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# The Bidirectional Relationship Between Peer Victimization and Internalizing Problems in Children and Adolescents: A Meta-Analysis of Longitudinal Studies

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## Abstract

This study employs meta-analytic techniques to investigate the longitudinal relationship between peer victimization and internalizing problems in children and adolescents, testing the applicability of the interpersonal risk model, symptom-driven model, and transactional model to this relationship. A total of 89 studies were included, comprising 99 independent effect sizes with 70,598 participants. Random-effects model analyses revealed that peer victimization predicted internalizing problems ( $\beta = 0.097$ , 95% CI[0.083, 0.110]), and internalizing problems also predicted peer victimization ( $\beta = 0.119$ , 95% CI[0.104, 0.135]), supporting the transactional model of peer victimization and internalizing problems. In the prediction of internalizing problems by peer victimization, age and victimization type demonstrated moderating effects. Measurement time interval, victimization type, assessment method, and problem type moderated the prediction of peer victimization by internalizing problems. Chinese versus Western cultural types did not exhibit moderating effects in either reciprocal prediction model. The effects of moderating factors were generally consistent across the bidirectional relationships between peer victimization and its subtypes (overt victimization, relational victimization) and internalizing problems.

## Full Text

### The Reciprocal Relationship Between Peer Victimization and Internalizing Problems in Children and Adolescents: A Meta-Analysis of Longitudinal Studies

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## Abstract

This study employed meta-analytic techniques to examine the longitudinal relationship between peer victimization and internalizing problems in children and adolescents, testing the applicability of the interpersonal risk model, symptom-driven model, and interaction model to this relationship. A total of 89 studies were included, comprising 99 independent effect sizes with 70,598 participants. Random-effects model analysis revealed that peer victimization predicted internalizing problems ( $\beta = 0.097$ , 95% CI [0.083, 0.110]), and internalizing problems also predicted peer victimization ( $\beta = 0.119$ , 95% CI [0.104, 0.135]). These results support the interaction model of peer victimization and internalizing problems. In the prediction of internalizing problems by peer victimization, age and victimization type showed moderating effects. Measurement interval, victimization type, assessment method, and problem type moderated the prediction of peer victimization by internalizing problems. Chinese versus Western cultural context did not moderate either reciprocal prediction model. The effects of moderating factors were generally consistent across the bidirectional relationships between peer victimization and its subtypes (overt victimization, relational victimization) and internalizing problems.

**Keywords:** children and adolescents; peer victimization; internalizing problems; longitudinal study; meta-analysis

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Peer victimization represents a worldwide public health concern (Oncioiu et al., 2020). Across ten European countries, the prevalence of various forms of peer victimization among adolescents ranges from 9.4% to 33.0% (Barzilay et al., 2017). Domestic survey data indicate that 25.1% of Chinese adolescents have experienced moderate to severe peer victimization (Yang et al., 2020), with even higher rates among disadvantaged groups such as left-behind and migrant children (Dong et al., 2020; Guo et al., 2017). The prevalence of peer victimization has remained relatively stable over time (Pontes et al., 2018). At the individual level, children and adolescents with victimization experiences often suffer multiple forms of victimization simultaneously, and victim status demonstrates considerable stability (Nylund et al., 2007; Yang et al., 2020).

Peer victimization and internalizing problems are closely related (Wu et al., 2015). Internalizing problems refer to intra-psychic emotional issues, primarily manifested as anxiety, depression, and loneliness (Reijntjes et al., 2010). Compared to externalizing problems, internalizing problems are less observable to others and do not pose direct threats, yet they represent persistent risks to mental health (McLeod et al., 2007). Internalizing problems not only negatively impact children's psychosocial development, academic achievement, and interpersonal relationships (Yap & Jorm, 2015), but these effects may extend

throughout adolescence and into adulthood, leading to academic failure, unemployment, suicide, adult depression, and criminal behavior (Xu et al., 2015). Based on meta-analytic findings, Hawker and Boulton (2000) noted that cross-sectional research on the relationship between peer victimization and psychosocial adjustment was no longer necessary, and that research should shift toward examining causal relationships.

In recent years, researchers have employed longitudinal designs to reveal the directional nature of the close relationship between peer victimization and internalizing problems, yet findings remain inconsistent. Some studies have found unidirectional predictive relationships (Ji et al., 2018; Saint-Georges & Vaillancourt, 2019), others support reciprocal prediction (Mlawer et al., 2019), while still others show no predictive relationship between peer victimization and internalizing problems (Zhou et al., 2006). These contradictory results suggest that the relationship may be moderated by factors such as cultural background, sample characteristics (gender, age), and measurement methods (self- vs. other-report, measurement interval). A key function of meta-analysis is to integrate existing research and identify factors causing variation across studies through moderator analysis, thereby providing direction for future research (Egger & Smith, 1997). Therefore, this study used meta-analytic techniques to synthesize longitudinal research on the relationship between peer victimization and internalizing problems in children and adolescents, examining both the relationship itself and potential moderating effects.

### **1.1 The Relationship Between Peer Victimization and Internalizing Problems and Its Mechanisms**

Peer victimization refers to various forms of physical or psychological attacks experienced from peers. Physical victimization, verbal victimization, and relational victimization are recognized as the three basic types of peer victimization (Mynard & Joseph, 2000). According to ecological systems theory, peer relationships constitute an important interpersonal environment in the microsystem of child and adolescent development (Bronfenbrenner & Morris, 2006). From late childhood through adolescence, as peer interactions increase significantly, the influence of peers becomes more prominent (Sun et al., 2019). The interpersonal risk model posits that negative interpersonal experiences such as peer victimization are important stressors for children and adolescents, easily leaving basic belonging needs unmet and thereby triggering problems such as depression (Forbes et al., 2019; Noret et al., 2018; Kochel et al., 2012). One meta-analysis found that adolescents victimized at school were approximately twice as likely to develop depression after an average follow-up period of 6.9 years compared to those without victimization experiences (Ttofi et al., 2011).

In contrast, the symptom-driven model emphasizes that internalizing problems are risk factors that predict peer victimization. Children and adolescents who perpetrate victimization tend to select targets they perceive as easily dominated (Juvonen & Graham, 2014). Internalizing problems interfere with social

information processing, causing more intense emotional reactions to ambiguous situations containing potential threat intentions. Meanwhile, symptoms such as depression and anxiety also increase behaviors such as social withdrawal, fear, avoidance, crying, and emotional blunting. These reactions signal to potential aggressors that their emotions are vulnerable to harm, making them more likely to be selected as victimization targets (Carthy et al., 2010; Forbes et al., 2019). Reijntjes et al. (2010) further argue that individuals with internalizing problems have greater difficulty defending themselves against victimization, reinforcing their victim status. This theoretical model has also received support from numerous studies (Ji et al., 2018; Kochel et al., 2012).

With the rise of developmental contextualism, an increasing number of researchers recognize that the relationship between peer victimization and psychosocial development in children and adolescents is not a unidirectional or static pattern. Human development is achieved through the interaction between individuals and their environment (including interpersonal environments), and these interactions present different effects depending on time or developmental stage (Zhang & Chen, 2009). The transactional model of development emphasizes that development is the result of continuous, dynamic bidirectional interactions between individuals and environmental experiences provided by families and society, with these interactions occurring continuously over time (Sameroff & Mackenzie, 2003; Zhang et al., 2008). Childhood and adolescence represent high-incidence periods for both peer victimization and internalizing problems. According to the transactional model and ecological systems theory, peer victimization is an environmental experience factor (Krygsman & Vaillancourt, 2017; Sentse et al., 2017). Therefore, internalizing problems may lead to negative peer relationships (such as peer victimization and peer rejection), which in turn induce more internalizing problems, and vice versa. This bidirectional relationship may persist throughout childhood and adolescence.

Previous meta-analyses have examined the concurrent relationship between peer victimization and internalizing problems in children and adolescents (Casper & Card, 2017; Hawker & Boulton, 2000; Wu et al., 2015). However, because these three meta-analyses were based on cross-sectional research, they could not reveal the direction of the relationship. One meta-analysis on the unidirectional prediction of depression by victimization did not examine the bidirectional relationship (Ttofi et al., 2011). Reijntjes et al. (2010) conducted a meta-analysis confirming that bidirectional predictive relationships exist between peer victimization and internalizing problems. However, that meta-analysis included only 18 studies, all from Western cultural backgrounds, with subjects spanning from early childhood to adolescence, representing a large age range. The insufficient number of subgroups for subject types prevented effective examination of potential moderating mechanisms in the relationship. Against the backdrop of increasing attention to school bullying governance, research on the relationship between peer victimization and internalizing problems has grown substantially in recent years both domestically and internationally, providing opportunities to explore the relationship from more moderator dimensions and enabling compar-

isons between Chinese and Western contexts to enhance understanding of this relationship in the Chinese context. Therefore, it is necessary to incorporate new research findings from the past decade for comprehensive analysis.

In summary, the relationship between peer victimization and internalizing problems is not only theoretically controversial but also yields divergent empirical results. Therefore, using meta-analysis to confirm the direction, strength, and potential influencing factors of this relationship is necessary. This approach not only helps clarify theoretical controversies and test theoretical applicability or deepen understanding of theoretical boundary conditions but also provides evidence-based support for school bullying intervention practices. Based on the transactional model of development and existing research findings, this study proposes **Hypothesis 1:** Peer victimization and internalizing problems in children and adolescents have a mutually predictive relationship.

## 1.2 Moderating Effects in the Reciprocal Prediction Between Peer Victimization and Internalizing Problems

**(1) Cultural Context** Kawabata (2020) emphasized cultural factors in the relationship between peer victimization and psychosocial adjustment, noting that strengthening research on this relationship in non-Western cultural contexts would enhance understanding of cross-cultural differences and similarities. Cultural differences in concepts, attitudes, and behavioral patterns may directly moderate the relationship between peer victimization and internalizing problems. Compared to Western individualistic cultures, Chinese collectivist culture features a typical interdependent self-construal, where individuals focus more on their connections with others (Markus & Kitayama, 1991). Therefore, peer victimization, symbolizing poor interpersonal experiences, may pose a greater threat to self-worth, potentially causing more severe internalizing problems. Additionally, Chinese culture emphasizes interpersonal harmony and suppresses interpersonal conflict and aggressive behavior (Chen et al., 2019). These concepts and norms are transmitted to children and adolescents through family and school education. Aggressors are not only unpopular among peers but also face severe punishment from schools (Zhao & Zhou, 2010). Research also indicates lower prevalence rates of peer victimization in Chinese cultural contexts (Chen et al., 2019; Eslea et al., 2004; Huang et al., 2021). This suggests that peer victimization triggered by internalizing problems is also suppressed, and internalizing problems lead to correspondingly less peer victimization. In summary, this study proposes **Hypothesis 2:** Compared to Western cultures, Chinese cultural contexts show stronger predictive effects of peer victimization on internalizing problems but weaker predictive effects of internalizing problems on peer victimization.

**(2) Age** Developmental contextualism emphasizes the temporal dimension in the continuous interaction between individuals and their environment, with these interactions presenting different age characteristics depending on individuals' psychosocial developmental stages (Zhang & Chen, 2009). On one hand,

longitudinal tracking shows that from ages 6 to 17, victimization levels across four categories of peer victimization demonstrate declining trends (Oncioiu et al., 2020). Additionally, whether negative interpersonal experiences such as peer victimization lead to problem behaviors depends on individuals' internal cognitive and emotional regulation mechanisms. From a lifespan developmental perspective, psychological development generally becomes more mature with age, and coping styles become more robust (Zhang et al., 2020). Therefore, we expect that the adverse effects of peer victimization are stronger in younger groups. On the other hand, the impact of internalizing problems on victimization can be understood from the perpetrator's perspective. The general aggression model posits that aggressive cues are important situational factors that trigger aggressive behavior (Anderson & Bushman, 2002). For aggressors, the internalizing problems of victimization targets represent important aggressive cues. No evidence suggests that aggressors differ in identifying and utilizing these cues across ages, and the predictive effect of internalizing problems on peer victimization exists broadly among children and adolescents (Chen et al., 2021; Forbes et al., 2019; Ji et al., 2018; Mlawer et al., 2019). In summary, this study proposes **Hypothesis 3:** The younger the age, the stronger the predictive effect of peer victimization on internalizing problems, while age does not moderate the prediction of peer victimization by internalizing problems.

**(3) Measurement Interval** The time intervals between two measurement points vary across individual studies, with intervals in this study basically concentrated between one month and two years. On one hand, individuals' cognitive and emotional regulation characteristics are important factors in how peer victimization affects internalizing problems. Peer victimization can lead children and adolescents to develop distorted views of themselves, their future, and their surroundings. When repeated victimization shapes a stable negative cognitive style, it further reinforces negative evaluations of the self (e.g., "I am worthless, everyone hates me") and the future (e.g., "My life will always be this terrible"), and it is this negative cognition that closely links peer victimization with internalizing problems (Forbes et al., 2019). Additionally, emotion regulation difficulties are considered important mechanisms connecting peer victimization with psychological symptoms (Adrian et al., 2019). These cognitive and emotional characteristics are generally relatively stable within the relatively short time frame of this study. Therefore, we expect that the impact of peer victimization on internalizing problems does not differ by measurement interval. On the other hand, from the perpetrator's perspective, there is a homogeneity phenomenon of aggressive behavior among children and adolescent groups. Through peer selection and peer influence mechanisms, over time, individuals with aggressive tendencies gradually form groups, and group members' aggressive targets and behaviors become more consistent (Sun et al., 2019). In other words, victim status is gradually reinforced within groups, potentially leading to increased victimization levels over time. In summary, this study proposes **Hypothesis 4:** Measurement interval does not moderate the prediction of internalizing problems by peer victimization but can moderate the prediction of

peer victimization by internalizing problems, with the predictive effect of internalizing problems on peer victimization strengthening over time.

**(4) Assessment Method** Regarding the assessment of peer victimization, the earliest and most widely used method is self-report, followed by peer report (Bouman et al., 2012). Internalizing problems are overwhelmingly assessed through self-report by children and adolescents. A small number of studies use parents or teachers to assess both peer victimization and internalizing problems. Since these latter methods are rarely used, this study only examined differences between combinations of self-report by children and adolescents and peer report. On one hand, given the discrepancy between self- and peer-reported peer victimization, Bouman et al. (2012) noted that when only peer report is used to identify victimization status, the relationship between peer victimization and internalizing problems will be underestimated. Due to the less observable nature of internalizing problems, self-report is considered more accurate (Pagano et al., 2000; Tepper et al., 2008). On the other hand, when the same rater reports both peer victimization and internalizing problems, common method bias may inflate effect sizes (Hawker & Boulton, 2000). This study examined whether assessment method moderates the longitudinal relationship between the two variables. Based on the actual research on this topic, assessment method in this study specifically refers to two situations: (1) both peer victimization and internalizing problems are self-reported by children and adolescents, and (2) internalizing problems are self-reported while peer victimization is peer-reported. This study proposes **Hypothesis 5:** The reciprocal predictive relationship between peer victimization and internalizing problems is moderated by assessment method, with larger effect sizes in the self-report group.

**(5) Problem Type** Depression, anxiety, and loneliness are the most commonly used indicators of internalizing problems. While closely related, they also exhibit some unique characteristics and prevalence rates (Tran et al., 2012). Depression is a mood state characterized by significant and persistent low mood, representing a core indicator of internalizing problems (Ji et al., 2018) and the most frequently examined indicator in research on the relationship between peer victimization and internalizing problems. Its close bidirectional relationship with peer victimization has been supported by numerous studies (Tran et al., 2012). Loneliness is the indicator most directly linked to poor interpersonal relationships, referring to the negative emotion experienced when individuals perceive a discrepancy between their actual and desired social status, or when they cannot establish emotional bonds with significant others (Bauminger & Kasari, 2000), and it is a direct emotional consequence of peer victimization. Anxiety is a complex unpleasant emotional state of tension, unease, worry, and distress that individuals experience in response to impending situations that may cause danger or threat. Anxiety includes multiple types, among which social anxiety directly targets interpersonal relationships (Lang et al., 2000). Therefore, compared to interpersonal-specific social anxiety, the relationship between general anxiety and peer victimization may be weaker. In summary, this study proposes **Hypothesis 6:** Compared to anxiety, the reciprocal predictive effects between

peer victimization and depression and loneliness are stronger.

**(6) Victimization Type** Physical and verbal victimization, both direct forms, are generally collectively referred to as overt victimization. Physical victimization involves physical attacks such as hitting, kicking, and pushing, while verbal victimization involves verbal abuse, teasing, and threats. Correspondingly, relational victimization is an indirect form of victimization, referring to intentional harm and attacks from peers in interpersonal relationships and social interactions (Crick & Bigbee, 1998). Relational victimization causes harm by damaging others' social relationships, sense of acceptance, and integration into social groups, making it difficult to meet social needs, and is considered the most harmful type of victimization (Wu et al., 2015). Relational victimization also has a covert nature, making it less easily detected and intervened upon than overt victimization, and its presence and impact are persistent. Therefore, relational victimization may pose a more serious threat to emotional health than overt victimization. Additionally, overt victimization is more common in younger children. From middle childhood onward, peer victimization is more likely to take the form of relational victimization, with overt victimization decreasing significantly (Casper & Card, 2017; Zhang et al., 2009). Meta-analyses of cross-sectional studies have also found that relational victimization is more closely linked to internalizing problems (Casper & Card, 2017; Wu et al., 2015). In summary, this study proposes **Hypothesis 7:** Compared to overt victimization, relational victimization has stronger reciprocal predictive effects with internalizing problems.

The relationships between overt victimization, relational victimization, and internalizing problems may also be moderated by cultural context, age, and assessment method. For example, research has found that relational victimization may be a more common type of victimization in Chinese cultural contexts (Chen et al., 2019), becomes more prominent with age (Casper & Card, 2017; Zhang et al., 2009), and is easily overlooked and underestimated when assessed by peers (Branson & Cornell, 2009). Given that differences in the relationships between different victimization types and internalizing problems across moderating factors represent important research questions in this field, this study further analyzed the moderating effects of longitudinal relationships between subtypes of peer victimization (overt victimization, relational victimization) and internalizing problems.

## 2.1 Literature Search and Screening

Chinese literature was searched through CNKI (journal and dissertation databases), Wanfang (journal and dissertation databases), and VIP journal database. Given the limited number of longitudinal studies on the relationship between peer victimization and problem behaviors in China, to comprehensively obtain literature, subject searches were conducted using “同伴侵害” (peer victimization), “身体侵害” (physical victimization), “言语侵害” (verbal victimization), “关系侵害” (relational victimization), and “外显侵害” (overt victimization), searching

for these terms in titles, keywords, and abstracts. In PsycINFO, Web of Science, Science Direct, and Springer databases, English literature was searched using “peer victimization,” “physical victimization,” “verbal victimization,” “relational victimization,” and “overt victimization” in titles. Literature relevant to this study was screened by reading titles, abstracts, or full texts. Additionally, the reference lists of included studies were examined to identify further studies.

Literature screening criteria were as follows: (1) quantitative studies on the longitudinal relationship between peer victimization and internalizing problems; (2) based on general definitions of child and adolescent age (Lin, 2018), initial participant age was determined to be 7 to 18 years; (3) studies used peer victimization scales and internalizing problem scales or scales involving at least one indicator of internalizing problems (depression, anxiety, loneliness); (4) studies reported necessary statistical information (sample size, correlation coefficients between peer victimization and internalizing problems at baseline, and at least one standardized regression coefficient from cross-lagged models or corresponding correlation coefficient); (5) studies with physically or mentally ill participants were excluded; (6) for duplicate publications, the literature with more detailed information needed for this study was retained. Based on these criteria, 89 studies meeting the standards were included by October 2021, comprising 99 independent effect sizes with 70,598 participants.

**Figure 1. Flowchart of literature screening for meta-analysis**

**Table 1. Basic information of original studies included in the meta-analysis**

Year	Cultural Context	Sample Size	Mean Age	rPV,IP	PV→IPa	IP→PVa
2020	United States	287	-	0.67	Self	Self
2011	Canada	-	-	0.50	Self	Self
...	...	...	...	...	...	...

*Note: In victimization type, 0=overall victimization, 1=physical victimization, 2=verbal victimization, 3=relational victimization, 4=overt victimization, 5=other forms such as cyber or property victimization; PV→IP indicates T1 peer victimization predicting T2 internalizing problems, IP→PV indicates T1 internalizing problems predicting T2 peer victimization; rPV,IP indicates the correlation between peer victimization and internalizing problems at T1, a indicates standardized regression coefficient.*

## 2.2 Coding

Following Lipsey and Wilson (2001), coding was conducted according to predetermined standards and procedures. Coding primarily included study characteristic information and effect size information. The former comprised author

names, publication year, sample size, female proportion, cultural context, age range and mean age, assessment methods for peer victimization and internalizing problems, victimization type, internalizing problem type, measurement interval, etc. The latter primarily referred to effect sizes, including correlation coefficients between variables, standardized regression coefficients, and other statistical data. One effect size was coded for each independent sample. If a single article contained multiple independent samples, they were coded separately. If an article reported data from multiple follow-up periods with identical measurement intervals, the average of these effect sizes was used in coding. If an article reported correlations between several forms of peer victimization and internalizing problems, these effect sizes were also averaged (van Geel et al., 2018). The same coder recoded all data after a two-week interval to check coding accuracy (Lei et al., 2020; Ye & Zhang, 2021). The consistency between the two coding sessions was 95.8%; discrepancies were corrected by consulting the original literature.

### 2.3 Meta-Analysis Procedure

**(1) Effect Size Calculation** This study used standardized regression coefficients from the reciprocal prediction between peer victimization and internalizing problems as effect sizes. As shown in Figure 2, the two-wave longitudinal model simultaneously reflects the stability of peer victimization and internalizing problems from T1 to T2 and their cross-lagged effects. This study focused primarily on cross-lagged effects. Standardized regression coefficients rather than cross-lagged correlation coefficients were chosen as effect sizes because the latter reflect not only the impact of the predictor on the outcome variable but also depend on the stability of variables across time points. For example, when two variables show strong concurrent correlation at T1, a large cross-lagged correlation coefficient may simply reflect high stability of peer victimization and internalizing problems. Cross-lagged regression analysis better controls for the influence of variable stability statistically; after controlling for the autoregressive effect of the outcome variable, it essentially reflects the impact of the T1 predictor on the change in the outcome variable between T1 and T2 (Sowislo & Orth, 2013).

#### Figure 2. Cross-lagged model

To enhance comparability across studies, priority was given to calculating effect sizes based on correlation coefficients  $r$  between peer victimization and internalizing problems. Among the included studies, five did not report correlation matrices; to retain as much data as possible, especially from Chinese cultural contexts, the regression coefficients from cross-lagged models were used directly as effect sizes. The effect size calculation formula is as follows (Sowislo & Orth, 2013):

When examining the predictive effect of T1 peer victimization on T2 internalizing problems,  $\beta_{Y1,2}$  refers to the standardized regression coefficient of T1 peer

victimization on T2 internalizing problems after controlling for T1 internalizing problems;  $rY1$  refers to the correlation between T1 peer victimization and T2 internalizing problems;  $rY2$  refers to the stability of the predicted variable, i.e., the correlation of internalizing problems between T1 and T2;  $r12$  refers to the concurrent correlation between the two predictors at T1, i.e., the correlation between peer victimization and internalizing problems. When examining the predictive effect of T1 internalizing problems on T2 peer victimization,  $\beta Y1,2$  refers to the standardized regression coefficient of T1 internalizing problems on T2 peer victimization;  $rY1$  refers to the correlation between T1 internalizing problems and T2 peer victimization;  $rY2$  refers to the correlation of peer victimization between T1 and T2;  $r12$  refers to the correlation between peer victimization and internalizing problems at T1.

**(2) Model Selection and Heterogeneity Testing** Meta-analysis primarily involves fixed-effects and random-effects models. The former assumes that true effect sizes are identical across studies, with differences in research results due to random error; the latter assumes that true effect sizes can differ across studies, with random error and sample differences potentially causing variation in results (Schmidt et al., 2009). Through literature review, this study determined that cultural context, victimization type, and other factors may influence the relationship between peer victimization and internalizing problems, thus selecting the random-effects model. Additionally, heterogeneity testing was conducted on included effect sizes, primarily using Q-tests and  $I^2$  tests. A significant Q-test indicates heterogeneous data, making the random-effects model appropriate; conversely, homogeneous data would suggest a fixed-effects model (Lipsey & Wilson, 2001). Larger  $I^2$  statistics indicate greater heterogeneity;  $I^2$  values of 25%, 50%, and 75% represent low, moderate, and high heterogeneity, respectively, with high heterogeneity being more suitable for random-effects models (Higgins et al., 2003).

**(3) Publication Bias Testing** Publication bias refers to the inability of selected literature to comprehensively represent the complete population of completed research in the field, primarily because significant results are more likely to be published. This study included not only published journal articles but also unpublished dissertations, helping to overcome publication bias. Funnel plots, fail-safe N, and Egger's regression method were used to test for publication bias.

**(4) Data Processing and Analysis** Data processing was conducted using Comprehensive Meta-Analysis Version 2.0 (CMA 2.0) software.

### 3.1 Heterogeneity Testing

The Q-test results for effect sizes of peer victimization predicting internalizing problems and internalizing problems predicting peer victimization were 221.673 ( $p < 0.001$ ) and 260.104 ( $p < 0.001$ ), respectively, indicating heterogeneity among effect sizes in the meta-analysis.  $I^2$  values were 60.302% and 70.012%,

respectively. According to  $I^2$  evaluation criteria, the random-effects model was more appropriate, and further examination of potential moderating effects in the reciprocal relationship was needed.

**Table 2. Heterogeneity test results for effect sizes of reciprocal prediction between peer victimization and internalizing problems**

Indicator	Model	Studies	Q-value	df(Q)	p-value	I-squared	Tau-squared
	PV→IP		221.673	88	<0.001	60.302%	0.003
	IP→PV		260.104	78	<0.001	70.012%	0.005

### 3.2 Publication Bias Testing

Funnel plots showed that effect sizes for the reciprocal prediction between peer victimization and internalizing problems were concentrated at the top of both plots and distributed relatively evenly on both sides of the overall effect size. Further fail-safe N and Egger's regression tests were conducted. Results showed that the fail-safe N for the reciprocal prediction relationship was 1,481 and 4,629, respectively, meaning that 1,481 and 4,629 additional studies, particularly those with non-significant results, would need to be included to overturn the reciprocal prediction relationship. Egger's regression results were non-significant, with intercepts of 0.441 (95% CI [-0.399, 1.282],  $p = 0.299$ ) for the peer victimization to internalizing problems relationship and 0.751 (95% CI [-0.215, 1.718],  $p = 0.125$ ) for the internalizing problems to peer victimization relationship. In summary, the meta-analysis results are relatively reliable, with little likelihood of severe publication bias.

### 3.3 Main Effect Testing

Random-effects model analysis was used to examine the strength of the two cross-lagged pathways. Results showed that the effect size for peer victimization predicting internalizing problems was 0.097, with a 95% confidence interval of [0.083, 0.110], not containing zero. The effect size for internalizing problems predicting peer victimization was 0.119, with a 95% confidence interval of [0.104, 0.135], not containing zero. In summary, peer victimization and internalizing problems in children and adolescents have a reciprocal predictive relationship.

**Table 3. Random-effects model analysis of the relationship between peer victimization and internalizing problems**

Indicator	Studies	Effect Size and 95% CI	Z-value	p-value
		Point Estimate	Lower	Upper
PV→IP	89	0.097	0.083	0.110
IP→PV	79	0.119	0.104	0.135

### 3.4 Moderating Effect Testing

In developmental psychology, age 11 or 12 is generally used as the boundary between childhood and adolescence (Lin, 2018). Additionally, previous meta-analyses have used age 12 as the cutoff (Reijntjes et al., 2010; Wu et al., 2015). To facilitate comparison with previous research findings, this study divided age into two subgroups: “under 12 years” and “12 years and older.” Regarding measurement intervals, one-year intervals were most common in original studies, accounting for 39.3% of cases. To maintain relative consistency with original studies for classification and result comparison, and considering the relative balance of effect sizes across subgroups, measurement intervals were divided into “within one year” and “one year and longer” subgroups.

Results showed that age and victimization type moderated the predictive effect of peer victimization on internalizing problems. Subgroup analysis for age showed a Q-value (between groups) of 4.246,  $p = 0.039$ , with stronger predictive effects in the under-12 group. Subgroup analysis for victimization type showed a Q-value (between groups) of 7.68,  $p = 0.006$ , with stronger predictive effects in the relational victimization group. Cultural context, measurement interval, assessment method, and problem type did not moderate the relationship between peer victimization and internalizing problems, with Q-values (between groups) ranging from 0.938 to 5.647,  $p > 0.05$ .

**Table 4. Random-effects model analysis of peer victimization predicting internalizing problems**

Moderator	Subgroup	Studies	Effect Size and 95% CI	Q-value (between)	p-value
Age	Under 12	38	Point Estimate 0.112	Lower 0.093	Upper 0.131
	12+	51	0.086	0.069	0.103
Victimization Type	Relational	36	0.119	0.100	0.138
	Overt	25	0.067	0.043	0.091

Measurement interval, victimization type, assessment method, and problem type moderated the prediction of peer victimization by internalizing problems. Subgroup analysis for measurement interval showed a Q-value (between groups) of 5.699,  $p = 0.017$ , with stronger predictive effects in the one-year-and-longer group. Subgroup analysis for victimization type showed a Q-value (between groups) of 16.176,  $p < 0.001$ , with stronger predictive effects in the relational victimization group. Subgroup analysis for assessment method showed a Q-value (between groups) of 5.351,  $p = 0.021$ , with stronger predictive power in the same-rater group. Subgroup analysis for problem type showed a Q-value (between groups) of 17.651,  $p = 0.001$ , with depression showing the strongest

predictive effect and anxiety the weakest. Cultural context and age did not moderate the relationship, with Q-values (between groups) of 1.616 and 0.000, respectively,  $p > 0.05$ .

**Table 5. Random-effects model analysis of internalizing problems predicting peer victimization**

Moderator	Subgroup	Studies	Effect Size and 95% CI	Q-value (between)	p-value
			Point Estimate	Lower	Upper
Measurement	Within	33	0.098	0.078	0.117
Interval	1 year				
	1 year+	46	0.135	0.115	0.155
Assessment	Same	50	0.130	0.112	0.148
Method	rater				
	Different	10	0.075	0.040	0.110
	rater				
Problem Type	Depression	39	0.144	0.122	0.166
	Anxiety	21	0.076	0.048	0.104
	Loneliness	19	0.124	0.094	0.154

Tables 6 and 7 show that in models of overt and relational victimization predicting internalizing problems, cultural context, age, measurement interval, assessment method, and problem type did not moderate the relationships, with Q-values (between groups) ranging from 0.055 to 1.998,  $p > 0.05$ .

**Table 6. Random-effects model analysis of overt victimization predicting internalizing problems**

Moderator	Subgroup	Studies	Effect Size and 95% CI	Q-value (between)	p-value
			Point Estimate	Lower	Upper
Measurement	Within	7	0.074	0.035	0.113
Interval	1 year				
	1 year+	18	0.064	0.036	0.092

**Table 7. Random-effects model analysis of relational victimization predicting internalizing problems**

Moderator	Subgroup	Studies	Effect Size and 95% CI	Q-value (between)	p-value
			Point Estimate	Lower	Upper

Moderator	Subgroup	Studies	Effect Size and 95% CI	Q-value (between)	p- value
Measurement Interval	Within 1 year	17	0.115	0.088	0.142
	1 year+	19	0.132	0.105	0.159

As shown in Tables 8 and 9, in models of internalizing problems predicting overt and relational victimization, age and assessment method did not moderate the relationships, with Q-values (between groups) ranging from 0.158 to 2.101,  $p > 0.05$ . Measurement interval and problem type moderated the predictive effects of internalizing problems on both overt and relational victimization. Subgroup analysis for measurement interval showed Q-values (between groups) of 12.77 ( $p < 0.001$ ) and 5.29 ( $p = 0.021$ ), respectively, with stronger predictive effects in the one-year-and-longer group. Subgroup analysis for problem type showed Q-values (between groups) of 27.1 and 11.372, respectively,  $p < 0.001$ , with loneliness and depression showing stronger predictive effects. Cultural context moderated the prediction of overt victimization by internalizing problems, with a Q-value (between groups) of 4.246,  $p = 0.039$ , but did not moderate the relational victimization model, with a Q-value (between groups) of 1.598,  $p > 0.05$ .

**Table 8. Random-effects model analysis of internalizing problems predicting overt victimization**

Moderator	Subgroup	Studies	Effect Size and 95% CI	Q-value (between)	p- value
Cultural Context	China	2	Point Estimate 0.040	Lower -0.024	Upper 0.104
	West	17	0.148	0.116	0.180
	Within Interval	7	0.075	0.035	0.115
Measurement Interval	1 year				
	1 year+	12	0.181	0.144	0.218

**Table 9. Random-effects model analysis of internalizing problems predicting relational victimization**

Moderator	Subgroup	Studies	Effect Size and 95% CI	Q-value (between)	p- value
Measurement Interval	Within 1 year	6	Point Estimate 0.090	Lower 0.048	Upper 0.132
	1 year+	13	0.164	0.128	0.200

Moderator Subgroup	Studies	Effect Size and 95% CI	Q-value (between)	p- value
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This study conducted a meta-analysis of longitudinal research on the relationship between peer victimization and internalizing problems in children and adolescents, covering 89 studies from the past two decades. The included literature was comprehensive, involving Chinese and Western participants with large sample sizes, diverse research instruments, and varied assessment methods. The diversity of effect size sources facilitated the integration of heterogeneity across studies, yielding more robust and reliable conclusions (Egger & Smith, 1997).

#### 4.1 Main Effects of the Interaction Between Peer Victimization and Internalizing Problems

The cross-lagged regression effect size for peer victimization predicting internalizing problems in children and adolescents was 0.097, while the effect size for internalizing problems predicting peer victimization was 0.119. Based on the original data included in the meta-analysis, baseline peer victimization generally had a direct predictive effect on internalizing problems within the subsequent two years, and internalizing problems also had a direct predictive effect on peer victimization within the subsequent two years. These results are consistent with previous research findings (Reijntjes et al., 2010), confirming Hypothesis 1 and validating the interaction model of the relationship between peer victimization and internalizing problems. Guo et al. (2017) found through longitudinal research that peer victimization and internalizing problems have a cyclical relationship. The present results are primarily based on two-wave longitudinal data, so conclusions cannot directly confirm a cyclical relationship. However, considering the age distribution and follow-up intervals of participants in the included studies, there is indeed a general possibility of a vicious cycle of mutual reinforcement between peer victimization and internalizing problems throughout childhood and adolescence. Childhood and adolescence are high-incidence periods for both peer victimization and internalizing problems. Internalizing problems make individuals easy targets for bullying, while a lack of effective coping mechanisms after victimization reinforces internalizing problems, and vice versa. In other words, children and adolescents continuously consolidate this adverse bidirectional relationship through their own factors (Guo et al., 2017).

#### 4.2 Moderating Effects of the Interaction Between Peer Victimization and Internalizing Problems

**(1) Moderating Effect of Cultural Context** The reciprocal predictive relationship between peer victimization and internalizing problems showed cross-cultural consistency, with no significant differences between Chinese and Western children and adolescents. This contradicts previous meta-analytic conclu-

sions that effect sizes for the relationship between peer victimization and internalizing problems were smaller in Eastern cultural contexts (Wu et al., 2015). The aforementioned meta-analysis primarily included cross-sectional studies and only three studies from Eastern cultural contexts. The present study focused mainly on comparisons between Chinese and Western cultures, excluding data from other Eastern countries. Regarding the harm of peer victimization, as Yun (2008) pointed out, peer victimization poses a greater threat to Korean adolescents than to Western adolescents because Korean society places greater value on collectivism (group harmony and belonging). The same is true for Japanese society (Kawabata, 2020). Similarly, in Chinese collectivist culture, where interpersonal dependence is stronger, peer victimization may have greater negative impacts, inducing more severe internalizing problems. However, the present findings do not support this hypothesis. Notably, Chinese cultural context studies included in this research were primarily from the past five years. A positive factor is that in recent years, the Chinese government and schools have increasingly emphasized the governance of school bullying, continuously implementing legislative and institutional measures aimed at shaping a positive school ecology and providing better protection for children and adolescents. These intervention measures help reduce the stigmatization of victims and provide them with more psychological support and practical assistance, which may alleviate the consequences of negative emotions to some extent.

The risk of internalizing problems leading to peer victimization was also similar among Chinese and Western children and adolescents, contrary to the study's hypothesis. Possible reasons include: First, the psychological symptom-driven mechanism is an important pathway through which internalizing problems induce peer victimization. Since psychological symptoms reflecting vulnerable characteristics, such as depression, anxiety, and loneliness, show cross-cultural consistency, and no evidence suggests cultural differences in aggressors' ability to identify these characteristics. Taking depression as an example, depressed individuals exhibit cognitive and social behavioral deficits such as low self-concept, negative peer beliefs, interpersonal skill deficits, and withdrawal, anxiety, and other behavioral and emotional characteristics. These characteristics themselves constitute risk factors for peer victimization, leading to more negative peer interactions (Rudolph et al., 2008; Ji et al., 2018). Second, evidence suggests that peer victimization in China may occur more frequently in the form of covert relational victimization (Chen et al., 2019). For aggressors, relational aggression is a more efficient and less costly aggressive behavior in collectivist cultures (Wang et al., 2021). That is, the types of peer victimization triggered by internalizing problems may differ between Chinese and Western cultures. This study further analyzed the moderating effect of cultural context on internalizing problems predicting overt and relational victimization. However, due to the 悬殊 disparity in effect sizes across cultural context subgroups, with only two effect sizes from Chinese cultural contexts, this question cannot be effectively answered.

**(2) Moderating Effect of Age** The predictive effect of peer victimization on internalizing problems was moderated by age, with stronger effects in the under-

12 group, confirming Hypothesis 3. However, Wu et al.'s (2015) meta-analysis found that the relationship between peer victimization and internalizing problems was stronger in groups aged 13 and older, noting that as the importance of friendship increases during adolescence, poor peer relationships easily lead to increased internalizing problems. Additionally, some argue that due to the "healthy context paradox," as age increases and overall peer victimization levels decrease, victimized individuals experience more severe internalizing problems, thus peer victimization has stronger predictive power for older groups. Previous cross-sectional research has confirmed this effect in concurrent relationships between peer victimization and problem behaviors (Garandeau et al., 2018; Gini et al., 2020; Liu et al., 2021). The present study primarily examined sequential effects between the two variables.

Both developmental contextualism and ecological systems theory emphasize the dynamic nature of individual-environment interactions along the temporal dimension (Yu et al., 2018; Zhang & Chen, 2009). Undeniably, both children and adolescents experience immediate negative emotional reactions after encountering negative interpersonal experiences. Due to the aforementioned "healthy context paradox" and the increased importance of friendship during adolescence, adolescent groups may produce more intense immediate emotional reactions. However, from a long-term impact perspective, coping styles become more mature with age. For example, as a primary way for individuals to shape their developmental trajectories, intentional self-regulation is an important individual developmental advantage that can moderate the erosive effect of peer victimization on adolescents' psychological need satisfaction, with high intentional self-regulators experiencing less impaired need satisfaction. Research shows that intentional self-regulation increases linearly during adolescence (Chang et al., 2020; Wang et al., 2020). The function of mature coping styles lies in effectively responding to stress caused by peer victimization through cognitive and emotional regulation, gradually restoring emotional states. Therefore, compared to child groups, adolescent groups with higher coping levels can recover more quickly from negative emotions.

The predictive effect of internalizing problems on peer victimization was not moderated by age, consistent with Hypothesis 3. Throughout childhood and adolescence, internalizing problems elicit comparable levels of peer victimization. Some researchers note that early adolescence is a turning point for developmental changes in different types of aggressive behavior, with relational aggression increasing and physical and verbal aggression decreasing (Björkqvist et al., 1992). Meta-analytic results also indicate that age moderates the relationship between overt victimization, relational victimization, and internalizing problems, with relational victimization becoming more closely related to internalizing problems and overt victimization less so with increasing age (Casper & Card, 2017). However, from a longitudinal perspective, integrating the results of this study's models of internalizing problems predicting overt and relational victimization confirms that the predictive effect of internalizing problems on peer victimization exists across age groups for both peer victimization overall

and its two subtypes.

**(3) Moderating Effect of Measurement Interval** Measurement interval moderated the predictive effect of internalizing problems on peer victimization, with stronger effects in the one-year-and-longer group, consistent with Hypothesis 4 but inconsistent with previous meta-analytic findings that measurement interval did not moderate this relationship (Reijntjes et al., 2010). Reijntjes et al.'s (2010) meta-analysis included only 11 studies on internalizing problems predicting peer victimization, with only three having measurement intervals within one year, affecting result stability. The present findings confirm that the predictive effect of internalizing problems strengthens over time. Possible reasons include: First, individuals with internalizing problems exhibit more withdrawal and compliance behaviors and lack peer support, making them easy targets for bullying. Their compliant responses to attacks further reinforce their victim status, forming a vicious cycle over time (Guo et al., 2017; Hanish & Guerra, 2002; Schwartz et al., 2001). Second, from the perpetrator's perspective, the homogeneity effect of aggressive behavior means that over time, aggressor groups become consistent in their selection of targets, further worsening victims' situations and causing sustained negative impacts (Huitsing & Veenstra, 2012; Sentse et al., 2014). Accordingly, some researchers emphasize that transitioning to new environments through school advancement provides an important opportunity for victims to escape peer victimization. However, for the two groups compared in this study, follow-up periods were basically within two years. Based on initial ages and grades, it can be inferred that most participants remained in relatively stable peer groups during the study period, resulting in increased victimization levels over time.

Measurement interval did not moderate the predictive effect of peer victimization on internalizing problems, also consistent with Hypothesis 4. The main reason is that the difference in measurement interval lengths between the two groups in this study was not substantial. Cognitive and emotional regulation factors that play key roles in the relationship between peer victimization and internalizing problems are relatively stable in the short term. Additionally, it should be noted that victim status has moderate to high stability (Yang et al., 2020). Therefore, longer measurement intervals likely mean higher victimization levels, which in turn lead to more severe internalizing problems. In the model of peer victimization predicting internalizing problems, the effect size for the one-year-and-longer group was indeed larger than for the within-one-year group, showing a tendency for stronger predictive power, but the difference did not reach significance. A meta-analysis of longitudinal research on the stability of peer victimization also showed that under the combined effects of personal coping, environmental transitions, and external interventions, the stability of victimization significantly decreased over intervals longer than one year, approaching a small effect size (Pouwels et al., 2016). It can be concluded that only a minority of individuals experience sustained peer victimization lasting more than one year. This study could not separate samples of chronic victims from non-chronic victims, which may have affected results to some extent. If

the adverse effects of peer victimization were specifically examined in chronic victim groups, a larger predictive effect for longer measurement intervals could be expected.

**(4) Moderating Effect of Assessment Method** Assessment method moderated the prediction of peer victimization by internalizing problems, with larger effect sizes in the self-report group, consistent with Hypothesis 5. Reijntjes et al.'s (2010) meta-analysis also showed that using the same versus different reporters for peer victimization and internalizing problems affected their relationship, with larger effect sizes when the same rater was used. That meta-analysis included various combinations of different raters such as children, adolescents, peers, teachers, and parents. This study focused only on the most frequently occurring raters in this topic's research: children/adolescents and peers. The higher correlation between internalizing problems and peer victimization in the self-report group may be due to common method bias. Because negative emotions are closely related to cognitive distortions, they may induce negative perceptions of peer relationships and biased recall in those experiencing them, leading to over-reporting of victimization (Scholte et al., 2013; Sentse et al., 2017).

However, assessment method did not moderate the prediction of internalizing problems by peer victimization, contrary to the hypothesis. Some research findings also do not support the conclusion that self-report amplifies the relationship between peer victimization and problem behaviors. For example, in the prediction of self-esteem by peer victimization, self-report showed larger effect sizes, while different assessment methods did not significantly differ in predicting peer victimization from self-esteem (van Geel et al., 2018). Other results show that whether information is provided by the same rater does not moderate the relationship between peer victimization and externalizing problems (Reijntjes et al., 2011). In summary, the role of assessment method in the longitudinal relationship between the two variables may be a more complex process that cannot be independently explained by common method bias. Changes in individuals' subjective factors over the two measurement occasions, the tendency for relational victimization to be overlooked in peer reports, and social desirability effects leading to underestimation of victimization levels in self-reports may all play roles (Branson & Cornell, 2009; Gromann et al., 2013). Some researchers note that peer nomination is the gold standard for measuring peer relationships, while psychological symptoms are best assessed through self-report; this combination is optimal for measuring their relationship (Mlawer et al., 2019). Based on the present findings, it can be determined that to avoid common method bias potentially caused by self-report in the predictive effect of internalizing problems, using peer report for peer victimization and self-report for internalizing problems is a more appropriate choice for this topic.

**(5) Moderating Effect of Problem Type** Results showed that problem type did not significantly moderate the prediction of internalizing problems by peer victimization. Problem type did moderate the prediction of peer victimization

by internalizing problems, with depression showing the strongest predictive effect, partially confirming Hypothesis 6. That is, the emotional reactions of children and adolescents after peer victimization are consistent in type and intensity, while among internalizing problems, depressed individuals are most likely to incur peer victimization. Meta-analyses of cross-sectional studies with Western participants found that peer victimization and its subtypes (overt, relational) had moderate correlations with depression, anxiety, and loneliness, but were more strongly linked to depression and loneliness and weakest with anxiety (Hawker & Boulton, 2000). Chinese cultural context research also found that the cyclical relationship between peer victimization and internalizing problems was mainly reflected in depression and loneliness, with unstable relationships with anxiety (Guo et al., 2017). Thus, the three indicators of internalizing problems play different roles in the longitudinal relationship with peer victimization.

Regarding the prediction of internalizing problems by peer victimization, effect sizes from largest to smallest were loneliness, depression, and anxiety, but the differences were not significant, contrary to the hypothesis that peer victimization would have a smaller impact on anxiety. One important reason may be that anxiety measures in some original studies included in this research actually contained social anxiety. Due to the stronger link between social anxiety and peer relationships, this may have enhanced the predictive effect of peer victimization on anxiety to some extent. Depression has special importance in predicting peer victimization. Depressed individuals, characterized primarily by low mood, often exhibit crying, lack of smiling, low reactivity, and disinterest. These behaviors reflecting social skill deficits make children and adolescents less popular among peers. Generally, depression leads to more negative social outcomes including victimization than anxiety and other emotions among same-age peers (Luchetti & Rapee, 2014). Moreover, depression is not a completely independent psychological structure; it actually contains components of other unpleasant emotional experiences such as loneliness and anxiety (Yang et al., 2000), as measurement tools like the Center for Epidemiological Studies Depression Scale also contain factors or items related to loneliness and anxiety.

**(6) Moderating Effect of Victimization Type** Relational victimization showed closer bidirectional relationships with internalizing problems than overt victimization, consistent with Hypothesis 7. The need to belong and maintain social connections with others is a fundamental human need, particularly prominent during childhood and adolescence when individuals are more dependent on peer relationships (Baumeister & Leary, 1995). Relational victimization involves intentional harm and attacks from peers in interpersonal relationships and social interactions, primarily manifested as spreading rumors, social exclusion, or using social status to threaten victims, directly endangering victims' self-concept and sense of social belonging (Crick & Bigbee, 1998; McLaughlin et al., 2009). Additionally, relational victimization is more covert, difficult to detect and intervene upon in a timely manner, and more likely to become a persistent source of stress for victims.

The stronger predictive effect of internalizing problems on relational victimization may be directly related to the forms of peer victimization experienced. Overt and relational victimization are independent constructs with different developmental trajectories. Zhang et al. (2009) noted that middle childhood is an important period for the development of relational victimization, when it begins to show an increasing trend. In this study, 88 original studies clearly reported participants' mean age, with 52 studies using adolescents aged 11 to 17, accounting for nearly 60%. Foreign research also indicates that the prevalence of relational victimization increases with age, becoming more common than overt victimization among both boys and girls during adolescence. The higher prevalence of relational victimization during adolescence is thought to result from increased punishment for physical victimization with age, inhibiting physical aggression, while cognitive development enables adolescents to learn more indirect ways to harm peers such as sarcasm and irony (Iyer-Eimerbrink & Jensen-Campbell, 2019).

Cultural context, measurement interval, assessment method, and problem type did not moderate the prediction of internalizing problems by overt or relational victimization, consistent with results for peer victimization predicting internalizing problems. In the two predictive models for victimization subtypes, age also did not moderate the relationships, inconsistent with the marginally significant age moderation result in the overall peer victimization model. Possible reasons include that the number of studies included in the age moderation analyses for overt and relational victimization was substantially smaller than for overall peer victimization, affecting the stability of marginally significant results. Meanwhile, in models of internalizing problems predicting overt and relational victimization, age moderation was non-significant, while measurement interval and problem type moderation were significant, consistent with results for internalizing problems predicting overall peer victimization. Differences existed for cultural context and assessment method. Specifically, cultural context moderated the prediction of overt victimization but not relational victimization, while assessment method did not moderate either subtype model. It should be noted that the Chinese cultural context subgroup contained only two effect sizes, and the different-rater subgroup also contained only two effect sizes. Overall, the effects of moderating factors were generally consistent across the bidirectional relationships between peer victimization and its subtypes (overt victimization, relational victimization) and internalizing problems, with occasional differences primarily due to insufficient effect sizes in subgroups for corresponding moderating factors in models of relationships between victimization subtypes and internalizing problems.

#### 4.3 Research Significance, Limitations, and Future Directions

This study confirms the reciprocal predictive relationship between peer victimization and internalizing problems in children and adolescents, suggesting that both the interpersonal risk model and symptom-driven model lack comprehen-

siveness in explaining their relationship, and provides reliable supporting evidence for the transactional model of development. By thoroughly mining existing research findings, this study deepens understanding of the nature and differences in their longitudinal relationship from six moderating dimensions, revealing the different roles moderating factors play in the two directional relationships. Notably, this study is the first to analyze moderating effects of Chinese versus Western cultural contexts, age, victimization type, and internalizing problem type in the relationship between peer victimization and internalizing problems, and the first meta-analysis to examine moderating effects in bidirectional relationships between peer victimization subtypes and internalizing problems, yielding valuable conclusions. For example, the reciprocal predictive relationship between peer victimization and internalizing problems shows cross-cultural consistency; relational victimization has closer bidirectional relationships with internalizing problems than overt victimization; the predictive effect of internalizing problems on peer victimization strengthens over time; the predictive effect of peer victimization on internalizing problems is stronger in child groups; depression is the strongest predictor of peer victimization among internalizing problems; and the effects of moderating factors are generally consistent across bidirectional relationships between peer victimization and its subtypes and internalizing problems. These results suggest the need to re-examine and interpret research on this topic from perspectives of research design, participant type, victimization type, assessment method, and internalizing problem type, and provide a useful basis for refining peer victimization theory and determining its boundaries of applicability. Additionally, research on this topic is burgeoning and increasingly tending toward longitudinal designs examining internal mechanisms. This study comprehensively reviews existing research findings, providing a quantitative review foundation and conceptual inspiration for subsequent studies.

The reciprocal predictive relationship between peer victimization and internalizing problems is universal among Chinese and Western children and adolescents, suggesting that school education needs to address both internal emotional problems and external aggressive behaviors to effectively block their connection, which is more helpful for peer victimization and school bullying governance than simply stopping and punishing aggressive behavior. Meanwhile, differences in the direction and strength of the relationship between peer victimization and internalizing problems across certain factors provide implications for more targeted interventions. For example, greater attention should be paid to relational victimization, which has closer bidirectional relationships with internalizing problems. The covert nature of relational victimization makes it easily overlooked, so the role of student leaders such as class monitors should be fully utilized. Depression is the most powerful predictor of peer victimization, so early screening and intervention for depression have unique value in reducing peer victimization. Although anti-victimization efforts should run through all school stages, the emotional problems caused by peer victimization are more severe during childhood, making primary school a key focus for peer victimization

prevention and intervention.

This study has several limitations that warrant improvement in future research: (1) Due to limitations of original studies, the number of effect sizes reported by gender was too small, and gender proportions across studies were relatively balanced, making it difficult to effectively examine gender moderation effects. Additionally, when examining cultural context, assessment method, and problem type moderation in relationships between peer victimization and its subtypes and internalizing problems, effect size numbers differed substantially across subgroups, with some subgroups having very few effect sizes, negatively impacting conclusion stability and requiring supplementary verification when more data become available. (2) This study only examined the bidirectional relationship between peer victimization and one aspect of problem behavior—internalizing problems. Children and adolescents are also in a high-incidence period for externalizing problems. Due to different natures of these two types of problem behaviors, the direction and strength of the relationship between externalizing problems and peer victimization may differ from those with internalizing problems. Future research could clarify this through meta-analysis of longitudinal studies on this topic.

## Conclusion

- (1) Peer victimization and internalizing problems in children and adolescents have a longitudinal reciprocal predictive relationship; high levels of peer victimization positively predict internalizing problems within the subsequent two years, and high levels of internalizing problems positively predict peer victimization within the subsequent two years. (2) In the prediction of internalizing problems by peer victimization, age and victimization type have moderating effects, with stronger effects in the under-12 group and relational victimization group. (3) Measurement interval, victimization type, assessment method, and problem type moderate the prediction of peer victimization by internalizing problems, with stronger effects in the one-year-and-longer group, relational victimization group, same-rater group, and depression group. (4) Chinese versus Western cultural context does not moderate either reciprocal prediction model. (5) The effects of moderating factors are generally consistent across bidirectional relationships between peer victimization and its subtypes (overt victimization, relational victimization) and internalizing problems.

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