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The Influence of Grandparenting Styles on Peer Relationships of Preschool Children: The Mediating Role of Social Adaptability

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Abstract. With social changes, population movement, and an increasing number of dual-income families have led to the spread of intergenerational childcare in China, and related research has also continued to study its effects on children's development. This paper will study the effect of grandparent-led intergenerational childcare on the peer behavior of young children in preschools and whether social adaptability is a mediator in this process. The children of the five kindergartens in Cangzhou, Hebei Province, aged 3-6, participated in the research of this paper. The chosen participants were grouped. Three tools were used to collect the data: the Grandparent Child-Rearing Behavior Questionnaire, the Child Social Development Scale (only the peer relationship dimension), and the Child Adaptive Behavior Rating Scale. For the data analysis, this study used SPSS 27.0 and PROCESS 4.0. In other words, there were also tests of reliability, correlation analysis, regression analysis, etc., on the mediator. Grandparenting was correlated with preschool children's peer relationships; thus, it can be assumed that grandparenting promotes these relationships. Social adaptation was one of the reasons for this. However, the corresponding mediators of different categories of socialization varied greatly. In short, this study shows that grandparent-led parenting affects the peer relations of young children in social adaptation. These results can be used to promote grandparent-led parenting and improve the social adaptation and peer interaction quality of children.

Keywords: Grandparent-led upbringing, preschool children, peer relationships, social adaptability, mediating effect

1. Introduction

The family is the first place for children's education, and it will help guide their all-round development and socialization. Due to several reasons, grandparent-led childcare has become an essential support for parent-led childcare in recent years; people's life expectancy has increased, more parents are employed, single-parent families have grown, and the two-child policy has been implemented. In many places around the world, the proportion of children being raised by grandparents is between 7% and 58% [1-3].

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The proportion in China is even larger. According to statistics, about 70 per cent of the children in Beijing are cared for by their grandparents. In Shanghai, 50%-60% of children aged 0-6 are looked after by grandparents. It is about half of all the children in Guangzhou. The rural area has an even larger number; now more than 80 per cent of the left-behind children are raised by their grandparents [4].

Eastern and Western cultures have some continuity in the intergenerational transmission of parenting. There are also clear differences in the beliefs, behaviors, and ways of raising children between parents and grandparents. Research has found that grandparents tend to be more lenient with their grandchildren than their parents are, and parents are generally stricter than grandparents [5].

The preschool years are a time for the development of social skills in early childhood. At this time, the children begin to learn and develop some basic social behaviors through play with their peers [6]. At the same time, their social and emotional development has also shown some progress. Good peer relations can help children better understand the world outside their own families. They learn how to perceive the emotions, thoughts, and beliefs of others and are thus able to deal with people well [7].

What are peer relationships precisely? They refer to the ongoing, mutual relationships among people at the same stage of life, maturity, or age who share similar values, lifestyles, social connections, backgrounds, etc [8]. Researchers have been investigating for a long time what kind of characteristics can help children form friendships. Why do some children have good relationships with their classmates, and others do not? Many reasons are due to this. The primary ones are the family environment, especially the quality of parent-child relationships, as well as the child's cognitive level, their social-emotional state, and how their social cognition develops [9].

Intergenerational caregiving is one of the subjects that have received much attention in recent years. Some studies have found that the warmth and care given by grandparents can provide children with emotional stability. With the changes in society, population movement and the rise of dual-income families, intergenerational childcare has become a popular way of parenting in China; thus, research on its impact on child development is constantly being conducted [10]. However, other studies have found that problems such as overprotection, spoiling, or outdated parenting ideas may make children lacking in independence and rule awareness, thus affecting their social adaptation [11]. In addition, a number of studies have found that grandchildren raised by their grandparents tend to have more difficulty regulating their emotions and are more prone to externalizing problems. However, most of the current research has focused on the direct effects of grandparenting on the cognitive development, emotional stability, and behavior of young children. On the other hand, not many studies have explored how grandparent-led upbringing connects with peer interaction, and this is a significant index of children's socialization. Also, there has been no in-depth and systematic research into the reasons for this.

So what exactly do people mean by social adaptability? It is basically a person's usual ability to adapt to social life. This ability is a combination of both internal factors and external expressions, and it can be observed in various areas such as social skills, the ability to learn, resilience to failure, etc [12]. It is hoped that grandparent-led upbringing can help children develop better social adaptability; at the same time, this will determine how well they integrate with peers and the quality of peer interactions. For example, when grandparents engage in positive parenting behaviors, the children will be more socially well—adjusted and therefore easier to be liked by other children.

However, some studies have shown that there are also some problems. In general, the three features of grandparent-led care are that there is "emphasis on care over education," "prioritization

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of the development of intelligence over moral education," and "seeking pleasure rather than discipline" [13]. These patterns may actually harm the child's socialization and reduce the development of peer relationships. However, this whole mediating path has not been fully studied in preschool children yet. There are still very few related real-world studies.

Most of the previous studies have been focused on how parents' parenting styles impact the development of preschool children's peer relationships. There is relatively good theory and practice in that area. But here is the problem—against the backdrop of how common intergenerational care is in China, not many studies have examined how it can make a difference. And very few have employed social adaptability as a mediator. Therefore, this study will be conducted on preschool children. This study hopes to find out how different kinds of intergenerational care affect the relationships among young people and whether social adaptation is involved in the process.

Specifically, this study wants to answer the following three problems:

Does grandparent-led upbringing have a direct impact on the peer relations of young children?

Is social adaptability in preschool children a significant mediator of grandparent-led upbringing and peer relationships?

If so, is it full mediation or partial mediation? Looking at the different sub-dimensions of social adaptability—rule-following, emotional regulation, and social skills—are they different in terms of how strongly they mediate the link between grandparent-led upbringing and preschool children's peer relationships?

2. Research methods

2.1 Research participants and procedure

Cluster sampling was used to select five kindergartens in Cangzhou City, Hebei Province, as they were representative of all. The hope is to cover all the children's ages from 3 to 6. This study took each kindergarten class as a unit and then randomly selected two or three classes from the junior, middle, and senior classes; each age group made up about one-third of the total sample. The gender distribution of males and females was kept around 45-55%. A total of 660 were distributed.

2.2 Research instruments

2.2.1. Intergenerational parenting patterns

A Grandparent Behavior Questionnaire was used, which is a modification of the Parent Behavior Report (PBR). It is a 3-point scale (1 = 'not at all,' 2 = 'somewhat similar,' 3 = 'very similar') and has two dimensions: nurturing and psychological pressure. Nurturing attribute: How warm, caring, and loving are the grandparents towards the children? A high score means they are very warm and caring. The psychological pressure dimension is a measure of the methods grandparents employ to control the behavior of their grandchildren; a high score indicates that the grandparents impose substantial psychological pressure on the children, with numerous requirements and restrictions. The general internal consistency coefficient (α) of the questionnaire was 0.80, and among them, the nurturing dimension had an α of 0.83 and the psychological pressure dimension had an α of 0.82. Both the total alpha coefficient and the alpha coefficients of the individual dimensions were greater than 0.80; thus, they met the psychometric criteria [14].

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2.2.2. Peer relationships of preschool children

To determine how well the children of the kindergarten get along with their peers, this study used the peer relationship subscale in Chen Huichang's Child Social Development Scale. The 5-point scale is as follows: 1 = not applicable, 5 = fully applicable. A relatively high total score is good for the peer relationship. It was previously found that the scale has good reliability and validity. Cronbach's α for this subscale was 0.75 in the pretest and 0.74 in the posttest in the study; both are good. Confirmatory Factor Analysis also showed that the data fit the model well; therefore, the scale has good structural validity [15, 16].

2.2.3. Children's social adaptation

The evaluation instrument in this paper is the Child Adaptive Behavior Rating Scale developed by Yao Shuqiao and Gong Yaoxian. It has the following eight subscales: perceptual-motor ability, daily self-care, language ability, self-awareness, social responsibility, time and space orientation, practical skills, and adaptation in economic life.

Some of the subscale items have been divided into different latent factors. Perceptual-motor ability, self-care, practical skills, and economic adaptation are jointly considered to be one independent factor; language competence and spatio-temporal perception belong to the cognitive domain; individual awareness and social obligation are combined to form the dimension of social self-regulation.

The total Child Adaptation Quotient (ADQ) is the sum of the T-scores of the three main factors, and then it will be standardized and ranked hierarchically. The grades are as follows: An ADQ score of 130 or more is considered to have excellent adaptive ability; from 115 to 129, it is considered a good level; from 85 to 104, it is in the normal average range; 70 to 84 is defined as a borderline level; 55 to 69 is considered to have mild functional defects; 40 to 54 indicates moderate impairment; 25 to 39 is regarded as severe adaptive deficits; and a score of less than 25 is classified as a profound developmental limitation [17].

2.3 Statistical analysis

All the data obtained in this study have been organized and analyzed statistically with the help of SPSS 27.0 software and the embedded PROCESS 4.0 plug-in. First, the three levels of reliability for grandparent-led upbringing, peer relationships among preschool children, and children's social adaptability were tested. Cronbach's alpha was used to check the internal consistency of all the scales and their respective items. Secondly, descriptive statistics were used to determine the mean, standard deviation, skewness, and kurtosis of all the variables and thus know the center and spread of the data. At the same time, a frequency distribution table was created to know the distribution of the sample. Pearson's correlation was then used to examine the correlations among the main variables. Then, a linear regression analysis was carried out to examine the effect of grandparent-led upbringing on the peer relationships of preschool children; that is to say, grandparent-led upbringing served as the independent variable, preschool children's peer relationships were the dependent variable, and age and gender were controlled for. Finally, based on the mediation analysis method proposed by Wen Zhongqi and Ye Baojuan, this study used Model 4 in the PROCESS macro to perform the mediation analysis. This was to check if social adaptability mediates the relationship between grandparent-led child-rearing and peer relationships of preschool children [18].

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3. Results

3.1 Frequency table of demographic variables

Table 1. Statistical table of frequency of demographic variables

Variable	Category	n	(%)
Your gender	Female	263	39.8
	Male	397	60.2
Your age	50-60 years	169	25.6
	Under 50	158	23.9
	61-70 years	171	25.9
	Over 70	162	24.5
Time spent caring for children daily	Over 12 hours	168	25.5
	4—8 hours	172	26.1
	8—12 hours	159	24.1
	Less than 4 hours	161	24.4
Your educational attainment	Lower secondary school	156	23.6
	College or above	163	24.7
	Primary school or below	174	26.4
	Upper secondary school/vocational school	167	25.3

Note: Total Sample Size N=660.

This paper presents the basic information of the 660 older persons providing care. The sample is relatively well-distributed in terms of gender, age, education, and length of care, so it can represent the characteristics of the grandparent-led childcare group for preschool children (See Table 1).

3.2 Descriptive statistics of the key variables

Table 2. Descriptive statistics of the main research variables

Name	Sample Size	Minimum	Maximum	Standard	Deviation	Median
Parental Upbringing Style_Mean	660	1.000	5.000	3.204	0.799	3.200
Child Social Adaptability_Mean	660	1.000	5.000	3.163	0.805	3.111
Peer Relationships_Mean	660	1.000	5.000	3.145	0.780	3.125

Based on the results, all three main indicators are in the above-average range and have a normal distribution; therefore, they can be used in further statistical analysis (See Table 2).

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3.3 Validity and reliability test of the scale

3.3.1. Construct validity tests

Table 3. Construct Validity Test of the Scale

Test Statistic	Value
KMO	0.979
Bartlett's Sphericity Test (approximate chi-square)	19658.205
df	496
p	< .001

Note: N=660.

Structurally, the KMO value was 0.979, and the Bartlett test of sphericity reached a statistical significance of $p < 0.001$. Based on the above results, it can be determined that the collected data meet the requirements for factor analysis and further confirm the good structural validity of the measurement scale (See Table 3).

3.3.2. Reliability analysis

Table 4. Reliability coefficients of the dimensions in the scale

Variable	Cronbach α
Parental rearing style	0.971
Children's social adjustment	0.949
Peer relationships	0.935

The total Cronbach's α of this study was 0.957, and it was much larger than the general criterion of 0.90. Therefore, the scale used in the present study has excellent internal consistency and the measurement results are stable and reliable (See Table 4).

3.4 Pearson correlation matrix

Table 5. Correlation Analysis Matrix of the Main Research Variables

Variable	1	2	3
1. Grandparental rearing style	—	—	—
2. Child social adjustment	0.408***	—	—
3. Peer relationships	0.313***	0.487***	—

Note: N=660. *p < .05,**p < .01,***p < .001 (two-tailed).

According to the results of correlation analysis, grandparental rearing style, socialisation, peer relations, etc., all had a positive correlation with each other and met the basic requirements for mediation analysis (See Table 5).

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3.5 Regression Analysis

Table 6. Results of hierarchical regression analysis taking peer relationship as the dependent variable

Results of Hierarchical Regression Analysis (n=660)		
	Model 1 (control variables)	Model 2 (with parenting style)
	β	*β*
Your gender	-0.019	-0.009
Your relationship with the child	-0.023	-0.023
Your age	0.012	0.005
The child's current primary parenting style	0.034	0.036
Time spent caring for the child per day	0.011	0.017
Your educational attainment	-0.032	-0.056
Number of grandchildren you care for	0.006	0.005
Grandparent's parenting style		0.317
R^2	0.003	0.103
Adjusted R^2	-0.007	0.092
F-value	F (7,652)=0.305,p=0.952	F (8,651)=9.370,p=0.000
$\triangle R^2$	0.003	0.100
$\triangle F$	F (7,652)=0.305,p=0.952	F (1,651)=72.597,p=0.000

Note: Dependent variable = peer relationships.p<0.05** p<0.01

Hierarchical regression was employed to study the level of peer relationships. Model 1 only contains the control variables and is not very explanatory; Model 2 adds the parenting style of grandparents, and this is significantly more effective at explaining the variation ($\triangle R^2 = 0.100$, $p<0.001$). Grandparents' parenting styles are associated with better peer relationships for children; it is a significant effect (See Table 6).

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3.6 Test of mediation effect

3.6.1. Regression coefficients of the mediation path

Table 7. Coefficients of the mediation effect path

Path	β	P
Grandparent rearing style → Social adaptability	0.421	<0.001
Grandparent rearing style → Peer relationships	0.310	<0.001
Social adaptability → Peer relationships	0.421	<0.001
Parenting style → Peer relationships (after controlling for the mediator)	0.136	<0.001
R^2	0.259	<0.001

As shown in the table, grandparents' parenting style is positively and significantly associated with both the socialization of their children (β= 0.421, p < 0.001) and their peer relations (β= 0.310, p < 0.001). With the addition of a mediating variable, the predictive effect of socialization on peer relations remains significant (β= 0.421, p < 0.001); although the direct effect of parenting style on peer relations has declined, it is still statistically significant (β= 0.136, p < 0.001), providing the first support for the mediation hypothesis (See Table 7).

3.6.2.Bootstrap mediation test

Table 8. Bootstrap test results of the mediation effect

Effect type	Effect size	95% CI		Standard error (SE)	*z-value/t-value*
		Lower Limit	Upper Limit		
Indirect Effect	0.173	0.135	0.217	0.021	8.266
Direct Effect	0.136	0.065	0.207	0.036	3.762
Total Effect	0.310	0.238	0.381	0.036	8.520

The regression results show that grandparents' parenting styles are associated with socialization in the older children positively, and among the older children, good socialization may enhance friendships. After adding the mediating variable, the direct effect of parenting style on peer relationships is still positive and significant, so it is believed that social adjustment may be involved. According to the bootstrap inspection results, the 95% confidence interval of the indirect effect did not contain 0. The above statistics show that there is indeed a certain mediating effect (See Table 8).

4. Discussion

The effect of grandparent-led caregiving on the peer relationships of young children in preschools and the role that socialization plays are the subjects of this study. In accordance with the research hypotheses, it was found that grandparent-led childcare positively correlated with both socialization and peer relationships, and it also significantly predicted the quality of peer relationships; at the same time, socialization partially mediated the relationship between grandparent-led childcare and peer relationships.

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Based on the above results, grandparent-led parenting is correlated with children's socialization. A good grandparent-led upbringing that is positive, supportive and reasonable can give children a stable sense of security in life, boost their desire to communicate with others, reduce bad behavior, and thus enhance the quality of their peer relationships. According to Bronfenbrenner's theory of ecological systems and previous experiments, it has been found that positive family education helps children better adjust to life and interact with others.

Based on mediation analysis, it can be concluded that social adaptability partially mediates the relationship between grandparent-led parenting and peer relations. On the one hand, good grandparent-led upbringing can directly promote the development of peer relationships; on the other hand, good parenting helps children improve their emotional regulation skills (to help them maintain emotional stability in conflict situations), awareness of rules (to enable them to follow the rules of play and receive recognition from peers), and interpersonal coping ability (to proactively initiate and maintain positive social relationships). Through the combined improvement of the above three abilities, children will be able to join in peer activities more easily and build close friendships. It can be seen from the above that social adaptability is the key psychological factor connecting grandparent-led upbringing and peer relationships.

5. Limitations

There are some deficiencies in this paper. First, it has a cross-sectional nature and cannot determine cause and effect; thus, the long-term cumulative effects of grandparental care on children's growth and development cannot be observed. In the future, longitudinal studies will be conducted to investigate the changes in children's socialization after being raised by grandparents more closely.

In addition, the three main variables in this study were also obtained from the same questionnaire completed by the grandparents. A single source of self-report is likely to be influenced by the desire to appear well, and thus the entire survey may lack accuracy. In response to this problem, in the future, multiple types of assessments can be used to collect data on children's behavior and teacher observations, etc., to enhance the accuracy of these indicators.

6. Conclusions

This paper will investigate the links among grandparents' care for children, socialization, and peer relations generally. This study selected 660 young children from preschools as the subjects of the study and conducted empirical tests and statistics. As shown by the results, grandparent-led parenting promotes children's good peer relations and socialization; it is related to the issue of socialization. In other words, a positive grandparent-led childhood can directly enhance children's development of peer relationships, and it can also indirectly foster their social adaptability by helping them better navigate life; thus, the quality of their interactions with peers will be better.

Based on the actual work in early childhood education, it is clear that improvements to kindergarten curricula need to be made. Kindergartens could make it a priority to strengthen children's social adaptability and systematically weave emotional regulation, rule understanding, and social skills training into daily teaching and care activities. A first idea is to design several rounds of activities for the children at different ages. For the younger class, learn the basic expressions of emotions and simple rules of behavior. For the middle class, learn to express and regulate emotions, as well as understand and follow group rules. For older children, strengthen the teaching of cooperation and conflict resolution in social skills. Using child-friendly forms, such as role-playing, picture-book lessons, and interactive games, relevant groups can integrate the cultivation of social

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skills into all aspects of life. Thus, educators aim to resolve children's socialization problems at the source and help them learn to get along with others better.

On the side of family education, this paper also proposes some practical paths to improve grandparent-led care. Family education guidance agencies and community early childhood education service centers can use this to offer grandparents some targeted support. For example, they can organize talks and other events to introduce the latest changes in grandparents' parenting concepts, ways of educating children to develop good social skills, and how to foster a close relationship between parents and children in scientific intergenerational care. At the same time, through one-on-one parenting consultation and the distribution of family parenting guides and online educational materials, grandparents can learn not to have detrimental habits, such as overindulgence or excessive use of substitute care. Grandparents can learn how to raise children according to the development stages of young children and create a healthy family environment for them through science.

When preschool institutions and family education guidance services cooperate, many sides can jointly create a better environment for the growth of children. The above-mentioned focused support can help young children enhance their adaptability and establish good relationships with peers; thus, it will promote the normal development of their social skills at this time.

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