

An Analysis on the Relationship between Preschoolers' Psychological Resilience and Their Raising Environment

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Abstract

This study explores the association between preschoolers' psychological resilience level and their family environment. Family environment refers to parenting style, parent's education, household income, and number of siblings. Preschooler's psychological resilience level has been measured by the Devereux Early Childhood Assessment for Preschoolers (DECA-P2). Family environment information has been collected through survey questionnaires. Chi-square test has been applied to check the association between variables of family environment and preschoolers' psychological resiliency. The results indicate: 1) The resilience level of preschoolers is significantly associated with their number of siblings ($p = 0.045$); 2) The self-regulation ability and attachment ability of preschoolers are associated with their parent's education level ($p = 0.033$; $p = 0.038$) and their age ($p = 0.047$; $p = 0.048$); 3) The resilience level of preschoolers doesn't show significant association with their family income or with their gender. These findings suggest that preschooler's psychological resilience level is related with some family environmental factors. The weak association between preschooler resilience and household income offers a hopeful message that transcends economic disparity. This study also reaffirms the prevalence of the democratic parenting style, which dwarfs the role of parenting style in preschooler's psychological resilience level.

Keywords

Preschoolers, Psychological Resilience, Nurture Environment

1. Introduction

The adolescent suicide rate has been increasing in recent decades. The suicide rate for people aged 10 - 19 in the United States increased 75% from 2009 through

2017 (Curtin & Garnett, 2023). Although there were about 6000 Chinese adolescents committed suicide in 2018 (Sun et al., 2020), the suicide rate of Chinese who are between five and fourteen increased substantially from 2010 to 2021 with an average annual percent change of 9.13% (Zhao et al. 2023).

In light of the alarming rate of suicide attempts among adolescents, researchers are actively exploring the underlying causes of this phenomenon. Some studies concentrate on the connections between academic stress and mental health. For instance, research revealed that prolonged and high-stress school years can exacerbate mental health issues in adolescents, contributing to an escalation in youth suicide rates (Hansen & Lang, 2011). Conversely, lower suicide tendencies have been observed during school breaks, with suicide rates increasing during the school days immediately following the holidays (Chandler et al., 2022). Many other factors also contribute to adolescent suicidal risk. For instance, substance abuse, negative self-concept, and isolation (Im et al., 2017; Tripković et al., 2015), dysfunctional family dynamics, poor parental attachment, and family history of suicide (Bilsen, 2018), school bullying, acute conflicts (with parental figures or intimate partners), and history of physical or sexual abuse (Bahk et al., 2017; Bilsen, 2018; Frey & Hans, 2015).

Although contributing factors of raising adolescent suicidal risks have been researched extensively, the existing research are mostly reflective. They focus on adolescents who have suicidal thoughts and attempts, or on these who already committed suicide. As valid as these research are, they are built upon suffering adolescents and their patients, have a limited preventive effect, and might accidentally create secondary harm.

Findings from life science and neuroscience research, however, suggest a predictive approach by examining the early development of children. It has been stated that people's brain reaches 80% of their adult volume by the age of three, and signs of emotions can be shown as early as four months old. At around 18-months-old, one is already capable of developing a sense of self-awareness (Amsterdam, 1972; Nielsen, Dissanayake, & Kashima, 2003). Childhood is also a critical period for establishing early parent-child attachment bonds, which is highly associated with positive social-emotional competence, cognitive function, and physical and mental health (Ding et al., 2022). Researchers have noted that even preschool children are capable of developing emotional disorders, exhibiting fear and high levels of anxiety (Ding et al., 2023). These findings show a linkage between children's early behavior and their future development of character traits, making it viable for early intervention to influence future behaviors and mental health status.

With the hope of reducing the rate of adolescent suicide, this study decides to focus on factors influencing the psychological resilience of preschoolers. Although there has not yet been a universal definition of psychological resilience, researches generally agreed that psychological resilience refers to the capacity to recover and maintain a good, adaptive level of psychosocial functioning in difficult situations

(Yang et al., 2021; Ding et al., 2023). It is highly associated with a healthy mental status. World Health Organization (2016) stated that it is fundamental to encourage the development of psychological resilience for mental health. In (Dray et al. 2014)'s research, a high level of psychological resilience is found to be one of the protective factors against the development of risky behaviors, including but not limited to self-harm and suicidal behaviors. Psychological resilience can also act as a defense against stress, alleviating its impact on mental health and reducing anxiety symptoms among children (Ding et al., 2023). Furthermore, psychological resilience corresponds with many socially determined skills, patterns of thought, and behaviors that are beneficial for interpersonal relationships (Duckworth & Yeager, 2015). In order to strengthen adolescents' mental health status in the long term and alleviate the tendency of increasing adolescent suicidal rates, a high level of psychological resilience must be cultivated from an early stage.

For preschoolers, a key influential factor of their psychological resilience is family environment. Lopez & Snyder (2009)'s *The Oxford Handbook of Positive Psychology* highlighted several family environmental factors affecting psychological resilience. These factors include a caring home environment, supportive parents, and higher family economic status and parental education levels. The more invested, supportive, well-paid, and educated parents are, the more likely their children will develop psychological resilience earlier and stronger. This statement were repeatedly confirmed by following researches, and the influential factors stretched to cover number of siblings and parenting style (Bai, 2021; Ji et al., 2015). Parenting style is defined as the stable behavioral tendency that parents show in the process of educating and raising children (Fang & He, 2005). The most popular parenting styles used in psychology are categorized by Baumrind (1967) and expanded by Maccoby & Martin (1983). They grouped parenting styles into four categories: authoritative, authoritarian, permissive, and uninvolved parenting style. According to Baumrind's categories, authoritative parenting has a strong and positive association with children's psychological resilience (Ji et al., 2015). Ogelman (2015) also attested the correlation between children's resiliency level and parenting styles through the parental acceptance-rejection theory.

Thus, this study aims to explore resilience level of preschoolers and its association with their family environment. Factors of family environment include parent education level, household income level, parenting style and number of siblings. The gender and age of the children will also be included to offer a more comprehensive assessment of the association. Other external factors, such as school curriculum and teacher attitude, will be assumed to be equal across the cohort of preschoolers as they attend the same school which implements the same curriculum and has the same standards for teachers. By doing so, this study can fully focus on the influence of family situations upon preschooler resiliency. This study proposes several research hypotheses:

H1: Preschooler's resilience level is associated with their parent's education level

H2: Preschooler's resilience level is associated with their parents' income level
H3: Preschooler's resilience level is associated with their parent's parenting style
H4: Preschooler's resilience level is associated with the number of siblings they have

H5: Preschooler's resilience level is associated with gender

H6: Preschooler's resilience level is associated with age

2. Method

2.1. Participants

This study's participants are from a kindergarten in a tier-two city located in the Pearl River Delta area, a region known for its rapid urbanization and diverse cultural influences. A total of 205 preschoolers aged 4 to 5 were included in this study.

Among the 205 participants, 123 of their parents provided information about their family environment, including parent education level, household income level, and number of siblings. These 123 surveys are essential materials for this study.

2.2. Measure

2.2.1. Preschooler's Resilience Level

In this study, the resilience level of preschoolers is measured by the Devereux Early Childhood Assessment for Preschoolers, Second Edition (DECA-P2). DECA-P2 is a behavior rating scale that can be completed by either parents or teachers and assesses protective factors central to resiliency and behavioral concerns for children aged 3 to 5 (LeBuffe & Nagileri, 2013). Although DECA-P2 is designed and commonly used in a western context, multiple researches have demonstrated the validity of the Chinese version of DECA-P2 in practice (Bai, 2021; Yang et al., 2021; Ding et al., 2022). Ji's assessment (Ji, 2015) on the Validity and Reliability of the Chinese Version of DECA-P2 and concluded that it has qualified psychometrics and could be applied to children raised in a Chinese cultural background.

DECA-P2 contains 38 measuring items, 27 of which assess children's resiliency level through Total Protective Factors (TPF) and will be the focus of this study. The other 11 items assess children's behaviors. The 27 TPF items are further divided into 3 categories of 9 items, each referring to a factor of the TPF: Initiative, Self-Regulation, and Attachment/Relationships. Initiative refers to the child's ability to actively reach for their needs, Self-Regulation refers to the child's ability to express themselves healthily, and Attachment/Relationships refers to the child's ability to maintain positive connections with others.

According to the DECA-P2 scoring manual (LeBuffe & Naglieri, 2013), each item is scored on a 5-point Likert scale from 0 to 4 (never, rarely, sometimes, often, and always), and the sum of points reflects their category sub-score. If the sum of points passes 59, then the child's specific ability is at a strong level; if the sum of points is below 41, the child's specific ability is in need of improvement; if the sum of points is between 41 and 59, the child's specific ability is at a typical

level. Since only very few children can score past 59, this study combines the strong and typical levels during chi-square data analysis. The TPF score is based on the sum of item points and is also divided into three categories after transformation.

2.2.2. Parenting Style

Parenting Style is commonly categorized by the four categories of Baumirnd, however, in this study, it is assessed with the Parenting Style Questionnaire designed by Lizhu Yang and Chunqing Yang. This questionnaire is one of China's most widely applied parenting style divisions and is frequently used by scholars (Yang, 2018; Dan, 2023; Zhao et al., 2023). Moreover, the two versions share a similar structure of dividing parenting styles. The Yangs' questionnaire have five categories: democratic, authoritative, doting, unchecked, and inconsistent (Yang & Yang, 1998). Aside from the inconsistent parenting which adds flexibility, the other four categories parallel with that of Baumirnd in general. Democratic parenting matches with authoritative parenting for reasonably supporting their children's decision, authoritative parenting matches with authoritarian parenting for being strict and high demanding, doting parenting matches with permissive parenting for easily over-satisfying their children, and unchecked parenting matches with uninvolved parenting for neglect and indifference.

The Yangs' Parenting Style Questionnaire uses 40 questions to assess the parenting style of participants. Questions 1 to 7 cover doting parenting, questions 8 to 17 cover democratic parenting, questions 18 to 26 cover unchecked parenting, questions 27 to 34 cover authoritarian parenting, and questions 35 to 40 cover inconsistent parenting. This questionnaire is also scored on a 5-point Likert scale. The more score one gets in a certain range, the higher tendency they have in that parenting style. The number of questions for each style varies based on the complexity of the parenting style. For example, inconsistent parenting only uses 6 questions, whereas democratic parenting uses 10. Nevertheless, this questionnaire proves to be very reliable, with a 0.711 internal consistency reliability, a 0.852 split-half reliability, and a 0.825 test-retest reliability (Zhao et al., 2023).

2.3. Procedure

To reach potential participants, a lecture about this study was presented during parent meetings at the selected kindergarten. A form was then distributed to collect the principal caregivers of preschoolers who would like to participate in this study. After providing more information about the study, the caregivers signed consent forms permitting the collection of their children's information and ensuring their honest participation in the parenting style questionnaire.

Next, the scorers of DECA-P2 observation sheets were selected. Teachers who have worked with the preschoolers for more than three months were invited to join this study. They were also introduced to the study and asked to sign a consent form. The form indicates that teachers voluntarily participate in this study and

promise to fill out the DECA-P2 observation sheet with authentic information. Then, after a workshop on DECA-P2 scoring rules and ethics, the teachers conducted their part and filled out the sheet.

3. Results & Discussion

3.1. Preschoolers' Resilience Level

3.1.1. Preschooler's Resilience Level Overview

Table 1 lists the demographic information of this study's participants: 205 preschoolers aged 4 to 5. The participants are not evenly split according to age and gender. 64.3% of them are 5 years old, and 55.6% are male. This leaves 35.6% of them 4 years old and 44.4% of them female.

Table 1. Preschooler's demographic information (N = 205).

	Count	Percentage
Gender		
Female	91	44.4%
Male	114	55.6%
Age		
4 years old	73	35.6%
5 years old	132	64.3%

Table 2 presents the distribution of preschooler's resilience level. Among the 205 participants, only 10.7% of them developed a strong resilience. 45.8% of them developed a typical level of resilience, and another 43.4% of them are under-developed in resilience (**Table 2**). This differs from past research as most of their participants developed a typical level of resilience (Bai, 2021; Ji, 2015).

Table 2. Preschooler's resilience level (N = 205).

	Count	Percentage
Strength	22	10.7%
Typical	94	45.8%
Need of improvement	89	43.4%

3.1.2. Preschooler's Resilience Level and Individual Factors

Table 3 illustrates the association between preschooler's resilience level and gender. It contains the total protective factor, which reflects the total resilience level of preschoolers, and the three factors that compose it. According to the table, preschooler's resilience level doesn't show significant association with gender. None of the sections have a P-value smaller than 0.05. However, this is highly unlikely

previous research. Multiple researches show that female preschoolers generally score higher than male preschoolers in the self-regulation zone (Jiao & Gai, 2011; Zhang, 2006; Bai, 2021). Chen et al. (2021)'s research even shows that female preschoolers perform better in all four sections of resilience.

Although chi-square analysis does not show a significant association between gender and resilience level, the two genders differ in the percentage of participants whose ability is in need of improvement. The average gap between the number of male preschoolers whose ability is in need and the number of female preschoolers whose ability is in need is 7.25%. 6.7% more male preschoolers' initiative ability needs improvement, 7.6% more male preschoolers' self-regulation ability needs improvement, 8.9% more male preschoolers' attachment/relationships ability needs improvement, and 5.8% more male preschoolers' total protective factors need improvement (Table 3).

Table 3. Chi-square analysis between gender and resilience level.

	Female (N = 91)		Male (N = 114)		P-value
	Count	Percentage	Count	Percentage	
Initiative					0.337
Strength	9	9.9%	9	7.9%	
Typical	45	49.5%	51	44.7%	
Need of Improvement	37	40.7%	54	47.4%	
Self-regulation					0.224
Strength	10	11.0%	14	12.3%	
Typical	60	65.9%	65	57.0%	
Need of Improvement	21	23.1%	35	30.7%	
Attachment/Relationships					0.228
Strength	2	2.2%	1	0.9%	
Typical	50	54.9%	54	47.4%	
Need of Improvement	39	42.9%	59	51.8%	
Total protective factors					0.403
Strength	9	9.9%	13	11.4%	
Typical	45	49.5%	49	43.0%	
Need of Improvement	37	40.7%	53	46.5%	

Note. Strength and typical level of resilience are combined as one section for the chi-square analysis.

Table 4 illustrates the association between preschooler's resilience level and age. It also contains four sections on resilience. This study does not show a strong association between age and the total protective factor ($p = 0.051$), but there is a relationship found between age and self-regulation ($p = 0.047$) and attachment/relationships ($p = 0.038$). There is also a difference in the percentage of preschooler's ability development. On average, there are 8% more 5-year-olds who developed a strong level of resilience ability and 11.75% less 5-year-olds who developed a low level (**Table 4**).

This ambiguity of age's influence on resilience level has been shown in previous research as well. **LeBuffe & Naglieri (2013)**, the authors of DECA-P2, concluded that age has few influences on preschooler's resilience in their research, whereas **Yoleri (2020)**'s research on factors affecting the level of children's resilience found age as a valid predictor of children's resilience. **Nasvytiene (2012)**'s meta-analysis shows no increase in resilience scores as children's ages increase, while **Ji (2015)**'s research shows a firm gap between the resilience level of 5-year-olds and 3 and 4-year-olds.

Table 4. Chi-square analysis between age and resilience level.

	4 years old (N = 73)		5 years old (N = 132)		P-value
	Count	Percentage	Count	Percentage	
Initiative					0.446
Strength	1	1.4%	17	12.9%	
Typical	37	50.7%	59	44.7%	
Need of Improvement	35	47.9%	56	42.4%	
Self-regulation					0.047*
Strength	4	5.5%	20	15.2%	
Typical	43	58.9%	82	62.1%	
Need of Improvement	26	35.6%	30	22.7%	
Attachment/Relationships					0.038*
Strength	2	2.7%	1	0.8%	
Typical	29	39.7%	75	56.8%	
Need of Improvement	42	57.5%	56	42.4%	
Total protective factors					0.051
Strength	2	2.7%	20	15.2%	
Typical	33	45.2%	61	46.2%	
Need of Improvement	38	52.1%	51	38.6%	

Note. Strength and typical level of resilience are combined as one section for the chi-square analysis * $p < 0.05$.

3.2. Family Environmental Factors

3.2.1. Survey overview

Family environmental factors include parent education level, household income level, parenting style, and number of siblings. This study collected information on family environmental factors through online surveys. A total of 123 surveys were collected (**Table 5**).

According to **Table 5**, 70.9% of the respondent's household income is equal to or above the yearly average household income of Qingyuan City, 43.3% is above the yearly average household income of Qingyuan City, and 27.6% is equal to the yearly average income. This reflects the respondents' general economic well-being.

Table 5. Family environment information (N = 123).

	Count	Percentage
Parent Education		
Bachelor and above	60	48.8%
High school and below	63	51.2%
Household income		
Above average	52	42.3%
Average	34	27.6%
Below average	16	13.0%
Other	21	17.1%
Number of siblings		
0 (Only child family)	39	31.7%
1	73	59.3%
2 or more	11	8.90%
Parenting Style		
Democratic	116	94.3%
Authoritative	1	0.81%
Doting	1	0.81%
Unchecked	2	1.63%
Inconsistent	3	2.44%

Table 5 also shows that 68.29% of the respondents are not an only-child family. 59.3% of the respondents have two children, and 8.9% have three or more children. A possible explanation can be found in the change in Chinese family planning programs. In the 1980s, China fully implemented the one-child policy,

shifting the total fertility rate from approximately six to below the replacement level in around two decades (Zhai & Jin, 2023). It was not until 36 years later that China started implementing a two-child policy in 2015 (Xinhua News Agency, 2016) and another 6 years more for an official permission to raise three children in 2021 (The National People's Congress of The People's Republic of China, 2021). The fluctuation and decreased regulation in Chinese family policies encourage households to grasp the opportunity to bear more than one child. Thus, considering the particular circumstances in China, this study will combine sibling numbers into two categories based on whether the household is an only-child family in the following data analysis.

Another impressive statistic in **Table 5** is the 94.3% of democratic parenting style. 116 of the 123 respondents are verified to have a democratic parenting style. Although democratic parenting has always been one of the popular parenting styles (Dan, 2023; Yang, 2018), the high percentage in this survey makes the influence of parenting style upon preschoolers' resilience hardly noticeable. As **Table 5** shows, 70.9% of the respondent's household income is equal to or above the yearly average household income of Qingyuan City. The high economic status of the families makes it easy to over-satisfy their children's needs, such as buying toys and going to Disney. The abundant resources could reduce the opportunities for children to develop resiliency as they encounter fewer adversities and setbacks.

Among these 123 surveys, 6.5% of the respondent's child developed a strong resilience, 49.6% of them developed a typical resilience, and 43.9% of them developed a resilience that is in need of improvement (**Table 6**). In comparison with the 205 DECA-P2 sheets, the surveys show that 3.8% more preschoolers developed a typical resilience, creating a 5.7% gap between the number of preschoolers with a typical resilience level and low resilience level. The number of preschoolers that developed a strong resilience, however, dropped by 4.2%.

Table 6. Preschooler's resilience level (N = 123).

	Count	Percentage
Strength	8	6.50%
Typical	61	49.6%
Need of improvement	54	43.9%

3.2.2. Family Environmental Factors and Preschooler's Resilience Level

Table 7 illustrates the association between preschooler's resilience level and their parent's education. Although an association between the total protective factor and parent education level was not shown ($p = 0.052$), a relationship was found between parent education and self-regulation ($p = 0.033$) and attachment/relationships ($p = 0.038$). In addition, preschoolers whose parents' education level is bachelor and above have developed, on average, 15.65% more typical level of

resilience ability and 16.28% less low-level ability than preschoolers whose parents' education level is high school and below (**Table 7**).

The valid impact of parent's education level on preschooler's resilience aligns with previous researches. **Zhang (2006)**'s research on children's self-regulation shows that a positive correlation between parent's education level and their children's self-regulation. **Tai (2015)** and **Ding et al. (2022)** also show a higher total protective factor for children whose parent's education level are relatively higher.

Table 7. Chi-square analysis between resilience and parent education.

	Bachelor and above (N = 60)		High school and below (N = 63)		P-value
	Count	Percentage	Count	Percentage	
Initiative					0.169
Strength	2	3.3%	2	3.2%	
Typical	34	56.7%	28	44.4%	
Need of Improvement	24	40.0%	33	52.4%	
Self-regulation					0.033*
Strength	6	10.0%	3	4.8%	
Typical	44	73.3%	39	61.9%	
Need of Improvement	10	16.7%	21	33.3%	
Attachment/Relationships					0.038*
Strength	1	1.7%	1	1.6%	
Typical	35	58.3%	25	39.7%	
Need of Improvement	24	40.0%	37	58.7%	
Total protective factors					0.052
Strength	3	5.0%	5	7.9%	
Typical	36	60.0%	25	39.7%	
Need of Improvement	21	35.0%	33	52.4%	

Note. Strength and typical level of resilience are combined as one section for the chi-square analysis * $p < 0.05$.

Table 8 illustrates the association between preschooler's resilience level and their household income. It shows no strong association between preschooler's resilience level and their household income. This result remains the same even if the "other" category was deleted due to lack of relevant information, with the lowest

p-value being 0.461 for self-regulation (Table 9). Surprisingly, when just considering the percentage of ability development, preschoolers with a household income below average behaves the best. Out of the 4 categories, they have 3 of the highest strength level percentage, 2 of the highest typical level percentage, and 2 of the lowest level percentage (Table 9).

Although this implies a hopeful message in which the development of children resilience can transcend economic disparity, this result is not commonly found in previous researches. In contrast, multiple researches have listed poverty, which is tightly related with household income, as one of the risk factors for early childhood development of resilience and other aspects (Rioux, 2016; Newland, 2014). The relationship between preschooler's resilience level and their household income ought to be explored more for certainty.

Table 8. Chi-square analysis between resilience and household income (N = 123).

	Above average (N = 52)		Average (N = 34)		Below average (N = 16)		Other (N = 21)		P-value
	Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage	
Initiative									0.590
Strength	1	1.9%	1	2.9%	1	6.3%	1	4.8%	
Typical	26	50.0%	19	55.9%	9	56.3%	8	38.1%	
Need of Improvement	25	48.1%	14	41.2%	6	37.5%	12	57.1%	
Self-regulation									0.636
Strength	3	5.8%	3	8.8%	2	12.5%	1	4.8%	
Typical	38	73.1%	20	58.8%	9	56.3%	15	71.4%	
Need of Improvement	11	21.2%	11	32.4%	5	31.3%	5	23.8%	
Attachment/Relationships									0.763
Strength	1	1.9%	1	2.9%	0	0.0%	0	0.0%	
Typical	25	48.1%	15	44.1%	10	62.5%	10	47.6%	
Need of Improvement	26	50.0%	18	52.9%	6	37.5%	11	52.4%	
Total protective factors									0.949
Strength	1	1.9%	4	11.8%	2	12.5%	1	4.8%	
Typical	28	53.8%	16	47.1%	6	37.5%	11	52.4%	
Need of Improvement	23	44.2%	14	41.2%	8	50.0%	9	42.9%	

Note. Strength and typical level of resilience are combined as one section for the chi-square analysis.

Table 9. Chi-square analysis between resilience and household income without the “other” category (N = 102).

	Above average (N = 52)		Average (N = 34)		Below average (N = 16)		P-value
	Count	Frequency	Count	Frequency	Count	Frequency	
Initiative							0.693
Strength	1	1.9%	1	2.9%	1	6.3%	
Typical	26	50.0%	19	55.9%	9	56.3%	
Need of Improvement	25	48.1%	14	41.2%	6	37.5%	
Self-regulation							0.461
Strength	3	5.8%	3	8.8%	2	12.5%	
Typical	38	73.1%	20	58.8%	9	56.3%	
Need of Improvement	11	21.2%	11	32.4%	5	31.3%	
Attachment/Relationships							0.583
Strength	1	1.9%	1	2.9%	0	0.0%	
Typical	25	48.1%	15	44.1%	10	62.5%	
Need of Improvement	26	50.0%	18	52.9%	6	37.5%	
Total protective factors							0.842
Strength	1	1.9%	4	11.8%	2	12.5%	
Typical	28	53.8%	16	47.1%	6	37.5%	
Need of Improvement	23	44.2%	14	41.2%	8	50.0%	

Note. Strength and typical level of resilience are combined as one section for the chi-square analysis.

Table 10 illustrates the association between preschooler’s resilience level and their number of siblings. It shows that preschooler’s overall resilience level is associated with their number of siblings ($p = 0.045$). The percentage difference of ability development also shows a strong association. On average, 15.63% more preschoolers from an only-child family developed a typical level of resilience ability, and 13.48% less developed a low level (**Table 10**). This result is consistent with previous researches. In [Ding et al. \(2022\)](#)’s research upon preschooler’s development of psychological resilience, preschoolers with no siblings are significantly more likely to display higher psychological resilience level.

What’s worth noticing is that **Table 10** only has 2 categories, while the original survey offers multiple categories based on how many siblings the respondent’s preschooler children have (**Table 5**). This is because this study takes the influence of China’s family planning programs into consideration and based the division on whether the respondent’s household is an only-child family. In addition, only

8.9% of the respondents have 2 or more children (Table 5) and could not be used for meaningful analysis. Bai's research (2015) uses the same division with this study and also confirmed the association between preschooler's resilience level and their number of siblings. Children with no siblings tend to develop their attachment/relationship ability better than those who have siblings.

Table 10. Chi-square analysis between resilience level and number of siblings.

	0 (Only-child family) (N = 39)		1 or more (N = 84)		P-value
	Count	Percentage	Count	Percentage	
Initiative					0.232
Strength	1	2.6%	3	3.6%	
Typical	23	59.0%	39	46.4%	
Need of Improvement	15	38.5%	42	50.0%	
Self-regulation					0.414
Strength	2	5.1%	7	8.3%	
Typical	29	74.4%	54	64.3%	
Need of Improvement	8	20.5%	23	27.4%	
Attachment/Relationships					0.092
Strength	0	0.0%	2	2.4%	
Typical	24	61.5%	36	42.9%	
Need of Improvement	15	38.5%	46	54.8%	
Total protective factors					0.045*
Strength	2	5.1%	6	7.1%	
Typical	25	64.1%	36	42.9%	
Need of Improvement	12	30.8%	42	50.0%	

Note. Strength and typical level of resilience are combined as one section for the chi-square analysis * $p < 0.05$.

4. Conclusion

This study analyzes the influence of family environment on preschooler's psychological resilience. It finds that preschooler's psychological resilience level is associated with the number of siblings preschoolers, the education level of preschoolers' parents, and the age of the preschoolers. The number of siblings influences the total protective factor of preschooler's resilience, which is interpreted as the overall resilience level of preschoolers, whereas parent's education level and

preschooler's age only influence the self-regulation aspect and attachment/relationship aspect of preschooler's resilience. The study doesn't find a significant association between preschooler's resilience level and parent's income level or preschooler's gender. In addition, this study presents an interesting phenomenon in which the overall preschooler's resilience level is lower than usual, while their family's financial situation is higher.

The findings suggest that the influence of family environment on preschooler's psychological resilience is still a fruitful area for future work. It reaffirms some of the results of previous research, such as the influence of sibling numbers and the uncertain impact of preschoolers' age, and challenges others. For example, parent's education level is no longer an indicator strong enough for preschooler's overall resilience level, and parent's income level and preschooler's gender do not show a significant association with preschooler's resilience level. This fluctuation in family environmental factors' validity calls for more exploration in the field. Further work needs to be done to be sure of the exact influence of parent's income level, preschooler's gender, and parent's education level. This is especially true as the current weak association between preschooler's resilience level and household income offers a hopeful message that transcends economic disparity. It reveals a rare circumstance in which one's financial status does not significantly influence one's ability development.

Nevertheless, the limitations of this study should be addressed. First of all, this study's participants have a relatively high financial status. 43.3% of the participants have a household income above the yearly average of Qingyuan City, and 27.6% have a household income equal to the annual average. This could influence the generality of this study's result. Secondly, this study did not cover the influence of parenting style on preschooler's resilience. Although this study planned to fill the gap in the association between these two variables, 94.3% of respondents were verified as having a democratic parenting style, which significantly reduced the statistical meaning of relevant analysis. Future studies should consider the prevalence of this parenting style and could expand the population or use multiple measurements of parenting style in response.

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