

Research on Influencing Factors of Sibling Relationships in Two-child Families based on Family Ecosystem Theory

Xuefangyuan Yu*

School of Psychology, Zhejiang Normal University, Jinhua, Zhejiang 321000, China

**Corresponding author: Xuefangyuan Yu, E-mail: 3419201951@qq.com.*

Abstract

In recent years, with the implementation of China's "comprehensive two-child" policy, the number of two-child families has increased. As one of the most enduring and inevitable social relationships in an individual's life course, sibling relationships have a significant impact on individual development and family stability. Types of sibling relationships include warm sibling relationships, conflictual sibling relationships, and relationships where warm and conflictual sibling relationships coexist. The influencing factors of its formation and development include individual factors, family factors, and social factors. Existing research often focuses on the impact mechanism of a single factor, such as parent-child relationships or sibling age gaps, while exploration of multi-factor interactions remains insufficient. This paper attempts to explore the interaction of various influencing factors at the individual, family, and social levels based on existing literature. Future research should incorporate the characteristics of Chinese culture for localized studies; Further reveal the interaction between different influencing factors of sibling relationships and their mechanisms, and construct a systematic model of influencing factors for sibling relationships.

Keywords

two-child families, sibling relationships, influencing factors, interaction

1. Introduction

With the deep implementation of China's "comprehensive two-child" policy, the number of two-child families has significantly increased, and family structures are gradually shifting from a single-child model to a multi-child model. This major social transformation has not only reshaped the structure of family members in China but also brought unprecedented challenges to the psychological development and social adaptation of firstborn children. Due to the long implementation of the one-child policy, research on sibling relationships among Chinese children has only gained attention in recent years. Therefore, further exploration of sibling relationships based on local culture is still needed (Chen, 2024). The arrival of a second child provides companionship for some firstborn children, but it also triggers psychological rejection in others, leading to sibling conflict. Sibling relationships, as one of the most enduring interpersonal relationships in an individual's life cycle (Noller, 2005), not only profoundly influence children's social-emotional abilities and behavioral adaptability but can also predict personality and interpersonal patterns in adulthood (Conger and Kramer, 2010). Existing research primarily focuses on the analysis of single influencing factors in sibling relationships, lacking exploration of multi-factor interactions. This paper, based on existing literature, attempts to explore the interplay of various influencing factors at the individual, family, and societal levels. This paper will discuss

the influencing factors of sibling relationships in two-child families from three aspects: (1) the definition of sibling relationships; (2) Type of sibling relationships; (3) Influencing factors of sibling relationships. By exploring these three aspects, this paper aims to provide inspiration for future empirical research and practical applications.

2. Concept and Types of Sibling Relationships

2.1 Concept

Siblings, upon perceiving each other's presence, interact and influence each other through behaviors, language, or other means. They share knowledge, perspectives, attitudes, beliefs, and feelings, and these interactions collectively shape sibling relationships (Cicirelli, 1995). Sibling relationships are characterized by long duration, relatively equal status among members, and the establishment of warmth through cooperation, sharing, and caregiving in daily interactions, reflecting traits of equality and reciprocity. The complementary nature of sibling relationships is reflected in the fact that eldest children help take care of their younger siblings and provide support for their education (Zhao and Yu, 2017).

2.2 Type

2.2.1 Warm Sibling Relationships

Warm sibling relationships are dominated by positive emotions, including dimensions of care, support, and sharing. In sibling interactions, warmth traits are manifested in various forms, such as prosocial behaviors in which siblings proactively help each other (Zhao and Yu, 2017). For example, when a sister sees her brother frustrated because he cannot complete his homework independently, she may proactively offer guidance, demonstrating mutual assistance between siblings that fosters growth. Children with warm sibling relationships are more inclined to share and cooperate, and such interactive behaviors can enhance the perception and understanding of siblings' emotional states (Jambon et al., 2019).

2.2.2 Conflictual Sibling Relationships

Conflictual sibling relationships are characterized by frequent disputes, hostile interactions, and competition, often manifesting as a struggle for resources or parental attention. When parents' emotional investment shifts, siblings may exhibit feelings of jealousy, which can manifest through arguments or competitive behavior (Sun Lihua, Zhang Anran, 2018). For example, a firstborn child may deliberately snatch a second child's toys or try to attract parental attention by belittling the sibling. However, moderate conflict is not entirely negative; it provides children with opportunities to learn negotiation, compromise, and emotional regulation, although frequent conflict can harm children's psychological well-being.

2.2.3 Warm and Conflict-Coexisting Sibling Relationships

He Shan's (2022) research shows that in the development of sibling relationships, warmth and conflict often coexist in the daily interactions between siblings. Siblings living together for a long time and sharing a family environment are likely to develop deep emotional dependence, resulting in care and companionship. However, as equal individuals within the family, they inevitably have differences in needs, which can lead to conflicts, creating a situation where warmth and conflict coexist. For example, a brother and sister might argue about whether to watch TV or go out to play, but when the sister is bullied outside, the brother will stand up to protect her without hesitation.

3. Influencing Factors of Sibling Relationships

The formation and development of sibling relationships result from the dynamic interaction of various factors, which can be summarized into three levels: individual factors, family factors, and social factors.

3.1 Individual Factors

3.1.1 Characteristics of Sibling Structure

Sibling structure primarily includes sibling gender and age gap. From the perspective of sibling gender, Kim (2006) found that the intimacy between opposite-sex siblings tends to decrease as they transition from childhood to adolescence. Research also shows that opposite-sex siblings often develop a more friendly environment (Conley, 2000). These studies report conflicting results between sibling gender and intimacy, which may be due to differences in the development of sibling relationships. Opposite-sex siblings may experience reduced competition due to gender differences in childhood, and decreased intimacy in adolescence due to developing different cognitions. From the perspective of sibling age gap, a gap of 4 years or more is conducive to the reasonable allocation of family resources and the formation of good sibling relationships (Zhang et al., 2009). The smaller the age gap, the more likely sibling conflicts are to occur (Buist et al., 2013).

3.1.2 Sibling Empathy

Sibling empathy is the psychological phenomenon where siblings perceive each other's emotions and experience each other's feelings (Jambon et al., 2019). The development of sibling empathy changes with the growth of children's age, being more pronounced in childhood and gradually weakening in adolescence. East (2009) finds that warm sibling relationships in childhood are associated with higher empathy, and this connection gradually weakens with age. Research by Longobardi et al. (2020) indicates that empathy can affect individual behavior, positively influencing prosocial behavior, helping to alleviate conflicts, and improving the quality of sibling relationships. For example, individuals with high empathy are more likely to engage in positive behaviors, which can help alleviate sibling conflicts and improve relationship quality.

3.1.3 Temperament

Temperament refers to relatively stable differences in individual behavior, reactions, and regulation that have a biological basis (Rothbart and Bates, 2006; Chen and Schmidt, 2015). The temperament of firstborn children moderates their behavioral response patterns to the birth of a second child, thereby influencing sibling relationships. For example, firstborn children with difficult temperaments - such as strong emotional reactions, impulsiveness, and difficulty adapting to environmental changes - may interpret their parents' reasonable care for the second child as a loss of their own status in the family, leading them to deliberately act out to regain attention. Firstborn children with an easygoing temperament - characterized by emotional stability, mild friendliness, and adaptability to environmental changes - tend to interpret this phenomenon as a temporary family need and actively assist their parents in taking care of the second child.

3.2 Family Factors

3.2.1 Parent-Child Relationship

The spillover hypothesis states that the emotional and behavioral patterns children develop in parent-child relationships will have an impact on their sibling relationships (Derkman et al., 2011; Portner and Riggs, 2016). Secure parent-child attachment provides children with ample emotional security, which is more conducive to developing warm sibling relationships. It is worth exploring that most existing studies focus on the role of mothers, while research on the mechanisms of fathers' influence on sibling relationships is relatively scarce. Future studies need to further investigate the impact of fathers on sibling relationships.

3.2.2 Parents' Differential Treatment.

Differential treatment refers to parents significantly favoring one child while relatively neglecting another during the parenting process (Jensen and Whiteman, 2014). Parental differential treatment is influenced by multiple factors, including gender and birth order. Parents are more likely to have higher expectations for children of the same gender as themselves and may show favoritism toward them. Birth order is also an important factor in parental differential treatment. Parents often assign more responsibilities to the eldest child (Pavan, 2014) while showing emotional favoritism toward the second child. Preference can damage the quality of sibling relationships, and unbalanced resource allocation may harm sibling relationships (Guo and Deng, 2024). For example, a mother might frequently ask the older sister to give in to her younger brother. Whenever the siblings argue, the mother criticizes the sister for being immature as soon as the brother starts crying,

ignoring the sister's grievances. This long-term, unprincipled favoritism can lead to the sister harboring resentment and negatively impact the sibling relationship. Therefore, effectively coordinating parent-child interactions and resource allocation is of significant practical importance for maintaining children's mental health and enhancing overall family functioning.

3.2.3 Marital Quality Between Spouses.

Marital quality reflects the overall state of emotional connection, communication, and support between spouses during a specific period. Families with high marital quality provide a harmonious and stable living environment for children, which is more likely to foster positive parent-child interactions and contribute to healthy sibling relationships. Madore's (2016) research shows that when parents have a good marital relationship, children will imitate their parents' way of resolving conflicts to deal with conflicts among siblings and form a mutually inclusive relationship. For example, a couple who always resolves disagreements through calm communication will have children who use methods like rock-paper-scissors to resolve differences, such as what TV show to watch. The behavior of transferring parents' conflict resolution strategies to sibling interactions reflects the positive impact of good marital quality on sibling relationships.

3.2.4 Parenting Styles

Parental upbringing styles influence sibling relationships by shaping the family atmosphere. Positive parenting styles, such as the authoritative approach, help foster prosocial behavior, while negative styles like authoritarian or permissive approaches can weaken the quality of sibling relationships. For example, authoritative parenting styles encourage children to value negotiation and rules, which is beneficial for the rational resolution of sibling conflicts. When siblings compete for toys, authoritative parents do not simply ask one child to withdraw from the competition. Instead, they guide the children to resolve the conflict in a harmonious manner, which promotes cooperation among siblings and avoids negative impacts on sibling relationships.

3.3 Social Factors

3.3.1 Peer relationship

The so-called peer relationship refers to a relationship of common activities and cooperation between children and their peers (Han, 2020). Persram et al. (2025) found no significant difference between negative and positive relationships among siblings and peers, indicating that adolescents may seek similar peer relationships through sibling relationships. Peer relationships have a significant positive predictive effect on sibling relationships, and individuals with good peer relationships often also have good sibling relationships (Han, 2020). This suggests that sibling and peer relationships are not isolated but have a bidirectional predictive relationship. For example, a child who is accustomed to sharing with siblings is more likely to cooperate with peers, and the social confidence gained from peer interactions can be brought into sibling relationships, facilitating mature resolution of conflicts between siblings, thus creating a positive cycle between sibling and peer relationships. Therefore, in the future, promoting the formation of good sibling or peer relationships can lead to the improvement of another relationship between the two.

3.3.2 Social Environment

Negative reports in society about the high cost of raising firstborn children and the abuse of second children can cause negative reinforcement effects on the psychological behavior of firstborn children, leading parents planning for a second child or two-child families to panic (Bian and Hu, 2019, Chen et al., 2021), thereby negatively impacting sibling relationships from multiple angles. For example, frequent news reports online about 'the elder sibling harming the younger out of jealousy' can cause parents planning to have a second child to worry excessively, leading them to overcompensate the firstborn even before the second child is born. This anxiety induced by the social environment may disrupt the original family balance and negatively impact future sibling relationships. The extent to which policies are refined not only affects parental stress but also indirectly influences sibling relationships through educational resources and social support systems. If policies can provide sufficient economic subsidies to families with a second child and extend parental leave, the cost of childbirth and parenting pressure on parents will be greatly reduced. The alleviation of parental stress helps them adopt positive parenting styles, improving the family atmosphere and fostering good sibling relationships.

3.3.3 Social Culture

Social culture has a significant impact on sibling relationships, with differences in role division and interaction patterns across different cultures. Western societies emphasize individualism and competition, while collectivist cultures emphasize cooperation and continuity (Updegraff, 2015). In collectivist cultures, intimate sibling relationships are widely accepted by society (Dong Yinghong, 2018), and collective development is promoted through sibling cooperation. China is a representative of collectivist cultures, and traditional Chinese culture emphasizes the eldest child's responsibility to show humility and care for younger siblings (Chen, 2024). However, influenced by the preference for sons over daughters, parents often exhibit inequality in the allocation of family resources (Zheng, 2013), which may weaken the closeness between daughters and their brothers over time, negatively impacting sibling relationships.

3.4 The Interaction of Various Influencing Factors at The Individual, Family, and Societal Levels.

Sibling relationships are not determined by a single factor but are shaped by the combined effects of individual, family, and societal factors. The influencing factors of sibling relationships include individual sibling factors, family factors, and social factors. Individual sibling factors include sibling structural characteristics (such as gender and age gap), sibling empathy, and each sibling's temperament. Family factors include parent-child relationships, differential treatment by parents, the quality of the marital relationship, and parenting styles. Social factors include peer relationships, social environment, social culture, and national policies. These influencing factors do not exist in isolation; they interact to impact sibling relationships. Therefore, it is essential to adopt a systematic and holistic perspective to understand their impact on sibling relationships.

There is an interaction between individual factors and family factors. The effect of individual factors on sibling relationships may be mediated by family factors. Existing research indicates that individual temperaments such as positive emotions, negative emotions, and persistence influence sibling relationships, with parenting styles playing a mediating role in this process (Shi and Tan, 2022). For example, children with positive emotions or higher levels of persistence are more likely to elicit positive parenting practices from their parents, which to some extent reduces sibling rivalry and fosters the development of close sibling relationships. The parenting style mediates the effect of temperament persistence, which is also influenced by birth order (Shi and Tan, 2022). Some studies have also pointed out that when the age gap between siblings is small, parents are more likely to focus on the firstborn, thereby neglecting the needs of later-born children (Crowne et al., 2012). The age gap between siblings affects the likelihood of parental differential treatment, reflecting the interaction between individual factors and family factors. There is an interaction between individual factors, family factors, and social factors. Disorganized family structures or high-stress environments are more likely to lead to differential treatment of children by parents (Atzaba-Poria and Pike, 2008). If firstborn children have higher empathy, they are more inclined to understand their parents' intentions, thereby mitigating the negative experiences caused by unequal resource distribution and reducing the impact of parental differential treatment. This reflects the influence of individual factors on family factors. Communication and explanation within the family regarding negative social opinions may also affect their effectiveness, suggesting that family factors can similarly influence social factors.

In summary, the influencing factors of sibling relationships do not act independently but interact with multiple factors, functioning within a family ecosystem.

4. Summary and Outlook

Sibling relationships are an important factor influencing social development and are also one of the most enduring interpersonal relationships throughout the life cycle. Based on a review of previous literature, several directions for future research are proposed:

First, existing research literature is primarily based on Western samples, lacking localized studies. There are significant differences between Western and Eastern cultures, and future research should focus on sibling relationships in different cultural contexts. For the influencing factors of sibling relationships in China, researchers need to further explore them in conjunction with the characteristics of our culture.

Second, current research mainly focuses on the impact of single factors on sibling relationships, lacking a comprehensive exploration of influencing factors at different levels. This paper explores the impact of different factors on sibling relationships from three levels: individual factors, family factors, and social factors. It analyzes the interaction of factors at these three levels and incorporates all factors into an interconnected, dynamic family ecosystem, attempting to view them from a holistic perspective. However, current research on the interaction mechanisms of different factors is insufficient, and future studies need to explore these through longitudinal research and empirical modeling. Future research should use multilevel linear models or structural equation models to reveal the interaction and mechanisms of different influencing factors, and construct a systematic model of influencing factors of sibling relationships to study the combined effects of various influencing factors in depth.

References

- Amirazodi, F. and Amirazodi, M. (2011). Personality traits and self-esteem. *Procedia-Social and Behavioral Sciences*, vol. 29, pp. 713-716.
- Atzaba-Poria, N. and Pike, A. (2008). Correlates of parental differential treatment: Parental and contextual factors during middle childhood. *Child development*, vol. 79, no. 1, pp. 217-232.
- Bian, S. Q. and Hu, Y. F. (2019). Research progress on the influencing factors of sibling relationship. *Chinese Journal of Child Health Care*, vol. 27, no. 04, pp. 404-406+410.
- Buist, K. L., Deković, M. and Prinzie, P. (2013). Sibling relationship quality and psychopathology of children and adolescents: A meta-analysis. *Clinical Psychology Review*, vol. 33, no. 1, pp. 97-106.
- Caspi, A. and Shiner, R. (2008). Temperament and Personality. In: Lamb, M. E., and Lerner, R. M. (eds.) *Rutter's Child and Adolescent Psychiatry*. Hoboken, NJ: Wiley, pp. 182-198.
- Chen, B.-B., Qu, Y. and Chen, X. (2021). Chinese parents' comparisons of siblings and adolescents' internalizing and externalizing problems. *Development and psychopathology*, vol. 33, no. 3, pp. 914-921.
- Chen, X. (2024). *Research on sibling relationship types, influencing factors and social work intervention strategies in two-child families*. Master's Thesis, Shanghai Normal University.
- Cicirelli, V. G. (1995). A measure of caregiving daughters' attachment to elderly mothers. *Journal of Family Psychology*, vol. 9, no. 1, pp. 89-94.
- Conger, K. J. and Kramer, L. (2010). Introduction to the special section: Perspectives on sibling relationships: Advancing child development research. *Child Development Perspectives*, vol. 4, no. 2, pp. 69-71.
- Conley, D. (2000). Sibship sex composition: Effects on educational attainment. *Social Science Research*, vol. 29, no. 3, pp. 441-457.
- Crowne, S. S., Gonsalves, K., Burrell, L., McFarlane, E. and Duggan, A. (2012). Relationship between birth spacing, child maltreatment, and child behavior and development outcomes among at-risk families. *Maternal and child health journal*, vol. 16, no. 7, pp. 1413-1420.
- Derkman, M. M., Engels, R. C., Kuntsche, E., van der Vorst, H. and Scholte, R. H. (2011). Bidirectional associations between sibling relationships and parental support during adolescence. *Journal of Youth and Adolescence*, vol. 40, no. 4, pp. 490-501.
- Dong, Y., Chen, D. and Fu, M. (2018). The impact of sibling relationships on the psychological development of children and adolescents. *Chinese Journal of School Health*, vol. 39, no. 07, pp. 1110-1114.
- East, P. L. (2009). Adolescents' relationships with siblings. In: Lerner, R. M., and Steinberg, L. (eds.) *Handbook of adolescent psychology*. Hoboken, NJ: Wiley, pp. 43-73.
- Gao, L., Hua, S., Li, P., Yang, J. and Wang, X. (2021). The effect of sibling relationship on adolescents' prosocial behavior: The roles of moral disengagement and empathy *Studies of Psychology and Behavior*, vol. 19, no. 02, pp. 216-222.
- Guo, X. and Deng, L. (2024). Relationship between maternal parenting stress and sibling relationship quality in two-child families *Children' Study*, no. 03, pp. 93-100+111.

- Han, C. (2020). *Research on sibling relationship of first-born young children in two-child families*. 硕士, Northeast Normal University.
- He, S., Lu, L. and Hu, F. (2022). Quality and types of sibling relationship of 3-to-6-year-old children. *Journal of Chengdu Normal University*, vol. 38, no. 7, pp. 85-92.
- Jambon, M., Madigan, S., Plamondon, A., Daniel, E. and Jenkins, J. M. (2019). The development of empathic concern in siblings: A reciprocal influence model. *Child development*, vol. 90, no. 5, pp. 1598-1613.
- Jensen, A. C. and Whiteman, S. D. (2014). Parents' differential treatment and adolescents' delinquent behaviors: Direct and indirect effects of difference-score and perception-based measures. *Journal of family psychology*, vol. 28, no. 4, p. 549.
- Karavasilis Karos, L., Howe, N. and Aquan-Assee, J. (2007). Reciprocal and complementary sibling interactions, relationship quality and socio-emotional problem solving. *Infant and Child Development: An International Journal of Research and Practice*, vol. 16, no. 6, pp. 577-596.
- Kavčič, T. and Zupančič, M. (2011). Sibling relationship and personality in early/middle childhood from parent's perception. *Suvremena psihologija*, vol. 14, no. 2, pp. 119-132.
- Kim, J. Y., McHale, S. M., Wayne Osgood, D. and Crouter, A. C. (2006). Longitudinal course and family correlates of sibling relationships from childhood through adolescence. *Child development*, vol. 77, no. 6, pp. 1746-1761.
- Kolak, A. M. and Volling, B. L. (2013). Coparenting moderates the association between firstborn children's temperament and problem behavior across the transition to siblinghood. *Journal of family psychology*, vol. 27, no. 3, pp. 355-364.
- Kramer, L., Perozynski, L. A. and Chung, T. Y. (1999). Parental responses to sibling conflict: The effects of development and parent gender. *Child Development*, vol. 70, no. 6, pp. 1401-1414.
- Longobardi, C., Borello, L., Thornberg, R. and Settanni, M. (2020). Empathy and defending behaviours in school bullying: The mediating role of motivation to defend victims. *British journal of educational psychology*, vol. 90, no. 2, pp. 473-486.
- Madore, C., Leyrolle, Q., Lacabanne, C., Benmamar-Badel, A., Joffre, C., Nadjar, A. and Layé, S. (2016). Neuroinflammation in autism: plausible role of maternal inflammation, dietary omega 3, and microbiota. *Neural plasticity*, vol. 2016, no. 1, p. 3597209.
- Milevsky, A. and Heerwagen, M. (2013). A phenomenological examination of sibling relationships in emerging adulthood. *Marriage & Family Review*, vol. 49, no. 3, pp. 251-263.
- Noller, P. (2005). Sibling relationships in adolescence: Learning and growing together. *Personal relationships*, vol. 12, no. 1, pp. 1-22.
- Pavan, R. (2016). On the production of skills and the birth-order effect. *Journal of Human Resources*, vol. 51, no. 3, pp. 699-726.
- Persram, R. J., Dirks, M. A., Craig, W. M. and Recchia, H. E. (2025). Stability of distinct relational profiles of adolescent sibling relationships and friendships: A latent transition analysis. *Journal of Social and Personal Relationships*, p. 02654075251345283.
- Portner, L. C. and Riggs, S. A. (2016). Sibling relationships in emerging adulthood: Associations with parent-child relationship. *Journal of Child and Family Studies*, vol. 25, no. 6, pp. 1755-1764.
- Rothbart, M. K. and Bates, J. E. (2006). Temperament. In: Damon, W., and Lerner, R. M. (eds.) *Handbook of child psychology*. Hoboken, NJ: Wiley, pp. 99-166.
- Shi, X. and Tan, W. (2022). Published. The Influence of Temperament on Sibling Relations: A Moderated Mediation Model. The 24th National Conference on Psychology, 2022 Xinxiang, China. Chinese Psychological Society, pp. 67-68.
- Song, J.-H. and Volling, B. L. (2015). Coparenting and children's temperament predict firstborns' cooperation in the care of an infant sibling. *Journal of Family Psychology*, vol. 29, no. 1, p. 130.

- Sun, L. and Zhang, A. (2018). Investigation of two-child siblings relationship under different family raising patterns. *Journal of Shanghai Educational Research*, no. 8, pp. 59-63.
- Updegraff, K. A. and Umaña-Taylor, A. J. (2015). What can we learn from the study of Mexican-origin families in the United States? *Family process*, vol. 54, no. 2, pp. 205-216.
- Zhang, Y., Li, R. and Zhao, N. (2009). Birth interval and children's compulsory education: Evidence from rural China *Chinese Journal of Population Science*, no. 03, pp. 48-57+111-112.
- Zhao, F. and Yu, G. (2017). Sibling relationship and its relation with children and adolescents' social development *Advances in Psychological Science*, vol. 25, no. 5, pp. 825-836.
- Zhuang, Y. (2017). Survey on sibling relationships among children in families with two children. *Chinese Journal of School Doctor*, vol. 31, no. 10, pp. 737-738+742.

Funding

This research received no external funding.

Conflicts of Interest

The authors declare no conflict of interest.

Acknowledgment

This paper is an output of the science project.

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal. This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>).