

Serial Mediation of Rumination and Emotion Dysregulation in the Relationship Between Peer Victimization and Adolescent Depression

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ABSTRACT

Objective: This study aimed to examine the serial mediating roles of rumination and emotion dysregulation in the relationship between peer victimization and depressive symptoms among adolescents in Mexico.

Methods and Materials: This cross-sectional correlational study was conducted among 657 adolescents aged 13–18 years enrolled in public and private secondary and upper-secondary schools in Mexico City during the 2025–2026 academic year. Participants were selected through multistage cluster sampling. Peer victimization was assessed using the Multidimensional Peer Victimization Scale, rumination using the rumination subscale of the Children's Response Styles Questionnaire, emotion dysregulation using the Difficulties in Emotion Regulation Scale, and depressive symptoms using the Patient Health Questionnaire-9. Data were analyzed using IBM SPSS Statistics version 29 and PROCESS macro Model 6. Pearson correlations, multiple regression analyses, and serial mediation analysis with 5,000 bootstrap resamples were performed. Age and sex were entered as covariates, and indirect effects were considered significant when 95% bootstrap confidence intervals excluded zero.

Findings: Peer victimization significantly predicted rumination ($\beta = .47, p < .001$), emotion dysregulation ($\beta = .13, p < .001$), and depressive symptoms ($\beta = .15, p < .001$). Rumination significantly predicted emotion dysregulation ($\beta = .55, p < .001$) and depressive symptoms ($\beta = .25, p < .001$), while emotion dysregulation significantly predicted depressive symptoms ($\beta = .45, p < .001$). The final model explained 51% of the variance in depressive symptoms, $F(5, 651) = 133.74, p < .001$. The total indirect effect of peer victimization on depression was significant ($B = 0.31, 95\% \text{ Boot CI } [0.25, 0.38]$). The serial indirect pathway through rumination and emotion dysregulation was also significant ($B = 0.12, 95\% \text{ Boot CI } [0.09, 0.16]$).

Conclusion: Peer victimization was associated with adolescent depressive symptoms both directly and indirectly through a sequential cognitive-emotional pathway involving increased rumination followed by greater emotion dysregulation.

Keywords: Peer Victimization; Rumination; Emotion Dysregulation; Depression; Adolescents; Serial Mediation

1. Introduction

Adolescence is a developmental period characterized by profound biological, cognitive, emotional, and social changes, during which relationships with peers become increasingly central to identity formation, belonging, emotional security, and psychological adjustment. Although peer relationships can provide companionship, validation, and opportunities for social learning, they can also become important sources of stress when adolescents experience exclusion, humiliation, verbal aggression, physical aggression, relational manipulation, or other forms of peer victimization. Such adverse peer experiences are particularly consequential because they occur at a developmental stage in which sensitivity to interpersonal evaluation and social acceptance is heightened. Depression during adolescence is therefore best understood not only as an individual emotional disorder but also as an outcome embedded within a broader developmental and interpersonal context in which stress exposure, social relationships, cognitive vulnerability, and emotion-regulation processes interact over time (Gibb et al., 2026; Giletta, 2026). Contemporary research on adolescent mental health has consistently identified interpersonal stressors, including peer difficulties and bullying victimization, among the most important psychosocial risk factors for depressive symptoms and related internalizing problems (Dianovinina & Surjaningrum, 2023; Lin & Guo, 2024). Understanding how peer victimization becomes psychologically translated into depressive symptoms is therefore a critical objective for both developmental psychopathology and preventive intervention research.

Peer victimization refers to repeated or significant exposure to aggressive, humiliating, coercive, or exclusionary behaviors perpetrated by peers, and it may occur through physical, verbal, relational, social, or digital channels. Its developmental significance extends beyond the immediate distress caused by the victimizing event because repeated victimization can modify adolescents' expectations about social relationships, their interpretations of ambiguous interactions, their sense of self-worth, and their perceived ability to cope with interpersonal adversity. Longitudinal evidence has demonstrated that peer victimization can precede later depressive symptoms, suggesting that the association cannot be explained solely by concurrent distress or by depressed adolescents perceiving their peer relationships more negatively (Hui et al., 2026; Zhanget al., 2022). Studies of adolescent social networks likewise

indicate that victimization and depressive symptoms can become embedded within friendship structures and peer-group dynamics, thereby reinforcing vulnerability in complex ways (Qin et al., 2023). The consequences of bullying experiences may also extend beyond adolescence, as victimization has been prospectively associated with later depression and aggression in adulthood (Malamut & Salmivalli, 2023). Moreover, bullying-related adversity has been linked with broader mood symptoms, self-harm-related risk, and suicidality in vulnerable populations, highlighting the clinical relevance of identifying the processes through which peer victimization contributes to psychological deterioration (Dell'Osso et al., 2025; Lv et al., 2025).

The magnitude of the association between peer victimization and depression, however, varies considerably across adolescents. This variability suggests that peer victimization does not operate through a simple deterministic pathway but interacts with cognitive, emotional, social, and contextual mechanisms that either intensify or attenuate its psychological effects. Developmental models of stress and depression emphasize that stressful experiences are especially likely to produce psychopathology when they activate maladaptive patterns of information processing, self-focused cognition, emotional reactivity, and ineffective coping (LeMoult et al., 2022; Valdes et al., 2025). Interpersonal stress may therefore be understood as the initiating condition in a cascade rather than as the complete explanation for depressive symptoms. Adolescents who experience victimization may repeatedly revisit the event mentally, question why they were targeted, anticipate further rejection, and focus on feelings of shame, sadness, anger, or helplessness. These repetitive cognitive processes may subsequently interfere with effective emotional regulation, thereby prolonging negative affect and increasing the probability of depressive symptoms. Such mechanisms are consistent with broader psychosocial models showing that vulnerability to adolescent depression is shaped by the interaction of interpersonal adversity with emotion-related and cognitive processes (Conley et al., 2023; Vaughn & Weisz, 2021).

Rumination represents one of the most theoretically relevant cognitive responses to peer victimization. Rumination involves repetitive and relatively passive attention to negative emotions, their causes, their meanings, and their anticipated consequences. Unlike constructive reflection or active problem solving, rumination tends to maintain attention on distress without producing effective resolution. In the context of peer victimization, an adolescent

may repeatedly replay humiliating experiences, wonder why peers targeted them, anticipate similar treatment in future interactions, or repeatedly evaluate the personal meaning of social rejection. Such repetitive thought processes can amplify the emotional salience of victimizing experiences and extend their psychological impact beyond the original event. Longitudinal research has shown that rumination can mediate associations between childhood or adolescent victimization and later internalizing difficulties (Peets et al., 2021). Rumination has also been identified as a mechanism connecting victimization with subsequent behavioral and emotional outcomes, indicating that its effects are not confined to transient sadness but may contribute to more enduring patterns of maladjustment (Malamut & Salmivalli, 2021). More recent work has further emphasized sadness-focused rumination as an important process linking depressive symptoms and relational victimization during adolescence (Voulgaridou, 2025).

The relationship between rumination and victimization may also be reciprocal or dynamically reinforced. Adolescents who ruminate after negative peer interactions may remain emotionally activated, behave more defensively, withdraw socially, or respond in ways that affect subsequent peer interactions. Research examining anger rumination and sadness rumination suggests that repetitive negative thinking can be intertwined with ongoing victimization experiences rather than functioning merely as a passive consequence of them (Spyropoulou & Giovazolias, 2022). Similarly, research on co-rumination indicates that repetitive discussion of interpersonal problems within friendships may have both supportive and maladaptive implications. Although sharing problems with a close friend can increase perceived intimacy, excessive repetitive discussion of distress may amplify emotional arousal and psychological difficulties (Tilton-Weaver & Rose, 2023). Evidence that co-rumination can moderate associations between friendship support and adolescent psychological distress further demonstrates that the interpersonal expression of repetitive negative thought is not uniformly protective (Steffie van der Mey- et al., 2025). Thus, rumination may represent a critical mechanism through which the social experience of victimization becomes converted into sustained internal psychological distress.

Emotion dysregulation constitutes another central mechanism in this process. Emotion regulation refers to the processes through which individuals monitor, understand, modify, and manage emotional experiences and expressions in accordance with situational demands and personal goals.

Effective emotion regulation during adolescence requires the capacity to identify emotional states, tolerate distress, inhibit impulsive responses, maintain goal-directed behavior under emotional strain, and flexibly employ adaptive strategies. Emotion dysregulation occurs when these processes are impaired, rigid, inaccessible, or ineffective. Adolescents exposed to repeated peer victimization may experience intense sadness, anger, fear, embarrassment, and social threat, and these emotional reactions can overwhelm existing regulatory capacities. Evidence from studies of peer and cybervictimization indicates that emotion-regulation ability can mediate the association between victimization experiences and subsequent well-being or psychological distress (Schunk et al., 2022; Vacca et al., 2023). Youth who encounter peer victimization but possess more adaptive emotion-regulation resources may be better able to recover from stressful events, whereas adolescents with greater regulatory difficulties may experience more persistent negative affect and depressive symptoms.

Research has also demonstrated that environmental and relational resources can shape emotional responses to victimization. For example, supportive interpersonal relationships may help adolescents process victimization experiences, regulate distress, and preserve resilience, whereas ineffective conflict-management patterns may intensify psychological adjustment problems (Wang et al., 2020). Friendship quality and emotional resilience likewise appear to alter the strength of the relationship between victimization and depression, indicating that social support may protect some adolescents while failing to fully buffer others (Wang et al., 2025). Even relationships with companion animals have been examined as potential contextual influences on the link between peer victimization and emotion regulation in youth, illustrating the increasing recognition that emotion-regulatory development is embedded within adolescents' relational environments (King et al., 2023). These findings collectively suggest that emotion regulation is not merely an individual trait but a developmental capacity shaped by repeated social experiences and available sources of support.

Theoretical integration of rumination and emotion dysregulation suggests that these mechanisms may operate sequentially rather than independently. Repetitive negative thinking can maintain emotional activation by continually reintroducing the content of stressful experiences into working awareness. An adolescent who repeatedly recalls peer rejection or humiliation may repeatedly reactivate the sadness, shame, anger, or anxiety associated with the

original event. Over time, this sustained cognitive-emotional activation may tax regulatory resources, narrow the adolescent's repertoire of coping strategies, and increase perceptions that negative emotions are uncontrollable. Rumination may therefore contribute to emotion dysregulation by preventing emotional recovery, increasing attentional fixation on distress, and reducing flexible engagement with alternative coping responses. In turn, emotion dysregulation may strengthen the progression toward depressive symptoms by prolonging negative affect, increasing hopelessness, reducing effective problem solving, and interfering with adaptive interpersonal behavior. Evidence from cross-national research supports the relevance of both rumination and emotion regulation in the association between childhood bullying victimization and depressive symptoms (Labella et al., 2023). This provides a strong empirical basis for examining whether these variables form an ordered pathway in adolescence rather than functioning only as parallel mediators.

The serial ordering of these mechanisms is also consistent with research showing that different forms of maladaptive cognition and behavior may accumulate across interpersonal stress processes. For example, chain mediation has been applied to models involving rumination and bullying-related experiences in the prediction of adolescent depression, illustrating the usefulness of sequential explanatory frameworks (Wang et al., 2023). Similarly, cognitive emotion-regulation strategies have been shown to mediate relationships between bullying victimization and depression, anxiety, and stress (Vacca et al., 2023). Suppression, another maladaptive regulatory strategy, has also been implicated in associations between cyberbullying and depression, anxiety, and self-esteem (Zamfir, 2020). Together, these findings reinforce the proposition that the psychological consequences of victimization may unfold through interconnected cognitive and regulatory processes. A serial mediation model is therefore particularly useful because it permits examination of whether victimization is associated first with greater rumination, whether rumination is subsequently related to greater emotion dysregulation, and whether this regulatory difficulty is ultimately associated with depressive symptoms.

Adolescent vulnerability to depression also needs to be situated within broader patterns of risk and adaptation. Machine-learning studies have demonstrated that depressive outcomes and related psychiatric risks can be predicted from multiple interacting psychological and contextual factors, highlighting the multifactorial nature of adolescent mental

health (Geng et al., 2025; Zhou et al., 2024). Social anxiety and maladaptive responses to interpersonal stress may further increase vulnerability by shaping how adolescents respond to daily peer challenges (Griffith & Hankin, 2025). Developmental pathways involving self-injury also demonstrate that emotional and interpersonal difficulties may cluster across adolescence, particularly among youth experiencing persistent psychological distress (Tilton-Weaver et al., 2022). These broader findings underscore the importance of moving beyond simple exposure-outcome associations and identifying the mechanisms through which risk is transmitted. Such mechanism-focused models can contribute to more precise intervention targets, particularly if they identify modifiable processes such as repetitive negative thinking and emotion-regulation difficulties.

At the same time, individual and relational responses to victimization can differ substantially. Some adolescents seek support from friends or adults, while others conceal victimization or withdraw from interpersonal contact. Longitudinal evidence suggests that friendship characteristics, coping responses, peer victimization, and depression influence one another across adolescence (Zimmer-Gembeck et al., 2026). Cultural and family contexts may also modify how adolescents interpret and cope with peer adversity. For example, research among multicultural adolescents has shown that the pathway from peer victimization to depressive symptoms can involve additional stress processes and may vary depending on family support (Lim, 2026). These findings indicate that peer victimization is embedded within broader systems of coping and support, but they also strengthen the importance of identifying intrapersonal mechanisms that may operate across social contexts. Rumination and emotion dysregulation are especially relevant in this respect because both are theoretically modifiable and potentially responsive to prevention and psychotherapy.

Despite growing evidence connecting peer victimization with depression, rumination, and emotion-regulation difficulties, several gaps remain. First, much of the existing literature has examined rumination or emotion regulation separately, thereby providing limited information about whether they operate as sequential mechanisms. Second, some studies have focused on specific types of victimization, particular regulatory strategies, or restricted developmental populations, making it difficult to determine whether a broader serial pathway is evident among adolescents in general. Third, cross-cultural research remains important because patterns of peer interaction, emotional expression,

family involvement, and help-seeking may vary substantially across societies. Research conducted in Mexico is comparatively limited relative to studies from North America, Europe, and East Asia, despite the importance of adolescent peer experiences and depressive symptoms as public-health concerns. A Mexican adolescent sample therefore provides an opportunity to examine whether theoretically established mechanisms of interpersonal stress, rumination, emotion dysregulation, and depression are evident within a distinct sociocultural context.

Clarifying this serial mechanism may also have practical relevance. If rumination constitutes an early cognitive response to victimization that subsequently contributes to emotion dysregulation, then interventions may benefit from targeting repetitive negative thought before regulatory difficulties become entrenched. Conversely, strengthening emotion-regulation skills may reduce the extent to which rumination is translated into persistent depressive symptomatology. Prevention programs addressing peer victimization may therefore be more effective when they combine environmental efforts to reduce bullying with individual-level strategies that address cognitive and emotional responses to victimization. This mechanism-oriented perspective is consistent with developmental intervention models emphasizing modifiable psychosocial risk processes rather than relying solely on symptom reduction after psychopathology has already emerged (Vaughn & Weisz, 2021). It is also consistent with emerging evidence that coping, friendship support, emotional resilience, and family resources can alter the consequences of peer adversity (Wang et al., 2025; Zimmer-Gembeck et al., 2026). By examining rumination and emotion dysregulation within the same serial model, the present study therefore seeks to clarify a psychologically plausible pathway through which stressful peer experiences may become associated with adolescent depression.

Accordingly, the aim of the present study was to examine the serial mediating roles of rumination and emotion dysregulation in the relationship between peer victimization and depressive symptoms among adolescents in Mexico.

2. Methods and Materials

2.1. Study Design and Participants

This study employed a cross-sectional correlational design with structural modeling to examine the serial mediating roles of rumination and emotion dysregulation in the relationship between peer victimization and depression

among adolescents in Mexico. The study population consisted of adolescents enrolled in public and private secondary and upper-secondary schools in Mexico City during the 2025–2026 academic year. A multistage cluster sampling procedure was used to recruit participants. In the first stage, schools were selected from different geographical areas of Mexico City to provide representation of students from diverse socioeconomic and educational backgrounds. In the second stage, classes within the participating schools were randomly selected, and all eligible students in the selected classes were invited to participate. A total of 684 adolescents initially completed the questionnaires. After screening the data for incomplete questionnaires, patterned responding, and cases with substantial missing data, 27 cases were excluded, resulting in a final analytical sample of 657 adolescents. Participants were between 13 and 18 years of age, and both male and female adolescents were included. Eligibility criteria consisted of being 13–18 years old, being currently enrolled in one of the participating schools, having sufficient Spanish-language proficiency to understand the questionnaires, providing adolescent assent, and obtaining written informed consent from a parent or legal guardian for participants younger than 18 years. Adolescents with severe cognitive or developmental difficulties that could prevent independent comprehension and completion of the questionnaires were excluded. Data collection was conducted during regular school hours in classrooms under standardized conditions. Participants were informed that participation was voluntary, responses would remain confidential, and they could discontinue participation at any time without academic or personal consequences. Questionnaires were administered anonymously and required approximately 30–40 minutes to complete. The research procedures were conducted in accordance with the ethical principles governing research involving human participants, particularly the principles of voluntary participation, confidentiality, informed consent, and protection of minors.

2.2. Measures

Multidimensional Peer Victimization Scale. Peer victimization was assessed using the Multidimensional Peer Victimization Scale developed by Mynard and Joseph (2000). The scale was designed to assess adolescents' exposure to different forms of negative behavior perpetrated by peers and contains 16 items covering four dimensions of peer victimization: physical victimization, verbal

victimization, social manipulation, and attacks on property. Each dimension is represented by four items. Respondents indicate how frequently they have experienced each form of peer victimization using a three-point response format ranging from 0 (not at all) to 2 (more than once). Item scores can be summed to calculate dimension-specific scores as well as an overall peer victimization score, with higher scores indicating more frequent or extensive exposure to peer victimization. The multidimensional structure of the instrument enables the assessment of both direct forms of victimization, such as physical and verbal aggression, and relatively indirect forms, including social manipulation. Previous investigations involving children and adolescents have supported the scale's factorial structure, internal consistency, construct validity, and associations with theoretically related indicators of psychosocial adjustment. For the present study, the total score was used as the observed indicator of adolescents' overall exposure to peer victimization.

Children's Response Styles Questionnaire. Rumination was measured using the rumination component of the Children's Response Styles Questionnaire, which was developed for the assessment of cognitive and behavioral responses to depressive affect among children and adolescents. The instrument is based on response styles theory and evaluates the extent to which young people respond to negative mood by repetitively focusing on their feelings, their perceived causes, and the possible consequences of emotional distress. The rumination subscale consists of 13 items describing repetitive and self-focused responses to sadness and negative affect. Participants indicate the frequency with which they engage in each response when they feel sad or upset, using a four-point response scale ranging from almost never to almost always. Scores are summed across the rumination items, with higher scores indicating a stronger tendency toward repetitive negative thinking in response to distress. Previous research with adolescent populations has demonstrated acceptable to strong internal consistency and has provided evidence for convergent, construct, and predictive validity, particularly through significant associations between rumination and depressive symptoms. In the present study, the total rumination score was used as the first mediator in the proposed serial mediation model.

Difficulties in Emotion Regulation Scale. Emotion dysregulation was assessed using the Difficulties in Emotion Regulation Scale developed by Gratz and Roemer (2004). The original scale consists of 36 items designed to provide a

multidimensional assessment of difficulties associated with effective emotional regulation. It encompasses six dimensions: nonacceptance of emotional responses, difficulties engaging in goal-directed behavior when distressed, impulse-control difficulties, lack of emotional awareness, limited access to effective emotion-regulation strategies, and lack of emotional clarity. Items are rated on a five-point Likert-type scale ranging from 1 (almost never) to 5 (almost always). Several negatively phrased items are reverse-scored before the scores are summed. A total score is calculated across the relevant items, with higher scores reflecting greater overall difficulty regulating emotional experiences and behavioral responses to emotional distress. The scale conceptualizes emotion regulation as involving emotional awareness and understanding, acceptance of emotional experiences, the capacity to control impulsive behavior and maintain goal-directed action during emotional arousal, and flexible access to contextually appropriate regulation strategies. Previous studies involving adolescent and young populations have reported satisfactory internal consistency, factorial validity, convergent validity, and associations with multiple indicators of psychological distress. The total score was used in the present study as the second mediator, representing the overall level of emotion dysregulation.

Patient Health Questionnaire-9. Adolescent depressive symptoms were measured using the Patient Health Questionnaire-9 developed by Kroenke, Spitzer, and Williams (2001). The PHQ-9 is a brief nine-item self-report instrument assessing the major symptoms of depression during the preceding two weeks. The items assess diminished interest or pleasure, depressed mood, sleep difficulties, fatigue, changes in appetite, feelings of worthlessness or failure, concentration difficulties, psychomotor changes, and thoughts related to death or self-harm. Each item is rated from 0 (not at all) to 3 (nearly every day), producing a total score ranging from 0 to 27. Higher total scores represent greater severity of depressive symptoms. Although initially developed for clinical screening in adults, the PHQ-9 has subsequently been extensively evaluated among adolescent populations and has demonstrated satisfactory internal consistency, criterion validity, construct validity, and utility for identifying varying levels of depressive symptom severity. Its brevity and correspondence with core depressive symptom domains make it particularly suitable for school-based adolescent research. In the present study, the total PHQ-9 score was

treated as the outcome variable representing the severity of adolescent depressive symptoms.

2.3. Data Analysis

Data were analyzed using IBM SPSS Statistics version 29 and the PROCESS macro for SPSS. Before testing the study hypotheses, the dataset was screened for data-entry errors, missing values, univariate outliers, and multivariate outliers. Missing-data patterns were examined before the main analyses, and cases with substantial incomplete responses were removed during the initial screening process. The distributions of the study variables were evaluated using skewness and kurtosis coefficients, histograms, and normal probability plots. The assumptions of linearity, homoscedasticity, independence of residuals, and absence of problematic multicollinearity were also evaluated. Multicollinearity was assessed using tolerance statistics and variance inflation factors, with tolerance values greater than .20 and variance inflation factor values below 5.00 considered indicative of acceptable levels of collinearity. Internal consistency of the measurement instruments was evaluated using Cronbach's alpha coefficients. Means and standard deviations were calculated for continuous study variables, and frequencies and percentages were used to describe relevant demographic characteristics. Pearson product-moment correlation coefficients were subsequently calculated to determine the bivariate relationships among peer victimization, rumination, emotion dysregulation, and depressive symptoms.

The hypothesized serial mediation model was examined using Model 6 of the PROCESS macro. Peer victimization was specified as the independent variable, adolescent depressive symptoms as the dependent variable, rumination as the first mediator, and emotion dysregulation as the second mediator. The model therefore tested whether greater peer victimization was associated with increased rumination, whether increased rumination was subsequently associated with greater emotion dysregulation, and whether emotion dysregulation was associated with higher levels of depressive symptoms. In addition to the sequential indirect pathway from peer victimization through rumination and emotion dysregulation to depression, the model estimated the specific indirect effect of peer victimization on depression through rumination alone and the specific indirect effect through emotion dysregulation alone. The direct effect of peer victimization on depression after inclusion of the mediators and the total effect before

controlling for the mediating variables were also estimated. Age and sex were entered as covariates to reduce the possibility that developmental and demographic differences would confound the estimated relationships among the principal study variables. Indirect effects were evaluated using a nonparametric bootstrapping procedure with 5,000 resamples and 95% bias-corrected bootstrap confidence intervals. An indirect effect was considered statistically significant when its confidence interval did not include zero. Unstandardized regression coefficients, standard errors, standardized coefficients where appropriate, *t* values, *p* values, and 95% confidence intervals were reported for the individual regression paths. Model explanatory power was assessed using the coefficient of determination (R^2) for each endogenous variable. Statistical significance for direct regression coefficients and correlation analyses was established at $p < .05$ using two-tailed tests, whereas the interpretation of mediation effects was primarily based on bootstrap confidence intervals.

3. Findings and Results

The final analytical sample consisted of 657 adolescents aged 13–18 years. The mean age of the participants was 15.47 years ($SD = 1.54$). Of the total sample, 338 participants (51.45%) were female and 319 (48.55%) were male. Regarding age distribution, 92 adolescents (14.00%) were 13 years old, 103 (15.68%) were 14 years old, 118 (17.96%) were 15 years old, 127 (19.33%) were 16 years old, 113 (17.20%) were 17 years old, and 104 (15.83%) were 18 years old. A total of 404 participants (61.49%) were enrolled in public schools, whereas 253 (38.51%) attended private schools. With respect to educational level, 302 adolescents (45.97%) were enrolled in lower-secondary education and 355 (54.03%) were enrolled in upper-secondary education. Most participants lived with both parents, accounting for 439 adolescents (66.82%), while 148 (22.53%) lived with one parent and 70 (10.65%) reported other family living arrangements, including residence with extended family members or guardians. Preliminary inspection of the dataset indicated that the proportion of missing responses for individual questionnaire items was minimal, and no variable exceeded 2% missingness before case-level screening. Examination of standardized scores and Mahalanobis distance identified no remaining observations with sufficiently extreme values to substantially influence the main analyses after the initial exclusion of incomplete or problematic cases. Consequently,

all 657 participants were included in the descriptive, correlational, regression, and serial mediation analyses.

Table 1

Descriptive Statistics, Distributional Characteristics, Internal Consistency, and Correlations Among the Study Variables (N = 657)

Variable	Possible Range	Observed Range	M	SD	Skewness	Kurtosis	Cronbach's α	1	2	3	4
1. Peer victimization	0–32	0–29	9.84	5.91	0.71	0.18	.88	—			
2. Rumination	13–52	14–51	31.72	8.46	0.16	–0.43	.91	.49***	—		
3. Emotion dysregulation	36–180	43–169	103.58	23.74	0.21	–0.38	.93	.43***	.61***	—	
4. Depressive symptoms	0–27	0–25	9.63	5.79	0.64	–0.12	.89	.46***	.59***	.65***	—

As shown in Table 1, all four principal study variables demonstrated satisfactory internal consistency, with Cronbach's alpha coefficients ranging from .88 for peer victimization to .93 for emotion dysregulation. The observed mean peer victimization score was 9.84 (SD = 5.91), indicating considerable variability in adolescents' exposure to negative peer experiences. Rumination had a mean score of 31.72 (SD = 8.46), while the mean emotion dysregulation score was 103.58 (SD = 23.74). The mean PHQ-9 depressive symptom score was 9.63 (SD = 5.79), indicating substantial individual differences in depressive symptom severity across the sample. Skewness coefficients ranged from 0.16 to 0.71 and kurtosis coefficients ranged from –0.43 to 0.18, suggesting that the distributions did not exhibit severe departures from normality. The correlational findings showed statistically significant positive relationships among all study variables. Peer victimization was positively

associated with rumination, $r = .49$, $p < .001$, indicating that adolescents who reported greater exposure to peer victimization also tended to report more repetitive negative thinking. Peer victimization was also positively associated with emotion dysregulation, $r = .43$, $p < .001$, and depressive symptoms, $r = .46$, $p < .001$. Rumination demonstrated a strong positive association with emotion dysregulation, $r = .61$, $p < .001$, as well as a substantial positive correlation with depressive symptoms, $r = .59$, $p < .001$. The strongest bivariate relationship was observed between emotion dysregulation and depressive symptoms, $r = .65$, $p < .001$. Overall, the correlation pattern was consistent with the proposed theoretical sequence, as adolescents exposed to greater peer victimization reported higher rumination, greater difficulties regulating emotions, and more severe depressive symptoms.

Table 2

Regression Models Predicting Rumination, Emotion Dysregulation, and Depressive Symptoms in the Serial Mediation Model

Outcome Variable	Predictor	B	SE	β	t	p	95% CI for B
Rumination	Peer victimization	0.68	0.05	.47	13.65	<.001	[0.58, 0.78]
	Age	0.41	0.18	.07	2.28	.023	[0.06, 0.76]
	Sex	1.64	0.57	.09	2.88	.004	[0.52, 2.76]
Emotion dysregulation	Peer victimization	0.54	0.12	.13	4.51	<.001	[0.30, 0.77]
	Rumination	1.55	0.08	.55	19.18	<.001	[1.39, 1.71]
	Age	0.69	0.45	.04	1.53	.127	[–0.20, 1.58]
Depressive symptoms	Sex	3.27	1.39	.07	2.35	.019	[0.54, 6.00]
	Peer victimization	0.15	0.03	.15	5.11	<.001	[0.09, 0.20]
	Rumination	0.17	0.03	.25	6.84	<.001	[0.12, 0.22]
	Emotion dysregulation	0.11	0.01	.45	12.33	<.001	[0.09, 0.13]
	Age	0.08	0.10	.02	0.81	.420	[–0.11, 0.27]
	Sex	0.77	0.31	.07	2.48	.013	[0.16, 1.38]

Table 2 presents the individual regression pathways comprising the serial mediation model. In the first regression equation, peer victimization significantly predicted

rumination, $B = 0.68$, $SE = 0.05$, $\beta = .47$, $t = 13.65$, $p < .001$, 95% CI [0.58, 0.78]. Thus, for every one-unit increase in peer victimization, rumination increased by approximately

0.68 points after controlling for age and sex. This association represented the first path in the proposed serial mediation sequence and showed that adolescents exposed to greater levels of victimization by peers were substantially more likely to engage in repetitive negative thinking. Age also had a small positive association with rumination, $B = 0.41$, $p = .023$, while sex significantly contributed to the prediction of rumination, $B = 1.64$, $p = .004$. In the second regression equation, both peer victimization and rumination significantly predicted emotion dysregulation. Peer victimization retained a significant direct association with emotion dysregulation after rumination was entered into the model, $B = 0.54$, $SE = 0.12$, $\beta = .13$, $t = 4.51$, $p < .001$. Rumination was substantially more strongly related to emotion dysregulation, $B = 1.55$, $SE = 0.08$, $\beta = .55$, $t = 19.18$, $p < .001$. This result indicated that a one-point increase in rumination was associated with an estimated 1.55-point increase in emotion dysregulation when the

remaining predictors were held constant. Sex also showed a statistically significant but comparatively small association with emotion dysregulation, whereas age did not reach statistical significance. In the final regression equation predicting depressive symptoms, all three principal predictors remained significant simultaneously. Peer victimization was positively associated with depressive symptoms, $B = 0.15$, $SE = 0.03$, $\beta = .15$, $t = 5.11$, $p < .001$; rumination independently predicted greater depressive symptoms, $B = 0.17$, $SE = 0.03$, $\beta = .25$, $t = 6.84$, $p < .001$; and emotion dysregulation emerged as the strongest standardized predictor, $B = 0.11$, $SE = 0.01$, $\beta = .45$, $t = 12.33$, $p < .001$. These results support the hypothesized sequential process in which peer victimization is associated with greater rumination, rumination contributes to greater emotion-regulation difficulties, and these difficulties are subsequently associated with more severe depressive symptomatology.

Table 3

Model Summary for the Regression Equations in the Serial Mediation Analysis

Dependent Variable	R	R ²	Adjusted R ²	F	df1	df2	p
Rumination	.50	.25	.25	72.38	3	653	<.001
Emotion dysregulation	.63	.40	.40	107.82	4	652	<.001
Depressive symptoms	.71	.51	.50	133.74	5	651	<.001

As reported in Table 3, each of the three regression models was statistically significant. The first model, in which peer victimization, age, and sex predicted rumination, produced $R = .50$ and $R^2 = .25$, $F(3, 653) = 72.38$, $p < .001$. Therefore, approximately 25% of the variance in rumination was explained by the predictors included in the model. The second equation, predicting emotion dysregulation from peer victimization, rumination, age, and sex, resulted in $R = .63$ and $R^2 = .40$, $F(4, 652) = 107.82$, $p < .001$. Accordingly, approximately 40% of the variance in emotion dysregulation was accounted for by the predictor set, with rumination making the largest individual standardized contribution. The

final model predicting depressive symptoms showed the greatest explanatory power, with $R = .71$, $R^2 = .51$, adjusted $R^2 = .50$, and $F(5, 651) = 133.74$, $p < .001$. Thus, approximately 51% of the variance in adolescent depressive symptoms was explained jointly by peer victimization, rumination, emotion dysregulation, age, and sex. The increase in explained variance across the sequential equations was consistent with the proposed conceptual model, particularly the substantial explanatory contribution of rumination and emotion dysregulation to individual differences in depressive symptoms.

Table 4

Total, Direct, and Specific Indirect Effects of Peer Victimization on Adolescent Depressive Symptoms

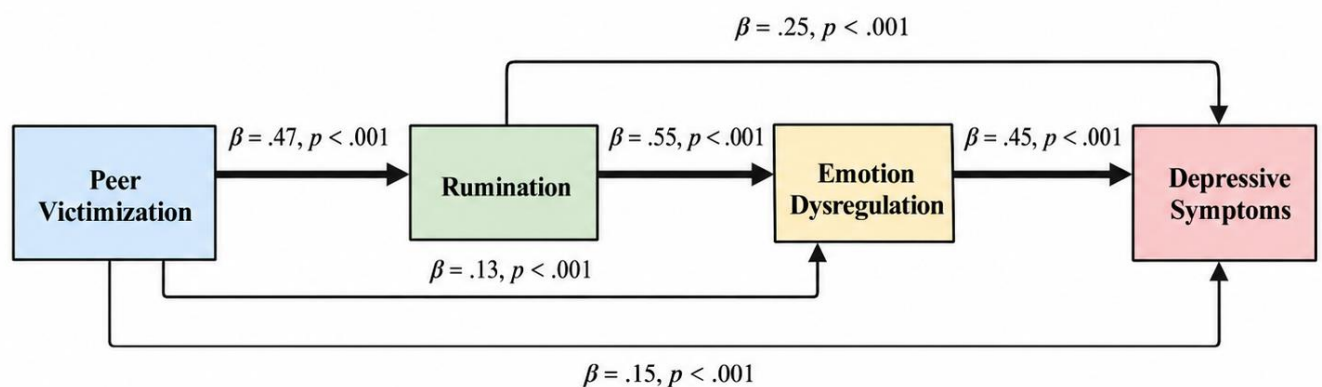
Effect	B	Boot SE	95% Boot CI	Interpretation
Total effect of peer victimization on depression	0.46	0.04	[0.38, 0.53]	Significant
Direct effect of peer victimization on depression	0.15	0.03	[0.09, 0.20]	Significant
Total indirect effect	0.31	0.03	[0.25, 0.38]	Significant
Peer victimization → Rumination → Depression	0.12	0.02	[0.08, 0.17]	Significant
Peer victimization → Emotion dysregulation → Depression	0.06	0.02	[0.03, 0.10]	Significant
Peer victimization → Rumination → Emotion dysregulation → Depression	0.12	0.02	[0.09, 0.16]	Significant

The mediation results shown in Table 4 provide direct support for the hypothesized serial mediation mechanism. Before the mediators were included, the total effect of peer victimization on depressive symptoms was statistically significant, $B = 0.46$, $\text{Boot SE} = 0.04$, 95% CI [0.38, 0.53], indicating that greater exposure to peer victimization was associated with substantially higher levels of depressive symptoms. After rumination and emotion dysregulation were simultaneously entered as mediators, the direct effect decreased to $B = 0.15$, $\text{Boot SE} = 0.03$, 95% CI [0.09, 0.20], but remained statistically significant. This reduction in the magnitude of the peer victimization coefficient, together with significant indirect effects, was consistent with partial rather than complete mediation. The total indirect effect was $B = 0.31$, $\text{Boot SE} = 0.03$, with a 95% bootstrap confidence interval of [0.25, 0.38]. Because this interval did not include zero, the combined mediating contribution of rumination and emotion dysregulation was statistically significant. Examination of the specific indirect pathways showed that the indirect effect through rumination alone was significant, $B = 0.12$, $\text{Boot SE} = 0.02$, 95% CI [0.08, 0.17], indicating that adolescents reporting greater peer victimization tended

to experience greater rumination, which in turn was associated with higher depressive symptoms. The indirect pathway through emotion dysregulation alone was also statistically significant, $B = 0.06$, $\text{Boot SE} = 0.02$, 95% CI [0.03, 0.10], demonstrating that peer victimization was related to greater emotion-regulation difficulties, which were subsequently associated with more severe depressive symptoms. Most importantly, the hypothesized sequential indirect effect from peer victimization to rumination, from rumination to emotion dysregulation, and subsequently from emotion dysregulation to depressive symptoms was statistically significant, $B = 0.12$, $\text{Boot SE} = 0.02$, 95% CI [0.09, 0.16]. The absence of zero within the bootstrap confidence interval provides evidence for the serial mediation hypothesis. In substantive terms, the results suggest that exposure to negative peer experiences is associated not only with depressive symptoms directly but also with a psychological sequence in which adolescents increasingly engage in repetitive negative thinking, experience greater difficulty regulating their emotional reactions, and consequently report more severe depressive symptoms.

Figure 1

Serial Mediation Model of Rumination and Emotion Dysregulation in the Relationship Between Peer Victimization and Adolescent Depressive Symptoms



The complete serial mediation model indicated statistically significant coefficients for each theoretically specified pathway. Peer victimization significantly predicted rumination ($\beta = .47$, $p < .001$), rumination significantly predicted emotion dysregulation after controlling for peer victimization and demographic covariates ($\beta = .55$, $p < .001$), and emotion dysregulation significantly predicted depressive symptoms after simultaneous adjustment for peer

victimization and rumination ($\beta = .45$, $p < .001$). Peer victimization also retained a significant direct pathway to emotion dysregulation ($\beta = .13$, $p < .001$) and to depressive symptoms ($\beta = .15$, $p < .001$), while rumination independently predicted depressive symptoms ($\beta = .25$, $p < .001$). The persistence of the direct peer victimization–depression association following inclusion of both mediators indicates that rumination and emotion dysregulation

accounted for a substantial, but not exhaustive, portion of the association between peer victimization and depressive symptoms. Taken together, the findings support a partially mediated serial process: adolescents experiencing greater levels of peer victimization were more likely to engage in rumination; increased rumination was strongly associated with poorer emotion regulation; and greater emotion dysregulation was subsequently related to more severe depressive symptoms. The magnitude and significance of the sequential indirect effect further indicate that rumination and emotion dysregulation functioned not simply as parallel correlates but as an ordered psychological pathway connecting stressful peer experiences with adolescent depressive symptomatology.

4. Discussion

The present study examined the serial mediating roles of rumination and emotion dysregulation in the relationship between peer victimization and depressive symptoms among adolescents in Mexico. The findings showed that peer victimization was positively associated with rumination, emotion dysregulation, and depressive symptoms, while rumination was positively related to emotion dysregulation and depression, and emotion dysregulation demonstrated the strongest bivariate association with depressive symptoms. In the serial mediation model, peer victimization significantly predicted rumination, rumination significantly predicted emotion dysregulation, and emotion dysregulation significantly predicted depressive symptoms. Peer victimization also retained significant direct effects on both emotion dysregulation and depression, while rumination independently predicted depressive symptoms. Most importantly, the sequential indirect pathway from peer victimization to rumination, from rumination to emotion dysregulation, and from emotion dysregulation to depressive symptoms was statistically significant. These findings support a partial serial mediation model in which adverse peer experiences are associated with depressive symptoms both directly and indirectly through a progressive cognitive-emotional process involving repetitive negative thinking and impaired emotion regulation.

The positive association between peer victimization and depressive symptoms is consistent with a substantial body of developmental research identifying negative peer experiences as an important psychosocial correlate and prospective predictor of adolescent depression. Peer relationships become increasingly salient during

adolescence, and repeated rejection, humiliation, exclusion, or aggression can undermine adolescents' sense of belonging, interpersonal security, and self-worth. The present findings are therefore consistent with evidence showing that peer relationship difficulties constitute an important component of developmental vulnerability to depression (Giletta, 2026). Longitudinal research has similarly demonstrated that peer victimization is associated with subsequent depressive symptoms, supporting the view that victimization may contribute to the development or persistence of internalizing difficulties rather than merely co-occurring with them (Hui et al., 2026; Zhang et al., 2022). The observed association also corresponds with broader reviews identifying peer adversity among the psychosocial factors associated with adolescent depressive symptomatology (Dianovinina & Surjaningrum, 2023; Lin & Guo, 2024). Taken together, the current results reinforce the developmental significance of the peer environment and suggest that repeated exposure to adverse peer interactions may represent an important interpersonal stressor in adolescent mental health.

The persistence of a significant direct effect of peer victimization on depressive symptoms after rumination and emotion dysregulation were included in the model is also noteworthy. This finding indicates that the two mediators explain a substantial but incomplete portion of the association between victimization and depression. Peer victimization may influence depressive symptoms through additional pathways not represented in the present model, including reduced self-esteem, heightened interpersonal threat sensitivity, social withdrawal, stressful life events, diminished perceived support, loneliness, or alterations in broader stress-response systems. This interpretation is consistent with biopsychosocial models proposing that adverse experiences contribute to depression through multiple interacting mechanisms rather than a single psychological pathway (Valdes et al., 2025). Research on stress and depression similarly emphasizes that stressful experiences may activate a range of affective, cognitive, biological, and behavioral vulnerabilities that jointly influence depressive outcomes (LeMoult et al., 2022). Furthermore, the psychosocial effects of victimization may be modified by relational resources such as friendship quality and family support, which may partly explain why some adolescents exposed to victimization develop substantial depressive symptoms while others show greater resilience (Lim, 2026; Wang et al., 2025).

A major finding of the present study was that peer victimization significantly predicted rumination. Adolescents reporting more frequent victimization also reported a greater tendency to engage in repetitive negative thinking. This result is theoretically plausible because victimization can create unresolved questions concerning social status, self-worth, responsibility, and the likelihood of future rejection. Adolescents may repeatedly mentally revisit victimizing events, consider why they were targeted, anticipate similar experiences, or focus on the emotional consequences of rejection. Such repetitive cognitive processing can prolong the psychological impact of the original event. The current finding closely aligns with longitudinal research showing that rumination mediates associations between victimization and later internalizing problems (Peets et al., 2021). It is also consistent with evidence that rumination operates as an important mechanism connecting victimization with subsequent psychological and behavioral outcomes (Malamut & Salmivalli, 2021). Research extending into adulthood has shown that adolescent victimization predicts later depression and aggression partly through rumination, suggesting that repetitive negative thinking may contribute to the long-term persistence of the psychological consequences of victimization (Malamut & Salmivalli, 2023).

The observed association between peer victimization and rumination is also consistent with research distinguishing different forms of repetitive negative thought. Sadness rumination appears especially relevant to depressive reactions following interpersonal adversity, whereas anger rumination may contribute to the maintenance of both emotional distress and problematic peer interactions. Recent findings indicating that sadness rumination links depressive symptoms with relational victimization support the importance of repetitive negative thought in understanding adolescents' responses to adverse peer experiences (Voulgaridou, 2025). Similarly, longitudinal work on anger and sadness rumination suggests that rumination and victimization may become mutually reinforcing across development (Spyropoulou & Giovazolias, 2022). The present results therefore support the view that rumination is not merely a secondary symptom of depression but may represent an intermediate cognitive process through which peer adversity acquires sustained emotional significance.

Rumination also significantly predicted emotion dysregulation, and this pathway represented one of the strongest effects in the serial mediation model. This finding is central to the proposed sequential mechanism because it

suggests that repetitive negative cognition may contribute to difficulties managing emotional responses. Rumination repeatedly directs attention toward distressing experiences and negative affect without necessarily producing effective problem solving or emotional resolution. As a consequence, emotional arousal may be prolonged, cognitive flexibility may be reduced, and adolescents may find it increasingly difficult to identify, accept, or regulate their emotional states. The current result is consistent with cross-national evidence showing that rumination and emotion-regulation processes are both closely associated with depressive symptoms among individuals with histories of bullying victimization (Labella et al., 2023). It is also compatible with research on co-rumination, which demonstrates that repeated discussion and cognitive elaboration of problems can coexist with interpersonal closeness while simultaneously contributing to psychological distress (Steffie van der Mey et al., 2025; Tilton-Weaver & Rose, 2023). These findings collectively support the proposition that repetitive focus on distress may impair adaptive emotional recovery.

The present study further showed that emotion dysregulation was the strongest standardized predictor of depressive symptoms in the final regression model. This finding suggests that adolescents' ability to understand, tolerate, and manage negative affect may be particularly important in determining whether interpersonal stress becomes associated with more severe depressive symptomatology. Peer victimization can evoke intense sadness, shame, anger, anxiety, and helplessness, and adolescents with limited emotion-regulation resources may experience greater difficulty recovering from these reactions. Previous research has similarly shown that cognitive emotion-regulation strategies mediate associations between bullying victimization and depression, anxiety, and stress (Vacca et al., 2023). Research on cybervictimization has also indicated that emotion regulation and emotional self-efficacy are important mechanisms linking victimization experiences with adolescent well-being (Schunk et al., 2022). In addition, suppression has been implicated in the relationship between cyberbullying and depressive and anxiety-related outcomes, further supporting the broader role of maladaptive emotion regulation in victimization-related psychological distress (Zamfir, 2020).

The significant direct pathway from peer victimization to emotion dysregulation suggests that victimization may impair emotional functioning even beyond its effect through rumination. Repeated exposure to peer aggression or rejection may create persistent states of vigilance and

emotional activation, reduce adolescents' confidence in their ability to manage distress, and promote avoidance, suppression, impulsive responding, or withdrawal. This interpretation is compatible with evidence that interpersonal resources and coping strategies shape the psychological consequences of victimization. Conflict-resolution strategies, for example, have been shown to influence the association between peer victimization and psychological adjustment (Wang et al., 2020). Similarly, friendship characteristics and emotional resilience can modify the relationship between victimization and depression (Wang et al., 2025). Research examining companion animals has also suggested that relational contexts may influence emotion-regulatory responses to victimization (King et al., 2023). Collectively, these studies reinforce the idea that emotion regulation develops and operates within a broader interpersonal environment and may be directly disrupted by repeated adverse peer experiences.

The most important finding of the present study was the significant serial indirect effect through rumination and emotion dysregulation. This result supports the hypothesized sequence in which peer victimization is associated first with greater rumination, rumination is then associated with greater emotion dysregulation, and emotion dysregulation is subsequently related to more severe depressive symptoms. This pattern extends previous work by integrating two mechanisms that are often examined separately. Prior studies have shown that rumination can mediate the consequences of victimization (Malamut & Salmivalli, 2021; Peets et al., 2021), while other research has demonstrated that emotion regulation mediates associations between victimization and psychological distress (Schunk et al., 2022; Vacca et al., 2023). The present findings suggest that these mechanisms may be sequentially connected rather than simply operating in parallel. Such a model is also compatible with research showing chain mediation involving rumination and bullying-related processes in adolescent depression (Wang et al., 2023). From this perspective, the cognitive aftermath of victimization may initiate a process in which repetitive negative thinking prolongs emotional activation and progressively undermines the adolescent's capacity to regulate distress.

The serial mediation result also has implications for understanding why interpersonal stress may become persistent rather than transient. Peer victimization is often episodic at the level of specific events, but rumination can continue long after the event itself has ended. Repetitive recall and reinterpretation may reactivate the emotional

experience, effectively extending the duration of exposure to stress at the psychological level. If adolescents repeatedly focus on humiliation, rejection, or perceived personal inadequacy, they may experience chronic emotional activation even when no immediate victimization is occurring. Over time, this sustained activation may contribute to emotion-regulation difficulties and increase vulnerability to depressive symptoms. This interpretation is consistent with developmental models of childhood and adolescent depression that emphasize the interaction of stress exposure with cognitive and affective vulnerability (Gibb et al., 2026). It is also consistent with evidence that maladaptive responses to interpersonal stress are associated with emotional difficulties during early adolescence (Griffith & Hankin, 2025). Thus, the pathway identified in the present study can be conceptualized as a mechanism by which external interpersonal adversity becomes internalized through recurrent cognition and dysregulated affect.

The findings also reinforce the importance of considering the wider relational context of adolescent coping. Not all adolescents who are victimized will respond through rumination or develop emotion-regulation difficulties to the same extent. Friendship support, family relationships, coping strategies, and adolescents' willingness to disclose stressful experiences may alter this process. Longitudinal research has shown that adolescents differ in whether they seek support or conceal peer-related stress, and these coping patterns are intertwined with friendship experiences, victimization, and depression (Zimmer-Gembeck et al., 2026). Social-network research likewise indicates that victimization and depressive symptoms unfold within friendship systems rather than in isolation (Qin et al., 2023). At the same time, friendship interactions themselves may sometimes reinforce repetitive negative thought, as indicated by research on co-rumination (Tilton-Weaver & Rose, 2023). Therefore, social support may be most protective when it facilitates constructive coping and emotional processing rather than repeated elaboration of distress.

The broader clinical relevance of these findings is strengthened by evidence linking adolescent depression and peer adversity with other forms of psychological risk. Bullying experiences have been associated with mood symptoms and suicidality in clinically vulnerable populations (Dell'Osso et al., 2025), while self-injurious behavior among depressed adolescents is associated with multiple emotional and interpersonal risk factors (Lv et al., 2025). Developmental trajectories of nonsuicidal self-injury further demonstrate that psychological distress can become

persistent or escalate during adolescence when underlying regulatory and interpersonal difficulties remain unresolved (Tilton-Weaver et al., 2022). Although the present study did not assess self-harm or suicidality, these findings emphasize that the combination of peer victimization, rumination, emotion dysregulation, and depression may have implications beyond depressive symptoms alone. From a developmental psychopathology perspective, identifying these pathways before more severe outcomes emerge may therefore be particularly important.

5. Conclusion

Finally, the explanatory power of the final model, which accounted for approximately half of the variance in depressive symptoms, suggests that the combination of interpersonal, cognitive, and emotional variables provides a meaningful account of adolescent depression. This result is compatible with contemporary research emphasizing the multifactorial nature of adolescent psychopathology and the value of integrating multiple predictors rather than relying on single risk factors (Geng et al., 2025; Zhou et al., 2024). At the same time, the remaining unexplained variance underscores that adolescent depression is shaped by a broader constellation of factors, including family relationships, temperament, biological vulnerability, stressful life events, socioeconomic context, and other forms of social adversity. The present model should therefore be viewed as one theoretically coherent pathway within a larger developmental system. Nevertheless, the significant serial indirect effect provides evidence that rumination and emotion dysregulation are important interrelated mechanisms through which peer victimization may become associated with depressive symptoms among adolescents.

6. Limitations & Suggestions

The present study has several limitations that should be considered when interpreting the findings. First, the cross-sectional design does not permit definitive conclusions regarding temporal or causal ordering, even though the proposed sequence was theoretically grounded. It cannot be established from these data alone that peer victimization preceded rumination, that rumination subsequently produced emotion dysregulation, or that emotion dysregulation caused later depressive symptoms. Second, all principal variables were assessed through adolescent self-report, which may have increased shared-method variance and introduced recall, mood-congruent reporting, or social-

desirability biases. Third, although the sample included adolescents from both public and private schools in Mexico City, it may not represent adolescents living in rural areas, other Mexican states, adolescents not attending school, or culturally distinct populations. Fourth, the study assessed overall peer victimization and did not separately model physical, verbal, relational, and cyber forms of victimization, which may differ in their psychological consequences. Finally, potentially important variables such as family support, friendship quality, socioeconomic status, previous mental-health difficulties, social anxiety, and exposure to other stressful life events were not incorporated into the serial model.

Future research should test the proposed serial pathway using longitudinal designs with three or more measurement occasions so that temporal ordering and reciprocal relationships can be evaluated more rigorously. Cross-lagged panel models or random-intercept cross-lagged models would be particularly useful for distinguishing stable individual differences from within-person changes over time. Future studies should also examine whether the serial mediation process differs according to sex, age, socioeconomic context, school type, or different forms of victimization. Distinguishing physical, verbal, relational, and cyber victimization may reveal whether some forms are more strongly associated with rumination or emotion dysregulation than others. Multi-informant designs incorporating parent, teacher, peer, or school reports could reduce dependence on self-report data. It would also be valuable to include protective variables such as family support, friendship quality, emotional resilience, coping flexibility, and school connectedness as moderators of the serial pathway. Replication across different regions of Mexico and in other Latin American populations would further clarify the cultural generalizability of the model.

The findings also have practical implications for schools, mental-health professionals, and prevention programs. Anti-bullying interventions should not focus exclusively on reducing the occurrence of victimization but should also identify adolescents who continue to experience cognitive and emotional consequences after victimization has occurred. Screening procedures in schools could include indicators of repetitive negative thinking, emotional-regulation difficulties, and depressive symptoms among students reporting peer victimization. Psychological interventions may benefit from combining cognitive strategies that reduce maladaptive rumination with emotion-regulation training that strengthens emotional awareness,

acceptance, distress tolerance, impulse control, and flexible coping. School counselors and psychologists could also teach adolescents how to seek constructive social support without becoming trapped in repetitive problem-focused discussion. At the broader school level, intervention should combine peer climate improvement, clear responses to bullying, accessible counseling, and early identification of students showing sustained distress. Such an integrated approach may help interrupt the progression from peer victimization to persistent rumination, emotion dysregulation, and depressive symptoms before these difficulties become more severe.

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Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

The study protocol adhered to the principles outlined in the Helsinki Declaration, which provides guidelines for ethical research involving human participants.

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

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Authors' Contributions

All authors equally contributed to this article.

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