

Family Cohesion and Depression on Adolescents: A Mediating Model of Perceived Social Support and Self-Esteem

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Abstract: Recent research has shown that family environment is one of the important factors affecting the mental health of adolescents, teenagers who grow up in a positive family environment are more likely to maintain good mental health, but little research has studied the relation between family cohesion and depression, and less is known about the mediating mechanisms underlying this relation. This study explores the relationship between family cohesion and depression, and examines whether social support and self-esteem have also taken into account this relationship. A questionnaire survey was conducted on family cohesion, perceived social support, self-esteem, and depression among a sample of Chinese adolescents. The results showed that family cohesion was negatively correlated with adolescent depression and this relationship was mediated by perceived social support and self-esteem. The results of this study provided new insights into the relationship between family cohesion and depression.

1. Introduction

Adolescence is a time of rapid physical and psychological changes, and a peak period for various emotional problems, among which depression is as the most prevalent mental health [1-2]. According to the Blue Book Report of Mental Health in China, the detection rate of depression in Chinese adolescents is 24.6% in 2020 and the rate of severe depression is 7.4%. In addition, studies have shown that adolescent depression is also associated with the risk of related mental disorders in adulthood. Adolescent depression is influenced by many factors, such as individual genetic characteristics and family factors (i.e. family function and parental support), among which family factors are proven to be one of the most important factors affecting adolescent depression [3]. The meaning of cohesion is that it has a significant correlation and lasting impact on the development of personality and psychological characteristics of adolescents in terms of the trust, compliance, and even obedience of individual motivational behaviors towards group target tasks, which is manifested externally [4]. Therefore, the reach explored the mechanism between adolescent depression and family cohesion to enrich relevant theories and provide guidance for practices.

2. Family Cohesion and Depression

Bioecologic model emphasizes proximal process that the interaction of individuals with people and surrounding environment around them is the most influential factor of individuals. As the innermost microsystem in four-layer network structure of bioecologic model, family is the environment that is most relevant to the individual and has the greatest impact. As an important part of the family ecological environment, family function has been shown in previous studies to significantly improve the emotional function and adaptive ability of individuals with close and positive parent-child relationship, and proved a higher level of mental health compared with unhealthy and negative parent-child relationship. Moreover, the level of family cohesion was associated with the level of adolescent suicide ideation depression. On the basis of the literature review, this study proposed that family cohesion would have a negative association adolescent depression (H1).

3. Perceived Social Support Has a Significant Impact on Mental Health and Perceived Social Support

Research has shown that perceived social support has a significant impact on mental health and perceived social support from family may be related to suicide in adolescents. A framework provided by The Risk Family Model gives the understanding on this association and suggests negative family dynamics may affect mental health according to disrupting the development of resilient resources such as the process of emotion and social abilities [5-6]. Another study finds that childhood adversity, including physical abuse, poor family conditions, reduces the level of social support. On the contrary, greater support received from family members predicts a deeper sense of meaning in life, which reduces depression. Meanwhile, some longitudinal studies have shown that depressive symptoms increase with a decrease in perceived social support levels. It has been suggested that depressive symptoms play a mediating role between social support and suicide. These findings suggest that enhanced social support may alleviate symptoms of depression [7-8]. A recent study suggests that mediation analysis suggests that perceived social support can mediate the relationship between family abuse experiences and mental illnesses such as depression and anxiety in adolescents and adults. In summary, due to the external manifestation of individuals' trust, compliance, and even obedience towards group target tasks, it often leads to a perceived system of spiritual or material help and support from various aspects of society, including parents, relatives, friends, etc., which is a predictive factor for depression. Therefore, it is reasonable to believe that perceived social support may mediate the relationship between family and depression (H2).

4. The Mediating Role of Self-esteem

Self-esteem is defined to an individual's overall evaluation towards self-efficacy and self-worth. Self-esteem is an important part of mental health and is highly correlated with adolescent well-being [9-11]. Through various conclusions and results, it has been found that self-esteem can predict adolescent depression, and one's own dignity is considered a vulnerable factor to depression. The findings of cross lagged longitudinal studies indicate that one's own dignity can predict depression, while depression cannot predict one's own dignity. In addition, due to the trust, compliance, and even obedience exhibited by individuals' individual motivational behaviors towards group target tasks, it has a positive predictive effect on individual self-esteem [12-15]. However, family function is not directly related to depression, but is actually mediated by personal characteristics such as one's own dignity. Psychological Stress Theory suggests that family relationships as a source of stress can influence an individual's internal psychological processes,

thereby affecting depressive symptoms. Therefore, we assumed that self-esteem may be a potential mechanism between family cohesion and depression (H3) [16-17].

5. Serial Mediation Effect of Perceived Social Support and Self-esteem

Based on the above literature analysis, there is a significant correlation between perceived social support and self-esteem related factors, as well as mediating family cohesion, and adolescent depression [18-19]. However, little is known how about these two mediators work together in this relationship. Some indirect evidence suggests that the relationship between family cohesion and adolescent depression may involve a sequential mediation model, in which perceived social support and self-esteem sequentially mediate the relationship between family cohesion and adolescent depression. Thus, considering the relation between family cohesion and perceived social support as well as the effect of self-esteem on adolescent depression mentioned above [20], we assume that the relation between family cohesion and adolescent depression would be mediated sequentially through perceived social support and self-esteem (H4).

6. Method

6.1 Survey Sample

The participants of this study were 378 adolescents from three high schools in Xinjiang Province, China. However, due to 15 participants not being able to fully complete the survey, these results were excluded from the analysis. In the end, a total of 363 adolescents (152 males, accounting for 42%; 211 females, accounting for 58%) completed the survey, including demographic variables and other information, the sum of family cohesion, the use of certain material and spiritual means by certain social networks to provide free assistance to socially disadvantaged groups, self-esteem, and depression. The age of the final participants ranges from 14 to 20 years old, with an average of 16.98 years old (SD=1.49 years old).

6.2 Measures

6.2.1 Family cohesion

The Family Adaptability and Cohesion Scale, second edition (FACES II, Chinese Version) composed of 30 items that assess two dimensions of family functioning including family adaptability (15 items) and family cohesion (15 items) independently. For this study, only family cohesion was reported by participants using a 5-point Likert-type scale ranging from never (1) to always (5). Higher scores represented higher level of family closeness. The FACES-II was imported into China and tested with good reliability and validity (Błachnio et al., 2016a, 2016b). For this study, the Cronbach's alpha coefficient was 0.86.

6.2.2 Perceived social support

The Perceived Social Support Multidimensional Scale is a tool for evaluating an individual's perceived social support, which includes 12 items. Participants use a 7-point Likert scale to report their attitudes towards these items, ranging from absolute disagreement (1) to absolute agreement (7). A representative project is "When I need someone, there is always someone special standing by my side." The higher the score on this scale, the stronger the individual's ability to perceive social support. The scale has been subjected to text analysis in Chinese language learning and has achieved good reliability and effectiveness. In this study, the scale's Cronbach α The coefficient is

0.82.

6.2.3 Self-esteem

The measurement of self-esteem was conducted using the Rosenberg Self Esteem Scale (SES; Rosenberg, 1965), which consists of 10 items. Participants need to choose a 4-component scale for each item, with options ranging from absolutely disagree (1) to absolutely agree (4). The higher the score, the higher the level of self-esteem.

6.2.4 Depression

The degree of depression can be evaluated using the Epidemiological Research Center Depression Scale, which includes 20 items. The scoring criteria for each item are on a 4-point scale (1 indicates never, 4 indicates always), with higher scores indicating more severe depression. CES-D has been tested in Chinese samples and has been proven to have good internal consistency and validity. In this study, Cronbach's α coefficient is 0.88.

Center for Epidemiological Studies Depression Scale is used to assess depressive in individuals within the past week. The scale consists of 20 items, each rated on a 4-point scale (1 = never, 4 = always). The higher the total score, the more severe the depression. The CES-D scale has been widely used in depression studies across different cultures and age groups, and has good reliability and validity. In Chinese samples, the reliability and validity of the scale have been confirmed (Dwyer et al., 2014).

6.3 Procedure

The ethical approval for this study was obtained from the ethics committee of the first author's university. Informed consent was obtained from all participants. The data were collected in high school classrooms in April 2022. The students voluntarily participated in the survey in a quiet classroom anonymously, without receiving reward for their participation. All participants have been instructed and assured that their privacy has been protected, and they have been notified that they can withdraw from the study at any time. The investigation took approximately 15 minutes to complete.

7. Final Results

The aim of this study is to explore whether the relationship between close family ties and depression is mediated by the perceived social support and self-esteem of individuals, and to examine the interaction mechanism between perceived social support and individual self-esteem. This goal was validated through a four step research program.

Table 1: Descriptive statistics and correlations between variables.

Variables	<i>M</i>	<i>SD</i>	1	2	3	4
1.Family cohesion	4.78	0.61	1			
2.Perceived social support	5.36	0.80	.46**	1		
3.Self-esteem	2.90	0.38	.32**	.32**	1	
4.Depression	1.51	0.44	-.27**	-.39**	-.44**	1

SD: standard deviation; Note: N=363.; $p < 0.01$.

In the early stage of data statistical analysis, the data is shown in Table 1, and the mean, standard deviation, and correlation coefficient of each research variable are calculated. The results showed that there was a significant correlation between all the variables involved. Specifically, higher levels

of family cohesion, spiritual and material support from different social resources (including parents, relatives, friends, etc.), and stronger individual self-esteem are all negatively correlated with lower depressive tendencies, $r = -0.23$, $p < 0.01$, $r = -0.39$, $p < 0.01$ and $r = -0.44$, $p < 0.01$, respectively. In addition, family cohesion, perceived social support and self-esteem were significantly correlated with each other positively. The results of the bivariate correlations are in line with our expectations. Therefore, H1 was supported.

Testing for mediation effect

Process Macro Model 6 (Hayes, 2013) is used to test the sum of the behaviors of a certain social network using certain material and spiritual means to provide free assistance to socially disadvantaged groups and the mediating effect of self-esteem. As shown in Table 2, there is a significant negative correlation between family cohesion and depression, with $b = -0.27$ and $p < 0.001$ (total effect, Model 1). In addition, family cohesion significantly positively predicted perceived social support, with $b = 0.46$ and $p < 0.001$ (Model 2). Model 3 shows that family cohesion significantly positively predicts self-esteem ($b = 0.22$, $p < 0.001$), and perceived social support has a significant direct impact on self-esteem ($b = 0.21$, $p < 0.001$). In addition, perceived social support ($b = -0.28$, $p < 0.01$) and self-esteem ($b = -0.16$, $p < 0.001$) significantly negatively predicted depression, while family cohesion did not have a significant direct impact on depression, $b = 0.02$, $p > 0.05$ (Model 4).

The aim of this study is to explore the indirect impact of family cohesion on depression, and statistical analysis was conducted using a 95% confidence interval (CI) without zeros. The research results indicate that the total indirect effect is -0.25 , with a significance level of 0.05. Specifically, family cohesion can be analyzed for predicting depression by perceiving social support, self-esteem, and family cohesion. Firstly, family cohesion significantly predicts depression through perceived social support (CI=) $(-0.20, -0.07)$; The standardized indirect effect is -0.13 . Secondly, family cohesion significantly predicts depression through self-esteem (CI=) $(-0.14, -0.04)$; The standardized indirect effect is -0.08 . Finally, family cohesion predicts depression through the order of perceived social support and self-esteem, with a standardized indirect effect of -0.03 . In summary, the hypothesis of this study is supported, and H2, H3, and H4 are confirmed. (Figure 1).

Table 2: Multiple regression analysis data on mediating effects

predictors	Model 1 (DE)		Model 2 (PSS)		Model 3 (SE)		Model 4 (DE)	
	b	t	b	t	b	t	b	t
FC	-0.23	-4.41***	0.44	9.88***	0.23	4.13***	0.02	0.39
PSS					0.22	3.82***	-0.30	-5.45***
SE							-0.36	-7.32***
DE								
R2	0.05*		.21***		.14***		.26***	
F	19.52		97.61		29.31		42.69	

FC: family cohesion; PSS: perceived social support; SE: self-esteem; DE: depression;

Criteria are in the parentheses.

(* $p < .05$; ** $p < .01$; *** $p < .001$.)

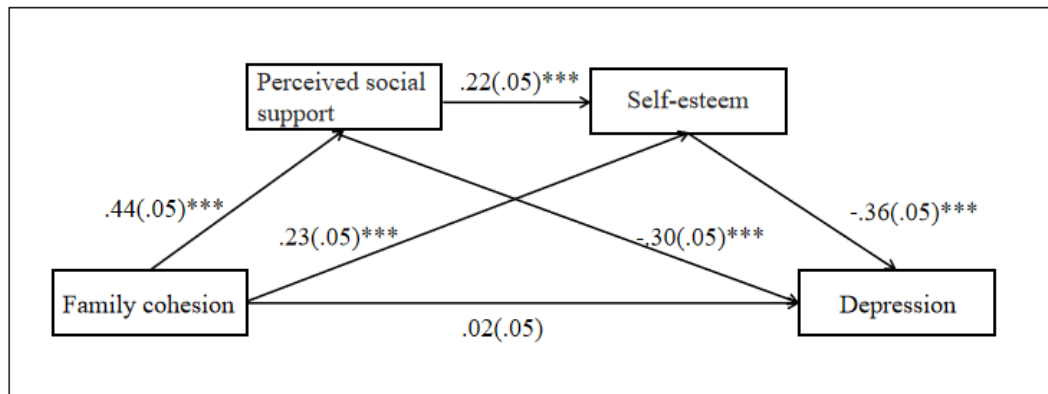


Figure 1: The mediation effects, Path values are the path coefficients (standard errors; *** $p < .001$)

8. Discussion

This findings were consistent with hypothesis mentioned above. The study showed adolescent depression was negatively with family cohesion, which is congruent with the Ecosystem theory developed by Bronfenbrenner, as well as previous studies (Prati and Pietrantonio, 2010, (Hazel et al., 2014). That is, the lower of family closeness predicted the more possibility of depression happened to adolescents. By contrast, adolescents live in higher level of family cohesion environment are correlated with higher level of mental health.

This study focuses on perceived social support that played a role of mediating the relation between family cohesion and depression. The result was in line with previous found that low level of perceived social support mediated the family function with less closeness and depressive symptoms (Scardera et al., 2020; Sheeber et al., 1997; Stice et al., 2004). That is to say when adolescents under low level of family cohesion are hard to perceive social support, which in turn would increase their depression.

Consistent with the above hypothesis, one's own dignity mediates the relationship between the trust, compliance, and even obedience of individual motivational behaviors towards group target tasks, as well as depression. That is to say, family cohesion is significantly associated with depression by increasing rejection sensitivity, cognitive impairment, loneliness, and negative self-esteem. The possible reason is that adolescents with a high perception of spiritual or material help and support from various aspects of society, including parents, relatives, friends, etc., have more positive emotions and higher self-awareness. When family members provide support and a strong sense of belonging, it can cultivate a sense of security and support in adolescents, thereby improving self-esteem and mental health.

The present study found that the association between family cohesion and depression was sequentially mediated through perceived social support and self-esteem, which is consistent with our hypothesis. That is, adolescents are more likely to perceived social support if they under the environment of high family cohesion, which in turn can contribute to increase self-esteem further, reduce their depression. Therefore, by fostering strong family relationships and a sense of belonging, it may be possible to increase adolescents' perceived social support and self-esteem, ultimately reducing their risk of developing depression.

Several limitations should be addressed. First, due to the cross-sectional survey, the causal relationship between variables cannot be clearly determined. To gain a deeper understanding of these relationships, longitudinal studies are needed to see how these variables affect each other over time. Second, self-report methods were used to measure family cohesion, self-esteem, depression,

and perceived social support. This method may be affected by personal subjective feelings, resulting in errors. To measure these variables more accurately, consider incorporating other measurement tools and objective indicators into the assessment. Third, since the study was only conducted in secondary schools in Xinjiang, the results may not be applicable to other regions. There are huge geographical and cultural differences in China, which can mean that secondary schools and teenagers in different regions may have different experiences and feelings. Therefore, caution must be exercised when generalising the findings to other regions. To enhance the generality of the study, further research in secondary schools in different regions may be considered.

9. Conclusion

This study examined the potential mechanism between adolescent family cohesion and depression. This study indicates a significant negative correlation between family cohesion and adolescent depression. In addition, the connection between family cohesion and depression is regulated by the sum of perceived social networks and the use of certain material and spiritual means to provide free assistance to socially disadvantaged groups, as well as self-esteem. The results of this study provide us with a better understanding of how family cohesion affects adolescent depression, which can help improve the mental health of adolescents.

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