

The Relationship Between Parental Attachment and Suicidal Ideation among Junior High School Students: The Mediating Role of Negative Emotion and the Moderating Role of Gender

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ABSTRACT : *The purpose of this study was to investigate the relationship between parental attachment and suicidal ideation in junior high school students, and to explore the role of negative emotions and gender in the relationship between the two. Using the Parental Attachment Scale, the Self-Rating Scale of Suicidal Ideation and the Negative Emotion Scale, a questionnaire survey was conducted among 1906 junior high school students. The results showed that the detection rate of suicidal ideation among junior high school students was 16.37%. The detection rates of suicidal ideation in boys and girls were 14.22% and 18.38%, respectively. There were no significant gender differences in father attachment and mother attachment among junior high school students. However, there were significant gender differences in negative emotions and suicidal ideation. Paternal attachment and maternal attachment were negatively correlated with negative emotions and suicidal ideation. Negative emotions were positively correlated with suicidal ideation. Negative emotions played a partial mediating role between parental attachment and suicidal ideation. Gender moderates the mediating effect of negative emotions. In conclusion, father attachment and mother attachment are related to suicidal ideation in junior high school students. Alleviating the negative emotions of junior high school students, especially girls, can reduce the generation of suicidal ideation.*

KEYWORDS– *Parental Attachment, Suicidal Ideation, Negative Emotion, Junior High School Students, Gender*

Introduction

Suicide is the leading cause of death among adolescents worldwide and a serious public health problem [1]. Whereas, suicidal ideation is a key link and the most sensitive predictor of the emergence of suicidal behavior [2], it is an idea of the presence of self-harm and death [3]. It has been noted that adolescence is the peak period for individuals to develop suicidal ideation [4]. Among the many factors associated with suicidal

ideation, parental attachment is considered to be an important factor associated with suicidal ideation in adolescents [5-7]. When experiencing lower quality parental attachment, adolescents exhibit higher levels of suicidal ideation. Furthermore, according to suicide avoidance theory, suicidal ideation is based on the individual need to escape the effects of intolerable negative emotions [8]. And lower-quality parental attachment triggers more negative emotions [9]. In addition, for middle school students, who are at an important stage of adolescence, they are going through a rebellious period and are prone to impulsivity and suicidal ideation [10].

Therefore, the current study intends to investigate the relationship between parental attachment and suicidal ideation among junior high school students and the mediating role of negative emotions in the relationship between the two as well as the moderating role of gender in order to provide an empirical basis for the prevention and intervention of suicidal ideation in junior high school students.

I. METHODS

1.1 Subjects

Using convenience sampling, 1979 questionnaires were sent out from April to May 2021 in four junior high schools in Ganzhou, Jiangxi Province, and 1906 valid questionnaires (96.31%) were returned. Among them, 914 were boys and 974 were girls (18 missing); 650 were in the first grade, 587 in the second grade, and 664 in the third grade (5 missing); the mean age was 14.09 years ($SD=1.01$, age range 12-17 years).

1.2 Research tools

1.2.1 Parental Attachment Scale

The Parental Attachment subscale of the Inventory of Parent and Peer Attachment (IPPA), as revised by Raja et al. [11], was used. The scale had 24 entries and includes three dimensions of trust, communication, and detachment. A 5-point Likert scale was used, with 1 being "never" and 5 being "always". The higher the score, the higher the level of parental attachment. In the present study, the alpha coefficient of the scale was 0.90.

1.2.2 Suicidal Ideation Scale

The Self-rating Idea of Suicide Scale (SIOSS) developed by Xia et al. [12] was used. There were 26 items, including four factors of despair, optimism, sleep, and masking. The scale was scored by "yes" or "no" responses. The higher the score, the greater the degree of suicidal ideation. In the present study, the alpha coefficient of the scale was 0.80.

1.2.3 Negative Emotion Scale

The negative affect subscale of the Positive and Negative Affect Schedule (PANAS) revised by Zhang et al [13] was used. The subscale had a total of 10 entries. A five-point Likert scale was used, with 1 being "almost none" and 5 being "extremely much". The higher the score, the greater the degree of negative emotionality. In the present study, the alpha coefficient of the scale was 0.87.

1.3 Research procedures and data processing

The group administration of the test was conducted after obtaining the consent of the school teachers and the students themselves. The trained teachers explained the purpose of the study and the requirements for filling it out to the students. The questionnaires were distributed and collected on the spot, and the time required was

approximately 20 min. SPSS 25.0 was used to analyze the data. JASP 0.16.1.0 was used to draw raincloud plots.

II. RESULTS

2.1 Common method bias test

The common method bias test was performed using Harmon's one-way method. The results showed that the total variance explained by the 1st factor was 20.47%, which was less than the critical value of 40%, indicating that there was no significant common method bias in this study.

2.2 Descriptive statistics and correlation analysis of main variables

The study found that the detection rate of suicidal ideation among junior high school students was 16.37%. The detection rates of suicidal ideation among boys and girls were 14.22% and 18.38%, respectively. In addition, the differences in father attachment and mother attachment among junior high school students of different genders were not significant, but the differences in negative emotions and suicidal ideation were significant (see Table 1, Figure1 to Figure4). Negative emotions and suicidal ideation were significantly higher in junior high school girls than in junior high school boys.

The results of Pearson product difference correlation analysis showed that age was significantly and negatively correlated with paternal attachment and maternal attachment ($p < 0.05$). There was a significant negative correlation between paternal attachment, maternal attachment and negative emotions ($p < 0.001$). There was a significant negative correlation between paternal attachment, maternal attachment and suicidal ideation ($p < 0.001$). There was a significant positive correlation between suicidal ideation and negative emotions ($p < 0.001$).

Table 1 Comparison of gender differences in main variables ($M \pm SD$)

| | boys ($n=914$) | girls ($n=974$) | t | Cohens' d |
|-------------------|------------------|-------------------|----------|-------------|
| father attachment | 42.08 \pm 8.59 | 42.04 \pm 9.40 | 0.09 | 0.02 |
| mother attachment | 42.70 \pm 8.11 | 42.37 \pm 9.01 | 0.83 | 0.04 |
| negative emotion | 2.01 \pm 0.77 | 2.17 \pm 0.76 | -4.56*** | -0.21 |
| suicidal ideation | 5.00 \pm 4.66 | 6.95 \pm 5.05 | -4.28*** | -0.20 |

Note: *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$

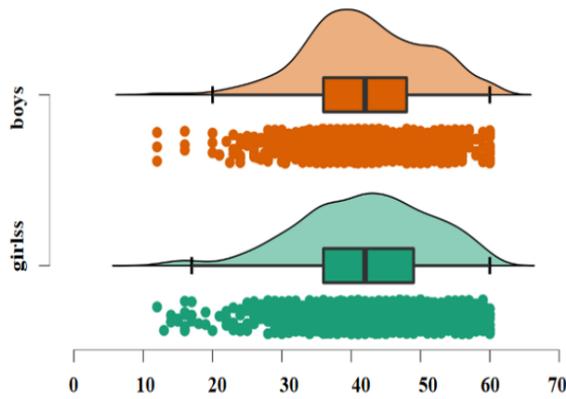


Figure 1 Gender differences in father attachment

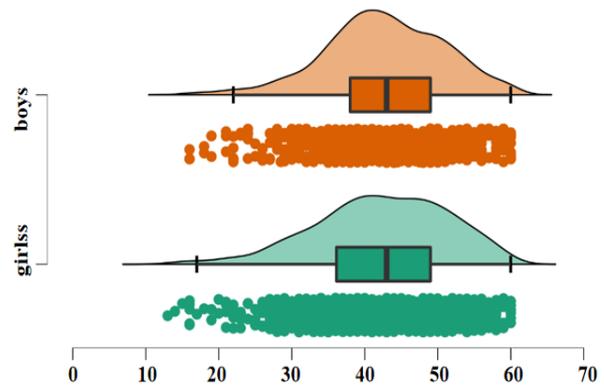


Figure 2 Gender differences in mother attachment

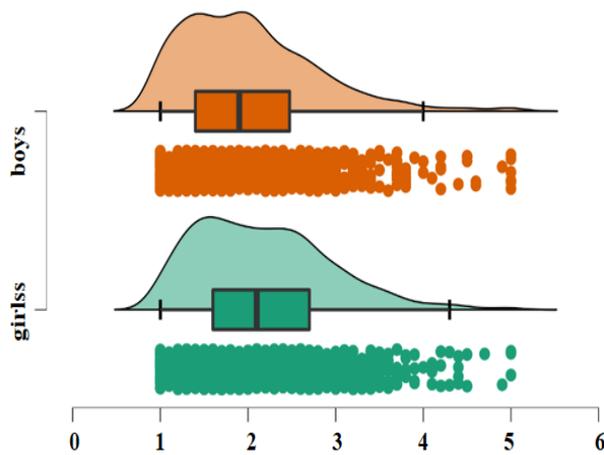


Figure 3 Gender differences in negative emotion

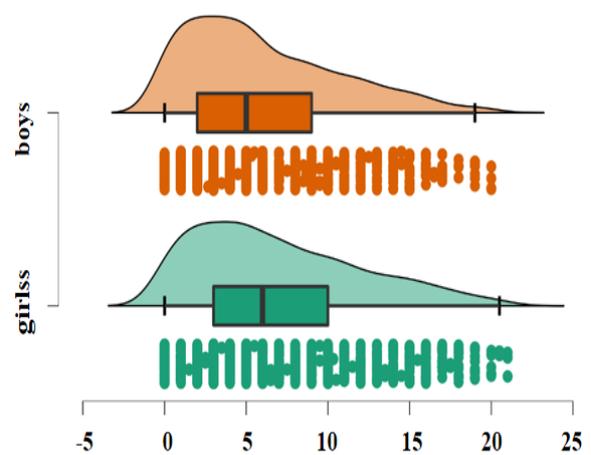


Figure 4 Gender differences in suicidal ideation

Table 2 Descriptive statistics and correlation analysis of main variables

| | <i>M</i> | <i>SD</i> | 1 | 2 | 3 | 4 | 5 |
|---------------------|----------|-----------|--------|----------|----------|---------|---|
| 1.age | 14.09 | 1.01 | 1 | | | | |
| 2.father attachment | 42.06 | 9.01 | -0.05* | 1 | | | |
| 3.mother attachment | 42.53 | 8.58 | -0.05* | 0.61*** | 1 | | |
| 4.negative emotion | 2.09 | 0.77 | 0.03 | -0.31*** | -0.36*** | 1 | |
| 5.suicidal ideation | 6.49 | 4.88 | 0.03 | -0.44*** | -0.49*** | 0.53*** | 1 |

2.3 Tests of mediating effects with moderation

In the first place, the study used the MEDIATE macro program in testing the mediating effect of negative emotions in the relationship between parental attachment and suicidal ideation. The results showed (see Figure 5) that after controlling for the effects of gender and age, negative affect, father attachment, and mother attachment

were all significant predictors of suicidal ideation, $p < 0.001$. The mediating effect of negative affect in the relationship between father attachment and suicidal ideation was significant with a mediating effect value of -0.03, 95% CI [-0.04,-0.02]. The mediating effect of negative emotions in the relationship between maternal attachment and suicidal ideation was also significant, with a mediating effect value of -0.06, 95% CI [-0.07,-0.05]. This suggests that negative emotions not only partially mediated the relationship between father attachment and suicidal ideation, but also partially mediated the relationship between mother attachment and suicidal ideation.

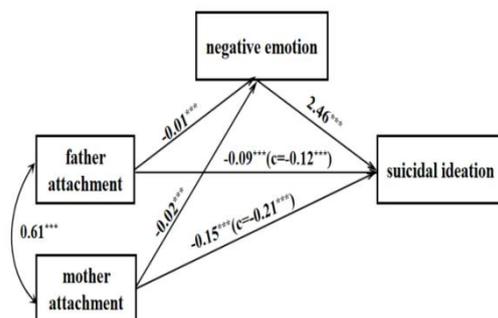


Figure 5 The mediating effect of negative emotion

Model 59 in the PROCESS macro program was then used to test the moderating effect of gender. As shown in Table 3, the interaction term for father attachment and gender did not significantly predict suicidal ideation; the interaction term for father attachment and gender did not significantly predict negative emotions; and the interaction term for negative emotions and gender significantly predicted suicidal ideation. This suggests that gender moderated the latter pathway of the mediation model. In the male group, the mediated effect value for negative affect was -0.06, 95% CI [-0.08, -0.04]; in the female group, the mediated effect value for negative affect was -0.08, 95% CI [-0.10, -0.07]. There was a significant gender difference in the mediated effect value of negative affect, 95% CI [0.01, 0.05]. That was, the mediated effect values for negative affect were significantly greater in the female group than in the male group. The simple slope plot showed (Figure 6) that the effect of negative emotions on suicidal ideation was greater in girls compared to boys (girls: $B=3.23$, $SE=0.17$, $p < 0.001$; boys: $B=2.32$, $SE=0.18$, $p < 0.001$).

As shown in Table 4, the interaction term between maternal attachment and gender did not significantly predict suicidal ideation; the interaction term between maternal attachment and gender did not significantly predict negative emotion; and the interaction term between negative emotion and gender significantly predicted suicidal ideation. This suggests that gender moderated the latter pathway of the mediation model. In the male group, the mediated effect value for negative affect was -0.07, 95% CI [-0.09, -0.06]; in the female group, the mediated effect value for negative affect was -0.09, 95% CI [-0.11, -0.07]. There was no significant gender difference in the mediated effect value for negative affect, 95% CI [-0.01, 0.05]. Simple slope plots showed (Figure 7) that negative emotions had a greater effect on suicidal ideation in girls compared to boys (girls: $B=2.95$, $SE=0.17$, $p < 0.001$; boys: $B=2.18$, $SE=0.18$, $p < 0.001$).

Table 3 Test of moderated mediating effects (father attachment)

| | Equation 1 (dependent variable: suicidal ideation) | | | Equation 2 (dependent variable: negative emotion) | | | Equation 3 (dependent variable: suicidal ideation) | | |
|-----------------------------|--|-----------|-----------|---|-----------|----------|--|-----------|-----------|
| | <i>B</i> | <i>SE</i> | <i>t</i> | <i>B</i> | <i>SE</i> | <i>t</i> | <i>B</i> | <i>SE</i> | <i>t</i> |
| age | 0.05 | 0.10 | 0.49 | 0.01 | 0.02 | 0.70*** | 0.01 | 0.09 | 0.05 |
| gender | -1.01 | 0.97 | -1.03 | -0.18 | 0.16 | -0.11 | 2.36 | 1.17 | 2.03* |
| father attachment | -0.24 | 0.02 | -15.65*** | -0.03 | 0.01 | -10.47 | -0.15 | 0.01 | -10.75*** |
| fatherattachment ×gender | 0.01 | 0.02 | 0.04 | 0.01 | 0.01 | 0.07 | -0.02 | 0.02 | -1.11 |
| negative emotion | | | | | | | 3.23 | 0.17 | 18.64*** |
| negative emotion ×gender | | | | | | | -0.90 | 0.25 | -3.67*** |
| <i>R</i> ² | | | | 0.11 | | | 0.37 | | |
| <i>F</i> | | | | 54.94*** | | | 185.46*** | | |

Table 4 Test of moderated mediating effects (mother attachment)

| | Equation 1 (dependent variable: suicidal ideation) | | | Equation 2 (dependent variable: negative emotion) | | | Equation 3 (dependent variable: suicidal ideation) | | |
|-----------------------------|--|-----------|-----------|---|-----------|-----------|--|-----------|-----------|
| | <i>B</i> | <i>SE</i> | <i>t</i> | <i>B</i> | <i>SE</i> | <i>t</i> | <i>B</i> | <i>SE</i> | <i>t</i> |
| age | 0.03 | 0.10 | 0.34 | 0.01 | 0.02 | 0.61 | -0.01 | 0.09 | -0.04 |
| gender | -2.15 | 1.00 | -2.16* | -0.08 | 0.17 | -0.45 | 0.69 | 1.24 | 0.56 |
| mother attachment | -0.29 | 0.02 | -19.40*** | -0.03 | 0.01 | -12.17*** | -0.20 | 0.02 | -13.81*** |
| motherattachment ×gender | 0.03 | 0.02 | 1.29 | -0.01 | 0.01 | -0.49 | 0.01 | 0.02 | 0.46 |
| negative emotion | | | | | | | 2.95 | 0.17 | 17.08*** |
| negative emotion ×gender | | | | | | | -0.77 | 0.25 | -3.11** |
| <i>R</i> ² | | 0.25 | | | 0.14 | | | 0.40 | |
| <i>F</i> | | 158.25*** | | | 75.19*** | | | 205.13*** | |

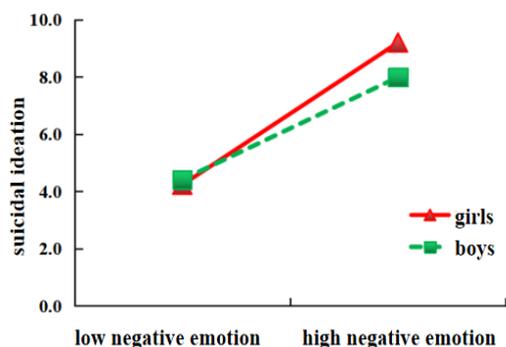


Figure 6 Moderating effects of gender (father attachment)

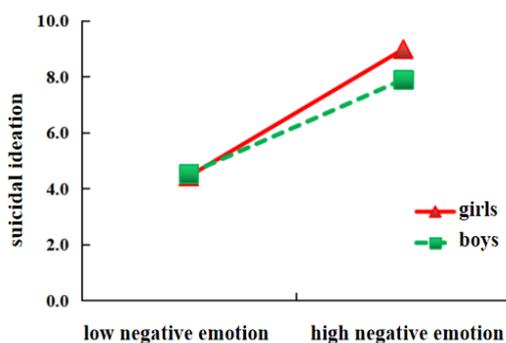


Figure 7 Moderating effects of gender (mother attachment)

III. DISCUSSION

This study showed that the detection rate of suicidal ideation among junior high school students was 16.37%. Among them, the detection rate of suicidal ideation was higher among girls than boys. This result is similar to the results of two existing meta-analyses [14-15]. Some researchers suggest that the reason why middle school girls are more likely to report suicidal ideation than boys is likely to be related to early maturation [16]. Early maturing girls are the group with the highest prevalence of depressive symptoms and a greater likelihood of suicidal ideation [17]. Therefore, during the education process, special attention should be paid to the psychological changes of middle school girls and to guiding their attitudes toward life and death.

In addition to gender differences in suicidal ideation, this study also found gender differences in negative emotions among junior high school students. Girls had more negative emotions than boys. It would be partly related to early physical maturity and partly related to the psychological characteristics of girls. Compared with boys, girls are more delicate, more easily affected by their studies, work and the little changes in their lives, and more likely to express their emotions [18]. As for the gender differences in father attachment and mother attachment, no gender differences were found in this study. This is not quite consistent with the findings of existing studies [19] and needs to be further explored in the future.

Because the two roles of father and mother have different effects on children's growth [20], this study explored the relationship between father attachment, mother attachment, and junior high school students'

suicidal ideation separately. It was found that both father attachment, and mother attachment, negatively predicted junior high school students' suicidal ideation. In other words, both high-quality paternal attachment and maternal attachment can reduce suicidal ideation. It has been noted that a secure relationship with a parent brings about feelings of appreciation, acceptance, security, and confidence, which makes individuals more inclined to seek help in a consistent manner rather than act in the wrong way when faced with adversity [21]. Low-quality attachment, on the other hand, generates perceptions associated with perceived burdens, failed attributions, and can exacerbate adolescent suicidal ideation [7]. Therefore, it is crucial to establish a good parent-child relationship between parents and children. If children are guided to form high-quality parental attachments from an early age, then even if they are in adolescent rebelliousness, they can effectively reduce the development of suicidal ideation.

This study also found that negative emotions showed a similar mediating pattern between father attachment and suicidal ideation and between mother attachment and suicidal ideation, both partially mediating the relationship between the two. This suggests that negative emotions are an important factor in the relationship between parental attachment and suicidal ideation, and also validates the suicide avoidance theory in some ways. First, parental attachment can negatively predict negative affect in junior high school students. When junior high school students' parental attachment is of high quality, they are less likely to develop negative emotions such as tension, anxiety, and anxiety. This is consistent with the existing research findings [9]. Second, negative emotions can positively predict suicidal ideation in junior high school students. A cross-lagged study has also shown that negative emotions have a delayed predictive effect on junior high school students' suicidal ideation [22]. Thus, if junior high school students have low quality parental attachment, they are prone to constant negative emotions, and the accumulation of negative emotions may lead individuals to develop thoughts or ideas to escape from pain and end their lives.

In addition, this study not only found gender differences in suicidal ideation and negative affect among junior high school students, but also found that gender moderates the mediating effect of negative affect between parental attachment and suicidal ideation. Specifically, the negative emotions of girls had a greater effect on suicidal ideation compared to boys. According to gender schema and social learning theory, gender differences in emotions increase with age as children's gender schema and socialization experiences increase [23]. Compared to boys, junior high school girls are more easily swayed by emotions and more likely to magnify the negative consequences triggered by negative emotions. As a result, they are also more likely to have a greater impact on suicidal ideation due to negative emotions.

Based on this, this study constructs a moderated mediation model to explore the relationship between parental attachment and suicidal ideation in junior high school students in depth, which provides an empirical basis for the prevention and intervention of suicidal ideation in junior high school students. At the same time, there are some shortcomings in this study. First, this study adopted a cross-sectional study, which makes it difficult to illustrate the causal relationship. Future studies can reveal the relationship between variables in depth through longitudinal studies. Second, this study used a questionnaire to collect data. Future studies can collect

data through diverse methods to reveal the problem more comprehensively.

IV. CONCLUSION

Father attachment and mother attachment are related to suicidal ideation in junior high school students. Father attachment and mother attachment can not only directly affect junior high school students' suicidal ideation, but also indirectly through negative emotions. Furthermore, negative emotions had a greater impact on suicidal ideation in girls compared to boys.

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