

# *Investigation on the Current Situation of Psychopathic Traits in Preschool Children*

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**Abstract:** This study aims to investigate the current status of psychopathic traits in preschool children and explore the effects of gender, temperament type, and parenting style on these traits. The Child Problem Trait Inventory (CPTI) was used to assess 125 preschool children. Differences in psychopathic traits across gender, temperament types, and parenting styles were analyzed, and regression analysis was employed to explore influencing factors of psychopathic traits. The results showed that boys scored significantly higher than girls in Grandiosity and Deception, Callousness, Impulsivity and Thrill-Seeking, and overall psychopathic traits; the four temperament types showed significant differences in Impulsivity and Thrill-Seeking and overall psychopathic traits; regarding parenting styles, children under authoritarian and indulgent parenting scored significantly higher in overall psychopathic traits than those under authoritative parenting; there were significant correlations between gender, phlegmatic, choleric, melancholic temperaments, authoritative and indulgent parenting styles, and overall psychopathic traits; gender, temperament, and parenting style could predict 32% of the variance in overall psychopathic traits. This study provides empirical evidence for understanding psychopathic traits in preschool children and is significant for early identification and intervention.

## 1. Introduction

Psychopathy is a complex personality trait characterized by emotional callousness, lack of empathy, impulsive behavior, and manipulation of others. In recent years, research on psychopathy in children and adolescents has gradually increased, with particular focus on the early identification and intervention of psychopathic traits in preschool children. Numerous studies involving children and adolescents have found that psychopathy is associated with behavioral problems, delinquency, and aggression. The preschool stage is a critical period for personality development, and early manifestations of psychopathic traits may have a profound impact on children's social adaptation and long-term development.

Although research on psychopathy in adults is relatively mature, the trait manifestations, influencing factors, and mechanisms of psychopathy in preschool children still require further investigation. Existing studies indicate that psychopathic traits in children present a

multidimensional structure, including dimensions such as emotional callousness, Grandiosity-manipulation, and impulsive-risk-taking. Colins developed the Child Problematic Traits Inventory (CPTI), which includes a three-factor model covering interpersonal, affective, and behavioral dimensions [1]. Later, Wang and colleagues revised this, and through factor analysis, identified three dimensions: Grandiosity and Deception, Callousness, and Impulsivity and Thrill-Seeking [2].

Building on previous research, this study uses questionnaire surveys to explore the current status of psychopathic traits in preschool children and their relationship with gender, temperament, and parenting styles, aiming to provide a scientific basis for early identification and intervention.

## **2. Research Design**

### **2.1 Research Subjects**

This study used a convenience sampling method and selected 125 children from three kindergartens in Chengdu, Sichuan Province as research subjects. Initially, 60 children from each of the lower, middle, and upper classes were selected, with 90 boys and 90 girls as the survey subjects. The children's parents completed the questionnaires, and a total of 125 valid questionnaires were recovered, including 27 from the lower class, 54 from the middle class, and 44 from the upper class; 65 from girls and 60 from boys.

### **2.2 Research Methods**

This study used a questionnaire survey method, adopting the revised "Child Problem Traits Inventory" (CPTI) by Wang et al. [2], which contains 28 items measuring three dimensions of psychopathic traits: 1. Grandiosity and Deception, 2. Callousness, 3. Impulsivity and thrill-seeking. The questionnaire uses a 4-point Likert scale. Basic information of the children was also collected, including gender, age, temperament type, and family parenting style. Questionnaires were filled out by the children's parents and data were collected through the Wenjuanxing platform.

### **2.3 Data Analysis Methods**

SPSS 26.0 software was used to conduct descriptive statistics, difference tests, correlation analysis, and regression analysis on the survey data.

## **3. Research Results**

### **3.1 Reliability and Validity Analysis**

The reliability analysis showed that the overall Cronbach's  $\alpha$  coefficient of the questionnaire was 0.914, and the  $\alpha$  coefficients for each dimension were as follows: Grandiosity and Deception 0.745, Callousness 0.829, and Impulsivity and Thrill-Seeking 0.895, indicating that the questionnaire has good internal consistency. The validity analysis results showed that the KMO value of the questionnaire was 0.849, and Bartlett's test of sphericity was significant ( $\chi^2 = 1559.396$ ,  $p < 0.001$ ), confirming that the questionnaire has good structural validity.

### **3.2 Descriptive Statistics Results**

The survey results (Table 1) showed that the overall average score of psychopathic traits was 2.713 (SD = 0.381), indicating that the sample as a whole exhibit a medium-to-high level of

psychopathic traits. The Impulsivity and Thrill-Seeking dimension had a relatively high score ( $M = 2.767$ ,  $SD = 0.571$ ) and the greatest dispersion ( $SD = 0.571$ ), reflecting significant individual differences in this trait and the possible existence of subgroups. The sample in this survey exhibited a characteristic pattern of psychopathic traits described as 'high impulsivity - moderate callousness - low Grandiosity.

Table 1 Descriptive Statistics of Various Dimensions of Psychopathy Traits (N=125)

|                                | Number of Items | Average Score | SD   | Minimum | Maximum |
|--------------------------------|-----------------|---------------|------|---------|---------|
| Grandiosity and Deception      | 8               | 2.632         | .382 | 2.000   | 3.500   |
| Callousness                    | 10              | 2.722         | .395 | 2.000   | 3.800   |
| Impulsivity and Thrill-Seeking | 10              | 2.767         | .571 | 1.500   | 3.900   |
| Overall Psychopathic Traits    | 28              | 2.713         | .381 | 1.893   | 3.714   |

### 3.3 Analysis of Gender Differences

Independent sample t-tests showed (Table 2) that girls scored significantly lower than boys on the dimensions of Grandiosity and Deception ( $t=-4.298$ ,  $p<0.001$ ), Callousness ( $t=-4.864$ ,  $p<0.001$ ), and impulsive-thrill-seeking ( $t=-5.115$ ,  $p<0.001$ ). The standard deviations across dimensions were generally higher in the boys' group than in the girls' group, indicating greater intra-group variation among boys. The largest gender difference was observed in the impulsive-thrill-seeking dimension ( $d=0.92$ ), followed by callousness ( $d=0.87$ ). Overall, the gender difference in psychopathic traits was significant, with girls scoring significantly lower than boys ( $t=-6.005$ ,  $p<0.001$ ).

Table 2 Comparison of Gender Differences in Psychopathic Traits ( $M \pm SD$ )

|                                | Girls (n=65)    | Boys(n=60)      | t         | p    | Cohen's d |
|--------------------------------|-----------------|-----------------|-----------|------|-----------|
| Grandiosity and Deception      | 2.500 $\pm$ 316 | 2.775 $\pm$ 397 | -4.298*** | .000 | 0.77      |
| Callousness                    | 2.570 $\pm$ 353 | 2.887 $\pm$ 373 | -4.864*** | .000 | 0.87      |
| Impulsivity and Thrill-Seeking | 2.538 $\pm$ 470 | 3.015 $\pm$ 570 | -5.115*** | .000 | 0.92      |
| Overall Psychopathic Traits    | 2.539 $\pm$ 293 | 2.900 $\pm$ 378 | -6.005*** | .000 | 1.07      |

Note: \* $p<0.05$ , \*\* $p<0.01$ , \*\*\* $p<0.001$ ; the same below.

### 3.4 Analysis of Differences in Temperament Types

Through one-way ANOVA and post hoc tests (LSD) (Table 3), the following findings were observed: First, in the dimension of impulsive-thrill-seeking, the most significant intergroup differences were found ( $F = 16.861$ ,  $p < 0.001$ ). Children with a choleric temperament scored the highest ( $3.020 \pm 0.495$ ), significantly higher than the other three groups, while children with a phlegmatic temperament scored the lowest ( $2.174 \pm 0.673$ ), significantly lower than the other three groups. Second, in terms of overall psychopathic traits, choleric children had the highest total scores ( $2.849 \pm 0.361$ ), phlegmatic children had the lowest total scores ( $2.495 \pm 0.434$ ), and both sanguine and choleric children scored significantly higher than phlegmatic children, with choleric children scoring significantly higher than melancholi children. Third, no significant differences were observed among temperament types in the dimensions of Grandiosity and Deception and Callousness traits.

Table 3 Comparison of Psychopathic Traits in Children with Different Temperament Types (M±SD)

|                                | Sanguine<br>(n=54) | Phlegmatic<br>(n=23) | Choleric<br>(n=30) | Melancholic<br>(n=18) | F             | p     | Post hoc<br>test                |
|--------------------------------|--------------------|----------------------|--------------------|-----------------------|---------------|-------|---------------------------------|
| Grandiosity and Deception      | 2.632±388          | 2.608±454            | 2.733±325          | 2.493±331             | 1.548         | 0.206 |                                 |
| Callousness                    | 2.729±374          | 2.726±422            | 2.77±428           | 2.617±369             | 0.577         | 0.631 |                                 |
| Impulsivity and Thrill-Seeking | 2.931±372          | 2.174±673            | 3.02±495           | 2.611±489             | 16.861*<br>** | 0.000 | 1>2<br>2<3<br>2<4<br>3>1<br>3>4 |
| Overall Psychopathic Traits    | 2.774±328          | 2.495±434            | 2.849±361          | 2.579±363             | 5.514**<br>*  | 0.001 | 1>2<br>2<3<br>3>4               |

Note: 1: Sanguine 2: phlegmatic 3: Choleric 4: Melancholic

### 3.5 Analysis of Differences in Family Parenting Styles

One-way ANOVA (Table 4) indicated that there were significant differences in the three dimensions and total scores of psychopathic traits among children under different parenting styles. Post hoc tests (LSD) revealed that children under authoritative and neglectful parenting styles scored significantly lower on the dimension of Grandiosity and Deceit than those under authoritarian and indulgent parenting styles ( $p < 0.01$ ); children under authoritarian and indulgent parenting styles scored significantly higher on the dimension of callousness than those under authoritative and neglectful parenting styles ( $p < 0.05$ ); children under indulgent parenting style scored the highest on the dimension of impulsivity and thrill-seeking ( $M = 2.977$ ,  $SD = 0.654$ ), and significantly higher than those under authoritative parenting style ( $p < 0.05$ ). There were no significant differences in scores on the dimension of impulsivity and thrill-seeking among children under other parenting styles. Authoritarian and Indulgent parenting styles scored significantly higher on the overall score of psychopathic traits than authoritative parenting style ( $p < 0.05$ ), while there were no significant differences in the overall scores among children under other parenting styles.

Table 4 Comparison of psychopathic traits under different parenting styles (M±SD)

|                                | Authoritative<br>(n=51) | Authoritarian<br>(n=28) | Indulgent<br>(n=26) | Neglectful<br>(n=20) | F       | p     | Post hoc<br>test         |
|--------------------------------|-------------------------|-------------------------|---------------------|----------------------|---------|-------|--------------------------|
| Grandiosity and Deception      | 2.546±354               | 2.723±437               | 2.798±364           | 2.506±297            | 4.022** | 0.009 | 1<2<br>1<3<br>2>4<br>3>4 |
| Callousness                    | 2.641±356               | 2.839±465               | 2.819±389           | 2.640±342            | 2.435*  | 0.048 | 1<2<br>1<3<br>2>4<br>3>4 |
| Impulsivity and Thrill-Seeking | 2.604±506               | 2.829±636               | 2.977±654           | 2.825±418            | 2.861*  | 0.04  | 1<3                      |
| Overall Psychopathic Traits    | 2.600±333               | 2.802±427               | 2.869±424           | 2.668±279            | 3.781*  | 0.012 | 1<2<br>1<3               |

Note: 1: Authoritative 2: Authoritarian 3: Indulgent 4: Neglectful

### 3.6 Relevant analysis

A correlation analysis was conducted on gender, temperament type, family parenting style and the overall psychopathic traits. The results of the correlation analysis showed that gender was significantly positively correlated with the overall psychopathic traits ( $r=0.479$ ). Among the temperament types, phlegmatic and melancholic were significantly negatively correlated with the overall psychopathic traits. Phlegmatic temperament ( $r=-0.411$ ) was the strongest protective factor. There is a significant positive correlation between choleric and overall psychopathic traits ( $r=0.299$ ). Among family parenting styles, the authoritative type has a significant negative correlation with psychopathic traits overall, and authoritative parenting shows a protective effect ( $r=-0.202$ ), but the indulgent type has a significant positive correlation with psychopathic traits overall, with a certain risk effect ( $r=0.180$ ). The data results are as follows (Table 5):

Table 5 Correlation analysis of gender, temperament type, parenting style and overall psychopathic traits

| Variable category    | Variable name | The correlation coefficient with the overall psychopathic traits |
|----------------------|---------------|--|
| Demographic variable | gender        | .479**   |
| Temperament type     | Sanguine      | 0.151  |
|                      | phlegmatic    | -.411**  |
|                      | Choleric      | .299**   |
|                      | Melancholic   | -.226*   |
| parenting style      | Authoritative | -.202*   |
|                      | Authoritarian | 0.084  |
|                      | Indulgent     | .180*  |
|                      | Neglectful    | -0.023   |

### 3.7 Regression Analysis

Using gender, temperament, and parenting style as predictor variables, and total psychopathy traits as the dependent variable, a hierarchical regression analysis was conducted. To perform the regression analysis, demographic variables needed to be dummy-coded, and the sub-variables of gender, temperament, and parenting style were included in the regression model. The results showed that among the predictors, gender ( $\beta = 0.418$ ,  $p < 0.001$ ) contributed the most, with boys scoring 0.317 points higher than girls on total psychopathy traits, an effect size equivalent to 0.83 standard deviations (Cohen's  $d$ ). After controlling for gender, among the four temperament types, melancholic temperament negatively predicted psychopathy traits, scoring 0.244 points lower than children with a sanguine temperament.

After controlling for gender and temperament type, the predictive ability of parenting styles on children's psychopathic traits was examined. The regression analysis results showed that authoritarian ( $\beta=0.182$ ) and indulgent ( $\beta=0.178$ ) parenting styles positively predicted children's psychopathic traits. Children with authoritarian and indulgent parenting scored 0.166 points higher in psychopathic traits than those with authoritative parenting. The model's coefficient of determination ( $R^2$ ) was 0.36, indicating that the predictor variables together explained 36% of the variance in psychopathic traits. The model was overall significant:  $F=9.409$ ,  $p<0.001$ , with an adjusted  $R^2$  of 0.32, suggesting that the model has a moderate to above-average explanatory power. The data results are as follows (Table 6):

Table 6 Regression Analysis of Gender, Temperament Type, and Parenting Style on Overall Psychopathic Traits

|               | Unstandardized Coefficient |                | Standardized coefficient Beta | t         | p     | R2   | F     | Adjusted R <sup>2</sup> |
|---------------|----------------------------|----------------|-------------------------------|-----------|-------|------|-------|-------------------------|
|               | B                          | Standard Error |                               |           |       |      |       |                         |
| (constant)    | 2.542                      | 0.061          |                               | 41.802*** | 0.000 | 0.36 | 9.409 | 0.32                    |
| Boys          | 0.317                      | 0.057          | 0.418                         | 5.531***  | 0.000 |      |       |                         |
| Girls         | 0                          |                |                               |           |       |      |       |                         |
| phlegmatic    | -0.244                     | 0.081          | -0.249                        | -3.006**  | 0.003 |      |       |                         |
| Choleric      | 0.052                      | 0.072          | 0.059                         | 0.723     | 0.471 |      |       |                         |
| Melancholic   | -0.162                     | 0.086          | -0.15                         | -1.882    | 0.062 |      |       |                         |
| Sanguine      | 0                          |                |                               |           |       |      |       |                         |
| Authoritarian | 0.166                      | 0.075          | 0.182                         | 2.204*    | 0.029 |      |       |                         |
| Indulgent     | 0.166                      | 0.077          | 0.178                         | 2.148*    | 0.034 |      |       |                         |
| Neglectful    | 0.013                      | 0.084          | 0.013                         | 0.154     | 0.878 |      |       |                         |
| Authoritative | 0                          |                |                               |           |       |      |       |                         |

Note: Gender: Boys = 1, Girls = 0 (reference group); Temperament type: Sanguine as the reference group; Parenting style: Authoritative as the reference group

## 4 Discussion

### 4.1 Group Differences in Psychopathic Traits

Among Preschool Children, this study found significant gender differences in psychopathic traits among preschool children, with boys scoring higher than girls in grandiose deceit, callousness, impulsive sensation seeking, and total scores. This aligns with Edens et al.'s research on gender differences [3], suggesting that the cultural norms of 'risk-taking and competition' in male socialization may make boys more likely to exhibit traits such as impulsivity and callousness. Meanwhile, the significantly higher scores for boys across all dimensions ( $p < 0.001$ ) also support the 'male susceptibility hypothesis,' which may result from the interaction between neuroendocrine differences (such as testosterone levels) and socialization processes. It is especially noteworthy that the dimension of impulsive-thrill-seeking showed the largest gender difference ( $d = 0.92$ ), echoing the findings of Salekin, an authoritative scholar in international research on childhood psychopathy, regarding gender differences in externalizing behaviors in children [4].

The influence patterns of temperament types provide new perspectives for understanding the early manifestations of psychopathic traits. The prominent performance of choleric children in seeking impulsive stimuli ( $M = 3.02$ ) confirms Forbes et al.'s longitudinal research on temperament-behavior associations [5], while the protective role of phlegmatic children ( $\beta = -0.249$ ) supports Wichstrøm et al.'s proposed 'temperament buffering model' [6]. This finding extends Cooke et al.'s hierarchical model [7], suggesting that different temperament types may influence the development of psychopathic traits through unique emotional regulation mechanisms. In addition, these results also validate Forbes et al.'s research on the association between children's temperament and subsequent psychopathological symptoms [5], indicating the need to provide impulse control training for extroverted, impulsive temperament children like choleric ones, using games, role-playing, and other methods to balance their exploratory desires with social rule awareness.

Differences in parenting styles indicate that children under authoritarian and indulgent parenting score higher on psychopathic traits. The 'high-pressure control' of authoritarian parenting can easily



lead children to develop a 'deception-avoidance' pattern (such as high scores in Grandiosity and Deception), which is consistent with Yang Minqi et al.'s research on family risk factors for psychopathy [8]. Notably, neglectful parenting did not show a significant effect in this study, which differs from Yang Minqi et al.'s findings and may reflect differences in sample characteristics or measurement tools.

Indulgent parenting, because of 'boundaryless gratification,' weakens children's ability to delay gratification and strengthens impulsive thrill-seeking, echoing the conclusions of a meta-analysis by American researchers on child psychopathy Frick et al., regarding the association between parental practices and children's psychopathic traits [9]. Authoritative parenting, through 'democratic support and rule guidance,' inhibits trait development, highlighting the critical role of the family environment in children's socialization.

## 4.2 Mechanisms of Influence of Psychopathic Traits in Preschool Children

Correlation analysis and regression models indicate that gender, temperament, and parenting styles jointly affect children's psychopathic traits. Gender socialization makes boys more likely to exhibit related traits, while temperament serves as an individual internal foundation (such as the 'buffering effect' of phlegmatic temperament and the 'facilitating effect' of choleric temperament), interacting with the family upbringing environment (such as the 'inhibitory effect' of authoritative parenting and the 'reinforcing effect' of authoritarian or indulgent parenting), thereby constructing an 'individual-environment' influence pathway.

This resonates with Cooke et al.'s proposed hierarchical model of psychopathy, where underlying temperament and personality traits interact with higher-level environmental factors to shape behavioral manifestations [7]. At the same time, the significant predictive effects of gender, phlegmatic temperament, and authoritarian/indulgent parenting in regression analyses confirm Kimonis et al.'s conclusion that early parent-child interactions influence the development of psychopathic traits in children [10], suggesting the need to establish an intervention system of 'temperament adaptation, gender sensitivity, and optimized parenting' to reduce the compounded risk of adverse factors.

## 4.3 Practical Implications

Based on the survey findings, this study proposes a three-tiered prevention system:

Primary prevention: Conduct "authoritative parenting workshops" for all young children's parents, focusing on training in behavior management strategies [11]. Special guidance is needed for indulgent families to establish appropriate rules and to help authoritarian families improve their communication methods.

Secondary intervention: Design "impulse control training" for high-risk combinations (male children with choleric temperament), using gamified intervention programs. At the same time, establish a strength development profile for phlegmatic children, leveraging their emotional regulation as a model.

Tertiary treatment: Implement a comprehensive "emotion-cognition-behavior" intervention for children who have already exhibited clinical-level problems, integrating family therapy and individual training. During treatment, narrative drawing therapy (NDI), which is more easily accepted by young children, can be employed.

## 5. Conclusion

Through this survey study, it was found that psychopathic traits in preschool children show

significant differences in terms of gender, temperament type, and family parenting style. Boys, children with choleric or sanguine temperaments, and children raised in authoritarian or indulgent environments have higher trait scores and are the key groups for early intervention. Gender, temperament type, and family parenting style, through the 'individual-environment' interaction, jointly influence the development of psychopathic traits in preschool children. Authoritative parenting has an inhibitory effect, whereas authoritarian/indulgent parenting and choleric temperament increase the risk of these traits. To effectively intervene in the development of psychopathic traits in young children, it is necessary to provide family education for parents considering gender differences, promote changes in parenting styles, reduce authoritarian and indulgent behaviors, implement a three-level prevention system, and adopt multidimensional strategies to lower the risk of developing psychopathic traits, laying a healthy foundation for children's social development.

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