, and financial obstacles sexual minority people have to face to become parents in Israel. This sense of triumph may promote elevated levels of mental health (Shenkman et al., 2020, Shenkman & Shmotkin, 2014).

Furthermore, as Israel is a familistic society in which parenthood represents a primary path towards social acceptance and support, it could be suggested that, when lesbian and gay couples finally join the “mainstream,” they gain more support from family and friends (Tsifti & Ben-Ari, 2019). This may explain the reports of greater social support among sexual minority parents relative to heterosexual parents. Moreover, to the extent that motherhood is a core identity characteristic in Israel and often seen as a “national mission” (Berkovitch, 1997; Donat, 2011), lesbian mothers who achieve the goal of motherhood after contending with difficulties may benefit from more favorable mental health outcomes. Similarly, an equal division of labor between parents in lesbian mother families and a special focus on the satisfaction of basic needs in the relationship between lesbian mothers (Bos et al., 2007; Carone & Lingardi, 2022; Shenkman, 2018) may relate to better mental health outcomes.

As hypothesized, our results identified fewer reports of child externalizing problems from lesbian and gay parents in comparison with heterosexual parents. This aligns with the results of previous studies in other countries, such as the United States, the Netherlands, and Italy, which have found fewer externalizing behaviors and, more generally, adjustment problems among children of sexual minority parents, in comparison to children of heterosexual parents (Baiocco et al., 2018; Bos et al., 2015; Carone et al., 2018b; Gartrell et al., 2005; Golombok & Badger, 2010; Green et al., 2019). These results, from several diverse countries, reinforce the conclusion that children in lesbian mother and gay father families are well-adjusted and may present fewer psychological problems than children of heterosexual parents (Fedewa et al., 2015; Patterson, 2017).

Finally, the current study explored for the first time the association between parents’ assisted conception

socialization self-efficacy and child externalizing problems across lesbian, gay, and heterosexual parents through assisted reproduction. In line with our hypothesis, irrespective of family type, parents who felt more confident socializing their child about their assisted conception reported fewer child externalizing problems. This result echoes the findings of previous studies on racial socialization practices, suggesting that parenting tactics and confidence in the ability to promote positive racial identity and communicate skills for managing discrimination contribute to better adjustment and the formation of positive racial identity in children (McRoy, 1994; Mohanty et al., 2007). Similarly, the current results recall a recent study finding positive associations between conversations about surrogacy conception, child attachment security, and children’s curiosity about their origins (Carone et al., 2020b).

## Strengths and Limitations

The main strength of the current study is the comparison of three distinct types of families conceived through assisted reproduction on child adjustment (i.e., externalizing problems), parental adjustment (i.e., mental health), and a more nuanced family process variable (i.e., parents’ assisted conception socialization self-efficacy). Also, the exploration of the link between parents’ assisted conception socialization self-efficacy and child externalizing problems responded to the recurrent call to examine how family socialization regarding diversity and conception relates to child adjustment (Carone et al., 2021a; Oakley et al., 2017; Wyman Battalen et al., 2019). Another strength pertains to the multilevel modeling analyses, which accounted for within-couple dependency and enabled us to use reports from both parents; it also adjusted the error variance to accommodate the interdependence of partner outcomes within the same dyad (Smith et al., 2020). In this vein, future studies including both parental couples for each family could examine whether—and to what extent—parents’ rating discrepancies affect child adjustment to provide a more nuanced picture of within-couple effects.

Nevertheless, certain limitations should be noted. First, as the study relied solely on parent reports, the data were thus susceptible to self-presentation biases. Also, the family groups were not based on a random or representative sample. Finally, the correlational research design did not allow for clear causal inferences to be drawn, in terms of the directionality of the results. However, it is relevant to note that these methodological limitations reflect common difficulties across investigations of sexual minority populations (e.g., Krueger et al., 2020).



## Conclusion and Implications

The current study found that lesbian and gay parents did not differ from heterosexual parents on assisted conception socialization self-efficacy, as well as that in all groups greater assisted conception socialization self-efficacy was associated with fewer child externalizing problems. Moreover, lesbian and gay parents reported fewer child externalizing problems and greater social support than did heterosexual parents; also, lesbian mothers reported lower levels of depression, greater life satisfaction, and more positivity, than did heterosexual parents. These findings correspond with the accumulated knowledge regarding sexual minority parent families, suggesting that both children and parents in these families are well-adjusted, and may fare even better than those in heterosexual parent families (Costa et al., 2021; Fedewa et al., 2015; Golombok, 2020; Patterson, 2017). The finding that parents' assisted conception socialization self-efficacy did not differ between family types, and was associated with child externalizing problems, is one of the main take-home messages from this study. It further contributes to the developing literature on socialization about diverse family forms (Goldberg et al., 2016; Oakley et al., 2017; Wyman Battalen et al., 2019), which also emphasizes the importance of providing support to parents to help them talk to their children about their assisted conception (Carone et al., 2020b).

With respect to practical implications, the results suggest that health and education professionals working with families formed by assisted reproduction should familiarize themselves with the relevant empirical data in order to better advise parents on their diverse conception socialization processes. This may be particularly important during children's transition from kindergarten to elementary school, when they are likely to be increasingly confronted with the views and questions of peers regarding the uniqueness of their family and conception. As the current study was conducted in Israel and its findings were interpreted in light of Israel's familistic and pronatalist context, it is paramount that future studies explore parents' assisted conception socialization and its implications for child adjustment from a cross-cultural perspective. Of relevance, policymakers and legislators should be aware of the results of the current study in order to promote supportive and inclusive policies for diverse family forms. This may be even more relevant in contemporary Israel, where legislation regarding gay men's access to surrogacy services is beginning to change and an increasing number of Israeli gay fathers are expected to conceive through domestic surrogacy in the coming few years.

## Data Availability

Data available on request from the authors.

## Compliance with Ethical Standards

**Conflict of Interest** The authors declare no competing interests.

**Ethical Approval** This study was reviewed and approved by the institutional review board at the Interdisciplinary Center (IDC) Herzliya for compliance with standards for the ethical treatment of human participants prior to data collection. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

**Informed Consent** Informed consent was obtained from all individual participants included in this study.

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