

The Impact of Peer Victimization on Aggressive Behavior among Middle School Students: The Mediating Role of Forgiveness

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Abstract: This study investigated the impact of peer victimization on aggressive behavior and the mediating role of forgiveness among 678 junior high school students. Data were collected using the Multidimensional Peer Victimization Scale (MPVS), Transgression-Related Interpersonal Motivations Inventory-12 (TRIM-12), and Buss-Perry Aggression Questionnaire (BPAQ), with mediation effects tested through the bias-corrected bootstrap method. Key findings revealed: (1) A significant positive correlation between peer victimization and aggressive behavior ($\beta = 0.69$, $p < 0.001$), with female students demonstrating notably higher aggressive behavior scores than males (2.34 vs 2.14, $p < 0.001$); (2) A significant negative association between forgiveness levels and aggression ($\beta = -0.49$, $p < 0.001$), with female students showing significantly higher unforgiveness tendencies than males (2.96 vs 2.64, $p < 0.001$); (3) Forgiveness partially mediated the relationship between peer victimization and aggressive behavior (indirect effect = 0.20, 95% CI [0.13, 0.27]), accounting for 28.99% of the total effect. The research demonstrates that peer victimization not only directly increases aggressive behavior risk but may also exacerbate aggressive behavior tendencies indirectly by reducing forgiveness levels, highlighting forgiveness as a protective adaptive coping mechanism. These findings provide theoretical support for school bullying interventions, suggesting the integration of forgiveness cultivation into mental health education systems to mitigate aggressive behavior tendencies among victimized adolescents and prevent cyclical school violence.

1. Introduction

Aggression refers to the behavior of an individual who intentionally causes harm to another person and the victim has a motive to avoid victimization [1]. In school environments, adolescent aggression often takes the form of bullying or hazing, which not only threatens school safety, but also has a profound impact on adolescents' physical and mental health. Studies have shown that aggressive behavior in adolescence not only endangers others, but is also closely related to the individual's externalizing problems (e.g., delinquency, alcoholism, and substance abuse) in adulthood. In addition, highly aggressive adolescents are at higher risk for psychiatric disorders, negative social relationships, and non-suicidal self-injury. The development of aggressive behavior shows a nonlinear trend. Aggression gradually decreases from early childhood (before age 5) to

middle childhood (age 5-10), increases as we enter adolescence (age 11-18), and decreases again in adulthood (after age 18). Junior high school students (11-15 years old) are at a critical stage of rising aggression, so it is of great theoretical and practical significance to explore the influencing factors and mechanisms of their aggression.

There is a close association between peer victimization (PEV) as a result of bullying and adolescent aggression. Social learning theory [2] suggests that individuals experiencing peer victimization may learn aggressive behavior and its associated cognitive and affective responses through observation and imitation. Empirical studies support this view, indicating that peer victimization significantly predicts individuals' aggressive behavior but the specific mechanism of action between the two still needs to be further explored. In recent years, researchers have begun to focus on the mediating or moderating role of cognitive factors between peer victimization and aggressive behavior, such as moral excuses, hostile attributions, rumination thinking, and empathy.

Forgiveness (forgiveness) as an important interpersonal motivational shift process, whose core components are avoidance and retaliation motives, specifically refers to the psychological process whereby the aggrieved person reduces retaliation and avoidance motives while increasing reconciliation motives [3]. Adolescents who had experiences of bullying victimization had high or low levels of forgiveness affecting subsequent behavior, which found that adolescents who reported higher levels of forgiveness were likely to use conflict resolution and advice and support-seeking strategies and were less likely to support revenge-seeking strategies in response to bullying.

Based on the interpersonal risk model [4], peer victimization serves as a stressor that may trigger an individual's unforgiveness response, which in turn leads to aggressive behavior. Empirical studies have also shown that forgiveness is highly correlated with aggression, and Webb found that forgiveness was inversely related to aggression using a college student population as a probing sample, with high levels of forgiveness being associated with lower levels of aggression, whereas low levels of forgiveness may lead to either implicit or explicit aggression. Some empirical studies have also provided direct or indirect evidence, for example, domestic studies have found that forgiveness mediates the role between bullying victimization and antisocial behavior among college students [5], and foreign studies have shown that forgiveness affects subsequent aggressive behavior among aggrieved individuals, and that unforgiveness is positively correlated with aggressive behavior [6]. However, most of the current studies have taken college students or adult groups as research subjects to explore the role of forgiveness in the relationship between peer victimization and aggression, and there is insufficient research on middle school students' groups, and the gender difference in the effect of forgiveness on aggression has not yet been conclusively determined.

Therefore, this study will examine the mechanism of forgiveness's role between peer victimization and aggressive behavior by using the middle school student population as a research subject and proposing the following hypotheses:

There is a positive correlation between peer victimization and aggressive behavior in middle school students

Middle school students' level of forgiveness is negatively related to aggressive behavior

Middle school students' forgiveness partially mediates the relationship between peer victimization and aggressive behavior

2. Methodology

2.1 Subjects

Random sampling method was used to select first and second year students from two junior high schools in a city to participate in this study. A total of 678 valid data were collected, with an

effective rate of 90.35%, among which 329 males were surveyed accounting for 48.8%, 345 females accounting for 51.2%, 467 urban students accounting for 69.3%, 207 rural students accounting for 30.7%, 225 only-children accounting for 33.4%, and 449 non-only-children accounting for 66.6%. The average age was 12.76 years old.

2.2 Research tools

2.2.1 Peer victimization

The Multidimensional Peer Victimization Scales (MPVS), revised by Guo Haiying et al. in 2017 and developed by Mynard and Joseph, was used to assess the extent to which individuals were victimized by their peers. The MPVS consists of 16 questions covering four dimensions: physical victimization, verbal victimization, social manipulation, and assault on property [7], and is scored on a four-point scale, with 1 indicating “does not occur” and 4 indicating “occurs frequently”. In this study, the Cronbach's alpha coefficient for this scale was 0.87.

2.2.2 Forgiveness

Wade's forgiveness short form, Transgression Related Interpersonal Motivations Scale 12 Item Form (TRIM-12), was used, which consists of two dimensions: retaliation motivation and avoidance motivation. The scale consists of two dimensions, retaliation motivation and avoidance motivation, and consists of 12 questions. The scale is scored on a 5-point scale, with 1 indicating “not at all consistent” and 5 indicating “completely consistent”. The scale was revised into a Chinese version by Chen Zhiyan and others in 2006 [8].

Higher scores indicate lower levels of forgiveness, and the Cronbach's alpha coefficient for this scale was 0.89 in this study.

2.2.3 Aggression

This study used the Chinese version of the Buss-Perry Aggression Questionnaire (BPAQ) [9], revised by Luo Guimin in 2008, which includes four dimensions: physical aggression, verbal aggression, anger, and hostility, with a total of 29 questions, of which questions 9 and 16 are reverse-scored questions with a 5-point scale. Questions 9 and 16 were reverse-scored, using a 5-point scale, with 1 indicating “not at all consistent” and 5 indicating “completely consistent”. Higher scores indicate more aggressive behavior, and the Cronbach's alpha coefficient for this scale was 0.86 in this study.

2.3 Procedures and data processing

In this study, a standardized data collection and processing process was used to ensure the subjects' right to information, and the questionnaires were distributed and collected by trained master's degree students in mental health education according to the guidelines. Data were analyzed using SPSS 27.0 software for descriptive statistics and mediation modeling.

3. Analysis of results

3.1 Common method bias test

Using the Harman one-way method, all the original topics of the 3 variables were analyzed together in an exploratory factor analysis. The results showed that there were 16 factors with

eigenroots greater than 1, and the amount of variation explained by the 1st factor was 22.46%, which was lower than the standard of 40%, indicating that the data in this study did not have serious common method bias.

3.2 Test of variance

The study used independent samples t-test to examine the differences between adolescents of different genders on the dimensions of peer victimization, aggressive behavior, and forgiveness as shown in Table 1. Descriptive statistics showed that boys (n=329) scored 1.36 ± 0.38 on peer victimization and girls (n=345) 1.32 ± 0.34 , but the gender difference did not reach statistical significance ($t=1.537$, $p=0.125$). Regarding aggressive behavior, girls scored significantly higher (2.34 ± 0.59) than boys (2.14 ± 0.57), $t=-4.494$, $p<0.001$.

The analysis of gender differences regarding the dimensions of forgiveness showed that girls scored significantly higher on avoidance motivation (3.15 ± 1.02) than boys (2.66 ± 1.11), $t=-5.99$, $p<0.001$; whereas on the dimension of retaliatory motivation, although girls scored slightly higher (2.69 ± 1.20 vs. 2.61 ± 1.25) the difference did not reach the level of significance ($t=-0.81$, $p=0.418$). Notably, the test for gender differences in forgiveness showed that girls (2.96 ± 0.97) scored higher on average than boys (2.64 ± 0.99), both girls exhibited more significant levels of unforgiveness ($t=-4.245$, $p<0.001$).

Table 1 Difference test

| Variable | Gender | Number of cases | M \pm SD | T | P | Difference comparison |
|--------------------|--------|-----------------|-----------------|--------|--------|-----------------------|
| Peer victimization | 1 | 329 | 1.36 ± 0.38 | 1.537 | 0.125 | |
| | 2 | 345 | 1.32 ± 0.34 | | | |
| Aggression | 1 | 329 | 2.14 ± 0.57 | -4.494 | <0.001 | Female>Male |
| | 2 | 345 | 2.34 ± 0.59 | | | |
| Avoidance motive | 1 | 329 | 2.66 ± 1.11 | -5.99 | <0.001 | Female>Male |
| | 2 | 345 | 3.15 ± 1.02 | | | |
| Revenge motive | 1 | 329 | 2.61 ± 1.25 | -0.81 | 0.418 | |
| | 2 | 345 | 2.69 ± 1.20 | | | |
| Forgiveness | 1 | 329 | 2.64 ± 0.99 | -4.245 | <0.001 | Female>Male |
| | 2 | 345 | 2.96 ± 0.97 | | | |

Note: 1=male, 2=female

3.3 Mediation effect test

Using deviation corrected Bootstrap method (repeated sampling 5000 times) to test the mediating effect of forgiveness. As shown in Table 2 and 3, after controlling for gender differences, the overall effect of peer victimization on aggressive behavior was significant (effect value=0.69, SE=0.06, $t=12.17$, $p<.001$, 95% CI [0.58, 0.80]). After introducing the mediator variable forgiveness, the direct effect remained significant but the effect size decreased (effect value=0.49, SE= 0.05, $t= 9.50$, $p<.001$, 95% CI [0.39, 0.59]), Indicating that forgiveness partially mediates the relationship. The estimated indirect effect is 0.20 (SE=0.04), with a 95% confidence interval excluding zero [0.13, 0.27], and the mediating effect accounts for 28.99% of the total effect. This result supports the theoretical hypothesis that forgiveness serves as a protective factor, that individuals who suffer from peer victimization increase their aggressive behavior by reducing their level of forgiveness. As shown in Figure 1, the research results support the interpersonal risk model,

which suggests that in the face of peer victimization as a stressor, the lack of forgiveness as an adaptive coping strategy may become an important mechanism for individuals to develop aggressive behavior.

Table 2 Correlation Analysis

| Variable | M±SD | 1 | 2 | 3 | 4 |
|----------------------|-----------|--------|--------|--------|--------|
| 1 Peer victimization | 1.34±0.36 | 1 | | | |
| 2 Avoidance motive | 2.91±1.09 | .206** | 1 | | |
| 3 Revenge motive | 2.65±1.23 | .239** | .475** | 1 | |
| 4 Aggression | 2.24±0.59 | .408** | .408** | .566** | 1 |
| 5 Forgiveness | 2.80±0.99 | .256** | .891** | .823** | .556** |

Note: **p<.01,***p<.001

Table 3 Mediation Effect Test

| | Effect value | SE | t | P | LLCI | ULCI | Effect size |
|-----------------|--------------|------|-------|------|------|------|-------------|
| Total effect | 0.69 | 0.06 | 12.17 | 0.00 | 0.58 | 0.80 | |
| Direct effect | 0.49 | 0.05 | 9.50 | 0.00 | 0.39 | 0.59 | |
| Indirect effect | 0.20 | 0.04 | | | 0.13 | 0.27 | 28.99% |

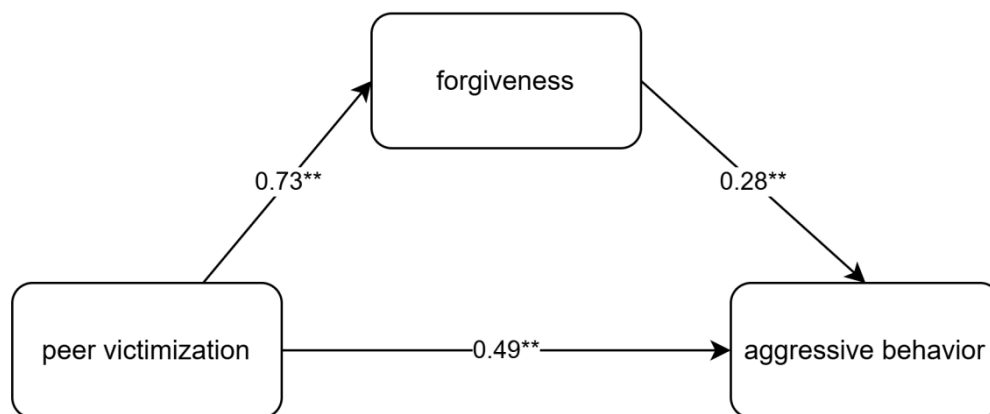


Figure 1 Mediation Effect Model

4. Discussion

This study focuses on middle school students and explores the impact of peer victimization on aggressive behavior, as well as the mediating role of forgiveness. The research results support the hypothesis that peer victimization is significantly positively correlated with aggressive behavior, with individuals who experience more peer victimization exhibiting higher levels of aggressive behavior. There is a significant negative correlation between forgiveness and aggressive behavior, with individuals with lower levels of forgiveness exhibiting higher levels of aggressive behavior. Forgiveness plays a partial mediating role between peer victimization and aggressive behavior, with individuals who have experienced peer victimization exhibiting lower levels of forgiveness and higher levels of aggressive behavior. Viewing the development of behavior from a social cognitive perspective is an appropriate framework for studying how forgiveness is associated with aggressive behavior after victimization. These findings not only enrich the theoretical models of aggressive

behavior, but also provide important practical insights for campus violence intervention.

Firstly, this study found that peer victimization significantly positively predicts middle school students' aggressive behavior, which is consistent with previous studies based on social learning theory. Middle school students are in a critical stage of developing aggressive behavior, and individuals who frequently suffer from peer victimization may learn aggressive behavior through observation and imitation, forming a vicious cycle of "victim attack". It is worth noting that in this study, girls scored significantly higher in aggressive behavior than boys, which differs from traditional gender role cognition and may reflect that girls tend to use hidden forms such as relational or verbal attacks during adolescence. Future research can further refine the gender performance differences in aggressive behavior.

Secondly, the role of forgiveness as a mediator variable has been validated. If middle school students who have suffered from peer victimization lack the ability to forgive, their motives for retaliation or avoidance may be activated, thereby increasing the risk of aggressive behavior. This result is consistent with the forgiveness theory proposed by McCullough et al., supporting the protective role of forgiveness as an adaptive coping strategy. However, this study found that the forgiveness level of girls (manifested as non forgiveness) was significantly higher than that of boys, which is contrary to the conclusions of some foreign adult studies [10]. This may reflect that girls in junior high school are more sensitive to interpersonal harm, or social and cultural expectations for women to "endure". Future research needs to combine longitudinal design to further examine the gender specific pathways of forgiveness development.

Finally, the mediating effect of forgiveness accounted for 28.99% of the total effect, indicating that the impact of peer victimization on aggressive behavior is not a single linear relationship, but is indirectly achieved through cognitive and emotional mechanisms such as forgiveness. This provides a new perspective for understanding the formation mechanism of aggressive behavior, that is, in addition to environmental risk factors, individuals' psychological regulation ability and forgiveness are equally crucial. The research results support the theoretical basis for incorporating forgiveness into the framework of campus bullying intervention and provide direction for the development of personalized psychological interventions for middle school students.

5. Educational recommendations

The concept of "ren" in traditional Chinese culture emphasizes "loving others", "forgiveness", and "extending oneself to others", which is highly compatible with the core idea of forgiveness. Based on the findings of this study, forgiveness ability has a protective effect in mitigating aggressive behavior caused by peer victimization. Combining the cultural wisdom of "benevolence", the following educational suggestions are proposed:

5.1 Integrating forgiveness education into the moral education system

Classic infiltration: Through the study of passages on "forgiveness" (such as "do not do to others what you do not want done to yourself" and "repay grievances with honesty") in classics such as the Analects and Mencius, guide students to understand that forgiveness is not cowardice, but the wisdom of resolving conflicts with integrity.

Storytelling teaching: Using historical allusions (such as "Guan Bao's friendship" and "pleading guilty") and modern cases, vividly explain the practical value of "benevolence" and forgiveness in interpersonal conflicts, and help students internalize the understanding that "forgiving others means forgiving oneself".

5.2 Building a "Renshu" Campus Practice Scene

Scenario simulation and role-playing: Design campus conflict scenarios (such as verbal bullying, social exclusion), allowing students to experience the psychology of perpetrators, victims, and bystanders through role-playing, and guiding them to propose nonviolent solutions with a "benevolent heart" (such as proactive communication and seeking mediation).

Renshu Theme Practice Activity: Carry out activities such as "Daily Kindness" and "Gratitude Diary" to encourage students to record their experiences of forgiving or being forgiven by others, and strengthen the habit of "ren" behavior.

5.3 Intervention strategies that focus on gender and cultural differences

Female group: In response to the higher levels of aggressive behavior and unforgiving tendencies among female students, the "gentle virtue" culture can be combined to emphasize "softness but not weakness", cultivate their ability to protect their rights in a gentle and firm manner rather than an aggressive one, and avoid falling into a vicious cycle of "tolerance explosion".

Rural and non only child: Through home school cooperation, utilizing the traditional "neighborhood mutual aid" in local culture, we help these students establish supportive interpersonal networks and reduce the motivation for retaliation caused by isolation.

5.4 Promote the construction of "forgiveness" campus culture

Teacher training: Strengthen teachers' understanding of the culture of "benevolence" and advocate the management concept of "cultivating students with forgiveness". For example, when dealing with student conflicts, the three-step approach of "mediation reflection reconciliation" is adopted to avoid simple punishment and guide students to shift from "arguing for right and wrong" to "cultivating oneself and comforting others".

Campus system design: Establish a "Star of Benevolence and Forgiveness" selection mechanism to recognize students who practice forgiveness and friendship; Students should independently mediate minor conflicts and practice the sense of community responsibility of "extending oneself to others".

5.5 Scientific verification of the effectiveness of traditional cultural intervention

Localization intervention program development: Drawing on the Enright forgiveness training model, incorporating elements of "benevolence" culture (such as the four steps of "cultivating oneself and comforting others"), designing intervention courses that are in line with the psychological characteristics of Chinese adolescents, and testing their effectiveness through empirical research.

Ren "is not only the moral cornerstone of Chinese culture, but also provides deep cultural resources for intervening in the aggressive behavior of contemporary teenagers. By transforming the concept of "benevolence and forgiveness" into actionable educational practices, it can not only help students resolve interpersonal conflicts, but also promote their comprehensive development of personality, ultimately achieving the educational goal of "nurturing the heart with culture and virtue".

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