Sexuality Research and Social Policy (2024) 21:813–826
https://doi.org/10.1007/s13178-023-00923-y

Attachment Figures among Donor-Conceived Children of Lesbian Mothers in Middle Childhood

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Accepted: 12 December 2023 / Published online: 15 December 2023

Abstract

Introduction Very little is known about the attachment figures of children born to parents with minoritized sexual identities who used assisted reproduction, despite the importance of attachment for healthy child development. The present study examined the identification and utilization of attachment figures (e.g., parents, siblings, teachers, friends, cousins) for general attachment and companionship needs, as well as in context-specific and emotion-eliciting attachment situations, by donor-conceived children of lesbian mothers in middle childhood.

Methods Thirty-six children 6–12 years of age ($M_{years} = 9.20$, $SD = 2.50$; 47.22% assigned females at birth) of lesbian mothers through donor insemination, all residing in Italy, completed an open-ended interview to identify their attachment figures.

Results Children first sought parents for general attachment needs, context-specific attachment situations, and emotion-eliciting situations at school, and demonstrated no preference between the biological and the non-biological mother or the primary and the secondary caregiver. Also, children first sought peers (i.e., siblings, friends, cousins) as much as parents for general companionship needs, while they first sought parents for context-specific companionship.

Conclusion In middle childhood, lesbian mothers continue to function as safe havens and secure bases for their children. However, it cannot be excluded that children first turn to their biological mother for context-specific attachment situations. Also, children seek out peers more in specific companionship situations (e.g., sharing secrets, playing).

Policy Implications As lesbian mothers through donor insemination effectively meet children's attachment needs, regardless of their biological status and caregiving role, the lack of legal recognition of these families in Italy is empirically unfounded.

Keywords Lesbian Mothers · Donor Insemination · Attachment Needs · Middle Childhood · Primary Attachment Figure · Biological Parenthood · Minoritized Sexual Identities

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Introduction

Attachment refers to a child's significant affective bond with a wiser and stronger figure who is not interchangeable with another individual and in which the provision of security is central (Ainsworth, 1989; Bowlby, 1958). Children who are securely attached to parents are able to use them (i.e., attachment figures) as safe havens in times of distress and, in times of low distress, secure bases for exploration and play (Kerns et al., 2000). Of note, children have more than one figure to whom they direct attachment behaviors (Bowlby, 1988). Likewise, children establish a hierarchical structure for their attachment relationships, with the child's most preferred caregiver taking on the role of the primary attachment figure, while other caregivers serve as secondary attachment figures, providing a safe haven and secure

base when the primary attachment figure is (temporarily) unavailable (Bowlby, 1982).

Although the need for attachment figures is most evident in early childhood, children continue to need—and rely on—their parents as attachment figures in middle childhood (i.e., ages 6–12 years) (Bosmans & Kerns, 2015; Bowlby, 1979), though in an age-specific manner. Notably, school-age children typically require less parental assistance, most likely because they show increased skills of self-regulation and self-reliance, and caregivers have expectations regarding greater child autonomy (Kerns et al., 2006). It follows that, during middle childhood, the goal of the attachment system changes from maintaining proximity to ensuring availability (Kerns & Brumariu, 2016). Also, compared to the preschool years, in the school years, attachment is characterized by less frequent attachment behaviors directed towards particular attachment figures, and children are able to manage longer separations and distance from caregivers, as long as children are aware that caregivers are reachable when needed (Kerns & Brumariu, 2016; Brumariu & Kerns, 2022).

Children's perceptions of caregiver availability, however, tend to increase in middle childhood (see Kerns and Brumariu (2016) for a review). In addition, attachment in middle childhood is characterized by the transition toward greater co-regulation of secure base contact between the child and parental figure, with the child taking a key role in initiating contact and maintaining the caregiver's availability as needed (Kerns & Brumariu, 2016; Koehn & Kerns, 2016). Of relevance, school attendance and engagement in extracurricular activities (e.g., sports) expand children's social world, with the result that peers and non-parental caregivers (e.g., teachers, relatives) generally begin to take on greater importance.

In this vein, the attachment system undergoes a process of differentiation and diversification, and the choices of attachment figures may be influenced by the specific situation, leading children to rely on different attachment figures in various circumstances, rather than relying on a single attachment figure for all situations (Mayseless, 2005). Consequently, the emotional bond with caregivers, although still important, may "penetrate" fewer domains of children's life (Cassidy, 1999). Despite gradual changes in the nature of attachment with parents and the increasing complexity and diversity of children's social connections, such as peers, teachers, and relatives, previous research consistently indicates that parents remain the primary source of attachment support during middle childhood (Brumariu et al., 2020; Kerns & Brumariu, 2016; Kerns et al., 2006; Kobak et al., 2005; Seibert & Kerns, 2009). In instances when parents are unavailable, children may turn to teachers, peers, relatives, or siblings, who can act as "temporary attachment figures" (Carone et al., 2022; Verschueren, 2015).

With one exception (Carone et al., 2020a), research has only investigated the identification of primary attachment figures during the school years among children born to heterosexual parents through unassisted conception (for a review, see Brumariu & Kerns, 2022). Worldwide, the number of families headed by parents with minoritized sexual identities is growing (Bos & Gartrell, 2020; Imrie & Golombok, 2020; Patterson et al., 2021), as are the various routes available to these families to have children (e.g., assisted reproduction, adoption). In this context, attachment theory may provide a useful framework for understanding the parent–child relationship in diverse family forms and generate insight into the attachment dynamics and hierarchies in family contexts that differ from those that Bowlby considered when developing his theory. This is especially important, given evidence that in families headed by parents with minoritized sexual identities caregiving roles are not organized based on parent gender, as it typically occurs in heterosexual parent families (Carone & Lingiardi, 2022). This may result in a difference in children's identification and use of parents as attachment figures in middle childhood (Carone et al., 2020a). Therefore, the present study aimed at exploring the identification and use of attachment figures in different situations by school-age children of lesbian mothers through donor insemination.

Do Mothers Remain Primary Attachment Figures in Middle Childhood?

Hazan and Zeifman (1994) identified four components of attachment: proximity maintenance, safe haven, separation distress, and secure base. From their perspective, the first two attachment components are transferred from parents to peers during middle childhood. In this vein, they conducted a cross-sectional interview study with 6- to 17-year-old children raised in heterosexual parent families to evaluate their attachment behaviors towards parents and peers (Hazan & Zeifman, 1994, 1999). Regarding the proximity maintenance component, most children, even in the youngest age group, preferred to spend time with peers, rather than parents. Also, they observed a developmental pattern in the safe haven component, indicating a transition from parents to peers between the 8-10-year-old group and the 11-14-year-old group. In contrast, children in all age groups directed separation distress and secure base behavior towards parents, rather than peers. Based on these results, Hazan and Zeifman (1994) suggested that children in middle childhood have already shifted the proximity maintenance element from parents to peers and are amid transitioning the safe haven component.

Nickerson and Nagle (2005) also tested Hazan's hypothesis regarding the transfer of attachment components from parents to peers. They interviewed fourth, sixth, and eighth graders and discovered that eighth graders were more inclined than fourth graders to seek proximity or find a safe haven in their peers. However, the grade level did not influence the selection of a secure base component, as the majority of children across all three grades preferred their parents. Consequently, Nickerson and Nagle (2005) identified a shift from parents to peers for the proximity-seeking and safe haven aspects of attachment, but their study suggested that this transition occurred in early adolescence rather than middle childhood. Kobak and colleagues (2005) modified the interview originally developed by Hazan and Zeifman (1994) and asked 9-13-year-old children to identify the four most significant people in their lives and then inquired about their preferences for various attachment scenarios. In their study, Kobak et al. (2005) found that parents were consistently ranked highest for all four attachment components.

Kerns and colleagues (2006) raised doubts about Hazan and Zeifman's (1994) explanations regarding the transition of attachment components during middle childhood, specifically concerning the proximity maintenance component. In this vein, they proposed that certain interactions might entail proximity but not necessarily address attachment-related needs. For instance, a child might seek out a peer to engage in play, which could be seen as a form of proximity maintenance, although it is not in the service of the child's attachment needs. Notably, because Hazan and Zeifman (1994, 1999) asked children about proximity maintenance through a question not directly regarding context (e.g., who they like to spend time with, to be near), it was not clear whether children's answers reflected seeking others when the attachment system was activated, or seeking others for affiliation (i.e., companionship). For this reason, Kerns and colleagues (2006) asked children their preferences for whom they would seek out in situations related to attachment and companionship (e.g., when they were scared versus when they wanted to play). These attachment-related questions essentially encompassed what Hazan and Zeifman (1994) identified as the safe haven aspect of attachment. Based on a sample of third and sixth graders, Kerns and colleagues (2006) discovered that children sought out their parents when the attachment system was activated (i.e., the safe haven questions), whereas they leaned toward peers for companionship.

In line with Kerns and colleagues (2006)'s results, several interview-based studies (Brumariu et al., 2020; Kerns et al., 2006; Seibert & Kerns, 2009; Kobak et al., 2005; Vandevivere et al., 2015) found that, in heterosexual parent families, children in middle childhood seek parents in a range of situations that trigger attachment behaviors including when they feel sad, ill or afraid; when coping with separation from—or the loss of—an attachment figure; and when they are distressed over a social conflict or perform poorly at school or in sports. Of note, different from toddlers, some school-age children report seeking siblings, grandparents, and peers, and, in school context only, teachers, when their parents are not immediately accessible (Brumariu et al., 2020; Kerns et al., 2006; Seibert & Kerns, 2009). Therefore, it is likely that non-parental figures may play a secondary role in meeting children's attachment needs in middle childhood.

The only study of attachment during middle childhood involving children of lesbian mothers was conducted in Italy (Carone et al., 2020a). Although it focused only on parents as potential attachment figures, and did not compare attachment to parents versus peers, the results showed that, on average, children relied heavily on mothers for both safe haven and secure base needs. These results suggest that, despite the typical growth in children's social networks during middle childhood, school-age children continue to use parents to meet the general attachment needs of safety (i.e., with parents promoting confidence) and support for exploration (i.e., with parents showing confidence).

Which Factors Matter Most for the Attachment Hierarchy?

As anticipated, most studies on the attachment hierarchy during middle childhood have been conducted with children of heterosexual parents through unassisted conception (e.g., Brumariu et al., 2020; Seibert & Kerns, 2009). These studies have indicated that children—and especially younger children (Umemura et al., 2013)—show greater attachment behaviors towards the mother, over the father, in stressful situations that activate the attachment system (but not non-distressing situations) (Seibert & Kerns, 2009). These results suggest an attachment hierarchy, with proximity to the mother prioritized over proximity to the father when the attachment system is activated.

Over the last decade, cultural changes and shifts in social norms and expectations have resulted in a reorganization of parental roles. Of note, women have assumed greater prominence in the workforce and have invested an increasing amount of time in their careers (Parker et al., 2009). As a result, although heterosexual mothers still spend approximately twice as much time performing weekly care activities relative to heterosexual fathers, fathers' involvement in daily care activities has significantly increased (Livingston & Parker, 2011). Thus, the traditional roles of fathers as decision-makers and mothers as caregivers have shifted to afford more egalitarian family decision-making between parents (Carone & Lingiardi, 2022). In this vein, studies on fathers' involvement in heterosexual parent families have

shown that they are likely to become attachment figures alongside the mother, and the quality of the infant's attachment to the father is related to the father's caregiving behaviors (Lucassen et al., 2011; Sarkadi et al., 2008).

Additionally, social, legislative, and technological changes have increasingly facilitated access to assisted reproductive techniques for individuals of diverse sexual orientations (Gato et al., 2022; Golombok, 2015). While a significant number of studies have shown that parents with minoritized sexual identities are as competent and well-adjusted as heterosexual parents (e.g., Baiocco et al., 2018; Bos & Gartrell, 2020; Carone et al., 2018; Gato et al., 2022; Imrie & Golombok, 2020; Shenkman et al., 2023a), and their children demonstrate healthy development (e.g., Bos & Gartrell, 2020; Carone et al., 2022; Farr et al., 2022; Patterson, 2017; Shenkman et al., 2023b), relatively fewer studies have explored child development and family processes from an attachment perspective (for exceptions, see Carone et al., 2020a, b, 2023a, 2023b; Feugé et al., 2020; McConnachie et al., 2020; Salinas-Quiroz et al., 2018).

The growing number of lesbian mother families through donor insemination (Bos & Gartrell, 2020) invites us to explore which factors might determine children's attachment patterns (e.g., a biological or non-biological link, proximity, availability, time spent together) in these families. Furthermore, it is critically important to evaluate attachment in donor-conceived children of lesbian mothers because in middle childhood children gain an awareness of biological inheritance and begin to grasp the significance of their origins (Williams & Smith, 2010; Carone et al., 2023a). Accordingly, the present study examined the identification and utilization of attachment figures in different contexts in middle childhood by children born to lesbian mothers through donor insemination. Specifically, it investigated whether these children directed their attachment behaviors towards mothers, peers, or other significant figures (e.g., grandparents, teachers, uncles, aunts), and whether they showed any attachment preference between mothers. Based on the literature discussed above, we hypothesized that:

a) children would seek mothers first for general attachment needs (i.e., when feeling sadness or fear) and in context-specific attachment situations, but seek other figures in emotion-eliciting situations at school;
b) children would seek peers (i.e., siblings, friends, cousins) first for general companionship (e.g., playing, sharing secrets) and in context-specific companionship situations;
c) children would not show a preference between the biological and the non-biological mother when seeking to meet general attachment needs;
d) children would first seek the mother who spent more hours with them daily (i.e., the primary caregiver, with greater availability);
e) children would at least once seek mothers for attachment needs, even if not initially; children would at least once seek peers for companionship needs, even if not initially.

Method

Participants

The sample comprised 36 donor-conceived children aged 6–12 years ($M = 9.20$ years; $SD = 2.50$) from 30 lesbian mother families, all residing in Italy. In six families, both children (of whom, two twins) in the relevant age range were included. Among the children, 19 (52.78%) were assigned male at birth and 17 (47.22%) were assigned female at birth. Twenty-nine (80.56%) children were conceived through donor insemination in an overseas clinic (i.e., 13 Spain, 12 Denmark, 3 Belgium, 1 Greece) and the remaining 7 (19.44%) were conceived through self-insemination using donor sperm. All mothers ($M_{years} = 47.13$ years; $SD = 6.31$) identified as cisgender and were white and Italian, except for one with German-Italian nationality. The sample was recruited in the context of a larger study on parenting and attachment in diverse families formed through assisted reproduction (Carone et al., 2023b). The inclusion criteria were that the parental couple had lived together since the child's birth, resided in Italy, had conceived using third-party assisted reproductive techniques, and had a child aged 6–12 years. All children in the relevant age range in each family (e.g., twins) were included.

Procedure

Ethical approval was granted by the Ethics Committee of the Department of Dynamic and Clinical Psychology, and Health Studies, Sapienza University of Rome (prot. n. 212/2020, project title: "Same-Sex and Different-Sex Parent Families through Assisted Reproduction: Parenting, Attachment, Child Adjustment and Neural Correlates"). Written informed consent was obtained from each parent and verbal consent was obtained from all children. Data were collected via Zoom between April 2021–December 2022. Child interviews were conducted by one of the four PhD students involved in the project—all of whom were trained in the study techniques and had expertise in research with diverse families through assisted reproduction.

Measures

Children's Identification of Attachment Figures

Following a two-stage process, the Attachment Figure Interview (Seibert & Kerns, 2009) was administered online to children to identify which figures they were likely to seek out in different situations. First, the interviewer asked each child to nominate the four most important people in their life. The decision to limit children to nominate four people was based on the Kobak et al. (2005)'s approach and allowed to test for the consistency of preferences across (parental and non-parental) adult caregivers, friends, siblings, and cousins, as well as to distinguish between primary and secondary attachment figures. Subsequently, the interviewer said to the child, "Now that you have told me about the four most important people in your life, I am going to ask you a few questions." For each of the 17 situations described, the child was asked which of their four people they would seek first. Then, they were asked who else they would seek if the previously nominated person was unavailable, until all four people were nominated or the child indicated that they would no longer seek anyone for that particular situation. Children were also allowed to nominate "nobody" or two people with the same priority (e.g., "both parents").

All of the attachment situations assessed the safe haven component of attachment, and they were distinguished from companionship situations, which focused on fun and shared activities. For each of the 17 situations, children were asked four general questions: two assessed attachment needs and two assessed companionship needs (taken from Kerns et al., 2006). They were then asked several context-specific questions: five assessed who the child would seek in situations likely to evoke attachment needs and four assessed who the child would seek in situations likely to evoke companionship needs. Finally, to examine who children might seek in situations evoking attachment needs when parents were not immediately available, they were presented with four emotion-eliciting situations at school.

The Attachment Figure Interview has been used in several previous attachment studies and has been shown to be a reliable instrument to identify attachment figures in middle childhood (e.g., Brumariu et al., 2020; Kerns et al., 2006; Kobak et al., 2005; Seibert & Kerns, 2009). More specifically, the interview questions are developmentally appropriate and in line with the attachment theory (Bowlby, 1979, 1982); children are directly asked questions such as regarding fear and sadness, which are the core of attachment theory, to distinguish between functions of peers and parents (Seibert & Kerns, 2009).

Sociodemographic Information

Mothers were asked to provide information on several individual, child, and family sociodemographic factors, including parent age and gender assigned at birth; child age and gender assigned at birth; method used to conceive; country of conception; (non-)biological status; and hours spent caring for the child in the absence of the other mother (weekly).

Data Analysis

Analyses first considered the "biological/non-biological mother" classification and then the "primary/secondary caregiver," defined as the mother who reported spending more time with the child. Preliminarily, children's responses about the four most important people in their life were grouped into nine categories: (1) the biological mother; (2) the non-biological mother; (3) both mother; (4) siblings; (5) grandparents; (6) uncles, aunts, and other adult non-parental figures; (7) cousins and friends; (8) teachers; and (9) others (e.g., pets, stuffed animals, etc.). A "nobody" option was included in the event that children made no nominations. After this preliminary classification, children's first choice for meeting general attachment needs (i.e., to alleviate sadness or fear) and general companionship needs (e.g., to share secrets or play), as well as in context-specific attachment situations (e.g., starting a new school, fighting with one's best friend, attending summer camp, experiencing bullying), and context-specific companionship situations (e.g., watching a movie, telling a funny story, taking a bike ride), and emotion-eliciting situations at school (e.g., getting hurt during recess, experiencing meanness from a friend, getting into trouble) were explored. Moreover, whether children were likely to choose specific figures over others—particularly for general attachment needs and in context-specific attachment situations—was also examined.

Subsequently, the number of times children named different figures for each group of attachment questions (i.e., general attachment needs, context-specific attachment situations, emotion-eliciting situations at school) as their first port of call was calculated and paired *t*-tests were conducted to assess if there are significant differences between attachment figures. Given the multiple comparisons, Bonferroni's correction was applied to minimize the risk of error (with $p < .006$ used to reject the null hypothesis). However, given the exploratory and descriptive nature of this study, all the paired comparison were also conducted without Bonferroni's correction to identify potential differences which otherwise would go undetected due to our small sample size. These analyses are reported as Supplemental Material. Further, we conducted power analyses to identify the power

observed for all comparisons presented in the Results section below.

Results

Do Children Seek Mothers First for General Attachment Needs?

Based on previous research (e.g., Brumariu et al., 2020, Seibert & Kerns, 2009), we hypothesized that children would seek their mothers first for general attachment needs (i.e., to minimize sadness or fear) and peers (i.e., siblings, friends, cousins) first for companionship needs (e.g., when playing or sharing secrets). As shown in Table 1, for general attachment situations (i.e., when sad or afraid), children reported that they would first seek their mothers (sum of "both mothers," "biological mother," and "non-biological mother") 47.23% of the time when scared, and 63.89% of the time when sad. On the other hand, children reported turning to peers (sum of "sibling" and "cousin/friend") for general attachment needs 30.56% of the time when scared and 13.89% of the time when sad. A small percentage (i.e., 16.67–19.44%) of children nominated grandparents, aunts, uncles, adult non-parental figures, or teachers in response to these two general attachment situations.

The *t*-tests confirmed the hypothesis, showing that children would seek their mothers first for general attachment needs, over and above any other figure, including a peer (Table 2). Moreover, for the same general attachment needs, children would seek siblings, grandparents, aunts, uncles, adult non-parental figures, friends, and cousins to an equal extent.

When context-specific attachment situations were considered, similar results emerged, in line with our expectations. Table 1 reported children's answers to each interview question. As shown in Table 1, children reported a tendency to seek their mothers first for context-specific attachment situations (e.g., starting a new school, fighting with a best friend, going to summer camp, experiencing bullying). The *t*-tests conducted on the dimensions calculated from each response (i.e., general attachment, context-specific attachment, emotion-eliciting situations at school) produced consistent results. Moreover, for these attachment situations, children were significantly more likely to first seek siblings,

Table 1 Frequencies of children's initial attachment figures for general attachment and companionship needs, and in context-specific attachment and companionship situations and emotion-eliciting situations at school

		Children's response									
		Both mothers	Biological mother	Non-biological mother	Sibling	Grandparent	Uncle, Aunt, Adult Friend	Cousin, Friend	Teacher	Other (e.g., cat, stuffed toy)	Nobody
Attachment Figure Interview area		%	%	%	%	%	%	%	%	%	%
GENERAL	**Attachment**										
	Sad	16.67	25.00	22.22	5.56	11.11	8.33	8.33	0.00	2.78	0.00
	Scared	13.89	27.78	5.56	16.67	5.56	11.11	13.89	0.00	2.78	0.00
	Companionship										
	Secret	13.89	13.89	11.11	19.44	2.78	5.56	25.00	0.00	2.78	2.78
	Play	2.78	5.56	2.78	36.11	5.56	8.33	33.33	0.00	5.56	0.00
CONTEXT-SPECIFIC	**Attachment**										
	New school	13.89	19.44	19.44	13.89	5.56	5.56	19.44	2.78	0.00	0.00
	Best friend fight	11.11	33.33	16.67	11.11	8.33	2.78	16.67	0.00	0.00	0.00
	Summer camp	22.22	30.56	8.33	11.11	8.33	5.56	11.11	0.00	0.00	2.78
	Best friend move	25.00	19.44	16.67	8.33	2.78	13.89	13.89	0.00	0.00	0.00
	Bully	5.56	33.33	8.33	13.89	5.56	5.56	25.00	0.00	0.00	2.78
	Companionship										
	Movie	8.33	13.89	8.33	16.67	13.89	5.56	33.33	0.00	0.00	0.00
	Funny story	5.56	16.67	13.89	16.67	16.67	0.00	27.78	0.00	0.00	0.00
	Bike ride	5.56	11.11	19.44	13.89	5.56	5.56	36.11	0.00	2.78	0.00
	Talk about book	5.56	27.78	19.44	19.44	2.78	5.56	13.89	2.78	0.00	0.00
EMOTION-ELICITING SITUATIONS AT SCHOOL	Hurt during recess	13.89	25.00	22.22	5.56	8.33	0.00	22.22	0.00	0.00	0.00
	Mean friend	11.11	27.78	8.33	2.78	8.33	8.33	27.78	2.78	0.00	0.00
	Got into trouble	8.33	13.89	16.67	8.33	8.33	8.33	27.78	2.78	2.78	2.78
	Drop lunch tray	5.56	27.78	11.11	5.56	8.33	5.56	30.56	2.78	0.00	2.78

Table 2 Means (and Standard Deviations) for children's first choice of figure in different sets of attachment items and companionship items

	Children's first choice						
	Mother (Bio, Non-bio, Both)	Siblings	Grandparents	Uncle, Aunt, Adult Friend	Cousin, Friend	Teacher	Other
	M (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
Attachment sets of questions							
General attachment	$0.77\ (0.65)_{A}$	$0.23\ (0.43)_{B}$	$0.17\ (0.38)_{B}$	$0.20\ (0.53)_{B}$	$0.23\ (0.55)_{B}$	$0.06\ (0.33)_{B}$	$0.11\ (0.47)_{B}$
Context-specific attachment	$2.83\ (1.68)_{A}$	$0.58\ (0.97)_{B}$	$0.31\ (0.86)_{B,C}$	$0.33\ (0.83)_{B}$	$0.86\ (1.40)_{B}$	$0.03\ (0.17)_{C,D}$	$0.00\ (0.00)_{D}$
Emotion-eliciting situations at school	$1.92\ (1.25)_{A}$	$0.22\ (0.54)_{B}$	$0.33\ (0.89)_{B}$	$0.22\ (0.59)_{B,C}$	$1.08\ (1.40)_{A}$	$0.08\ (0.50)_{B,C}$	$0.03\ (0.17)_{C}$
Companionship sets of questions							
General companionship	$0.50\ (0.66)_{A}$	$0.56\ (0.73)_{A}$	$0.08\ (0.28)_{B}$	$0.14\ (0.43)_{B}$	$0.58\ (0.81)_{A}$	$0.00\ (0.00)_{B}$	$0.08\ (0.37)_{B}$
Context-specific companionship	$2.83\ (1.68)_{A}$	$0.58\ (0.97)_{B}$	$0.31\ (0.86)_{B,C}$	$0.33\ (0.83)_{B,C}$	$0.86\ (1.40)_{B}$	$0.28\ (0.17)_{C}$	$0.00\ (0.00)_{C,D}$

Note. Letters subscripted within a row indicate a significant difference in the number of times children chose that figure over another. Higher mean is indicated by letter A, while for significantly lower values the following letters are used. The same letter assigned to different groups indicates that there is no statistically significant difference between the two groups. Biological and non-biological parents were first compared (see Table 3), and then the general choice of "parent" was compared with that of other figures

grandparents, cousins, friends, and adult non-parental figures, over teachers (Table 2).

Subsequently, we examined who children would seek first at school. Table 1 displays that, for most of the emotion-eliciting situations, children reported that they would first seek someone at school—usually a peer (i.e., "mean friend": 27.78% cousin or friend, 27.78% biological mother; "got into trouble": 27.78% cousin or friend; "drop lunch tray": 30.56% cousin or friend). However, in one situation (i.e., "hurt during break": 25.00% biological mother), they reported that they would first seek one of their mothers. In fact, as the *t*-tests showed, children nominated mothers at a similar level to cousins and friends for these situations. However, they were more likely to seek cousins and friends and grandparents over siblings, adult non-parental figures, and teachers (Table 2).

Do Children Seek Peers First for Companionship Needs?

When asked about general companionship needs (i.e., to share a secret or play), children reported that they would first seek peers (sum of "sibling" and "cousin/friend") 44.44% of the time when sharing a secret, and 69.44% of the time when playing. On the other hand, they reported that they would first seek their mothers (sum of "both mothers," "biological mother," and "non-biological mother") 38.89% of the time when telling a secret, and only 11.12% of the time when playing. A small percentage (i.e., 8.34–13.89%) of children nominated grandparents, aunts, uncles, adult non-parental figures, and teachers for these general companionship situations. The *t*-tests partly confirmed our hypothesis that children seek peers first for companionship needs and showed that children sought mothers, siblings, cousins, and friends approximately equally, and more than grandparents, aunts, uncles, adult non-parental figures, teachers, and others (Table 2).

Moreover, when context-specific companionship situations (e.g., watching a movie, telling a funny story, riding a bike) were considered, children reported going to their mothers first (Table 2). Subsequently, they sought siblings, grandparents, adult non-parental figures, cousins, and friends approximately equally. They sought teachers less frequently than mothers and peers (even if this tendency was at a similar level to that of grandparents and adult non-parental figures), and they very rarely sought others (Table 2).

Do Children Seek the Biological Mother First for Attachment Needs (over the Non-Biological Mother)?

Children reported a similar preference for their biological and their non-biological mother across general attachment situations, context-specific attachment situations, and emotion-eliciting situations (Table 3).

Table 3 Mean (and Standard Deviation) for children's choice of biological or non-biological mother and of primary or secondary caregiver in different sets of attachment items

	Children's first choice between their mothers		Children's first choice between their mothers	
	Biological mother	Non-biological mother	Primary caregiver	Secondary caregiver
Attachment sets of questions	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
General attachment	$0.54\ (0.66)_p$	$0.29\ (0.48)_p$	$0.47\ (0.61)_p$	$0.33\ (0.54)_p$
Context-specific attachment	$1.36\ (1.36)_p$	$0.69\ (0.92)_p$	$1.39\ (1.27)_p$	$0.92\ (1.13)_p$
Emotion-eliciting situations at school	$0.94\ (1.01)_p$	$0.58\ (0.81)_p$	$0.94\ (0.98)_p$	$0.58\ (0.84)_p$

Note. Letters subscripted within a row indicate a significant difference in the number of times children chose that figure over another. Higher mean is indicated by letter A, while for significantly lower values the following letters are used. The same letter assigned to different groups indicates that there is no statistically significant difference between the two groups

Table 4 Frequencies of all nominated attachment figures (Primary and Secondary) for general attachment and companionship needs, and in context-specific attachment and companionship situations and emotion-eliciting situations at school

		Children's responses						
		Mothers	Sibling	Grandparent	Uncle, Aunt, Adult Friend	Cousin, Friend	Teacher	Other (e.g., cat, stuffed toy)
Attachment Figure Interview area		%	%	%	%	%	%	%
GENERAL	**Attachment**							
	Sad	91.67	52.78	30.56	30.56	47.22	2.78	5.56
	Scared	86.11	52.78	30.56	30.56	44.44	2.78	5.56
	Companionship							
	Secret	88.89	47.22	30.56	30.56	44.44	2.78	2.78
	Play	91.67	52.78	30.56	30.56	47.22	2.78	5.56
CONTEXT-SPECIFIC	**Attachment**							
	New school	94.44	52.78	30.56	30.56	50.00	2.78	5.56
	Best friend fight	94.44	52.78	27.78	30.56	50.00	2.78	5.56
	Summer camp	88.89	52.78	30.56	30.56	47.22	2.78	2.78
	Best friend move	94.44	50.00	30.56	30.56	50.00	2.78	2.78
	Bully	91.67	50.00	30.56	30.56	50.00	2.78	2.78
	Companionship							
	Movie	94.44	52.78	30.56	30.56	50.00	2.78	5.56
	Funny story	88.89	52.78	27.78	27.78	50.00	2.78	5.56
	Bike ride	91.67	52.78	30.56	69.44	30.56	0.00	0.00
	Talk about book	91.67	47.22	30.56	30.56	50.00	2.78	2.78
EMOTION-ELICITING SITUATIONS AT SCHOOL	Hurt during recess	91.67	44.44	30.56	30.56	47.22	2.78	2.78
	Mean friend	91.67	50.00	30.56	30.56	50.00	2.78	2.78
	Got into trouble	86.11	50.00	30.56	30.56	2.78	2.78	0.00
	Drop lunch tray	91.67	52.78	30.56	30.56	50.00	2.78	5.56

Do Children Seek the Primary Caregiving Mother First for Attachment Needs (Over the Secondary Caregiving Mother)?

Children showed a similar preference for their primary and their secondary caregiver across general attachment situations, context-specific attachment situations, and emotion-eliciting situations (Table 3).

Do Children Seek Parents at least once for Attachment Needs and Peers at least once for Companionship Needs?

In most cases, children reported that they would seek their mothers first for attachment needs. The following section presents the other figures reported by children at least once in response to the 17 attachment situations (each with four corresponding questions). As shown in Table 4, for general attachment needs, children most frequently reported that they would seek one of their mothers (or both mothers) (86.11–91.67%), followed by a sibling (52.78%), a

grandparent (30.56%), an adult non-parental Fig. (30.56%), a cousin or friend (44.44–47.22%), a teacher (2.78%), and another Fig. (5.56%). In response to the context-specific attachment questions, children again nominated one of their mothers (or both mothers) most frequently (88.89–94.44%), followed by a sibling (50.00–52.78%), a grandparent (27.78–30.56%), an adult non-parental Fig. (30.56%), a cousin or friend (47.22–50.00%), a teacher (2.78%), and another Fig. (2.78–5.56%). Finally, in response to questions investigating emotion-eliciting situations at school, children reported one of their mothers (or both mothers) most frequently (86.11–91.67%), followed by a sibling (44.44–52.78%), a grandparent (30.56%), an adult non-parental Fig. (30.56%), a cousin or friend (2.78–50.00%), a teacher (2.78%), and another Fig. (0.00–5.56%).

For general attachment needs, children most often sought their mothers over other figures (Table 5). Also, they sought siblings, grandparents, aunts, uncles, adult non-parental figures, friends, and cousins equally, and more frequently than teachers and others. With regard to context-specific attachment situations and emotion-eliciting situations at school, children most often sought their mothers, followed by siblings, grandparents, cousins, friends, and adult non-parental figures. They only rarely sought teachers and others (Table 5).

With regard to companionship needs, in both general and context-specific situations, children most often sought one of their mothers (or both mothers) first, and subsequently siblings, grandparents, cousins, friends, and other adult family members. Only rarely did they seek teachers and others (Table 5).

Power Analysis

For all *t*-tests we ran applying Bonferroni's correction ($p = .006$), the observed power ranged from 0.12 to 1.00 (lower Cohen's $d = 0.28$ to higher Cohen's $d = 2.60$, respectively), indicating that for some comparison (e.g., comparison between grandparents and teachers for general companionship first choice, $d = 0.28$) the lack of significant differences might be related to the small sample size. Of note, regarding comparisons between mothers and peers for attachment versus companionship needs, the observed power was the highest and ranged from 0.83 to 1.00 (lower Cohen's $d = 0.65$ for general companionship to higher Cohen's $d = 2.60$ for context-specific attachment, respectively).

Discussion

The present study aimed at evaluating the attachment figures reported in middle childhood by children of lesbian mothers through donor insemination. The results confirmed our first hypothesis, showing that, for general attachment needs and in context-specific attachment situations, children first sought their mothers. These results align with several studies conducted in U.S and Eastern-Europe with children in the same age range born to heterosexual parents through unassisted conception (Brumariu et al., 2020; Kerns et al., 2006; Seibert & Kerns, 2009), finding that, in middle childhood, attachment figures continue to function as both safe havens in times of distress (e.g., sadness, fear) and secure bases to support exploration (e.g., going to new school). Indeed, in middle childhood, parents must not only be

Table 5 Means (and Standard Deviations) for all nominated attachment figures (primary and secondary) in different sets of attachment items

	Children's ever choice						
	Mother (Bio, Non-bio, Both)	Siblings	Grandparents	Uncle, Aunt, Adult Friend	Cousin, Friend	Teacher	Other
Attachment sets of questions	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
General attachment	1.78 (0.59)$_A$	1.06 (1.01)$_B$	0.61 (0.93)$_B$	0.61 (0.93)$_{B,C}$	0.92 (1.00)$_B$	0.06 (0.33)$_C$	0.11 (0.47)$_C$
Context-specific attachment	4.63 (1.18)$_A$	2.58 (2.50)$_B$	1.50 (2.29)$_B$	1.53 (2.34)$_B$	2.47 (2.51)$_B$	0.14 (0.83)$_C$	0.19 (0.82)$_C$
Emotion-eliciting situations at school	3.61 (1.02)$_A$	1.97 (1.96)$_B$	1.22 (1.87)$_B$	1.22 (1.87)$_B$	1.97 (2.01)$_B$	0.11 (0.67)$_C$	0.14 (0.59)$_C$
Companionship sets of questions							
General companionship	1.81 (0.53)$_A$	1.00 (0.99)$_B$	0.61 (0.93)$_B$	0.61 (0.93)$_B$	0.92 (1.00)$_B$	0.06 (0.33)$_C$	0.08 (0.37)$_C$
Context-specific companionship	3.67 (1.04)$_A$	2.06 (1.99)$_B$	1.19 (1.83)$_B$	1.19 (1.83)$_B$	2.00 (2.03)$_B$	0.11 (0.67)$_C$	0.19 (0.82)$_C$

Note. Letters subscripted within a row indicate a significant difference in the number of times children chose that figure over another. Higher mean is indicated by letter A, while for significantly lower values the following letters are used. The same letter assigned to different groups indicates that there is no statistically significant difference between the two groups

responsive and available, but they must also act in ways that support children's developing autonomy (Seibert & Kerns, 2009).

With regard to emotion-eliciting situations at school (e.g., getting hurt during recess, fighting with a friend, getting into trouble, dropping one's lunch tray), children often—but not always—reported first seeking someone at school (usually a peer), though many also reported that they would first seek a parent. Given the age of the children in the sample, peers may have played an important role in meeting attachment needs, especially when parents were not immediately available. Indeed, research has found that, particularly in the school context, peers may operate as "temporary attachment figures" (Bosmans & Kerns, 2015); however, they do not routinely act as attachment figures in other contexts.

In terms of general attachment needs and context-specific and emotion-eliciting situations, children most frequently reported seeking parents first, followed by siblings, grandparents, adult non-parental figures, cousins, and friends. Although these latter (i.e., non-parental) figures do not typically serve as attachment figures, they may be important in other respects. For instance, siblings may represent social models (Lewis, 2005) and grandparents may provide validation and self-esteem (Seibert & Kerns, 2009).

Contrary to our expectations and the literature (Seibert & Kerns, 2009), the results showed that children sought out both mothers and peers for general companionship needs about equally often (e.g., to share a secret or play), and they sought mothers more often than peers in context-specific companionship situations (e.g., watching a movie, telling a funny story, going for a bike ride, or talking about a book). While these results may have been influenced by the COVID-19 pandemic, which made it more likely for children to engage in activities with their mothers, rather than peers, they suggest that in middle childhood children continue to share activities and interests with their parents.

Furthermore, children showed no preference between their biological and their non-biological mother with respect to general attachment needs, context-specific attachment situations, and emotion-eliciting situations at school. These results should be situated within the wider family dynamics at play in lesbian mother families. The society often suggests that non-biological mothers may not be considered "real" mothers, which can lead to their invalidation and exclusion within the family triad (Clarke, 2008). However, both mothers make efforts to prevent conflicts in the child regarding their preferred mother (Millbank, 2008). If the child has internalized such maternal intentions through their daily experiences, it is reasonable to assume that they have developed an internal working model (IWM) of both of their mothers as being available and responsive to their attachment needs.

However, it is important to note that when the analyses were repeated without applying Bonferroni's correction, children reported a preference for their biological mother over their non-biological mother in context-specific attachment situations. While interpreting this result, one should consider the small sample size and the peculiar characteristics of the sample. We can only offer speculative interpretations at this point. In this context, it appears that in middle childhood, children continue to refer to both mothers when asked to think about situations in which they are sad or scared (general attachment domain) or when something emotionally significant happens at school (e.g., being hurt during recess or dealing with a mean friend). However, when context-specific situations activate their attachment system (e.g., a fight with their best friend or a call from summer camp), these children tend to seek their biological mother more frequently. Whether this is a sign of the preferential attachment bond they had in infancy with their biological mother due to the greater time spent together, as some research has indeed found (Goldberg et al., 2008), cannot be excluded and deserves further examination. The results also showed that children sought their primary and secondary caregivers equally. Compared to heterosexual parent families (Golombok, 2015), families headed by parents with minoritized sexual identities are more likely to share caregiving roles, and the quality of parenting has been proposed as a key factor in the development of attachment, irrespective of the amount of time each parent spends with the child (Carone & Lingiardi, 2022). This result aligns with the only study conducted thus far on this topic, which found that parents with minoritized sexual identities can serve as both safe havens and secure bases, regardless of whether the child perceives them as a primary or a secondary attachment figure (Carone et al., 2020a). In this regard, Bos et al. (2007) showed that lesbian mothers, compared to heterosexual parents, are more committed as parents and show higher levels of support (e.g., emotional involvement, parental concern) and lower levels of control and structure, thereby encouraging their child's autonomy.

Of interest, in the present study, children rarely sought teachers for attachment needs, similar to what has been found by Brumariu and colleagues (2020) in their Romanian sample. A potential explanation for this is that most teacher–child relationships are not characterized by an attachment bond, as they are neither exclusive nor long-lasting (i.e., in the Italian educational system, children often change teachers during the school year and share teachers with many peers). In addition, in Italy classes often consist of large numbers of students, about 25 per class, therefore teachers in the Italian education system may often find themselves having to favor more collective, group-oriented relationships rather than individualized ones with individual

students. As suggested by Brumariu and colleagues (2020; see also Kerns & Brumariu, 2016), these results may reflect children's increase self-reliance (e.g., their ability to negotiate peer situations at school by themselves or their increased ability to regulate their emotions and wait until their primary attachment figure is available rather than relying on an alternative adult).

Several studies (Carone et al., 2022; Verschueren, 2015; Verschueren & Koomen, 2012; Zajac & Kobak, 2006) have shown that teachers may still be regarded as temporary or ad hoc attachment figures, serving as safe havens and secure bases in the classroom when other sources of support are limited. In this vein, it must be considered that the present study was conducted during the COVID-19 pandemic, when schools in Italy were closed due to safety concerns and children engaged with teachers only online. It can be assumed that this different form of exposure may have affected children's assessment of teachers as attachment figures.

Some limitations of the study should be considered, to contextualize the results. First, the use of an interview methodology may have influenced children's responses. For instance, while some children answered "nobody" in response to some questions, they may have had a specific person in mind. Second, although based on previous research (Kobak et al., 2005), the decision to limit the children to four nominations of attachment figures likely influenced our results. In particular, while this would not have much impact on the identification of primary attachment figures, it could impact the identification of the secondary attachment figures. For example, children could have nominated two parents and two grandparents for their four people, and then when they were asked who they would go to in companionship situations they would have had only adult figures available for their responses. This may contribute to explain why going to peers seemed low in our sample.

Third, the broad age range within a small sample makes it hard to compare our results across different developmental phases in middle childhood (e.g., early middle childhood versus late middle childhood) and with other previous studies. In fact, it should be considered that children in the early middle childhood may have responded to the companionship questions by reporting that they turn more often to parents than to peers (friends and siblings), thus affecting the results of the entire group. Future studies with larger samples will allow to examine age trends in the identification and use of attachment figures for younger and older middle childhood subsamples, as well as they may likely help to explain whether the non-significant differences we found are indeed confirmed also in other samples or were biased by the small sample size in our study. Fourth, we did not collect several specific socio-demographic characteristics (e.g., age) of each figure the children nominated throughout the interview. Therefore, it was not possible to analyze whether, for example, the children's attachment hierarchy was also influenced by such demographics. Finally, the sample was comprised of mainly well-educated families with middle to high socioeconomic status. This may limit the generalizability of the results to all lesbian mother families. Relatedly, our study would benefit from replication in other sociocultural settings to evaluate whether different legal recognitions of families headed by parents with minoritized sexual identities might influence child–parent relationships. Similarly, a comparison with children of gay fathers, heterosexual parents, and single parents could generate insight into the specific contribution of parent gender, number, and sexual orientation to determining children's use of parents as safe havens and secure bases.

Conclusion

The present study brings new information on children's identification and use of attachment figures in lesbian mother families through donor insemination in middle childhood. The results suggest that, during this developmental stage, parents typically represent the primary attachment figures, whereas friends, cousins, siblings, grandparents, and teachers serve as secondary attachment figures in specific contexts and situations.

In Italy, parents with minoritized sexual identities, including lesbian mothers, are still targets of stereotypes and prejudices in terms of their competence and capacity to offer a nurturing environment for their children (Di Battista et al., 2023a). In addition, the lack of legal recognition for couples with minoritized sexual identities (e.g., no access to adoption and assisted reproduction techniques), combined with a judgmental and negative rhetoric about how families should be constructed (Di Battista et al., 2022; Battista et al., 2023b; Salvati et al., 2023), creates a challenging environment for these families to navigate. Under these circumstances, lesbian mothers (and particularly lesbian non-biological mothers) and their children are vulnerable in a number of situations, such as divorce and the death of the biological mother, as non-biological mothers have no right to child custody (Lingiardi & Carone, 2016). Despite concerns raised over the healthy development of children of parents with minoritized sexual identities (for a discussion, see Bos & Gartrell, 2020; Golombok, 2015), the present results indicate that lesbian mothers are capable of fulfilling children's safe haven and secure base needs, regardless of their biological relation or primary/secondary caregiver status.

Further research on the experiences of lesbian mother families through donor insemination could provide deeper

insight into the functioning of these families, in order to orient policymakers working on the legal recognition of families headed by parents with minoritized sexual identities and access to assisted reproduction for all intended parents (of any sexual orientation). In this vein, conducting longitudinal studies through middle childhood and adolescence would be useful as it would enable the investigation of parental attachment relationships during a developmental phase characterized by increasing demands for autonomy and individualization (Bosmans & Kerns, 2015; Brumariu & Kerns, 2022). This perspective would shed light on the dynamics of peer relationships which become increasingly important, and how they evolve and intersect with parental relationships, potentially replacing them in some cases. Finally, although previous research has both disconfirmed the adverse effect of parents' non-heterosexual orientation and assisted conception on child development (for a review, see Golombok, 2015; Patterson, 2017) and emphasized the importance of secure attachment for healthy child development (e.g., Brumariu & Kerns, 2010; Groh et al., 2017), very few studies have adopted an attachment perspective to explore this topic (e.g., Carone et al., 2020a, b, 2023a, 2023b; Feugé et al., 2020; McConnachie et al., 2020; Salinas-Quiroz et al., 2018). Therefore, further research is recommended to deepen our understanding of child–parent attachment relationships in families of diverse sexual orientation and method of child conception.

Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/s13178-023-00923-y.

Acknowledgements The authors thank all the families who made this research possible.

Funding The present project was funded by the Ministry of University and Research under the call Progetti di Rilevante Interesse Nazionale (PRIN) 2017 (project number 2017XNYB9C; Principal Investigator: Vittorio Lingiardi). In their work, Marta Mirabella and Maria Quintigliano were supported by two research fellowships (Rep. 4/2020, Prot. N. 102 23 January 2020; Quintigliano: Rep. 47/2022, Prot. n. 1937 17 November 2022, respectively) funded within the PRIN 2017 (Principal Investigator: Vittorio Lingiardi).

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

Code Availability Not applicable.

Declarations

Conflicts of Interest/Competing Interests The authors have no conflicts of interest or competing interests.

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