



Peer Victimization, Depression, Conflict with Teachers, and Life Satisfaction: A Moderated Mediation Model Based on Hong Kong Children

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Accepted: 2 April 2026
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Abstract

Peer victimization is prevalent among school-age children worldwide, including the Hong Kong Special Administrative Region, China. Previous studies have identified the negative consequences of peer victimization for children, but few studies have examined the mediation mechanisms involved in the predictive relationship between peer victimization and life satisfaction. This study explored the predictive effect of peer victimization on children's life satisfaction by considering depression as a mediator, and teacher-student conflict as a moderator in the predictive relationship between peer victimization and depression among 1,144 children at Grade 6 (mean age=11.43 years, SD=0.61, 44.3% females) from 16 Hong Kong primary schools. Results demonstrated that peer victimization was positively associated with children's depression and teacher-student conflict, and it negatively predicted their life satisfaction. Depression partially mediated the relationship between children's peer victimization and life satisfaction, and teacher-student conflict moderated the association between peer victimization and depression as predicted. The present study contributes to our understanding of the underlying mechanisms involved in the predictive relationship between peer victimization and life satisfaction in children with depression serving as a mediator and teacher-student conflict as a moderator in the relationship between peer victimization and depression.

Keywords Peer victimization · Depression · Teacher-student conflict · Life satisfaction

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Published online: 21 April 2026

Springer

1 Introduction

Bullying is considered to be a global concern for youth populations because of its adverse impacts on the victims' mental health, academic adjustment, and quality of life (Flannery et al., 2004; Li et al., 2024). Peer victimization is defined as different types of repeated, intentional harm or abuse inflicted by children on their peers, including physical bullying, verbal abuse, social manipulation, and attacks on victim children's property (Mynard & Joseph, 2000). Bullying is commonly experienced by children from middle to late childhood in different countries around the world. In a meta-analysis conducted by Ariani et al. (2025), the prevalence rate of victimization was 25% across 116 studies ($N=603,231$ children and adolescents), which implies that globally, one-quarter of children and adolescents have experienced victimization. The United Nations Educational, Scientific and Cultural Organization report (2019) highlighted that 32% of students worldwide had encountered school bullying at least one or more times during the past month, which suggests nearly one in every three students has experienced school bullying.

With specific reference to Hong Kong, China, which is basically a Chinese society, a study found that 80.7% of the students reported peer victimization in primary school and secondary school settings, with primary school students more likely than secondary school students to experience physical victimization and attacks on property (Fung et al., 2021). Because of the high prevalence of peer victimization globally and locally, there is an urgent need to examine how victimization relates to children's mental health, as defined by their psychological symptoms and well-being. Besides, it is theoretically and practically important to understand the mediation mechanisms between peer victimization and student well-being.

Previous research has suggested that individuals who have suffered from peer victimization are more likely to experience comparatively low life satisfaction. Grounded in the General Strain Theory (GST; Agnew, 1992), persistent negative social experiences, such as peer victimization, can function as "strains" that precipitate negative affect and consequently, diminished well-being and life satisfaction. Empirical studies have also demonstrated that primary school students with a higher level of peer victimization were more likely to show lower levels of life satisfaction (Chai et al., 2020; Laftman & Modin, 2017; Varela et al., 2018). However, whether peer victimization is related to life satisfaction and whether there are mediating factors involved in this relationship remain unclear.

Children face many daily stressors, such as peer victimization and adverse relationships with teachers leading to an increase in risk for poor well-being, which may co-exist with intense emotional, psychological and biological changes in their transition to puberty (Llewellyn et al., 2012; Rudolph et al., 2011). As primary school students spend most of their time at school, their relationship with their teachers and peers play an important role in their life. With a specific focus on China, teachers often represent the primary or sole authority figure in the classroom, characterized by a stronger emphasis on respect, hierarchy, and enduring attachment, which is in contrast to Western educational settings that emphasize more collaborative and egalitarian interactions between students and teachers (Chen et al., 2025). Therefore, this study examined the relationship between students' peer victimization and life satis-

faction, with the proposal that depression is a mediator and teacher-student conflict is a moderator in the link between peer victimization and depression among Hong Kong primary school children.

1.1 The Association Between Victimization and Life Satisfaction

Life satisfaction refers to a self-evaluation of one's quality of life, an assessment or measurement in regard to mood, satisfaction with relationships, goal achievement, self-concept, and self-perceived ability to cope with life (Veenhoven, 1996). In Hong Kong, Ho (2023) reported that Hong Kong students' life satisfaction was two times lower than the average life satisfaction of students in other countries. Because primary school years represent the start of formal education for children, life satisfaction at this stage lays the foundation for their subsequent mental health, academic adjustment, and well-being (Xu et al., 2022). Hence, it is crucial to examine the determinants of life satisfaction, with particular attention paid to peer victimization as a prevalent and potential risk factor.

Empirical studies have found that peer victimization was negatively associated with student life satisfaction (Chai et al., 2020; Katsantonis et al., 2024; Laftman & Modin, 2017). Laftman and Modin (2017) similarly showed that lower levels of peer victimization in class were associated with higher psychological well-being (e.g., higher self-esteem, greater life satisfaction). In addition, Chai et al. (2020) highlighted that the students who were being bullied displayed lower self-rated health and life satisfaction, regardless of the types of their victimization experiences (i.e., offline or online). Researchers also identified an indirect association between victimization and life satisfaction, which was partially mediated by poor relationships with parents, teachers, and peers (Chai et al., 2020). Moreover, Katsantonis et al. (2024) revealed a significantly negative association between bullying victimization and overall life satisfaction, as well as positive affect, even after controlling for extensive factors affecting subjective well-being. These findings suggest that school bullying may negatively influence students' life satisfaction, with some key elements such as school satisfaction and interpersonal relationships playing a significant role in this dynamic. Therefore, in addition to understanding the relationship between peer victimization and life satisfaction, it is also crucial to explore the mediation processes involved, an understanding of which can provide further insights for intervention and prevention.

1.2 The Mediating Role of Depression

Depression is a common mental disorder, defined by the WHO as a state of low mood and/or a prolonged loss of interest in activities (World Health Organization, 2025). Depression negatively influences children's well-being and impairs their psychosocial development (Garber & Horowitz, 2002). The General Strain Theory (Agnew, 1992) provides a framework for understanding how stressful events or chronic stressors ultimately affect individuals' well-being, which has also been successfully applied to examine how life stressors or strains leading to different types of negative emotions (e.g., Daniels & Holtfreter, 2019). Based on this model, peer victimization experiences impact individuals' evaluation of their life by influencing their inter-

nal state, particularly depressive symptoms, which subsequently impair cognitive appraisal processes, leading to the development of pessimistic evaluative schemas toward overall life circumstances, which eventually result in lower life satisfaction (Li et al., 2021; Proctor et al., 2009).

Depression is influenced by negative interpersonal relationships, which are often expressed within, and intricately linked to, interpersonal interactions and relationships (Rudolph et al., 2011). Children who are bullied are more vulnerable to depression (Hawker & Boulton, 2000; Li et al., 2021, 2025). Empirical studies have also shown that peer victimization was positively linked to depression (Christina et al., 2021; Stapinski et al., 2015; Yang et al., 2016). Furthermore, life satisfaction was predicted by depression across different developmental stages (Kurtović & Ivančić, 2019). Specifically, children with depression tend to exhibit symptoms such as persistent sadness, irritability, cognitive impairment, changes in appetite, and sleep disturbances, which may in turn lead to decreased life satisfaction (Garber & Horowitz, 2002; Mehler-Wex & Kölch, 2008). Research also identified that individuals with depression were more likely to display a lower level of life satisfaction (Seon & Smith-Adcock, 2023).

Although there is indirect evidence for the path from peer victimization to depression and the path from depression to life satisfaction, very few studies have focused on the mediating role of depression. While evidence of full or partial mediation by self-compassion and emotional flexibility (İme, 2025), interpersonal relationships (Chai et al., 2020) and school satisfaction (Varela et al., 2018) in the predictive relationship between peer victimization and life satisfaction has been reported, evidence supporting the hypothesis that depression serves as a mediator between peer victimization and life satisfaction remains limited. Yavuzer and Civilidag (2014) found that mobbing could lead to depression, which in turn could result in a low level of life satisfaction. Besides, a full mediation effect of depressive mood was found in the relationship between peer victimization and life satisfaction among adolescents (Cava et al., 2018). However, existing studies on depression as a mediator are few and no study has been conducted in the Chinese context. Combining the conceptual model outlined by General Strain Theory with empirical evidence, it can be conjectured that the predictive relationship between peer victimization and life satisfaction would be mediated by depression. Nevertheless, given that these potential mediating links have not been tested among children thus far, a more comprehensive examination of these aforementioned sets of hypothesized associations is urgently needed.

1.3 The Moderating Role of Teacher-student Conflict

Teachers can be regarded as important attachment figures for children because of frequent interactions (Fabris et al., 2022; Li et al., 2026). Positive teacher-student relationships characterized by emotional closeness contribute to psychosocial adjustment (e.g., feelings of security), whereas negative teacher-student relationships are characterized by negative interactions and a general lack of rapport between the teacher and student (Ladd & Burgess, 2001). Notably, positive and negative teacher-student relationships are distinct, and negative teacher-student relationships have greater impact than positive teacher-student relationships on students' development. Many

studies have documented the significant impact of negative teacher-student interaction on shaping children's emotional and behavioral adjustments (e.g., Heekes et al., 2020). For instance, a multilevel meta-analysis by Bokkel et al. (2022) reported that negative relationship indicators (e.g., conflict) rather than positive indicators (e.g., closeness) have stronger associations with peer victimization. These findings support the hypothesis of a stronger influence of negative rather than positive teacher-student relationships on students' developmental outcomes.

The Stress Process Model (Pearlin, 1989) posits that the process of psychological adaptation to a stressor is a dynamic process influenced by both personal and environmental characteristics, which consists of two stages of appraisal: being cognitively appraised by evaluating the impact of the stress on one's life (primary appraisal) and considering what one can do in response (secondary appraisal). From this perspective, peer victimization is conceptualized as an interpersonal stressor, which would elicit psychological distress, and in turn undermine life satisfaction (Galand & Hospel, 2013). In secondary appraisal, teachers serve as a broader contextual resource to shape the coping resources of students. Teachers are role models and authority who play an important role in establishing classroom discipline and climate in Chinese context (Chen et al., 2025). Accordingly, teacher-student conflict functions as a resource drain and can negatively influence how students appraise their coping resources when facing peer victimization, and may further influence the direct negative impact of peer victimization on victims' depression.

According to ecological systems theory (Bronfenbrenner, 1979), individuals' developmental outcomes are affected by the characteristics of the individuals as well as the multiple systems in which their lives are embedded. From this perspective, interactions between teacher and student constitute a critical microsystem in a child's life. Furthermore, the ecological model emphasizes the importance of the interplay between microsystems. Peer victimization typically occurs within the peer relationship microsystem, while teacher-student conflict represents a dysfunctional element within another microsystem. Thus, teacher-student conflict can exacerbate the impact of victimization through mesosystemic interaction. This lack of support across microsystems allows risks to accumulate and multiply, which eventually hinder the child's well-being.

Previous research has examined the potential moderating role of teacher-student relationship and shown that a positive and supportive teacher-student relationship can buffer the negative effects of victimization on children's mental health while negative teacher-student relationship would exaggerate the negative impact (Mihalas et al., 2012; Yeung & Leadbeater, 2010). On the one hand, a positive teacher-student relationship can reduce the negative influence of victimization on children. Mihalas et al. (2012) found that teacher support negatively moderated the association between relational victimization and depression, particularly for moderate to severe levels of victimization because teachers provided emotional, informational and instructional support for students experiencing victimization. Similarly, Yeung and Leadbeater (2010) demonstrated that emotional support from teachers negatively moderated the association between students' peer victimization and maladaptive outcomes.

On the other hand, studies also revealed that teacher-student conflict, rather than teacher-student closeness, played a significant predictive role in students' well-being

(Saxer et al., 2025). Researchers also found that associations between victimization and depression were weaker among students exposed to higher levels of teacher-student conflict (Olivier et al., 2020). These findings also indicated a potential negative moderation role of teacher-student conflict. Given that primary school students in the higher grades (i.e., Grades 4–6) are in the stages of middle and late childhood with more autonomy and relatively weaker attachments to teachers (Eccles & Roeser, 2011), the protective role of teacher-student relationship in the association between peer victimization and well-being may become weaker with increase in age. Thus, examining this potentially distinct moderation effect is theoretically important, as it can help clarify developmental patterns of teacher influence and inform age-appropriate intervention strategies. Unfortunately, there are very limited studies examining the moderating effect of teacher-student relationship in the predictive relationship between peer victimization and depression.

2 The Present Study

Although previous studies have found significant associations among students' peer victimization, depression, teacher-student conflict, and life satisfaction (Chen et al., 2024; Elledge et al., 2016; Laftman & Modin, 2017), very few studies have explored the related mediating and moderating mechanisms between children's peer victimization and life satisfaction. Moreover, although the teacher-student relationships (TSR) are widely recognized as a buffer for victimization experiences, prior studies frequently have treated different dimensions in a holistic manner (e.g., conflict versus support) or have focused primarily on teacher support, while ignoring how specific components, particularly teacher-student conflict as a distinct stressor, may moderate victimization's impact. Therefore, the present study investigated the associations among students' peer victimization, depression, life satisfaction, and teacher-student relationships indexed by teacher-student conflict based on the Stress Process Model (Pearlin, 1989) and the General Strain Theory (Agnew, 1992). We attempted to address the following research questions and the associated hypotheses:

Research Question 1:

- 1a. What is the relationship between peer victimization and life satisfaction?
- 1b. What is the relationship between peer victimization and depression?
- 1c. What is the relationship between depression and life satisfaction?
- 1d. Does depression mediate the relationship between peer victimization and life satisfaction?

Based on the review presented above, we hypothesized that peer victimization would show a negative relationship with life satisfaction (Hypothesis 1a) and a positive relationship with depression (Hypothesis 1b). In addition, we expected that depression would negatively predict life satisfaction (Hypothesis 1c) and would mediate the relationship between peer victimization and life satisfaction (Hypothesis 1d).

Research Question 2:

- 2a. What is the relationship between teacher-student conflict and depression?
- 2b. Does teacher-student conflict play a moderating role in the relationship between peer victimization and depression?

Based on the finding of Heekes et al. (2020), we hypothesized that teacher-student conflict would be positively related to depression (Hypothesis 2a). Besides, we proposed two competing hypotheses on the moderating role of teacher-student conflict on the predictive relationship between peer victimization and depression. On the one hand, considering previous studies (Mihalas et al., 2012; Yeung & Leadbeater, 2010), teacher-student conflict can be regarded as a risk factor that consumes the energy of students, which would intensify the impact of peer victimization on depression (Hypothesis 2b). On the other hand, based on the findings of Olivier et al. (2020), it can be argued that teacher-student conflict would create a ceiling effect on student depression because it is a strong risk factor so that peer victimization may not add further impact on student depression (Hypothesis 2c). This possibility is higher in Chinese context where poor teacher-student relationship is regarded as very stressful by students.

3 Methods

3.1 Participants and Procedures

The study's participants were 1,144 children whom we recruited, using cluster sampling, from 16 primary schools across Hong Kong Island, Kowloon, and New Territories in Hong Kong. The students were in Grade 6 and were ages 10 to 14 years (Mean age = 11.43, $SD = 0.61$). The sample included 634 (55.4%) boys and 504 (44.1%) girls, with six individuals not reporting their gender. Regarding socioeconomic status (SES), 5.2% and 18.9% of participants reported receiving Comprehensive Social Security Assistance and the School Textbook Assistance Scheme, respectively. The Missing Completely at Random (MCAR) test (Little, 1988) was significant, and the normed chi-square (χ^2 / df) was 1.34. As this value is lower than the normed χ^2 of 3.0, the finding suggests that the pattern of missing data was not materially different from a random pattern (Bollen, 1989). Therefore, Full Information Maximum Likelihood (FIML) was used in subsequent analyses, producing unbiased estimates for data with non-normal indicator variables under the missing at random assumption.

This study was approved by the Ethics Committee of the university. Written informed consent was obtained from the participants, their parents, and their schools. The participants were informed of the purpose and significance of the current study, and they filled out a 30-minute paper-and-pencil questionnaire voluntarily and anonymously under the instruction of a trained research assistant.

3.2 Measures

3.2.1 Peer Victimization

Peer victimization was measured by the Victim subscale of the Chinese version of the Olweus Bully/Victim Questionnaire (Zhang et al., 1999). A total of six items were used, allowing the students to report how frequently they were bullied by others during the current semester (e.g., “Have you ever been called mean nicknames or teased by your classmates?”). The children responded to the items using a five-point Likert scale, ranging from 1 (it hasn’t happened in the past couple of months) to 5 (several times a week). Mean scores were calculated, and higher scores indicated higher frequencies of victimization. In this study, the Cronbach’s α for the Victim subscale was 0.772.

3.2.2 Life Satisfaction

The Satisfaction with Life Scale (SWLS; Diener et al., 1985; Shek & Li, 2016 for the Chinese version) was used to assess the life satisfaction of the children. The SWLS consists of five items, each scored on a seven-point scale ranging from 1 (strongly disagree) to 7 (strongly agree). Three of the items tap into current life satisfaction and positive evaluations of the participants’ lives (e.g., “In most ways, my life is close to my ideal”), and the other two items evaluate past life satisfaction (i.e., “So far I have gotten the important things I want in life” and “If I could live my life over, I would change almost nothing”). In the current study, the mean score of the SWLS was tested and the Cronbach’s α for the SWLS was 0.838, indicating good internal consistency.

3.2.3 Depression

The Hospital Anxiety and Depression Scale (HADS, Zigmond & Snaith, 1983) is broadly utilized to assess anxiety and depression, focusing on non-physical symptoms. The validity and reliability of the HADS have been widely examined globally in both clinical and community settings (Li et al., 2021). We measured depression by the HADS Depression subscale, which uses a seven-item questionnaire. Students responded to each question using a four-point Likert scale, ranging from 0 (never), to 1 (sometimes), 2 (often), or 3 (always). The Cronbach’s α for depression in the current study was 0.671.

3.2.4 Teacher-student Conflict

The Student Version of the Teacher–Student Relationship Inventory (S-TSRI; Ang et al., 2020; Li et al., 2026) captures three dimensions of the quality of the teacher-student relationship: Satisfaction, Instrumental Help, and Conflict from the students’ perspective. We used the Conflict subscale of the S-TSRI to measure conflict in the teacher-student relationships in the present study. The participants responded to four items (e.g., “If this teacher is absent, I feel relieved”) using a five-point scale, ranging from 1 (almost never true) to 5 (almost always true). Mean scores were calculated,

with higher scores indicating a stronger disposition toward higher levels of conflict in the teacher-student relationship. The Cronbach's α was excellent at 0.903 in this study.

3.2.5 Covariates

Based on previous studies (Von Marées & Petermann, 2010; Wang et al., 2024), covariates included (a) students' gender (1=male, 2=female); (b) students' age; (c) SES, which was assessed by asking whether their family received any financial assistance (i.e., "Does your family currently receive Comprehensive Social Security Assistance?" and "Do you currently receive student textbook allowance?") (Sirin, 2005). This information was collected along with other variables from participants.

3.3 Data Analysis

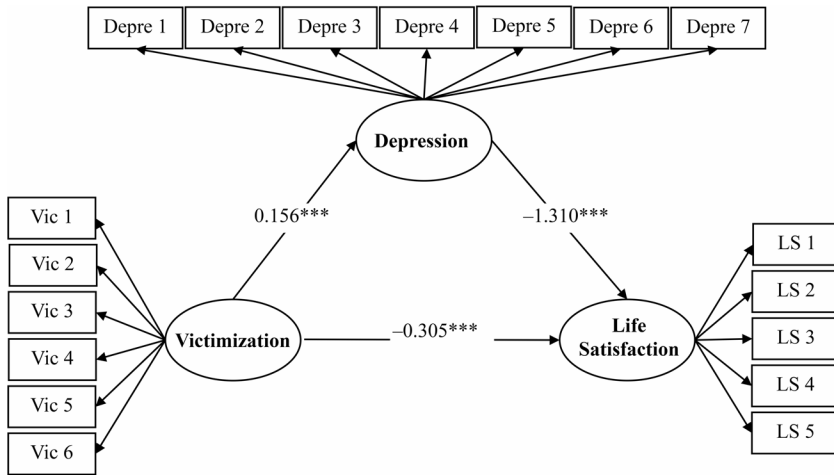
Data were analyzed using IBM SPSS 30.0 and Mplus 8.11 (Muthén & Muthén, 1998–2024). We used SPSS to conduct the preliminary analyses, including descriptive statistics and Pearson's correlations of the key variables. We then conducted a structural equation modeling (SEM) path analysis that was based on the models in Fig. 1A and B, using Mplus 8.11 for the total sample. The percentile bootstrapping approach ($N=1,000$ bootstrap samples) with standard maximum likelihood estimation was used to test the significance of the mediated effects and produce percentile confidence intervals. A 95% confidence interval excluding zero indicated that the indirect effect was statistically significant at the 0.05 level. The model fit was evaluated with multiple indicators, including the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), the Root Mean Square Error of Approximation (RMSEA), and the Standardized Root Mean Square Residual (SRMR). As indicators of a good fit, we used cut-off values close to 0.90 for the CFI and TLI, RMSEA values less than 0.08, and SRMR values less than 0.06 (Browne & Cudeck, 1992; Hooper et al., 2008; Hu et al., 1992).

Regarding moderated mediation analysis, the maximum likelihood robust estimator (MLR) was used to account for nonnormally distributed data. Moreover, mediation analyses with moderation were considered significant at p -values smaller than 0.05. The coefficients were considered significant if the 95% confidence interval (CI) excluded the value of zero. Covariates were also included in the data analyses.

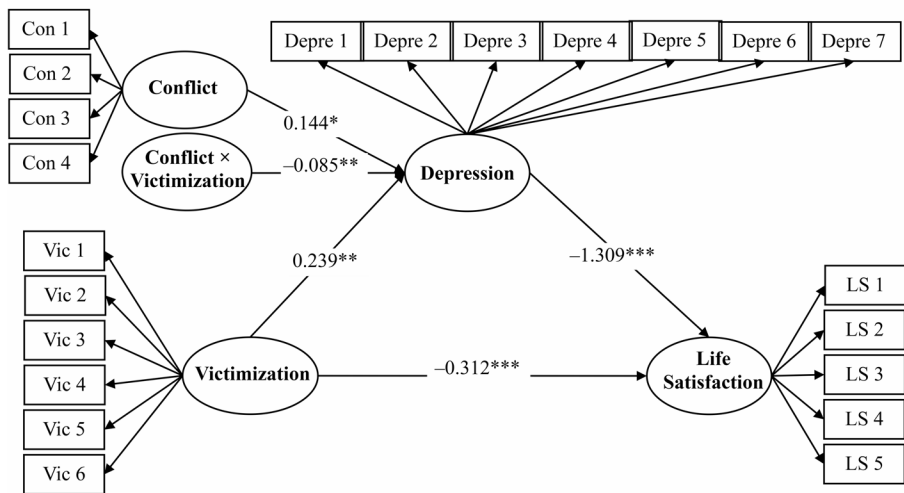
4 Results

4.1 Descriptive Statistics and Pearson's Correlations

Table 1 provides the values of the means and SDs of the variables, and the Pearson's correlations between the study variables, for the sample of Hong Kong children. The results indicated that a higher level of peer victimization was correlated with a lower level of life satisfaction ($r = -.217, p < .001$), greater depression ($r = .212, p < .001$), and more teacher-student conflict ($r = .200, p < .001$). Meanwhile, depression was



(A)



(B)

Fig. 1 Path results from peer victimization to life satisfaction: **(A)** Simple mediation model, **(B)** Moderated mediation model. Note. Conflict = Teacher-student conflict; Victimization = Peer victimization; Con = Item of teacher-student conflict; Vic = Item of peer victimization; Depre = Item of depression; LS = Item of life satisfaction

Table 1 Descriptive statistics and correlations among the study's main variables ($N=1,144$)

Variable	$M \pm SD$	Minimum	Maximum	1	2	3	4
1. Peer victimization	1.57 ± 0.68	1.0	5.0	1			
2. Depression	1.05 ± 0.55	0.0	3.0	0.212***	1		
3. Life satisfaction	4.62 ± 1.33	1.0	7.0	-0.217***	-0.526***	1	
4. Teacher-student conflict	1.62 ± 0.91	1.0	5.0	0.200***	0.174***	-0.132***	1
5. age	11.43 ± 0.61	6	15				

M mean, SD standard deviation. *** $p < .001$

negatively associated with life satisfaction ($r = -.526, p < .001$) and had a significantly positive relationship with teacher-student conflict ($r = .174, p < .001$). The relationships were in the predicted directions.

4.2 Peer Victimization and Life Satisfaction, with Depression as a Mediator

Figure 1a shows results from the SEM testing the direct effect of peer victimization on depression, and the indirect effect through depression with gender, age and SES as covariates. The mediating model exhibited an adequate model fit to the data (CFI=0.934, TLI=0.922, RMSEA=0.046, SRMR=0.050). The result demonstrates a significant negative association between peer victimization and life satisfaction ($b = -0.305, p < .001, 95\% \text{ CI} = [-0.443, -0.197]$), supporting *Hypothesis 1a*. Besides, higher peer victimization predicted a higher level of depression ($b = 0.156, p < .001, 95\% \text{ CI} = [0.084, 0.230]$), and higher depression was related to lower life satisfaction ($b = -1.310, p < .001, 95\% \text{ CI} = [-1.591, -1.060]$), both of which supported *Hypotheses 1b* and *1c*. Regarding the mediation effect, depression was found to play a partial mediating role in the relationship of peer victimization and life satisfaction, with a significant indirect effect (*indirect effect* = $-0.204, p < .001, 95\% \text{ CI} = [-0.304, -0.107]$), supporting *Hypothesis 1d*.

4.3 Peer Victimization and Life Satisfaction: A Moderated Mediation Model

Although the model fit index of the moderated mediation model (Akaike Information Criterion, AIC=49705.850, Bayesian Information Criterion, BIC=50119.196; sample size adjusted BIC, aBIC=49842.908) exhibited a slight increase compared with the mediation model (AIC=42335.993, BIC=42663.657; aBIC=42444.553), all of the paths showed significant results in the predicted directions. Regarding the effect size, the model explained 8.9% of the variance in depression (a medium effect) and 44.7% of the variance in life satisfaction (a large effect). These results provide support for the moderated mediation model. As shown in Table 2 and Fig. 1b, teacher-student conflict demonstrated a significant positive relationship with depression ($b = 0.144, p < .05, 95\% \text{ CI} = [0.012, 0.275]$), which was consistent with *Hypothesis 2a*. Furthermore, the interaction between peer victimization and teacher-student conflict significantly and negatively predicted depression ($b = -0.085, p < .01, 95\% \text{ CI} = [-0.139, -0.031]$). This result supported *Hypothesis 2c* rather than *Hypothesis 2b*, indicating that teacher-student conflict is more likely to have a ceiling effect on depression, rather than a protective effect.

Table 2 Results of moderated mediation analyses testing the moderating effects of teacher-student conflict on the indirect relationship between peer victimization and life satisfaction through depression

Path	b	SE	95% CI
The mediation model			
Peer victimization → depression	0.156***	0.037	[0.084, 0.230]
Peer victimization → life satisfaction	-0.305***	0.061	[-0.443, -0.197]
Depression → life satisfaction	-1.310***	0.137	[-1.591, -1.060]
The moderated mediation model			
Peer victimization → depression	0.239**	0.085	[0.072, 0.405]
Peer victimization → life satisfaction	-0.312***	0.062	[-0.433, -0.192]
Depression → life satisfaction	-1.309***	0.131	[-1.566, -1.053]
Teacher-student conflict → depression	0.144*	0.067	[0.012, 0.275]
Peer victimization × teacher-student conflict → depression	-0.085**	0.028	[-0.139, -0.031]

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

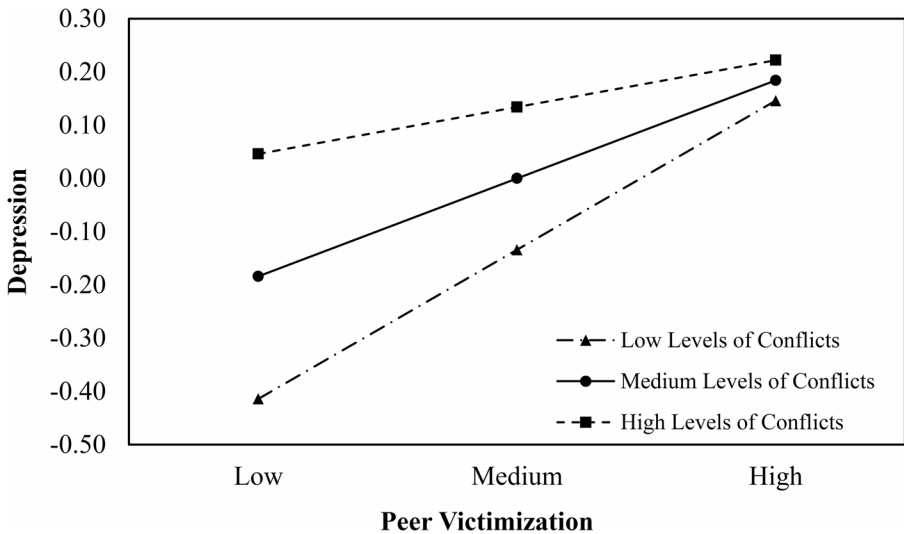


Fig. 2 Simple slopes of the interaction effect: Peer victimization × Teacher-student conflict

Teacher-student conflict was divided into three levels: the mean minus one standard deviation ($M-1SD$), the mean (M), and the mean plus one standard deviation ($M+1SD$), to show the moderating effect of teacher-student conflict on the relationship between peer victimization and depression. The resulting simple slope plot is presented in Fig. 2. Regarding the direct effect of peer victimization on depression, simple slope analysis showed that among children with a low level of teacher-student conflict ($M-1SD$), the direct effect of peer victimization on depression was significant ($b=0.324$, $p < .01$, 95% CI = [0.130, 0.518]). Among children with a medium

level of teacher-student conflict (M), the direct effect of peer victimization on depression was significant ($b=0.239, p < .01, 95\% \text{ CI} = [0.072, 0.405]$). However, the effect was only marginally significant ($b=0.153, p = .05, 95\% \text{ CI} = [-0.001, 0.308]$) in the sample of children with a high level of teacher-student conflict ($M+1SD$). Regarding the indirect effect, simple slope analysis suggested that among children with a low level of teacher-student conflict ($M-1SD$), the indirect effect of peer victimization on life satisfaction via depression was significant ($b = -0.424, p < .01, 95\% \text{ CI} = [-0.674, -0.174]$). Among children with a medium level of teacher-student conflict (M), the indirect effect of peer victimization on life satisfaction via depression was significant ($b = -0.312, p < .01, 95\% \text{ CI} = [-0.529, -0.096]$). However, the indirect effect was only marginally significant ($b = -0.201, p = .05, 95\% \text{ CI} = [-0.402, 0.001]$) in the sample of children with a high level of teacher-student conflict ($M+1SD$).

5 Discussion

This study investigated the predictive effects of two forms of interpersonal relationships (i.e., peer victimization and teacher-student conflict) on depression and their further impact on life satisfaction among primary school students in Chinese societies. As predicted, our results showed that there was a negative association between peer victimization and life satisfaction (*Hypothesis 1a*), with depression partially mediating this association (*Hypotheses 1b, 1c, and 1d*). Furthermore, as supported by a moderated mediation model, there was a positive association between teacher-student conflict and depression (*Hypothesis 2a*), with conflict with teachers negatively moderating the association between peer victimization and depression (*Hypothesis 2c*).

This study revealed a negative association between peer victimization and life satisfaction, which was aligned with previous research (Blood et al., 2011; Castelli & Marcionetti, 2024; Miranda et al., 2019). In a meta-analysis, Chen et al. (2024) revealed that traditional victimization was negatively associated with life satisfaction among victims, and they suggested that victimization might undermine basic psychological needs, which then can lead to depression, reduced life satisfaction, and adjustment difficulties. They also stated that victimization experiences could further foster a negative bias toward oneself and others via social-cognitive processing, thereby lowering the victims' own satisfaction and reducing their well-being (Chen et al., 2024).

In line with previous studies, we also found that peer victimization experiences were associated with the occurrence of depressive symptoms among the students (Bartlett et al., 2024; Estévez et al., 2019), an association that could be explained by victims' heightened sensitivity to negative psychological emotions. Zwierzynska et al. (2013) pointed out that depressive symptoms were predicted by victimization in both the short term and long term, and individuals who experienced peer victimization were more likely to report consistently high (top tenth percentile) depression scores over time. Therefore, this also implies that individuals with peer victimization experiences are more vulnerable to depression.

Our results suggest that depression partially mediated the association between peer victimization and life satisfaction, with peer victimization exerting a significant direct effect on life satisfaction and a significant indirect effect on life satisfaction via depression. This finding implies that individuals who experience peer victimization are more likely to suffer from depression, and that in turn reduces children's life satisfaction. Although limited studies have directly examined the mediating role of depression, indirect evidence for this mediation has been reported across several studies (see Christina et al., 2021; Gui et al., 2025 for a review).

Previous studies have consistently identified a negative relationship between peer victimization and depression (e.g., Christina et al., 2021; Hawker & Boulton, 2000; Mihalas et al., 2012). Moreover, a significant and negative association between depression and life satisfaction has been found in empirical research (Meule & Voderholzer, 2020; Seo et al., 2018), suggesting that when depression increases, life satisfaction decreases among victims who have experienced peer victimization. This finding is also consistent with the General Strain Theory (Agnew, 1992), which posits that peer victimization operates as a chronic strain that directly triggers depressive affect while it simultaneously erodes life satisfaction. In addition, strains trigger both direct harm and indirect pathways, via affective disruption. Moreover, Barchia and Bussey (2010) highlighted that depression rumination partially mediated the association between peer victimization and depression, because students with victimization experiences had a higher likelihood of recalling moments of depression, and that recall aggravated their level of depression over time. Additionally, such rumination exemplifies the affective extension principle: depression affect spawns secondary maladaptation (e.g., cognitive fixation), which further amplifies the decrease in life satisfaction, and that observation is precisely aligned with our results in which depression transmitted and intensified victimization's impact on the students' life satisfaction (Lyubomirsky & Nolen-Hoeksema, 1995).

Our moderated mediation analysis revealed a significant negative moderating effect of teacher-student conflict on the association between peer victimization and depression. Specifically, higher levels of teacher-student conflict were associated with a weaker link between peer victimization and depression. Our finding aligns with Olivier et al. (2020), who also observed a negative moderating role of teacher-student conflict in the relationship between peer victimization and depression. We propose that this negative moderating effect may reflect an emotional adaptation or desensitization process creating a ceiling effect. In high-conflict environments, students may become accustomed to negative interactions, potentially leading to emotional numbing in response to bullying (e.g., perceiving teacher indifference as making victimization less impactful). Conversely, in low-conflict environments, the internalization of distress (e.g., self-blame: "The teacher is good to me, yet I am bullied; it must be my fault") (Graham & Juvonen, 1998) might amplify the depressive impact of victimization. This interpretation suggests a complex, "double-edged sword" dynamic where the relationship quality interacts with victimization in non-linear ways, challenging simple protective/risk assumptions (Demaray et al., 2006).

However, our finding diverges from studies emphasizing the purely protective role of positive teacher-student relationships (e.g., Mihalas et al., 2012; Yeung & Leadbeater, 2010), and those proposing that a supportive teacher-student relationship

serves as an attachment and a buffering role for children (e.g., Berkowitz & Winstok, 2022; Pianta, 1999; Sulkowski & Simmons, 2018), which may be partly explained by developmental shifts in early adolescence. The age group of the children included in our study coincides with a period where peer relationships become important, potentially diminishing the attachment role and protective function of teachers compared to childhood (Nickerson & Nagle, 2005; Oriol et al., 2025).

Furthermore, cultural context might influence how conflict is interpreted. Teachers in Confucian-heritage contexts like Hong Kong are vested with heightened moral authority and responsibility for student development (Chen et al., 2025). In this context, teacher-student conflict could be regarded as attention from teachers rather than a strain, through which students learn how to express dissent, thereby potentially decreasing the emotional impact of peer victimization. Overall, although the quality of the teacher-student relationship is recognized as a key factor in children's emotional and social adjustment (De Laet et al., 2016), the significance of peer relationships becomes increasingly central during early adolescence. Consequently, given that transition of developmental stage and the mixed findings in the literature regarding how peer and teacher-student relationships interact to influence students' psychological outcomes, further research is needed to clarify the independent effects of peer victimization and conflict in the teacher-student relationship, as well as their joint effects, from a longitudinal perspective.

5.1 Limitations, Future Directions, and Implications

This study innovatively explored the association between peer victimization and life satisfaction in early adolescence, with the mediating role of depression and the moderating role of teacher-student conflict. Some limitations remained, however. First, all of the participants included in this study were drawn from primary schools in Hong Kong, perhaps limiting the generalizability of the findings. Future studies are therefore needed to replicate and extend these findings in other areas and different cultural contexts. Second, cross-sectional data were collected in this study. A future longitudinal design can be considered to investigate more stable relationships between these variables. Third, although grounded in Pearlin's (1989) Stress Process Model, this study focused solely on depressive symptoms. Future studies therefore could consider other mediators, such as school belonging—mechanisms critical to comprehensively unpacking victimization's range of impacts on children's well-being. Fourth, in this study, the Cronbach's α for the self-reported depression index was 0.671, slightly lower than the conventional threshold of 0.70. While Alpha alone is not the sole indicator (Schmitt, 1996), we still acknowledge this limitation and plan to explore more assessment tools with more stable and higher reliabilities or adopt multi-informant reports to measure children's depression.

This study's findings provide implications for educational practitioners and policy makers. First, given the alarmingly high prevalence of peer victimization and its severe impacts on depression and life satisfaction among upper-primary students, schools must establish monitoring and screening procedures for timely prevention and intervention. Second, this study reveals, for the first time, the paradoxical amplifying effect that low-conflict teacher-student relationships have on harm from bully-

ing, and this insight into their dual-edged nature highlights the urgent need for more nuanced and context-sensitive intervention strategies. Specifically, in low-teacher-student-conflict-level classroom environments, educators should remain vigilant to students' hidden psychological distress. Although harmonious teacher-student relationships are generally beneficial, they may lead bullied students to conceal their suffering to avoid disrupting the positive dynamic. Teachers are thus encouraged to proactively identify potential signs of victimization, such as social withdrawal or sudden avoidance of interaction, rather than relying solely on visible classroom harmony. In contrast, within high-teacher-student-conflict-level settings, although bullying victimization may be less directly predictive of depression, victimized students still may express their distress, perhaps through externalizing behaviors such as aggression or school disengagement. In such contexts, interventions should aim not only to improve the quality of teacher-student relationships but also to establish multi-tiered support systems designed to address the students' behavioral and emotional needs. Third, incorporating teacher-student interaction training into regular professional development may help reduce negative relational patterns. As previous research has shown (Kang et al., 2021), such programs can effectively shift the role of teachers from potential stressors to protective agents, thereby contributing to a more beneficial school climate. Finally, the various roles of teachers and peers that were demonstrated in this study have also indicated that for primary school students in the upper grades, the role of teachers as attachment figures has changed, underscoring the crucial challenge of dealing with teacher-student relationships and peer relationships simultaneously.

Conclusion

This study generates an innovative perspective on students' well-being by revealing the predictive relationship between peer victimization and life satisfaction, with depression and teacher-student conflict as intervening factors (mediator and moderator, respectively). Regarding depression, parents and teachers should realize the negative impact of peer victimization on depression when assessing the origin of depression. For teacher-student relationship, the present findings offer a more nuanced conceptual model for understanding how school-related factors may promote children's well-being. These findings highlight that teacher-student relationship should be taken into account when we handle peer victimization. Early and targeted interventions aimed at building a healthy and positive relationship between students and teachers would benefit children's life satisfaction and their long-term well-being.

Acknowledgements We are grateful to all the respondents for their participation in this study. We also thank Ms. Xintong Zhang and Ms. Louisa Lei for their assistance with literature review and data checking.

Author Contributions Xiang Li: conceptualization, data curation, formal analysis, funding acquisition, investigation, supervision, methodology, project administration, writing - original draft, and writing - review and editing. Esther Y. W. Shek: investigation, formal analysis, writing - original draft, and writing - review and editing. Daniel T. L. Shek: writing - review & editing. Meiru Deng: Formal analysis, writing - review and editing. All authors reviewed and approved the final manuscript.

Funding Open access funding provided by The Hong Kong Polytechnic University. This research is financially supported by the Research Grants Council General Research Fund (Project no. 15614423), University Grants Committee, Hong Kong, which was awarded to Dr. Xiang Li.

Data Availability Data available on request from the corresponding author.

Declarations

Competing interests The authors declare no competing interests.

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