

# The Influence Mechanism of Inter-parental Conflict on Self-Injury of Middle School Students—The Chain Mediation Role of Campus Interpersonal Relationship, Negative Emotion Regulation of Self-Efficacy and Self-Esteem

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**Abstract:** The study was conducted to explore investigate the relationship and action mechanism between inter-parental conflict and self-injury in middle school students. 1072 middle school students were investigated by using Children's Perception of Inter-parental Conflict Scale, Campus Personal Relationship Scale, Scale of Regulatory Emotional Self-efficacy, Self-esteem scale and Adolescents self-injury Scale. The result showed that self-injury was positively correlated with inter-parental conflict, and negatively correlated with campus interpersonal relationship, negative emotion regulation self-efficacy and self-esteem. Campus interpersonal relationship failed to play a mediating role effect between inter-parental conflict and self-injury, while negative emotions regulate self-efficacy and self-esteem both played a mediating role effect between inter-parental conflict and self-injury. Inter-parental conflict can influence self-injury through the chain mediation of school interpersonal relationship, negative emotion regulating self-efficacy and self-esteem. It was concluded that inter-parental conflict can not only directly affect self-injury in middle school students, but also influence on self-injury through the independent mediating effect of negative regulatory emotional self-efficacy and self-esteem, and indirectly affect self-efficacy through the chain mediating roles of campus interpersonal relationship and regulatory emotional self-efficacy and self-esteem.

**Keywords:** Inter-parental conflict; Self-injury; Campus interpersonal relationship; Negative emotions regulate self-efficacy; self-esteem

## 1. Introduction

Self-injury refers to the intentional, direct, and repetitive harm to one's own body tissues without suicidal intent, manifested in forms such as cutting or burning<sup>[1]</sup>. Previous research indicates a global prevalence of self-injury at 17%~18%<sup>[2]</sup>, with 22.9% of adolescents reporting at least one instance of self-harm during their lifetime<sup>[3]</sup>; in China, this proportion rises to 26.9%<sup>[4]</sup>. Self-injury has increasingly become a predominant expression of harm among high school students, significantly impacting the physical, mental, and social development of adolescents, with adverse effects on individuals, families, and society.

Self-injury is influenced by a confluence of physiological, environmental, individual, and social factors<sup>[5]</sup>. The interpersonal/system model and emotion regulation model are two pivotal theories in recent years explaining the mechanisms behind self-injury. The interpersonal/system model posits self-injury as a result of the imbalance between individual and environmental interactions, where the individual's environment inadvertently supports or reinforces self-injurious behavior<sup>[6]</sup>. Studies reveal that the familial environment in which an individual grows up<sup>[7]</sup>, as well as the school environment and its adverse interpersonal aspects such as parental conflict, parent-child relationships, peer relationships, and teacher-student relationships directly predict self-injury. Adolescents with self-harm experience report more interpersonal issues and weaker conflict resolution abilities. The emotion regulation model emphasizes self-injury as a means for individuals to swiftly alleviate intense negative

emotions or aversive emotional arousal, reinstating calmness<sup>[8]</sup>. Prior studies establish a complex reciprocal relationship between self-injury and emotions, where negative emotions and the ability to regulate negative emotions predict self-injurious behavior. Individuals significantly experience relief in negative emotions after engaging in self-harm. Experimental research also confirms heightened sensitivity of self-injurers to negative information, a propensity to generate higher intensity negative emotions, and a marked decrease in negative emotions following self-harm, even in cases of simulated pain stimuli<sup>[9]</sup>. Some researchers propose a collaborative role of the interpersonal/system model and emotion regulation model in the formation of self-injury, suggesting that adverse early-life environments hinder the development of effective emotional coping strategies, leading individuals to resort to self-harm as the only means to alleviate negative emotions when facing emotional crises<sup>[10]</sup>. Hence, advocating for the integration of the interpersonal/system model and emotion regulation model to jointly explore their impact on self-injurious behavior.

Inter-parental conflict refers to verbal disputes or non-verbal attacks between parents due to disagreements or other reasons<sup>[11]</sup>. As a typical negative context, parental conflict not only directly predicts self-injurious behavior but also influences adolescents' school interpersonal relationships, such as peer relationships and teacher-student relationships<sup>[12]</sup>. Both peer relationships and teacher-student relationships predict self-injury. However, there is limited research on how Inter-parental conflict and school interpersonal relationships interact to influence self-injury. Thus, this study hypothesizes that school interpersonal relationships mediate between Inter-parental conflict and self-injurious behavior.

Emotion regulation self-efficacy refers to an individual's belief in their capability to effectively manage various emotions, including expressing positive emotions and managing negative emotions<sup>[13]</sup>, serving as a core indicator of differences in individual emotional regulation abilities. Individual family relationships, teacher-student relationships, and peer relationships significantly predict emotion regulation self-efficacy. Negative emotion regulation self-efficacy significantly predicts individual self-injury, and parental conflict affects self-harm through the mediation of negative emotion regulation self-efficacy. Peer relationships also influence self-injury through the mediation of negative emotion regulation self-efficacy. Yet, few studies comprehensively examine the interactions among parental conflict, school interpersonal relationships, negative emotion regulation, and self-injury. Thus, this study proposes that Inter-parental conflict influences self-injury through the chain mediation of school interpersonal relationships and negative emotion self-efficacy.

Self-esteem refers to an individual's emotional experience and evaluation of self-worth developed during the process of socialization<sup>[14]</sup>. Ecological systems development theory<sup>[15]</sup> posits that individual development is nested within a series of interacting environmental systems, with the family and school being crucial environments influencing individual development. Self-esteem, as a core component of an individual's self-system, plays a significant role between environmental variables and individual behavior. Past studies have found that Inter-parental conflict, school interpersonal relationships predict self-injury through the mediation of self-esteem, and negative emotion regulation self-efficacy also predicts self-injury through the mediation of self-esteem. Thus, this study hypothesizes that Inter-parental conflict influences self-injury through the chain mediation of school interpersonal relationships, negative emotion self-efficacy, and self-esteem.

In summary, based on ecological system theory, this study integrates the interpersonal/system model and emotion regulation model, exploring the mechanisms of school interpersonal relationships, negative emotion regulation self-efficacy, and self-esteem between Inter-parental conflict and self-injury. Combining hypotheses 1 to 3, a chain mediation model is formed.

## 2. Research methods

### 2.1 Participants

The participants came from four public junior and senior high schools in Foshan City, Guangdong Province. A total of 1121 questionnaires were distributed, with 1072 valid responses remaining after removing patterns of evidently systematic or incomplete answers, resulting in an effective recovery rate of 95.7%. Participants ranged in age from 12 to 18 years, with an average age of  $15.98 \pm 1.31$  years, 563 male participants and 509 female participant.

## 2.2 Measure

### Self-injury questionnaire

Self-injurious questionnaire compiled by Feng Yu (2008)<sup>[16]</sup>. The questionnaire included 18 items (e.g., "Intentionally using glass, a knife, etc., to cut one's own skin") and an open-ended question. The assessment of self-injury frequency was rated on a 4-level scale: 1 for "0 times," 2 for "1 time," 3 for "2-4 times," and 4 for "5 times or more (including 5 times)." The assessment of bodily harm severity was rated on a 5-level scale: 1 for "none," 2 for "mild," 3 for "moderate," 4 for "severe," and 5 for "extremely severe." A comprehensive evaluation of self-harm levels was derived from the product of self-harm frequency and average bodily harm severity. In this study, the questionnaire exhibited a Cronbach's a coefficient of 0.87.

### School Interpersonal Relationships

School Interpersonal Relationships employed the Campus Environment and Interpersonal Experience Scale developed by Zheng Gang (2005)<sup>[17]</sup>. The questionnaire comprised 11 items (e.g., "Our teachers are very concerned about me") divided into two dimensions: teacher-student relationships and peer relationships. It utilized a 5-point scoring system: 1 for "not at all," 2 for "basically not," 3 for "sometimes," 4 for "always," and 5 for "completely." Higher scores indicated more harmonious school interpersonal relationships. The questionnaire exhibited a Cronbach's a coefficient of 0.92.

### Inter-parental conflict questionnaire

Inter-parental conflict used the Inter-parental conflict Children's Perception Scale developed by Grych (1992)<sup>[11]</sup>. The questionnaire consisted of 38 items (e.g., "I have never seen my parents argue or disagree") divided into seven dimensions: conflict level, resolution, self-involved conflict, threat level, coping effects, triangulation, and conflict attribution. A 5-point scoring system was used: 1 for "completely inconsistent," 2 for "inconsistent," 3 for "average," 4 for "quite consistent," and 5 for "completely consistent." Higher scores across dimensions and total scores indicated higher conflict levels with parents. In this study, the questionnaire exhibited a Cronbach's a coefficient of 0.85.

### Self-Esteem questionnaire

Self-Esteem employed the Chinese version of the Rosenberg Self-Esteem Scale developed by Rosenberg (1965)<sup>[18]</sup>. The scale comprised 10 items (e.g., "I feel I am a person of worth, at least on an equal plane with others") using a 4-point scoring system: 1 for "strongly disagree," 4 for "strongly agree," with items 3, 5, 9, and 10 reverse-scored. Higher scores indicated higher self-esteem levels. In this study, the questionnaire exhibited a Cronbach's a coefficient of 0.77.

### Emotion Regulation Self-Efficacy questionnaire

Emotion Regulation Self-Efficacy employed the Emotion Regulation Scale developed by Caprara et al. (2005)<sup>[19]</sup>. The questionnaire comprised 17 items (e.g., "When I am angry, I can avoid losing my temper") divided into two dimensions: positive emotion regulation self-efficacy and negative emotion regulation self-efficacy. A 5-point scoring system was used: 1 for "not at all," 2 for "not," 3 for "somewhat," 4 for "quite," and 5 for "very much." Higher scores indicated higher levels of emotion regulation self-efficacy. In this study, the main focus was on negative emotion regulation self-efficacy, and the questionnaire exhibited a Cronbach's a coefficient of 0.92.

## 2.3 Data analyses

Before subjects filled in the questionnaire, the examiner explained the study aim and emphasized that responses would be anonymous and that the scores are neither good or bad. The subjects were asked to complete the questionnaires independently and to provide their honest responses. After the data collection was complete, SPSS 22.0 was used for data analyses

## 3. Results

### 3.1 Common Method Bias

A Harman single-factor test was used to conduct an unrotated principal component factor analysis on all variables. The results revealed that there were 9 factors with eigenvalues greater than 1. The

variance explained by the first factor was 23.85%, which was below the critical threshold of 40%. Hence, it can be considered that this study did not exhibit serious common method bias.

### 3.2 Descriptive Statistics and Correlation Analysis of Variables

This study primarily focused on examining the relationships among Inter-parental conflict, school interpersonal relationships, negative emotion regulation self-efficacy, self-esteem, and self-injurious behavior. Therefore, an analysis was conducted to explore the correlations and their magnitudes between these variables. The results in Table 1 indicated a significant positive correlation between self-injury and Inter-parental conflict, and a significant negative correlation with school interpersonal relationships, self-esteem, and negative emotion regulation. Parental conflict showed significant positive correlations with school interpersonal relationships and self-esteem, positive emotion regulation, and negative emotion regulation. Additionally, it exhibited a significant negative correlation with age. Self-esteem demonstrated a significant positive correlation with positive emotion regulation and negative emotion regulation.

Table 1: Descriptive statistics and correlation analysis (N=1072)

	M±SD	1	2	3	4	5	6	7
1 Age	15.98±1.31	1						
2 Sex		-.11*	1					
3 Inter-parental conflict	2.33±0.98	.06	.09	1				
4 Campus interpersonal relationship	3.83±0.71	-.20**	.09	-.14**	1			
5 Negative emotion regulation self-efficacy	3.41±0.84	-.08	-.16**	-.19**	.45**	1		
6 Self-esteem	2.83±0.58	-.16**	-.13*	-.29**	.41**	.43**	1	
7 Self-injury	6.27±11.44	.02	-.19**	.20**	-.19**	-.36**	-.31**	1

\* p<.05, \*\*p<.01, \*\*\*p<.001.

### 3.3 Chained Mediation Effects Testing

The bias-corrected percentile bootstrap method (repeated sampling 5000 times) was employed to test chained mediation effects (see Table 2). Bootstrap results demonstrated significant total mediation effects (bootstrap 95% confidence interval excluding 0), with a total mediation effect value of 0.27. School interpersonal relationships did not show a significant mediation effect between Inter-parental conflict and self-injury (95% confidence interval [-.065, .125], including 0). However, school interpersonal relationships, negative emotion regulation self-efficacy, and self-esteem demonstrated significant mediation effects in the relationship between Inter-parental conflict and self-injury. Additionally, negative emotion regulation self-efficacy, self-esteem, and their successive pathways displayed significant mediation effects in the relationship between Inter-parental conflict and self-injury. Notably, Inter-parental conflict contributed to 52.11% of the direct effect on self-injury, while negative emotion regulation self-efficacy, self-esteem, and their successive paths collectively accounted for 35.79%, 33.37%, and 2.8% of the total mediation effect, respectively. School interpersonal relationships in combination with negative emotion regulation self-efficacy, school interpersonal relationships with self-esteem, and school interpersonal relationships with negative emotion regulation self-efficacy and self-esteem also exhibited chained mediation effects, accounting for 8.7%, 3.14%, and 1.5% of the total mediation effect, respectively.

Table 2: Test of the chain mediation effect(N=1072)

Road	Effect value	Effect quantity	SE	Confidence Interval	
				upper	lower
Total effect	0.57		.14	.296	.847
direct effect (Inter-parental conflict→Self-injury)	0.29		.13	.028	.567
indirect effect	0.27	100%	.08	.136	.476
<b>Road 1</b> Inter-parental conflict→Campus interpersonal relationship→Self-injury	0.01	1.50%	.02	-.068	.031
<b>Road 2</b> Inter-parental conflict→Campus interpersonal relationship→Negative emotions	0.05	8.70%	.02	.015	.111

regulate self-efficacy→Self-injury					
<b>Road 3</b> Inter-parental conflict→Campus interpersonal relationship→Self-esteem→Self-injury	0.01	3.13%	.01	.003	.051
<b>Road 4</b> Inter-parental conflict→Campus interpersonal relationship→Negative emotions regulate self-efficacy→Self-esteem→Self-injury	0.01	1.50%	.01	.002	.024
<b>Road 5</b> Inter-parental conflict→Negative emotions regulate self-efficacy→Self-injury	0.09	35.79%	.04	.028	.226
<b>Road 6</b> Inter-parental conflict→Negative emotions regulate self-efficacy→Self-esteem→Self-injury	0.01	2.80%	.01	.004	.050
<b>Road 7</b> Inter-parental conflict→Self-esteem→Self-injury	0.09	33.37%	.03	.032	.197

\* p<.05, \*\*p<.01, \*\*\*p<.001.

#### 4. Discussion

This study rooted in the ecosystem theory, integrated interpersonal or systemic models with emotion regulation models to explore the mechanism of school interpersonal relationships, negative emotion regulation, and self-esteem in the relationship between Inter-parental conflict and self-harming behaviors among adolescents. Consistent with prior research findings, this study discovered a significant positive correlation between self-harm and Inter-parental conflict. Additionally, it found significant negative correlations between self-harm and school interpersonal relationships, negative emotion regulation self-efficacy, and self-esteem. The reduction in Inter-parental conflict, establishment of positive school interpersonal relationships, improvement in negative emotion regulation self-efficacy, and enhanced self-esteem were all identified as beneficial factors in reducing self-harm among high school students. This validates both the interpersonal or systemic models and emotion regulation models.

Unexpectedly, this study found that parental conflict does not affect self-harm through school interpersonal relationships, which contradicts hypothesis 1. Previous research indicated that conflict within the family could influence other types of interpersonal relationships, notably disrupting school interpersonal relationships, increasing conflicts within these relationships. However, in this study, school interpersonal relationships did not mediate the relationship between Inter-parental conflict and self-harm, possibly because although self-harming behaviors frequently occur at school, their origins lie within the family. The family system views the family as a unit where Inter-parental conflict can disrupt the spousal-subsystem and parent-child subsystem, causing the entire system to fracture, leading to problematic behaviors in children. The impact of Inter-parental conflict on individuals is deep-rooted and enduring, making it difficult for even positive school interpersonal relationships to significantly influence the impact of parental conflict on self-harm.

Moreover, this study revealed that parental conflict impacts self-harm through a chained mediation involving school interpersonal relationships, negative emotion self-efficacy, and self-esteem, thereby validating hypotheses 2 and 3. Existing studies have shown that frequent parental conflict within the family can affect other interpersonal relationships, especially school interpersonal relationships. Meanwhile, poor school interpersonal relationships can diminish an individual's emotional regulation abilities and lower self-esteem. Conversely, positive school interpersonal relationships can influence self-harm by enhancing negative emotion self-efficacy and self-esteem through mediation. Schools represent the most crucial environment for adolescents to develop interpersonal relationships. As adolescents gradually reduce emotional dependence on parents and family, communication among teachers and peers accelerates. The atmosphere of acceptance, inclusive, and encouragement provided by teachers and peers strengthens emotional stability in individuals. This, in turn, enables individuals to learn more effective emotional regulation strategies, leading to a decrease in self-harm. Additionally, positive school interpersonal relationships foster greater self-acceptance and affirmation among adolescents, enhancing individual self-esteem. Individuals with higher self-esteem are more willing to face challenges, view failures positively [20], utilize and integrate resources to cope with adverse situations, and adopt more positive problem-solving strategies, ultimately reducing self-harm behaviors.

However, this study has several limitations. Firstly, being a cross-sectional study, it only revealed correlations among variables and cannot explain causal relationships. Therefore, future research should

adopt a longitudinal study design to infer causation from longitudinal data for more practical implications. Secondly, the entire sample for this study was derived from four public high schools in Foshan City, Guangdong Province, mostly comprising Han ethnicity students deeply influenced by the local culture. Whether the study conclusions can represent other provinces, cities, or ethnic regions requires further validation. Future research may consider selecting representative high schools from central and western regions to examine the influence of economic development, regional culture, and ethnic culture, thereby enhancing the sample's representational and further validating the model.

## 5. Conclusion

This study concludes:(1)Self-injury is significantly positively correlated with Inter-parental conflict and significantly negatively correlated with school interpersonal relationships, negative emotion regulation self-efficacy, and self-esteem.(2)School interpersonal relationships do not act as mediators between Inter-parental conflict and self-injury.(3)Inter-parental conflict impacts self-harm behavior through a chained mediation involving school interpersonal relationships, negative emotion regulation self-efficacy, and self-esteem.

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