



Chinese Mothers' Sibling Status, Perceived Supportive Coparenting, and their Children's Sibling Relationships

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Abstract

Objectives Parents' experiences as siblings have received little attention from family psychologists. This study examined whether Chinese mothers' sibling status—growing up with or without siblings—played a role in the quality of their children's sibling relationships. It also tested whether the association between mothers' sibling status and children's sibling relationships was moderated by supportive coparenting. The research goal was to provide preliminary evidence relevant to the importance of parents' sibling experiences on their children's sibling relationships.

Methods The sample comprised 167 two-child families in Shanghai, China. Mothers ($M = 34.5$ years old; 55.1% of mothers without siblings) completed questionnaires assessing supportive coparenting and the quality of their children's sibling relationships.

Results The results indicated that there were differences in the quality of sibling relationships among children whose mothers grew up with siblings and their counterparts whose mothers grew up without siblings. Specifically, the former had sibling relationships characterized by more positive involvement, but less conflict, rivalry and avoidance than the latter. In addition, supportive coparenting was positively related to positive sibling involvement and—in children of mothers without siblings—negatively related to both sibling conflict and sibling avoidance.

Conclusions These findings enhance understanding of how mothers' experiences as siblings may have a role in their children's sibling relationships.

Keywords Sibling relationship · Sibling status · Only child · Coparenting · China

Several investigators have proposed that sibling status—whether one has siblings or not—is an important family factor in children's development (Falbo and Polit 1986; Riggio 1999). In particular, China's one-child policy, which restricted the majority of families to having only one child, was introduced by the central government in the late 1970s to control population growth and to solve social and economic problems. It offered a unique opportunity to carry out a quasi-experimental study of the influences of sibling status on developmental outcomes in Chinese children (Falbo and

Poston 1993; Wang et al. 1998). Furthermore, since the early 2000s China's central government has gradually relaxed the one-child policy and now allows couples to have two children (Wang et al. 2016). Consequently, the number of families with more than one child has rapidly increased. According to National Health and Family Planning Commission (NHFPC) statistics, by 2016 more than 45% of infants born had at least one older sibling (NHFPC 2017). Also, there has been an increasing academic concern about sibling relationships and parenting behaviors toward siblings in China. A recent study based on a sample of Chinese families showed that the reaction of firstborn children to a sibling before the birth was associated with the time at which they were told about the mother's pregnancy and their effortful control (Chen et al. 2018). Specifically, for firstborn children low in effortful control, being told later about the pregnancy was associated with lower levels of positive feelings about the sibling. Another study demonstrated that for Chinese mothers in the third trimester of pregnancy with their second child, the attachment to their

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own mother was related to antenatal attachment to their second baby, but this association was only found among mothers with high parenting efficacy in raising the first child (Chen and Xu 2018).

However, it should be noted that the first generation of children born under the one-child policy has reached adulthood; most are married and have become parents (Chen *in press-b*). Take aforementioned studies as an example. Most Chinese parents who participated in these studies (Chen and Xu 2018; Chen et al. 2018) were raised under the one-child policy, however, nowadays they are allowed to have two children. This policy change offers an opportunity to test the roles of sibling status of parents themselves on their two children's development (e.g., sibling relationships). In other words, the Chinese population policy created a stark contrast between parents with siblings and parents without siblings. In addition, models of development, including ecological system theory (Bronfenbrenner 1979) and the process model of parenting (Belsky 1984), emphasized the role that parental personal characteristics (e.g., developmental history) and the social ecological environment play in shaping children's development. Family environment is one of the most proximal environments for children's development. A large body of research has shown that family environments influenced children's sibling relationships (e.g., Kim et al. 2006; Song and Volling 2015; Stocker et al. 1997).

While there is accumulating evidence concerning the role of sibling status on Chinese children's developmental outcomes, the findings are less uniform. Some studies showed that only children had more positive outcomes than children with siblings (e.g., Falbo and Poston 1993; Jiao et al. 1996), but others indicated the reverse direction or no differences between only children and children with siblings (e.g., Chen et al. 1994; Jiao et al. 1986; Tseng et al. 2000). Although sibling experience may be not crucial for normal development and a large number of people grow up without siblings, experience as a sibling strongly influences people's social lives throughout the lifespan (Howe and Recchia 2005; Whiteman et al. 2009). Until middle childhood, siblings spend more time with each other and interact more frequently with each other than with anyone else (McHale et al. 2013). Sibling experiences can be the foundation for commonly used social skills (e.g., sharing and caring behaviors; Bedford and Volling 2004; Dunn 2002; McHale et al. 2013). There is a considerable body of evidence on how adults' relationships with their siblings influenced their psychological and behavioral outcomes (Donato and Dillow 2017; Trent and Spitze 2011), but there is much less evidence on how sibling experiences affect parenting behavior or the development of one's children.

The conceptual framework of this study was based on previous research dealing with individuals who grew up as

only children and the limited amount of research comparing adults with and without siblings (Carpenter 2014; Luo et al. 2015). Literature has shown that adults without siblings had more negative conflict management strategies in romantic relationship (Carpenter 2014), and had less positive responses to young children's faces than adults with siblings (Luo et al. 2015). Findings from the samples of adults with or without siblings may be in keeping with the theoretical proposal that parents' sibling status (i.e., growing up with or without siblings) may influence their children's sibling relationships.

Some skills and competences are more likely to be displayed by children when they are interacting with their siblings (Downey and Condron 2004; Yucel and Downey 2015) and not when interacting with parents or peers. For example, compared with only children, children with siblings had better social and interpersonal skills (Downey and Condron 2004). Obviously, individuals who grow up with siblings have much more opportunity to develop a capacity for managing the sibling relationship; individuals who grow up without siblings necessarily cannot acquire the same competence (Chen 2018). Through establishing the relationships associated with siblings, whether warmth, or conflict and jealousy (Buist and Vermande 2014; Dunn 2002), individuals with siblings are more likely to learn how to interact with siblings than those without; thus, experiences with one's siblings in early life may provide a foundation for helping one's children manage their sibling relationships (Chen 2018; Chen and Shi 2017). A psychoanalytic case study showed that an American mother's positive sibling experiences in childhood had helped her to prepare her older children for the birth of a new sibling (Abarbanel 1983). This study suggests that a mother's own sibling experiences can enhance her ability to ensure that her children have good relationships with their siblings. A mother who has not had siblings may be less well-equipped to teach her children to interact positively each other. In particular, there is evidence that Chinese adults who were only children were more self-centered (Wang et al. 1998); hence, when they became parents of two children they might be more likely to adopt parenting behaviors characterized by a lack of considering others' feelings (e.g., unequal parental treatment and strict control; Chen 2018).

Caring for two children may be more challenging and stressful than caring for one child (Mercer and Ferketich 1995; Volling 2012), and this may influence the relationship among siblings (Chen *in press-c*; Tippett and Wolke 2015). Therefore, raising two children needs more cooperation between parents. Coparenting has more impact on family functioning after the arrival of a second child (Szabó et al. 2012). Previous research has shown that supportive coparenting behavior was positively associated with children's adjustment (Teubert and Pinquart 2010). Also, a recent

study based on a sample of American families showed that supportive coparenting behavior was positively associated with the quality of their sibling relationships (Song and Volling 2015). The present findings, together with the previous research (Chen *in press-a*; Song and Volling 2015), suggest that parental cooperation over child-rearing may be important for positive sibling relationships.

Supportive coparenting may also buffer children against the potentially negative influence of family stress (Chen *in press-c*; Kolak and Vernon-Feagans 2008). There is an evidence that it might be a protective factor for temperamentally vulnerable children during the transition to siblinghood (Song and Volling 2015). One can apply the same logic about the moderating role of coparenting to the association between a mother's sibling status and her children's sibling relationships. In particular, supportive coparenting might help to promote good sibling relationships between the children of parents who were only children. A recent study, based on a sample of Chinese undergraduate students, showed that social support availability was an important source of self-efficacy for those without siblings because it made them more confident (Lin et al. 2017). Only children were the recipients of all their parents' investment in offspring rather than sharing it with siblings (Fong 2004; Jiao et al. 1986); therefore support and help accessibility might promote self-efficacy in only children (Lin et al. 2017). Similarly, having their partner's support might make mothers who grew up without siblings feel much more confident about caring for two children and hence might promote a better sibling relationship between them.

Birth rates have been declining for years in both the developing and developed countries in the world (Nargund 2009). As a result, the number of siblings in a family also has been declining. For example, the average number of children under 18 in families in America is less than two (U. S. Census Bureau 2017). What this statistic reveals is that more and more individuals will grow up without siblings; further, they will become parents who have no sibling experiences. Perhaps in the future these parents might encounter the same challenges that Chinese parents do now (Chen 2018). In international contexts, the examination of sibling status may shed light on the decrease of siblingship size during the demographic transition and its importance in family dynamics. Also this study is important because it may provide insights on some issues of having only one child in the family.

The first aim of this study was to examine the relationships between mothers' sibling status and their children's sibling relationships against the background of China's two-child policy. The secondary aim was to investigate the potential moderation of any relationship between maternal sibling status and children's sibling relationships by supportive coparenting. This study assessed both positive and

negative aspects of sibling relationships (i.e., positive involvement, conflict and rivalry as well as avoidance). The first hypothesis was that children whose mothers had siblings would have higher scores on measures of positive aspects of sibling relationships (i.e., sibling positive involvement) and lower scores on measures of negative aspects of sibling relationships (i.e., sibling conflict and rivalry and sibling avoidance) than the children of mothers without siblings. The second hypothesis was that supportive coparenting would be associated with children's sibling relationships and moderate the association between mothers' sibling status and their children's sibling relationships.

Method

Participants

One hundred and sixty-seven maritally intact families (mother, father and two children) in Shanghai, China participated in this study. Families were recruited from local kindergartens. They were invited to participate in a study, the Fudan Sibling Project, on children's sibling relationships. The mean age of participating mothers was 34.5 years old and they had completed a mean of 14.6 years of education. About half the mothers ($N = 92$; 55.1%) had grown up without siblings, and the rest of the mothers ($N = 75$; 44.9%) had grown up with siblings. In some regions in China, there was a partial policy relaxation since the mid-1980s that allowed couples to have a second child (Chen et al. 2016; Hesketh and Zhu 1997). For example, the couples were required to meet certain conditions (e.g., their first-born child was a girl; and they are minority ethnic families). They could also have an additional child at the expense of economic fine or loss of their jobs in government or public service institutions. In addition, some mothers in the current sample were born before the one-child policy. That is why in the current sample nearly half the mothers had grown up with siblings. This unique Chinese population policy (e.g., the conditions the couples had to meet for a second child) offer a unique opportunity for a quasi-experimental study of the influences of an individual's sibling status on their children's sibling relationships.

The mean ages of the two children were 89.9 months and 38.8 months. The sibling sample comprised 45 boy-boy dyads, 49 girl-girl dyads, and 73 boy-girl dyads. There was a wide range of annual family income amongst the families, assessed on a mother report scale from 1 (<50,000 RMB \approx 7,357 US \$) to 13 (>600,000 \approx 88,246 US \$) (similar to Jambon et al. 2018). See Table S1 for detailed information about annual family income in the online supplementary material.

Procedure

Data were collected in June 2017. After mothers had provided written, informed consent to participate, they were given a link to an online survey. The Chinese version of the instruments was translated following the method by Geisinger (1994). All measures had been translated into Chinese by the research team and then back-translated into English by a bilingual psychologist working in this area.

Measures

Sibling relationship

Mothers completed the sibling relationship scale developed by Volling et al. (2002). This measure consists of three subscales: positive involvement (eight items; e.g., “Shares playthings”; Cronbach’s $\alpha = .92$); conflict and rivalry (seven items; e.g., “Has physical fights with sibling”; Cronbach’s $\alpha = .81$); avoidance (three items; e.g., “Stays away from sibling if possible”; Cronbach’s $\alpha = .68$). Responses were given on a five-point scale (1 = *never*; 5 = *always*). The item scores were averaged to yield composite scores for each subscale.

Supportive coparenting

Mothers completed the coparenting relationship scale (Stright and Bales 2003) to provide a measure of how they perceived their current coparenting relationship. The scale consists of 14 items (e.g., “My partner backs me up when I discipline our child”; Cronbach’s $\alpha = .89$). Responses were given using a five-point scale (1 = *never*; 5 = *always*). Items describing unsupportive behavior were reverse scored; then the average score was used as a composite score. High scores indicated higher levels of supportive coparenting.

Data Analyses

Regression models were calculated to determine the contributions of mothers’ sibling status and supportive coparenting to variance in children’s sibling relationships. We followed a standard current practice for moderation analyses (Hayes 2013), using Model 1 in the PROCESS macro. This macro is a plug-in program for SPSS; therefore it can be operated in the SPSS environment. The Model 1 in the PROCESS macro is the standard moderating model analysis (Hayes 2013).

The control variables of sibling age gap, sibling gender composition, maternal age and maternal educational level were entered into the model analyses. Sibling age gap and sibling gender composition were included because there

were often age and gender differences in sibling relationship quality (e.g., Kim et al. 2006; Updegraff et al. 2005). In addition, maternal age and maternal educational level were included because they were often found to be related to children’s developmental outcome (e.g., Geronimus et al. 1994; Hauser 1994).

To explore whether coparenting moderated the relationship between mothers’ sibling status and three different aspects of sibling relationships (i.e., positive involvement, conflict and rivalry, and avoidance), three regression equation models were constructed separately. If the interaction effects were statistically significant, the slopes of coparenting to sibling relationships were tested for mothers with siblings and mothers without siblings, respectively (Aiken and West 1991).

Results

Table 1 shows descriptive statistics and correlations among variables. Sibling avoidance was negatively associated with positive sibling involvement but positively associated with sibling conflict and rivalry. Mothers’ sibling status was negatively associated with both sibling avoidance and sibling conflict and rivalry. Supportive coparenting was positively associated with positive sibling involvement but negatively associated with both sibling avoidance and sibling conflict and rivalry.

The first goal of the study was to explore how mothers’ sibling status was related to their children’s sibling relationships. As shown in Table 2, mothers’ sibling status was positively associated with positive sibling involvement and negatively associated with both sibling conflict and rivalry and sibling avoidance after the effects of variance in sibling age gap, sibling gender composition, and maternal age and educational level had been taken into account. In other words, the children of mothers with siblings were more likely to be positively involved with their sibling than the

Table 1 Descriptive statistics and correlations of variables

Variables	1	2	3	4	5
1. Sibling positive involvement		–			
2. Sibling conflict and rivalry	–.10				
3. Sibling avoidance	–.28***	.67***			
4. Mothers’ sibling status	.15	–.28***	–.19*		
5. Supportive coparenting	.36***	–.35***	–.43***	.04	
<i>M</i>	4.05	2.45	1.77	.45	3.70
<i>SD</i>	.70	.67	.73	.50	.58

Note. *M* = mean, *SD* = standard deviation. For mothers’ sibling status, 0 = have no sibling, 1 = have siblings

* $p < .05$. ** $p < .01$. *** $p < .001$

Table 2 Regression testing the role of mothers’ sibling status and coparenting on children’s sibling relationships

	Positive involvement			Conflict and rivalry			Avoidance		
	<i>B</i>	<i>SE</i>	<i>t</i>	<i>B</i>	<i>SE</i>	<i>t</i>	<i>B</i>	<i>SE</i>	<i>t</i>
Sibling age gap	-.00	.00	-.69	.00	.00	.26	.00	.00	.00
Sibling gender composition	.20	.11	1.84	.13	.10	1.35	.12	.10	1.18
Mother’s age	-.02	.02	-1.39	-.01	.02	-.73	.01	.02	.67
Mother’s education	.02	.02	.81	.02	.02	.84	.01	.02	.69
Mother’s sibling status	.22	.11	1.96*	-.28	.10	-2.70**	-.23	.11	-2.17*
Supportive coparenting	.43	.12	3.48***	-.51	.11	-4.57***	-.69	.11	-5.98***
Sibling status × coparenting	.00	.18	.01	.28	.16	1.68 ⁺	.47	.17	2.78**

Note. *B* = estimated value of raw regression coefficient; *SE* = standard error; *t* = *t*-test value. For mothers’ sibling status, 0 = have no sibling, 1 = have siblings

* $p < .05$. ** $p < .01$. *** $p < .001$. ⁺ $p = .09$

children of mothers without siblings, but less likely to avoid their sibling or be involved in conflict or rivalry with him or her.

As the second goal of the study, the main and moderating roles of coparenting on children’s sibling relationships were tested. As shown in Table 2, supportive coparenting was positively associated with positive sibling involvement but negatively associated with both sibling conflict and rivalry and sibling avoidance. Furthermore, the interaction between mother’s sibling status and supportive coparenting was a marginal predictor of sibling conflict and rivalry and a statistically significant predictor of sibling avoidance. First, simple effects were estimated from separate regression equations predicting sibling conflict and rivalry from supportive coparenting in mothers with and without siblings. Supportive coparenting was negatively associated with sibling conflict and rivalry if the mother was without siblings, $\beta = -.51, t = -4.57, p < .001$, but not if she had siblings, $\beta = -.23, t = -1.89, p > .05$ (see Fig. 1). Second, simple effects were estimated from separate regression equations predicting sibling avoidance from supportive coparenting in mothers with and without siblings. Supportive coparenting was negatively associated with sibling avoidance in mothers without siblings, $\beta = -.69, t = -5.98, p < .001$, but not mothers with siblings, $\beta = -.21, t = -1.70, p > .05$ (see Fig. 2).

Discussion

This research contributes to understanding of factors affecting children’s sibling relationships. This study examines how mothers’ own sibling status and coparenting behaviors may influence their children’s sibling relationships. First, the quality of children’s sibling relationships was associated with whether or not their mother had grown up with siblings. Second, supportive coparenting appears to protect siblings against the adverse roles of having a mother

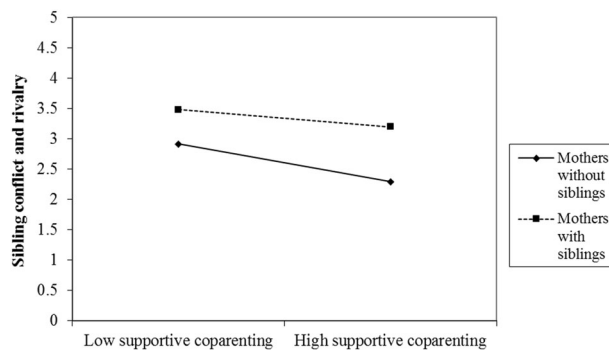


Fig. 1 The association between supportive coparenting and sibling conflict and rivalry as a function of mother’s sibling status

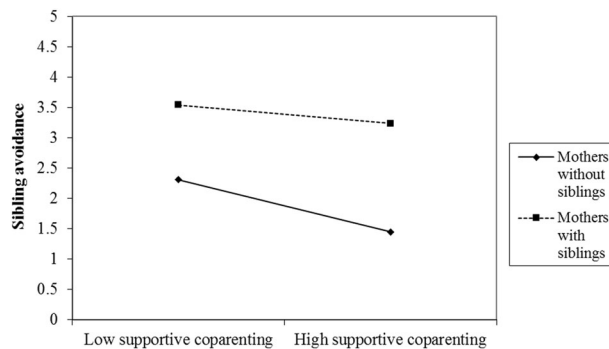


Fig. 2 The association between supportive coparenting and sibling avoidance as a function of mother’s sibling status

who was an only child. This study adds new findings to the existing literature on how parental personal characteristics and the family environment might interact to influence their children’s sibling relationship quality.

The findings about the correlations among the study variables were consistent with our expectations. First, sibling avoidance was negatively associated with positive sibling involvement but positively associated with sibling conflict and rivalry. This seems to suggest that, similar to sibling conflict and rivalry, sibling avoidance may be considered as a negative sibling relationship. In addition,

supportive coparenting was significantly related to all sibling relationship variables. These findings are consistent with results of previous research in China (Chen *in press-a*) and in other countries such as America (Song and Volling 2015). The present findings, together with previous research, suggest that parental cooperation over child-rearing may be important for the development of sibling relationships.

Mothers' sibling experiences seem to influence their children's sibling relationships. The present finding indicated that children of mothers who had siblings were more likely to be positively involved with their sibling, whereas children of mothers without siblings were more likely to have a sibling relationship characterized by conflict, rivalry and avoidance. There are several possible explanations for these findings. First, mothers who grew up with siblings may be more sensitive and competent at caring for two children (e.g., teaching them to cooperate with siblings) and managing their children's sibling relationships (e.g., mediating between them, and resolving their conflicts) than mothers who were only children. This finding is consistent with previous studies (Donato and Dillow 2017; Trent and Spitze 2011), showing that growing up with a sibling may enhance social skills and abilities. In addition, mothers who grew up with siblings may be more empathic toward the needs of their children's sibling relationships (Chen 2018). However, mothers who grew up without siblings do not have the experiences that would enable them to anticipate potential problems between siblings and, of course, their parents did not model effective parenting of siblings; together, these factors may mean that mothers who were only children are less effective in handling cooperation, jealousy and conflict between siblings when they become parents.

This study examined the potential intergenerational transmission of sibling experiences. Parents' ability to regulate children's sibling relationships was shown to be influenced by experiences as siblings in early life, which appeared to influence the next generation (Schönpflug 2001). The present study suggests that the benefits of growing up with a sibling extend to the parenting of multiple children.

The present study also demonstrated that supportive coparenting was positively related to positive sibling involvement, but negatively related to both sibling conflict and rivalry and sibling avoidance. Previous studies showed that marital satisfaction influenced sibling relationship quality (Milevsky 2004; Stocker et al. 1997). This finding suggests that the positive relationship between parents (e.g., supportive coparenting or marital satisfaction) may improve sibling relationship quality, but the present findings further demonstrated that supportive coparenting might interact with mothers' sibling status to influence sibling relationship quality. Specifically, for mothers without siblings, their

partners' supportive coparenting might decrease sibling conflicts and avoidance. Supportive coparenting is defined as parenting behaviors which include displaying support to one's partner and helping him or her raise the children in order to protect the joint investment in them (McHale 1995; Schoppe et al. 2001). Having a supportive co-parent may help Chinese mothers to cope with the pressure of caring for two children and deal more confidently with their children's sibling relationship (Chen *in press-c*). It means that fathers' support by providing necessary assistance may compensate for mothers' singleton experiences. The current findings support the ecological system theory by providing new evidence that personal characteristics (i.e., mothers' sibling status) and family environment (i.e., coparenting behavior) have an interactive role in child development and sibling relationship.

Furthermore, it should be noted that the current study makes an important contribution to the literature on sibling relationships. First, the present results on the role of mothers' own sibling status in their children's sibling relationships add new insights to the literature. The findings stress the potential intergenerational transmission of sibling experiences and suggest future directions for studies in other cultural contexts, given that the intergenerational transmission process may be influenced by different cultural contexts (Schönpflug 2001).

Second, by using the sample of Chinese families, we could replicate previous findings, based on Western families, on the associations between coparenting and sibling relationships. In particular, the present sample is situated in the cultural context where parents themselves grow up without siblings, which is underrepresented in the existing literature. In addition, social collaboration in family is highly emphasized in Chinese societies (Chen and Chang 2012; Lam et al. 2018). This replication suggests that the role of coparenting on sibling relationships may be not culture-specific and that coparenting may be important for families in both Western as well as Eastern societies such as China.

Third, previous studies have shown cultural differences in sibling relationship quality (Buist et al. 2016; French et al. 2001). Harmonious family relationships, including sibling relationships in collectivist societies, were more strongly emphasized than those in individualist societies (Buist et al. 2016; French et al. 2001). Therefore, parents' sibling status and coparenting might play stronger roles in children sibling relationships in collectivist societies than in individualist societies. Furthermore, inclusion of multiple features of sibling relationships in the present study seem particularly important for cross-cultural research, because cultural differences might emerge in the specific sibling relationship qualities associated with parental factors (Chen et al. 2017).

Limitations and Future Research

These research results should be interpreted in light of several limitations. First, all variables were based on maternal reports, which may have resulted in common method bias and shared variance (Podsakoff et al. 2012). Further research would benefit from the use of multiple assessment methods (e.g., observations and paternal reports). Second, the only variable on parental sibling experience, assessed in the present study, was maternal sibling status. Further research should include a variable or variables capturing the quality of mothers' relationships with their siblings in early life. The warmth or conflict in a mother's relationship with her own sibling or siblings may influence how she deals, as a parent, with her children's sibling relationship. Unresolved childhood sibling conflicts might make a woman more likely to intervene inappropriately in her children's sibling relationship (Chen 2018). Furthermore, mothers with siblings perhaps might be more empathetic to the child who is similar to themselves (e.g., both of them experienced sibling bullying; Wolke et al. 2015) rather than the other children in the family. Third, because the study was cross-sectional and the data correlational, we cannot draw conclusions about the causal links between coparenting and children's sibling relationships (Song and Volling 2015); this would require a longitudinal design to test the association patterns explored in the present study. Finally, it is possible that coparenting may be a mediator underlying the relationship between parents' sibling status and their children's sibling relationships quality. Future studies could use a longitudinal design to test this relationship pattern.

Nonetheless, the current findings provide new insights on an understudied family relationship—sibling relationships (Conger and Kramer 2010). This study suggests a new discovery that parents' own sibling experiences are associated with their children's sibling relationship quality. In addition, it underscores the importance of supportive coparenting on children's sibling relationships, especially for mothers without siblings. Interventions should be designed to enhance knowledge of sibling relationships amongst mothers without siblings and to increase parents' coordination of their parenting efforts in order to promote good sibling relationships among children.

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Compliance with Ethical Standards

Conflict of Interest The author declares that he has no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional (Fudan University) 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 the study.

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