

The Influence of Parent-child relationship on Depression Level in Junior Middle School Students: Loneliness as A Mediator

Shijie Zhou^{1, a}

¹Department of Psychology, Yan'an University, Shaanxi, 716000, China

^aE-mail: Shijie9@126.com

Abstract: The objective of this research is to reveal the influence of parent-child relationship on depression level of junior high school students, and to explore the mechanism of loneliness in that relationship. The study mainly adopts the questionnaire method. A total of 589 students from grade one to grade three were surveyed by using the parent-child intimacy questionnaire, the simplified Center for Depression Scale and the UCLA Loneliness Scale, and the data were analyzed by SPSS software and PROCESS plug-in. The survey data proves that the parent-child relationship can predict the depression level of junior middle school students negatively. After the variable of loneliness is introduced, there is a pairwise correlation between the three factors. The parent-child relationship can predict their loneliness negatively in junior high students. And the correlation between loneliness and depression level is significant positive. Meanwhile, loneliness can be a mediator in the relationship between those two variables.

Keywords: Parent-child relationship, Depression level, Loneliness level, Junior high school student.

1. Introduction

Depression is a kind of widespread negative mood, which is characterized by a long period of low mood and lack of energy. Individuals suffering from depression are often manifested as loss of interest, low mood and fading of willpower and behavior. If the disease is serious, individuals will appear in a state of stupor and suicidal tendencies, and may be accompanied by mental disorders such as fantasies and hallucinations. According to China's 2022 National Depression Blue Book, one billion people around the world are suffering from depression. The number of depressed people in China has reached 95 million, which with one in 14 people suffering from depression on average. Children and juveniles account for over than 50% of the population with depression in China, reaching 55.6%. People learning in junior high school are in the stage of transition to juvenile, their mental health must be taken seriously.

Family is an important elements which can lead to depression in person under 18 years old. 68.04% of them suffering in depression are caused by the bad relationship between them and parents. According to Bronfen Brenner's ecological system theory, life exists in a layer of nested ecosystems, and the family is a microsystem. In that system, the parent-child relationship directly affects the psychological development of individuals in various aspects^[1], including the emotional development of individuals. Poor parent-child relationship may make individuals feel more lonely. In recent years, among the many factors that affect psychological development, parent-child relationship has also become a hot spot of social concern. Bowlby's internal working model of early attachment also proves that the attachment type formed by an individual early with his parents will have an impact on his later emotions, interpersonal communication and other aspects. The internal working model points out that if an individual forms an insecure attachment relationship, it will produce more negative views of others, which will further

affect their own cognition and behavior, and lead to a tendency of depression. It has been demonstrated that parent-child relationship could predict depression tendency dramatically in previous research^[2]. Adolescents are in the stage of rapid development of self-awareness, and the conflicts with parents are gradually increasing, which will affect the parent-child relationship of individuals, and then affect the individual psychology, which may lead to depression^[3].

People with terrible parent-child relationship will also have stronger sense of loneliness. Loneliness, as a negative emotion, is caused by the lack of high-quality interpersonal relationships^[4]. Individuals who feel lonely often lack communication with others and are socially isolated themselves. Loneliness is a social challenge that individuals need to face in life. Erikson's eight-stage theory of life development points out that the most important social challenges for individuals in early adulthood are intimacy and loneliness. A longitudinal research concentrating on the predictive effect of parent-child relationship on loneliness of the students living in universities first year has found that relationship between parents and children can persistently predict individual loneliness^[5]. Loneliness is also an important factor affecting people's psychological health. A study on art vocational college students has confirmed the correlation between loneliness and depression, and individuals with high loneliness also have higher levels of depression^[6]. This correlation is more obvious in the elderly group. Many studies have found that the loneliness of the elderly is related to the level of depression^[7,8]. Adolescents who are prone to depression may feel more lonely. Overall, if the parent-child relationship is good, the individual's loneliness will be low. Meanwhile, loneliness and depression also have a certain degree of positive correlation.

Previous studies have involved the relationship between parent-child relationship and depression, and have formed related theories. The correlation among parent-child

relationship, loneliness and depression have also been involved in completed studies, which can provide reference and theoretical basis for related research in this field in the future. However, after browsing literature, it can be hard to find the effect of loneliness existing in the relevance of parent-child relationship and depression level. The mechanism of this association needs to be further studied. In addition, most of the previous studies involved children, college students and the elderly, while junior high school students were less involved. For junior high school students, parents still have a strong influence on individuals, and whether there is an impact of parent-child relationship on depression in this group deserves further verification. And the study of loneliness as a mediating factor can also become a new research field in this relationship. In conclusion, this study proposes the following hypothesis: in the group of junior high school students, the correlation of individual parent-child relationship and depression is negative. And loneliness acts as a mediating factor between this relationship and plays a certain mediating role.

2. Research Subjects and Methods

2.1. Research Subjects

The students from Grade one to grade three of a middle school was selected as the research subject. Data was collected by issuing and recycling paper questionnaires in September 2023. 593 questionnaires have been collected totally, among which 589 were valid, with an effective rate of 99.3%. See Table 1 for details.

Table 1. Sample description feature

Item		Number of cases	Proportion
Grade	Grade 1	220	37.37%
	Grade 2	263	44.65%
	Grade 3	106	17.99%
Gender	Male	325	66.46%
	Female	264	53.98%
Living in School	Yes	345	58.57%
	No	244	41.42%
Source of Student	Country	186	31.57%
	Town	403	68.42%
Only child	Yes	106	17.99%
	No	483	82.00%
Class leader	Yes	238	40.41%
	No	351	59.59%

2.2. Research Tool

2.2.1. Self-compiled questionnaire

This scale is mainly used to collect basic demographic data, including grade, gender, school residence, student origin, whether the only child and whether the class leader.

2.2.2. Parent-child intimacy questionnaire

The parent-child intimacy scale compiled by Buchanan et al. (1991)^[9] Two parts are designed in it: the father scale and the mother scale, respectively, to measure the father-child intimacy and mother-child intimacy. Both them are composed of 9 questions. The total score of the parent-child relationship can be obtained by calculating the average points of two

dimension. The higher the score, the higher the quality of the relationship between the individual and the parent. The questionnaire has been showed good reliability and validity in Chinese domestic research. About the subscales, the Cronbach's α coefficients of the father and mother scales are 0.858 and 0.913. The KMO values are 0.905 and 0.921($P < 0.01$). The scale shows good reliability and validity in this survey.

2.2.3. Short Form of Center for Epidemiological Studies Depression Scale(SF-CES-D)

Andresen set up the scale on the basis of Center for Epidemiological Studies Depression Scale(CES-D^[10]). This question has good validity in Chinese adolescents^[11]. The questionnaire consists of 10 items and adopts the 4-level scoring method. People's depression may be more severe if they get higher score. The Cronbach's α coefficient and KMO value are 0.809 and 0.854($P < 0.01$)in this research, which indicate good reliability and validity.

2.2.4. UCLA Loneliness Scale

This scale is compiled by Russell^[12], with a total of 20 questions.4-level scoring method is adopted to calculate the total score. People can be considered to have stronger loneliness if getting higher score. In previous studies, this scale has shown good reliability and validity. In this study, Cronbach's α coefficient and KMO value of this scale are 0.885 and 0.922($P < 0.01$), indicating good reliability and validity.

2.3. Data processing

SPSS 27.0 software is used for data entry, descriptive analysis and correlation analysis. PROCESS 4.0 plug-in is adopted in mediating effect analysis.

3. Results

3.1. Common Method Bias Test

Harman single factor test was used to conduct exploratory factor analysis for all items, among which 9 factors had eigenvalues greater than 1, and the maximum variance explanation rate was 26.01%, which was less than the critical value of 40%. Therefore, there was no serious common method bias problem in this study.

3.2. Correlation among Parent-child Relationship, Depression Level and Loneliness

There is a significant negative correlation between parent-child relationship and depression tendency($P < 0.01$), and the two dimensions of parent-child relationship and mother-child relationship are negatively correlated with depression level. There is a significant negative correlation between parent-child relationship and loneliness, and the negative correlation is significant in the two dimensions of parent-child intimacy and mother-child intimacy. Parent-child relationship is negatively correlated with loneliness. And loneliness is negatively correlated with parent-child cohesion and mother-child cohesion. A significant positive association exist in the relationship between loneliness and depression levels. There is a pairwise correlation among parent-child relationship, loneliness and depression level, which can be tested for mediation. Details are given in Table 2.

Table 2. The relationship between parent-child relationship, depression level and loneliness of junior middle school students

	Parent-child intimacy	Father-child intimacy	Mather-child intimacy	Depression	Loneliness
Parent-child intimacy	1				
Father-child intimacy	0.89**	1			
Mather-child intimacy	0.87**	0.58**	1		
Depression	-0.47**	-0.39**	-0.38**	1	
Loneliness	-0.46**	-0.41**	-0.39**	0.66**	1
M±SD	62.41±14.89	29.37±8.40	33.04±8.43	22.14±5.86	44.29±10.23

Note: **($P < 0.01$)

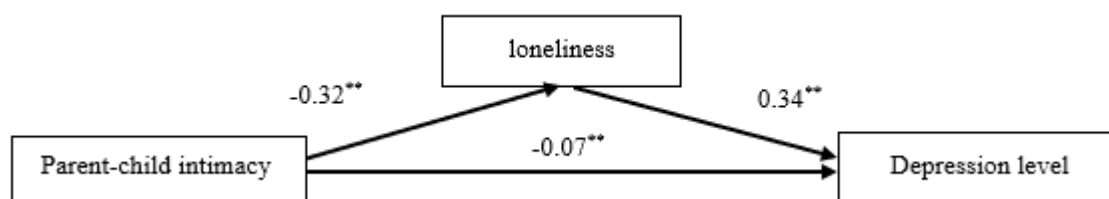
3.3. Loneliness as an intermediary

Bootstrap method is used to repeat 5000 times to analyze the mediating effect of loneliness on the correlation between parent-child relationship and depression level in junior high school students. The results are shown in Table 3. Loneliness

has a significant mediating effect, which is -0.107 and accounts for 61.49% of the total effect. The confidence interval indicates that this factor has a partial mediating effect. Please refer to Figure 1 for the specific mediation model diagram.

Table 3. Bootstrap analysis of mediating effects

Item	Path	Effect	Boot SE	95%CI		Proportion
				Upper limit	Lower limit	
Indirect effect	Parent-child intimacy → loneliness → Depression level	-0.107	0.014	-0.134	-0.081	61.49%
Direct effect	Parent-child intimacy → Depression Level	-0.067	0.013	-0.093	-0.041	38.51%
Total effect		-0.174	0.015	-0.203	-0.145	

**Figure 1.** Mediating model of loneliness

4. Discussion

4.1. Relationship among Parent-child Relationship, Depression Level and Loneliness of Junior High School Students

This study finds that parent-child relationship can negatively predict their depression level in junior high school students. And the research results are similar to previous studies on parent-child relationship and depression tendency^[13]. In the study, the two dimensions of father-son intimacy and mother-child intimacy have similar predictive effects on the depression level of junior middle school students. In contrast, mother-child intimacy was a slightly stronger predictor than father-son intimacy. In previous studies, the predictive effect of father-child intimacy was significantly smaller than that of mother-child intimacy^[14]. The change may be due to the changing family roles in China, with fathers taking on more family roles and spending more time with their children in recent years. In China, people attach great importance to the concept of "family standard".

Parenting style in daily life can influence individual psychological development deeply.

The mediating role of loneliness between parent-child relationship and depression level has been found in junior high school students. Parent-child relationship is a negative predictor of loneliness, and loneliness can positively predict their depression level. The results are consistent with previous studies. In daily life, parents should spend more time in contact with their children and adjust their parenting styles to increase the intimacy between parents and children, which can reduce the level of loneliness of individuals and further reduce the tendency of depression. The individual's self-realization is premised on the environment^[15]. Family environment is the environment which individuals contact earliest and most frequently. The behavior of parents in the environment can impact individual development profoundly. Junior high school is the transition stage from children to teenagers. Parents still have a strong influence on the various aspects of individual development at this stage. Therefore, a close parent-child relationship can guarantee the development of physical and mental health.

The research's innovation is to explore the pertinence of parent-child relationship, depression level and loneliness in junior high school students. Also, it has been found that loneliness does play a partial mediating role in parent-child relationship and depression level. The mediating role of loneliness in the relationship has not been studied in previous researches. This study has proposed and verified the hypothesis which supports that the parent-child relationship can not only directly affect the level of depression in junior high school students, but also indirectly affect the level of depression through loneliness.

4.2. Research Deficiencies and Prospects

First of all, the research is regarded as a cross-sectional study. It is difficult to understand the development law of the impact of parent-child relationship to depression. Only the correlation among the three variables has been studied. Secondly, only the family system of junior high school students has been involved. For these students, peer relationship can also affect their physical and mental development. And school environments they live in cannot be ignored. In the later study, the peer relationship and school system can be formed. Thirdly, loneliness is only one of the mediating variables. There are other mediating variables between parent-child relationship and depression level, such as individual cognitive flexibility and adaptability. In the future research, other mediating variables can be introduced to conduct relevant research. Finally, the scales used in this study are compiled by Western scholars, so the localization factor has been ignored to some extent. In future studies, questionnaires meeting the psychological characteristics of Chinese people can be developed for research, so as to further improve the accuracy.

5. Conclusion

In this research, it can be found that there are correlations between parent-child relationship, depression and loneliness. Also, it is sure that loneliness plays a partial mediating role in the correlation between parent-child relationship and depression. From the perspective of single factor, the parent-child intimacy of junior middle school student is generally good. In contrast, mother-child intimacy levels is higher. As for loneliness and depression, Some measures should be taken by school to reduce the level of students in those aspects. In the future research, it can be considered to explore the development trend of junior middle school students in those aspects. New variables can also be introduced to study the mediating effect and moderating effect. Some related scales can be revised to make the result more accurate.

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