

Characterizing the Psychological Patterns Associated With Toxic Peer Relationships During Adolescence

Ardit. Hoxha¹, Julien. Dupont²

¹ Department of Clinical Psychology, University of Tirana, Tirana, Albania

² Department of Neuropsychology, University of Bordeaux, Bordeaux, France

* Corresponding author email address: julien.dupont@u-bordeaux.fr

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ABSTRACT

Objective: This study aimed to identify distinct latent profiles of toxic peer relationships among adolescents and examine differences among these profiles in emotion-regulation difficulties, self-esteem, depression, anxiety, and stress.

Methods and Materials: This cross-sectional descriptive-analytical study was conducted among 486 adolescents aged 13–18 years enrolled in secondary schools in France during the 2025–2026 academic year. Participants were selected through multistage cluster sampling. Data were collected using measures of peer victimization, relational aggression, friendship conflict, peer trust, peer communication, peer alienation, emotion-regulation difficulties, self-esteem, depression, anxiety, and stress. Data analysis was performed using SPSS 29 and Mplus 8.10. Pearson correlations were calculated, and latent profile analysis was used to identify distinct peer-relationship patterns. Competing models were compared using AIC, BIC, sample-size-adjusted BIC, entropy, the Lo-Mendell-Rubin likelihood ratio test, and the bootstrap likelihood ratio test. Differences in psychological outcomes across profiles were examined using multivariate and univariate analyses with adjusted pairwise comparisons.

Findings: A four-profile solution provided the most interpretable and statistically adequate representation of the data, yielding Secure/Low-Toxicity, Conflict-Dominant, Alienated-Victimized, and High-Toxicity profiles. Significant between-profile differences were found for emotion-regulation difficulties, $F(3, 482) = 102.47, p < .001, \eta^2 = .39$; self-esteem, $F(3, 482) = 95.63, p < .001, \eta^2 = .37$; depression, $F(3, 482) = 116.28, p < .001, \eta^2 = .42$; anxiety, $F(3, 482) = 82.91, p < .001, \eta^2 = .34$; and stress, $F(3, 482) = 101.36, p < .001, \eta^2 = .39$. The High-Toxicity profile showed the poorest psychological functioning, whereas the Secure/Low-Toxicity profile showed the most favorable outcomes. The overall multivariate effect of profile membership remained significant after a adjustment for age and gender, Wilks' $\Lambda = .49, F(15, 1319.62) = 25.84, p < .001, \text{partial } \eta^2 = .20$.

Conclusion: Toxic peer relationships during adolescence are heterogeneous and form distinct psychological profiles that differ substantially in emotional regulation, self-esteem, and psychological distress.

Keywords: Adolescence; Toxic Peer Relationships; Peer Victimization; Latent Profile Analysis; Emotion Regulation; Self-Esteem; Depression; Anxiety; Stress

1. Introduction

Adolescence is a developmental period characterized by major biological, cognitive, emotional, and

interpersonal transitions, during which peer relationships become increasingly central to identity formation, emotional security, social learning, and psychological adjustment. As adolescents progressively seek autonomy from family

structures, friendships and peer-group affiliations often assume greater importance as sources of belonging, validation, companionship, and social comparison. Supportive peer relationships can facilitate emotional regulation, resilience, self-esteem, school engagement, and adaptive identity development, whereas persistently hostile, coercive, rejecting, manipulative, or unstable peer interactions may undermine these developmental processes and contribute to psychological distress. Contemporary research increasingly emphasizes this dual function of peer relationships, demonstrating that peers can operate simultaneously as important protective resources and as potent sources of psychosocial risk depending on the quality, stability, reciprocity, and emotional safety of the relationship (Carapeto et al., 2025). Consequently, understanding maladaptive or toxic peer relationships requires a broader perspective than the traditional identification of isolated bullying episodes, because harmful peer environments may involve overlapping patterns of victimization, aggression, exclusion, distrust, alienation, conflict, coercion, emotional dependence, and deficient communication.

Peer victimization represents one of the most extensively investigated manifestations of dysfunctional adolescent peer relationships. It encompasses repeated exposure to physical, verbal, relational, social, or digital forms of aggression in situations characterized by interpersonal harm and, frequently, an imbalance of power. Bullying exposure has increasingly been conceptualized as a potentially significant adverse childhood experience because repeated victimization can interfere with emotional security, stress regulation, interpersonal expectations, and developmental functioning over prolonged periods (Berger & Möhler, 2026). Peer victimization is therefore not simply a transient social difficulty but may constitute a sustained developmental stressor whose psychological effects depend on duration, severity, developmental timing, social context, and access to protective relationships. Longitudinal evidence further indicates that trajectories of bullying exposure from childhood into adolescence are heterogeneous and may be associated with differing mental health outcomes, emphasizing the importance of identifying patterns rather than relying solely on average levels of victimization (Deniz et al., 2026). Such heterogeneity becomes especially relevant during adolescence because experiences of acceptance, rejection, status, and belonging become deeply intertwined with evolving self-concept and emotional functioning.

The psychological consequences associated with harmful peer experiences encompass a wide range of internalizing

and behavioral problems. Peer victimization has repeatedly been linked with depressive symptoms, anxiety, stress, emotional distress, behavioral dysregulation, and broader psychopathological symptoms among adolescents (Ali & Khan, 2022). Developmental psychopathology models suggest that interpersonal stressors rarely act in isolation; rather, they interact with individual vulnerabilities, family experiences, cognitive tendencies, emotional processes, and contextual factors to alter developmental trajectories over time (Gökdağ & Kızıltepe, 2023). Peer-related stress may therefore contribute to mental health difficulties directly while also intensifying existing vulnerabilities. In periods of heightened social sensitivity, repeated rejection or humiliation can reinforce negative self-evaluations, increase threat monitoring, disrupt emotion regulation, and reduce confidence in interpersonal relationships. Consistent with this perspective, broader reviews of adolescent mental health risk factors identify adverse social relationships, interpersonal stress, family difficulties, maladaptive coping, and environmental pressures as interconnected determinants of psychological well-being (Lin & Guo, 2024).

Depression appears to be particularly sensitive to adverse peer experiences. Adolescents who are frequently victimized may experience helplessness, social defeat, diminished perceived belonging, and persistent negative self-appraisal, all of which can contribute to depressive symptomatology. Recent evidence indicates that the relationship between peer bullying and adolescent depression may also operate through behavioral and technological pathways, including patterns of cellphone use that potentially function as coping strategies, avoidance mechanisms, or alternative channels for social engagement (Zhou et al., 2025). Similarly, interpersonal stressors during periods of widespread disruption have been associated with adolescent mental health partly through heightened loneliness, suggesting that subjective social disconnection may represent an important mechanism through which stressful relationships influence psychological functioning (Manvelian et al., 2026). These findings underscore that the psychological effects of problematic peer relationships cannot be fully understood by counting aggressive events alone; adolescents' perceptions of exclusion, loneliness, trust, belonging, and emotional connection may be equally important.

Emotion regulation is another central process linking peer adversity with psychological outcomes. Adolescents exposed to repeated victimization may develop maladaptive regulatory responses such as rumination, catastrophizing, suppression, withdrawal, or heightened emotional reactivity.

Research has demonstrated that cognitive emotion-regulation strategies mediate associations between bullying victimization and adolescent depression, anxiety, and stress, indicating that peer adversity may partly influence mental health through alterations in how adolescents interpret and manage emotional experiences (Vacca et al., 2023). Neurobiological research similarly suggests that victimization may affect neural systems involved in threat detection, emotional processing, reward, social cognition, and regulatory control (Cubillo, 2022). Integrative accounts of bullying-related brain dynamics further propose that repeated social stress may produce converging cognitive and emotional adaptations that contribute to stress-related psychopathology (Palamarchuk & Vaillancourt, 2022). Thus, psychological patterns associated with toxic peer relationships may involve both interpersonal characteristics and intrapersonal processes, particularly emotion-regulation difficulties that amplify adolescents' vulnerability to distress.

Self-esteem and self-related processes are also likely to be affected by the quality of adolescent peer relationships. Repeated criticism, exclusion, humiliation, relational aggression, or rejection can undermine feelings of competence, worth, and social acceptance, while secure friendships may support positive self-evaluations. The emotional implications of both direct and relational bullying have been shown to vary according to intrapersonal protective resources such as self-compassion, suggesting that adolescents' ways of relating to themselves may influence the psychological consequences of negative peer experiences (Múzquiz et al., 2022). At a developmental level, adverse peer relationships may also disrupt identity consolidation. Childhood peer victimization has been associated with later identity diffusion and maladaptive behavioral outcomes, indicating that peer-related experiences may become incorporated into enduring self-representations (Márkou et al., 2021). Furthermore, developmental trajectories involving peer victimization have been connected with borderline personality features and suicidal risk, illustrating the potential significance of persistent interpersonal adversity for emerging patterns of self-organization and emotional instability (Yang, 2024).

More severe psychological and behavioral outcomes have also been documented in adolescents exposed to adverse peer environments. Bullying involvement has been associated with non-suicidal self-injury, suggesting that interpersonal distress may contribute to self-harming behavior among vulnerable young people (Çiçek et al., 2022). Studies examining predictors of non-suicidal self-

injury likewise identify interpersonal and psychological factors as important correlates of adolescent self-harm (Iswanti et al., 2024). Among clinical adolescent populations, bullying experiences, depressive symptoms, and relationship variables have also emerged as predictors of non-suicidal self-injury (Zhang et al., 2021). Broader integrative discussions of self-injury emphasize that such behavior must be understood within interacting psychological, social, cultural, and meaning-based systems rather than as a single-cause outcome (Permana, 2024). School-based analyses of youth suicide similarly emphasize developmental vulnerabilities, cumulative interpersonal adversity, and failures of supportive systems as important contexts for understanding severe emotional crises (Mutmainnah & Hendrawan, 2024). Although toxic peer relationships should not be interpreted deterministically, this evidence highlights the importance of identifying adolescents whose relational patterns may place them at elevated psychological risk.

The consequences of peer adversity can extend beyond immediate internalizing symptoms and may have implications for later functioning. Peer victimization has been associated with eating-related difficulties through perceived stress, indicating that the effects of interpersonal adversity may generalize into behavioral domains beyond anxiety and depression (Rosén et al., 2023). Childhood and adolescent peer victimization has also been examined in relation to personality disorders in adulthood, raising the possibility that repeated interpersonal adversity contributes to longer-term patterns of emotional and relational dysfunction among some individuals (Martínez et al., 2022). Reviews focused on borderline personality pathology in adolescence likewise identify psychosocial adversity, unstable relationships, invalidation, trauma-related processes, and emotional dysregulation as developmentally relevant risk factors (Gupta et al., 2023). Recent work further suggests that particular peer-relationship features during specific developmental periods may differentially predict later borderline personality disorder and major depressive disorder, indicating that the nature and timing of interpersonal experiences may matter as much as their overall frequency (Naeem et al., 2025). Such findings support approaches that seek to characterize different configurations of harmful peer relationships rather than treating all peer adversity as a unitary construct.

The social context surrounding peer relationships also shapes their psychological impact. School enjoyment, for example, develops through distinct trajectories and latent

classes that are associated with peer victimization and mental health, demonstrating the importance of school-based relational experiences for adolescents' broader emotional adjustment (Kawabata et al., 2025). Classroom social support may moderate the association between victimization and emotional-behavioral functioning, indicating that supportive interpersonal climates can reduce or alter the psychological consequences of harmful peer experiences (Campbell et al., 2026). Protective and risk factors associated with victimization also include individual, family, peer, and school-level characteristics, reinforcing the need for ecological interpretations of adolescent peer adversity (Lin, 2023). From a resilience perspective, adaptation following childhood adversity is best understood as a dynamic multilevel process involving interactions among individual capacities and environmental resources rather than as a stable trait possessed by the adolescent (Pastuning et al., 2024). Consequently, adolescents exposed to similar levels of peer conflict or victimization may show markedly different psychological profiles depending on the availability of supportive relationships and adaptive regulatory resources.

Attachment and family experiences constitute additional protective or vulnerability factors within this broader developmental system. Secure attachment may influence peer functioning by supporting expectations of trust, communication, emotional availability, and interpersonal safety. Evidence suggests that secure attachment is associated with family relationship quality and peer bullying and that positive childhood experiences may mediate these relationships (Çiçek et al., 2025). This developmental pathway is relevant because toxic peer relationships often involve precisely the opposite relational characteristics: mistrust, insecurity, emotional inconsistency, alienation, and difficulty seeking or receiving support. Adolescents who possess stronger interpersonal security may be better able to establish boundaries, disengage from coercive relationships, interpret conflict accurately, and access support, whereas those with greater relational insecurity may remain vulnerable to problematic peer dynamics. Research on resilience and developmental risk therefore supports simultaneous examination of negative relationship indicators and protective interpersonal characteristics rather than focusing exclusively on overt victimization.

The meaning and expression of harmful peer relationships can also vary according to identity and social position. Homophobic bullying, for example, has been associated with emotional factors and psychopathological

symptoms, demonstrating that identity-based peer aggression can impose specific burdens on adolescents exposed to stigmatization (Garaigordobil et al., 2025). Gender-related trauma frameworks similarly emphasize that experiences of harassment, discrimination, rejection, and interpersonal threat may become embedded within broader social systems and identity-related vulnerabilities (Tishelman, 2026). These perspectives illustrate that peer toxicity is not psychologically uniform and may differ in origin, content, meaning, and consequences across adolescents. A relational environment that appears to involve conflict at the behavioral level may, for one adolescent, primarily reflect mutual antagonism, whereas for another it may represent exclusion, power imbalance, identity-based hostility, or chronic victimization. This variability reinforces the value of person-centered methods capable of distinguishing subgroups defined by particular constellations of peer experiences.

Contemporary digital environments further complicate adolescent peer relationships because interpersonal aggression and social exclusion are no longer restricted to face-to-face contexts. Online toxicity may spill over into classrooms and school ecosystems, blurring distinctions between digital and offline social environments and extending peer conflict beyond conventional temporal and spatial boundaries (Marshall, 2026). Cyberbullying victimization can retain psychological relevance over long periods, as reports of adolescent cybervictimization have become increasingly prominent among adults seeking outpatient mental health services (Iffland et al., 2023). Technology-related behaviors may also coexist with aggression and problematic social functioning; research examining social bullying has linked it with internet gaming disorder, risk-taking behavior, and internet addiction, illustrating the complexity of digital and behavioral factors surrounding peer aggression (Nwanosike et al., 2022). Exposure to antisocial media content may additionally be associated with subjective well-being through school-based victimization pathways, suggesting interactions between media environments and offline peer experiences (Akintunde et al., 2025). These developments make it increasingly difficult to conceptualize toxic peer relationships as a single behavior occurring within one setting.

Importantly, not all adolescents involved in problematic peer relationships occupy a simple victim-versus-aggressor dichotomy. Some may experience high victimization but relatively little aggressive behavior, whereas others may

display both victimization and aggression. Still others may report high interpersonal conflict in the absence of severe victimization, or profound alienation despite relatively moderate levels of overt hostility. Adolescents may also maintain emotionally intense peer relationships marked by low trust, poor communication, and recurrent conflict without meeting conventional definitions of bullying. Person-centered analytical approaches are particularly suitable for examining such complexity because they identify subgroups on the basis of configurations of multiple relational indicators. This approach shifts attention from whether individual variables are correlated toward how combinations of victimization, aggression, conflict, trust, communication, and alienation coexist within identifiable groups. Evidence that developmental outcomes vary across heterogeneous trajectories and latent classes of peer and school experiences provides a strong rationale for this perspective (Deniz et al., 2026; Kawabata et al., 2025).

The distinction between supportive and toxic peer configurations may also be critical for understanding why some adolescents experience substantial psychological distress whereas others remain comparatively well adjusted. Toxic relationships may simultaneously expose adolescents to aggression while depriving them of the protective benefits ordinarily provided by friendships, such as validation, emotional disclosure, companionship, and secure belonging. In this sense, the psychological burden of a toxic peer environment may arise not only from the presence of negative interactions but from the combined presence of interpersonal threat and absence of interpersonal safety. This interpretation is consistent with evidence showing that peer relationships can function as both protective and risk-enhancing influences on adolescent mental health (Carapeto et al., 2025). It also aligns with evidence that social and emotional effects of victimization are embedded within stress-regulation, cognitive, and neurobiological systems rather than being reducible to isolated interpersonal events (Cubillo, 2022; Palamarchuk & Vaillancourt, 2022).

Despite extensive research on bullying and peer victimization, several gaps remain. A substantial proportion of existing studies employ variable-centered approaches that estimate associations between individual peer-experience variables and psychological outcomes. Although valuable, such approaches may obscure meaningful heterogeneity in adolescents' relational experiences. Moreover, overt victimization frequently receives greater attention than relational characteristics such as trust, communication, conflict, and alienation. Studies that simultaneously

incorporate these dimensions are needed to determine whether qualitatively distinct peer-relationship profiles can be identified and whether these profiles correspond to different levels of emotional dysregulation, self-esteem, depression, anxiety, and stress. This issue is particularly important given accumulating evidence that interpersonal adversity is associated with diverse developmental outcomes ranging from emotional distress and self-injury to altered identity development and longer-term psychopathology (Çiçek et al., 2022; Martínez et al., 2022). A multidimensional, person-centered characterization may therefore provide a more developmentally informative account of toxic peer relationships than analyses based on isolated indicators.

Accordingly, the aim of the present study was to characterize distinct psychological patterns associated with toxic peer relationships among adolescents in France by identifying latent profiles based on peer victimization, relational aggression, friendship conflict, peer trust, peer communication, and peer alienation and examining differences among these profiles in emotion-regulation difficulties, self-esteem, depression, anxiety, and stress.

2. Methods and Materials

2.1. Study Design and Participants

This study employed a cross-sectional, descriptive-analytical design with a person-centered approach to characterize distinct psychological patterns associated with toxic peer relationships among adolescents in France. The study population consisted of adolescents enrolled in lower- and upper-secondary schools during the 2025–2026 academic year. A total of 486 adolescents aged 13 to 18 years participated in the study, with a mean age of 15.47 years ($SD = 1.52$). Participants were recruited from public and private secondary schools located in several urban and suburban areas of France through a multistage cluster sampling procedure. In the first stage, schools were selected from participating educational districts, and in the second stage, classes were randomly selected from different grade levels. All students in the selected classes who met the eligibility criteria were invited to participate. Inclusion criteria consisted of being between 13 and 18 years of age, current enrollment in a secondary school in France, sufficient proficiency in French to understand the questionnaires, and provision of informed assent together with parental or legal guardian consent for participants younger than 18 years. Adolescents were excluded if they

submitted substantially incomplete questionnaires, demonstrated response patterns indicating indiscriminate responding, or reported a condition that prevented independent completion of the assessment instruments. Data collection was conducted in classrooms under standardized conditions by trained research assistants. Participants were informed that participation was voluntary, that their responses would remain anonymous and confidential, and that they could withdraw from the study at any point without academic or personal consequences. To reduce social desirability and concerns related to peer observation, students completed the questionnaires individually without discussion with classmates, and teachers were not given access to individual responses. Ethical principles concerning research with minors, confidentiality, informed consent, and protection of participants from psychological harm were observed throughout the research process.

2.2. Measures

Peer Experiences Questionnaire. Toxic peer relationship experiences were primarily assessed using the Peer Experiences Questionnaire developed by Prinstein et al. (2001). The instrument was designed to assess adolescents' involvement in problematic peer interactions, particularly overt and relational forms of aggression and victimization. Its items address behaviors such as being threatened or physically mistreated, being deliberately excluded from peer activities, experiencing interpersonal manipulation or rumor spreading, and engaging in similar behaviors toward peers. Responses are provided on a frequency-based Likert scale, with higher scores reflecting greater involvement in aggressive or victimizing peer experiences. Particular emphasis in the present study was placed on the victimization dimensions because repeated relational aggression, exclusion, humiliation, and coercive peer behavior represent central behavioral indicators of unhealthy or toxic peer relationships. Scores were calculated according to the original scoring framework, and higher scores represented greater exposure to adverse peer experiences. Previous research with adolescent populations has provided evidence supporting the construct validity and internal consistency of the questionnaire. Internal consistency was reassessed for the present sample before the main analyses.

Friendship Qualities Scale. The quality of close peer relationships was assessed using the Friendship Qualities Scale developed by Bukowski, Hoza, and Boivin (1994). This instrument evaluates several dimensions of adolescents'

friendships, including companionship, help or aid, security, closeness, and conflict. Participants respond to statements concerning their experiences with a close friend using a Likert-type response format. Positive dimensions reflect supportive, trusting, and emotionally secure friendship characteristics, whereas the conflict dimension captures disagreement, irritation, tension, and antagonism within the relationship. For the purposes of the present research, high conflict accompanied by comparatively low support, security, and closeness was considered particularly relevant to the identification of maladaptive peer-relationship configurations. Subscale scores were calculated by averaging the corresponding items, with higher values indicating a stronger presence of the respective friendship characteristic. The Friendship Qualities Scale has demonstrated satisfactory factorial validity and reliability across studies involving children and adolescents and has been extensively used in developmental and peer-relationship research.

Inventory of Parent and Peer Attachment—Peer Scale. Adolescents' perceived emotional attachment to peers was evaluated using the peer component of the Inventory of Parent and Peer Attachment originally developed by Armsden and Greenberg (1987). The instrument evaluates perceived trust, quality of communication, and alienation in adolescents' relationships with significant peers. Items are rated on a Likert-type scale indicating how accurately each statement describes the respondent's peer relationships. Trust reflects feelings of acceptance, understanding, and reliability; communication represents the perceived quality and openness of interpersonal communication; and alienation reflects emotional distance, anger, and perceived disconnection. Higher trust and communication scores indicate healthier peer attachment, whereas higher alienation indicates greater interpersonal insecurity and detachment. The peer scale was included because toxic relationships may coexist with strong emotional dependence while simultaneously being characterized by mistrust, alienation, and impaired communication. Previous investigations have reported adequate construct validity and high internal consistency for the instrument among adolescent samples.

Difficulties in Emotion Regulation Scale—Short Form. Emotion-regulation difficulties were measured using the Difficulties in Emotion Regulation Scale—Short Form developed by Kaufman et al. (2016), based on the original theoretical framework proposed by Gratz and Roemer. The 18-item measure assesses several dimensions of emotion dysregulation, including nonacceptance of emotional

responses, difficulty engaging in goal-directed behavior when distressed, impulse-control difficulties, limited access to effective emotion-regulation strategies, lack of emotional clarity, and limited emotional awareness. Items are rated using a five-point Likert-type scale ranging from responses indicating that the statement applies almost never to responses indicating that it applies almost always. After appropriate reverse scoring, item scores are combined to obtain dimension scores and an overall indicator of emotion-regulation difficulty. Higher total scores indicate greater problems regulating emotional states. The short form has demonstrated strong correspondence with the original scale, satisfactory factorial validity, and acceptable to high internal consistency in adolescent and young populations.

Rosenberg Self-Esteem Scale. Global self-esteem was assessed using the Rosenberg Self-Esteem Scale developed by Rosenberg (1965). The scale consists of 10 items measuring overall positive and negative evaluations of the self. Participants indicate their agreement with each statement on a four-point Likert scale ranging from strong disagreement to strong agreement. Five items are positively worded and five are negatively worded; negatively phrased items are reverse scored before calculating the total score. Higher total scores indicate higher global self-esteem, whereas lower scores reflect a more negative evaluation of the self. The Rosenberg Self-Esteem Scale is one of the most widely used measures of global self-esteem in adolescent research and has demonstrated strong evidence of reliability, convergent validity, and construct validity across different cultural settings.

Depression Anxiety Stress Scales–21. Psychological distress was assessed using the 21-item version of the Depression Anxiety Stress Scales developed by Lovibond and Lovibond (1995). The instrument contains three seven-item subscales assessing depressive symptoms, anxiety symptoms, and stress experienced during the recent period. Participants rate each item using a four-point response scale ranging from 0, indicating that the statement did not apply to them, to 3, indicating that it applied very much or most of the time. Scores are calculated separately for depression, anxiety, and stress, with higher scores indicating greater symptom severity. The scale was used to determine whether different patterns of toxic peer relationships were accompanied by distinct psychological distress profiles. The DASS-21 has demonstrated satisfactory factorial validity and high internal consistency in adolescent and young populations and has been widely applied in both epidemiological and psychological research.

2.3. Data Analysis

Data analysis was conducted using IBM SPSS Statistics version 29 and Mplus version 8.10. Before the primary analyses, the dataset was screened for missing values, response irregularities, univariate outliers, and distributional characteristics. Cases with excessive missing information were excluded, while limited item-level missingness was handled using appropriate model-based estimation procedures. Descriptive statistics, including means, standard deviations, minimum and maximum values, skewness, and kurtosis, were calculated for the principal study variables. Internal consistency of the study instruments and their subscales was examined using Cronbach's alpha and McDonald's omega coefficients. Pearson correlation coefficients were initially calculated to examine associations among adverse peer experiences, friendship conflict, peer attachment characteristics, emotion-regulation difficulties, self-esteem, depression, anxiety, and stress. The primary analysis employed latent profile analysis to identify psychologically meaningful subgroups of adolescents according to their patterns of toxic peer-relationship experiences. Standardized indicators representing peer victimization, relational aggression, friendship conflict, peer trust, peer communication, and peer alienation were entered as profile indicators. Models specifying progressively increasing numbers of latent profiles were estimated and compared. Selection of the optimal solution was based on the Akaike information criterion, Bayesian information criterion, sample-size-adjusted Bayesian information criterion, entropy, the Lo-Mendell-Rubin adjusted likelihood ratio test, the bootstrap likelihood ratio test, profile size, and substantive interpretability. Lower information-criterion values were considered indicative of comparatively better model fit, whereas entropy values closer to 1.00 indicated clearer classification of individuals into profiles. Solutions containing extremely small or theoretically uninterpretable classes were not retained solely on the basis of statistical fit indices. After selection of the optimal latent-profile model, the resulting groups were characterized according to the relative severity and configuration of toxic peer-relationship indicators. Differences among the identified profiles in emotion-regulation difficulties, self-esteem, depression, anxiety, and stress were subsequently examined using appropriate auxiliary-variable procedures and multivariate comparisons while accounting for classification uncertainty. Where overall differences were statistically significant, pairwise

comparisons were conducted with adjustment for multiple testing. Adolescents' age and gender were additionally examined as potential covariates in supplementary analyses to determine whether profile membership and psychological outcomes remained distinguishable after accounting for basic demographic characteristics. Effect sizes were reported alongside significance tests to indicate the magnitude of observed differences. All statistical tests were two-tailed, and the threshold for statistical significance was established at $p < .05$.

3. Findings and Results

A total of 486 adolescents were included in the final analyses. Participants ranged in age from 13 to 18 years, with a mean age of 15.47 years ($SD = 1.52$). Of the total sample, 247 participants (50.82%) were girls and 239 (49.18%) were boys. With regard to age distribution, 61 adolescents (12.55%) were 13 years old, 82 (16.87%) were 14 years old, 103 (21.19%) were 15 years old, 98 (20.16%) were 16 years old, 84 (17.28%) were 17 years old, and 58 (11.93%) were

18 years old. In terms of school level, 221 participants (45.47%) were enrolled in lower-secondary education and 265 (54.53%) were enrolled in upper-secondary education. Most participants attended public schools ($n = 371$, 76.34%), whereas 115 adolescents (23.66%) attended private schools. Regarding family structure, 356 adolescents (73.25%) reported living with both parents, 96 (19.75%) lived primarily with one parent, and 34 (7.00%) reported another living arrangement. Preliminary screening indicated that the proportion of missing item-level data was low and did not exceed 2.3% for any major study variable. No major violations of univariate normality were observed. Absolute skewness values ranged from 0.08 to 0.91 and absolute kurtosis values ranged from 0.12 to 1.18. Examination of standardized scores and Mahalanobis distance did not identify a sufficient number of influential multivariate outliers to affect the substantive results. Internal consistency coefficients for the principal variables were satisfactory to high, with Cronbach's alpha coefficients ranging from .79 to .92 and McDonald's omega coefficients ranging from .80 to .93.

Table 1

Descriptive Statistics, Reliability Coefficients, and Correlations Among the Study Variables (N = 486)

Variable	M	SD	α	ω	1	2	3	4	5	6	7	8	9	10
1. Peer victimization	2.31	0.74	.88	.89	—									
2. Relational aggression	2.08	0.69	.84	.85	.52***	—								
3. Friendship conflict	2.47	0.72	.81	.82	.46***	.49***	—							
4. Peer trust	3.58	0.67	.90	.91	-.41***	-.29***	-.47***	—						
5. Peer communication	3.44	0.65	.87	.88	-.36***	-.25***	-.42***	.68***	—					
6. Peer alienation	2.29	0.71	.83	.84	.49***	.36***	.53***	-.58***	-.51***	—				
7. Emotion-regulation difficulties	2.63	0.61	.92	.93	.43***	.34***	.41***	-.38***	-.33***	.48***	—			
8. Self-esteem	26.84	5.12	.89	.90	-.37***	-.26***	-.35***	.44***	.39***	-.46***	-.52***	—		
9. Depression	8.91	5.43	.88	.89	.45***	.31***	.39***	-.40***	-.35***	.51***	.61***	-.58***	—	
10. Anxiety	8.14	4.91	.85	.86	.39***	.28***	.34***	-.31***	-.29***	.43***	.56***	-.47***	.68***	—
11. Stress	10.72	5.26	.86	.87	.41***	.30***	.38***	-.35***	-.32***	.46***	.59***	-.49***	.71***	.66***

As shown in Table 1, the study variables displayed theoretically coherent patterns of association. Peer victimization was positively correlated with relational aggression ($r = .52$, $p < .001$), friendship conflict ($r = .46$, $p < .001$), peer alienation ($r = .49$, $p < .001$), emotion-regulation difficulties ($r = .43$, $p < .001$), depression ($r = .45$, $p < .001$), anxiety ($r = .39$, $p < .001$), and stress ($r = .41$, $p < .001$). In contrast, greater peer victimization was associated with lower peer trust ($r = -.41$, $p < .001$), poorer peer communication ($r = -.36$, $p < .001$), and lower self-esteem ($r = -.37$, $p < .001$). Friendship conflict showed a particularly strong positive association with peer alienation

($r = .53$, $p < .001$) and was inversely associated with peer trust ($r = -.47$, $p < .001$). Peer trust and peer communication were strongly and positively related ($r = .68$, $p < .001$), indicating that adolescents who perceived their peer relationships as more dependable also tended to report greater openness and interpersonal communication. Peer alienation was associated with poorer psychological functioning across all outcome variables, including greater emotion-regulation difficulties ($r = .48$, $p < .001$), depression ($r = .51$, $p < .001$), anxiety ($r = .43$, $p < .001$), and stress ($r = .46$, $p < .001$), as well as lower self-esteem ($r = -.46$, $p < .001$). Emotion-regulation difficulties were also strongly

associated with depression ($r = .61, p < .001$), anxiety ($r = .56, p < .001$), and stress ($r = .59, p < .001$), while self-esteem was inversely associated with all three forms of psychological distress. These preliminary relationships

supported the use of a person-centered analysis to determine whether distinct configurations of peer relationship characteristics could be identified within the adolescent sample.

Table 2

Fit Indices for the Latent Profile Models Based on Toxic Peer-Relationship Indicators

Number of profiles	Log-likelihood	AIC	BIC	SSA-BIC	Entropy	LMR-LRT p	BLRT p	Smallest class, n (%)
1	-3974.86	7973.72	8024.03	7986.01	—	—	—	486 (100.00)
2	-3693.41	7424.82	7504.47	7444.28	.82	<.001	<.001	171 (35.19)
3	-3556.79	7165.58	7274.57	7192.21	.88	<.001	<.001	104 (21.40)
4	-3491.37	7048.74	7187.08	7082.54	.91	.003	<.001	67 (13.79)
5	-3467.92	7015.84	7183.52	7056.81	.86	.119	<.001	31 (6.38)
6	-3448.61	6991.22	7188.25	7039.36	.83	.274	<.001	18 (3.70)

Table 2 presents the fit statistics for the one- through six-profile solutions. Across successive models, the AIC, BIC, and sample-size-adjusted BIC decreased, indicating progressively improved model fit as additional latent profiles were introduced. However, consideration of all statistical and substantive criteria supported retention of the four-profile model. The four-profile solution yielded an AIC of 7048.74, a BIC of 7187.08, and a sample-size-adjusted BIC of 7082.54 and demonstrated the highest entropy value among the competing solutions (entropy = .91), reflecting very good classification precision. The Lo-Mendell-Rubin adjusted likelihood ratio test indicated that the four-profile model provided a statistically significant improvement over the three-profile model ($p = .003$), whereas the addition of a fifth profile did not produce a significant improvement according to the LMR-LRT ($p = .119$). Although the

bootstrap likelihood ratio test remained significant for larger solutions, the five- and six-profile models generated progressively smaller classes comprising only 6.38% and 3.70% of the sample, respectively, and the additional profiles were not substantively distinct from neighboring classes. Consequently, the four-profile solution was judged to provide the most parsimonious and interpretable representation of the observed heterogeneity. The four retained profiles were subsequently labeled Secure/Low-Toxicity, Conflict-Dominant, Alienated-Victimized, and High-Toxicity based on their standardized indicator patterns. The Secure/Low-Toxicity profile included 189 adolescents (38.89%), the Conflict-Dominant profile included 126 adolescents (25.93%), the Alienated-Victimized profile included 104 adolescents (21.40%), and the High-Toxicity profile included 67 adolescents (13.79%).

Table 3

Differences in Psychological Outcomes Across the Four Latent Profiles

Psychological outcome	Secure/Low-Toxicity (n = 189) M (SD)	Conflict-Dominant (n = 126) M (SD)	Alienated-Victimized (n = 104) M (SD)	High-Toxicity (n = 67) M (SD)	F	p	η^2
Emotion-regulation difficulties	2.19 (0.43)	2.57 (0.49)	2.91 (0.50)	3.31 (0.53)	102.47	<.001	.39
Self-esteem	30.41 (4.10)	27.16 (4.47)	23.82 (4.38)	20.37 (4.21)	95.63	<.001	.37
Depression	5.43 (3.51)	8.12 (4.17)	11.64 (4.82)	15.79 (5.21)	116.28	<.001	.42
Anxiety	5.51 (3.28)	7.49 (3.74)	10.06 (4.16)	13.18 (4.43)	82.91	<.001	.34
Stress	7.48 (3.69)	10.16 (4.23)	13.07 (4.31)	16.54 (4.62)	101.36	<.001	.39

As presented in Table 3, the four latent profiles differed significantly across all psychological outcomes. The largest between-profile difference emerged for depression, $F(3, 482) = 116.28, p < .001, \eta^2 = .42$, indicating that approximately 42% of the observed variance in depressive symptoms was associated with latent profile membership.

Adolescents in the Secure/Low-Toxicity profile reported the lowest mean depression score ($M = 5.43, SD = 3.51$), followed by the Conflict-Dominant profile ($M = 8.12, SD = 4.17$), the Alienated-Victimized profile ($M = 11.64, SD = 4.82$), and the High-Toxicity profile ($M = 15.79, SD = 5.21$). Adjusted pairwise comparisons indicated that each of the

four profiles differed significantly from the others in depressive symptoms (all adjusted p values $< .01$). A similarly graded pattern was observed for emotion-regulation difficulties, $F(3, 482) = 102.47, p < .001, \eta^2 = .39$. Adolescents in the High-Toxicity profile reported the greatest difficulties in regulating emotional responses ($M = 3.31, SD = 0.53$), whereas those in the Secure/Low-Toxicity profile reported the fewest difficulties ($M = 2.19, SD = 0.43$). The Alienated-Victimized group also demonstrated substantially greater emotion-regulation problems than the Conflict-Dominant group, indicating that victimization and interpersonal alienation were associated with greater dysregulation than conflict alone.

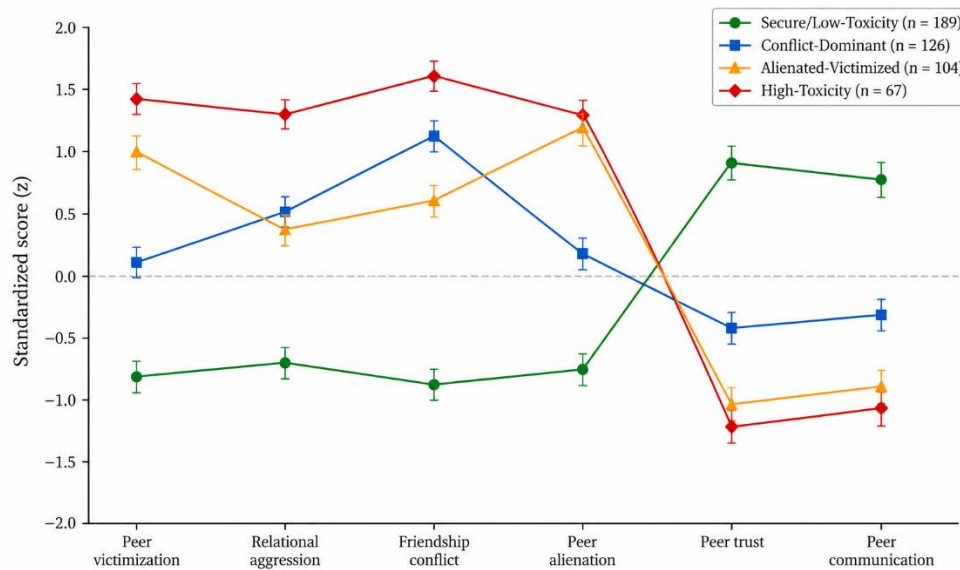
Significant differences were also observed for self-esteem, $F(3, 482) = 95.63, p < .001, \eta^2 = .37$. Mean self-esteem showed a monotonic decline across profiles as peer-relationship adversity increased. Adolescents in the Secure/Low-Toxicity profile had the highest self-esteem ($M = 30.41, SD = 4.10$), followed by those in the Conflict-Dominant profile ($M = 27.16, SD = 4.47$), the Alienated-Victimized profile ($M = 23.82, SD = 4.38$), and the High-Toxicity profile ($M = 20.37, SD = 4.21$). Pairwise comparisons showed statistically significant differences between all profile pairs after correction for multiple comparisons. Anxiety also differed significantly between profiles, $F(3, 482) = 82.91, p < .001, \eta^2 = .34$, with mean scores increasing from 5.51 ($SD = 3.28$) in the Secure/Low-Toxicity group to 13.18 ($SD = 4.43$) in the High-Toxicity group. Stress followed the same pattern, $F(3, 482) = 101.36, p < .001, \eta^2 = .39$, with adolescents in the High-Toxicity profile reporting more than twice the average stress score observed among those in the Secure/Low-Toxicity profile. Across all outcomes, the Alienated-Victimized profile consistently exhibited poorer psychological functioning than the Conflict-Dominant profile, despite the latter group's

relatively elevated interpersonal conflict. This pattern indicated that perceived exclusion, victimization, low trust, poor communication, and peer alienation were particularly closely associated with psychological maladjustment.

Supplementary analyses were conducted to determine whether the observed psychological differences remained evident after accounting for age and gender. Multivariate analysis with age and gender entered as covariates continued to show a significant overall effect of latent profile membership on the combined psychological outcomes, Wilks' $\Lambda = .49, F(15, 1319.62) = 25.84, p < .001$, partial $\eta^2 = .20$. The adjusted univariate effects of profile membership remained statistically significant for emotion-regulation difficulties, self-esteem, depression, anxiety, and stress, with all p values $< .001$. Neither adjustment for age nor adjustment for gender materially changed the ordering or magnitude of the profile means. Multinomial analyses further indicated that older adolescents were modestly more likely to belong to the Alienated-Victimized or High-Toxicity profiles than to the Secure/Low-Toxicity profile, although the magnitude of these associations was small. Gender differences in profile distribution were statistically significant but modest, with girls somewhat more frequently represented in the Alienated-Victimized profile and boys somewhat more frequently represented in the Conflict-Dominant profile. Importantly, these demographic variations did not account for the substantial differences in psychological distress and self-esteem across profiles. Taken together, the findings demonstrated four distinct patterns of adolescent peer relationships and showed that progressively more adverse configurations of victimization, conflict, alienation, low trust, and poor communication were accompanied by increasingly severe emotional dysregulation, reduced self-esteem, and elevated symptoms of depression, anxiety, and stress.

Figure 1

Standardized Toxic Peer-Relationship Indicator Scores Across the Four Latent Profiles



The profile configuration illustrated in Figure 1 demonstrated clear qualitative differences across the four groups rather than merely differences in overall severity. Adolescents classified in the Secure/Low-Toxicity profile displayed standardized scores below the sample mean for peer victimization, relational aggression, friendship conflict, and peer alienation, together with markedly above-average scores for peer trust and communication. This pattern was consistent with relatively supportive and psychologically secure peer relationships. The Conflict-Dominant profile was characterized primarily by elevated friendship conflict and moderately elevated relational aggression, whereas peer victimization and alienation remained closer to the sample average and trust and communication were only moderately reduced. This suggested a pattern of recurrent interpersonal tension and antagonism that was not accompanied by the more severe emotional disconnection observed in the higher-risk groups. The Alienated-Victimimized profile exhibited high peer victimization and peer alienation, low trust, and low communication, while relational aggression was only moderately elevated, indicating that these adolescents were more strongly characterized by perceived rejection, exclusion, and disconnection than by their own aggressive behavior. The High-Toxicity profile demonstrated the most globally adverse configuration, with substantially elevated peer victimization, relational aggression, friendship conflict, and alienation accompanied by pronounced deficits in peer trust and communication. The divergence between the four trajectories supported the interpretation that toxic peer

relationships during adolescence are heterogeneous and may involve distinct combinations of conflict, victimization, aggression, attachment insecurity, and relational disconnection.

4. Discussion

The present study sought to characterize psychological patterns associated with toxic peer relationships among adolescents by identifying latent profiles based on peer victimization, relational aggression, friendship conflict, peer trust, peer communication, and peer alienation and by examining differences among these profiles in emotion-regulation difficulties, self-esteem, depression, anxiety, and stress. The findings revealed four distinguishable profiles: Secure/Low-Toxicity, Conflict-Dominant, Alienated-Victimimized, and High-Toxicity. These profiles differed not only in the overall severity of adverse peer experiences but also in their configuration, suggesting that toxic peer relationships during adolescence are heterogeneous and cannot be adequately represented by a single continuum of bullying or victimization. The Secure/Low-Toxicity profile was characterized by low victimization, aggression, conflict, and alienation together with comparatively high trust and communication. In contrast, the High-Toxicity profile combined elevated victimization, relational aggression, friendship conflict, and alienation with markedly reduced trust and communication. The Conflict-Dominant and Alienated-Victimimized profiles occupied intermediate

positions but differed qualitatively, with the former characterized primarily by interpersonal tension and aggression and the latter by stronger victimization, alienation, and relational disconnection. These findings are consistent with research emphasizing that peer relationships can simultaneously contain protective and risk-related dimensions and that adolescent mental health is influenced by the broader relational configuration rather than by a single peer-related variable (Carapeto et al., 2025). They also correspond with longitudinal and person-centered evidence showing that peer adversity develops through heterogeneous trajectories with differing psychological consequences (Deniz et al., 2026; Kawabata et al., 2025).

The correlational findings provided further support for this multidimensional interpretation. Peer victimization, relational aggression, friendship conflict, and peer alienation were positively associated with emotion-regulation difficulties, depression, anxiety, and stress, whereas peer trust and communication were generally associated with more favorable psychological functioning. These patterns closely align with previous studies showing that involvement in bullying and peer victimization is associated with a broad range of psychopathological symptoms among adolescents (Ali & Khan, 2022). The results also support developmental psychopathology accounts in which interpersonal adversity contributes to internalizing symptoms through interacting emotional, cognitive, and social mechanisms rather than through a single direct pathway (Gökdağ & Kızıltepe, 2023). The association between peer victimization and depressive symptoms observed in the present study is particularly consistent with recent findings linking peer bullying with depression and identifying behavioral and technology-related mechanisms through which peer adversity may exert its influence (Zhou et al., 2025). Likewise, the positive relationships between peer alienation and depression, anxiety, and stress reinforce the importance of perceived social disconnection as a psychologically meaningful component of peer toxicity. This interpretation is supported by findings indicating that loneliness can play an important role in the association between interpersonal stressors and adolescent mental health (Manvelian et al., 2026).

The most important result concerned the identification of the High-Toxicity profile, which comprised adolescents exposed to a convergence of adverse peer experiences. These adolescents reported the highest levels of emotion-regulation difficulties, depression, anxiety, and stress and the lowest levels of self-esteem. This profile therefore

appears to represent a particularly vulnerable configuration in which adolescents are simultaneously exposed to interpersonal threat and deprived of supportive relational resources. Such a pattern is consistent with the view that bullying may function as a significant adverse childhood experience when it is chronic, relationally pervasive, and accompanied by psychological insecurity (Berger & Möhler, 2026). The marked psychological difficulties observed in this group can also be interpreted in light of neurobiological and cognitive evidence suggesting that repeated peer victimization is associated with alterations in systems related to stress reactivity, social threat processing, emotion regulation, and cognitive control (Cubillo, 2022; Palamarchuk & Vaillancourt, 2022). Adolescents repeatedly exposed to hostile or rejecting interactions may become increasingly vigilant to social threat, less able to regulate negative affect, and more likely to interpret ambiguous interpersonal situations negatively, thereby increasing vulnerability to persistent distress.

Emotion-regulation difficulties showed one of the strongest differences across the four profiles. Adolescents in the Secure/Low-Toxicity group reported the lowest level of emotional dysregulation, whereas those in the High-Toxicity group reported the highest, with the Alienated-Victimized group also displaying substantial difficulties. This finding is strongly supported by previous research demonstrating that cognitive emotion-regulation strategies mediate the relationship between bullying victimization and symptoms of depression, anxiety, and stress (Vacca et al., 2023). Repeated victimization may interfere with the development of adaptive regulatory skills by producing frequent experiences of shame, anger, fear, humiliation, and helplessness in situations where adolescents perceive limited control over interpersonal outcomes. When peer relationships themselves become sources of threat, adolescents may also lose opportunities to use social support as an emotion-regulation resource. The result that the Alienated-Victimized profile demonstrated more emotional dysregulation than the Conflict-Dominant profile is particularly informative. It suggests that the emotional burden of toxic peer relationships may be more strongly associated with rejection, alienation, and lack of relational security than with conflict alone. This interpretation corresponds with evidence that supportive social contexts can buffer the impact of victimization on emotional and behavioral functioning (Campbell et al., 2026).

The findings regarding self-esteem were similarly consistent and demonstrated a progressive decline across the

profiles from Secure/Low-Toxicity to High-Toxicity. Adolescents who experienced the most toxic relational configuration had markedly lower self-esteem than those whose peer relationships were characterized by greater trust and communication. This pattern is developmentally plausible because adolescence is a period in which self-evaluations are strongly influenced by social comparison, perceived acceptance, belonging, and feedback from significant peers. Repeated rejection or humiliation may gradually become internalized as negative beliefs about personal worth, social competence, or desirability. Previous research has shown that intrapersonal protective resources such as self-compassion can reduce the adverse emotional consequences associated with direct and relational bullying (Múzquiz et al., 2022). The present findings extend this perspective by indicating that supportive interpersonal characteristics, particularly trust and communication, may coexist with higher self-esteem, whereas alienation and victimization are associated with more negative self-evaluation. These findings are also compatible with evidence linking childhood peer victimization to later identity diffusion and maladaptive developmental outcomes (Mápkov et al., 2021). Persistent toxic relationships may therefore influence not only transient mood states but also the development of broader self-representations.

The psychological distinction between the Conflict-Dominant and Alienated-Victimized profiles is another noteworthy finding. Although adolescents in the Conflict-Dominant profile experienced elevated friendship conflict and relational aggression, their psychological outcomes were consistently less severe than those of adolescents in the Alienated-Victimized profile. This suggests that not all adverse peer interactions have equivalent psychological implications. Conflict may occur within relationships that still preserve some level of trust, communication, reciprocity, or belonging, whereas alienation and victimization may more directly communicate rejection, exclusion, powerlessness, and lack of interpersonal safety. Research on protective and risk factors associated with peer victimization similarly emphasizes that the consequences of adverse peer experiences depend on contextual resources and the broader social environment (Lin, 2023). Secure attachment and positive childhood experiences may also shape the capacity to maintain healthier peer interactions and reduce vulnerability to bullying (Çiçek et al., 2025). Accordingly, the current results suggest that relational quality should be examined alongside overt conflict when assessing adolescent peer difficulties.

The pronounced differences in depression across the four profiles are also consistent with a large body of previous research. Depression showed the largest proportion of explained variance among the psychological outcomes, with adolescents in the High-Toxicity profile reporting substantially higher symptoms than those in all other groups. Peer victimization has consistently been associated with depressive symptomatology, and recent evidence indicates that developmental timing and specific peer-relationship characteristics may distinguish pathways toward depressive disorders from other forms of psychopathology (Naeem et al., 2025). Similarly, adverse trajectories involving peer victimization have been linked with borderline personality features and suicidal risk, suggesting that persistent interpersonal stress may become integrated into broader patterns of affective and interpersonal dysfunction (Yang, 2024). Reviews of psychosocial risk factors for borderline personality pathology likewise emphasize the relevance of unstable relationships, emotional dysregulation, invalidation, and adverse interpersonal experiences (Gupta et al., 2023). Although the present study did not evaluate personality pathology, the elevated depression and emotional dysregulation observed in the High-Toxicity profile are compatible with this broader developmental literature.

The results for anxiety and stress showed the same graded pattern, with the highest levels among adolescents in the High-Toxicity group and the lowest among those in the Secure/Low-Toxicity group. This finding is consistent with evidence that peer victimization is associated with multiple internalizing outcomes rather than with depression alone (Ali & Khan, 2022; Vacca et al., 2023). Repeated exposure to relational hostility may increase anticipatory anxiety about future interactions, promote hypervigilance to rejection, and heighten physiological and psychological stress responses. The cumulative nature of such experiences may be especially important. Resilience research increasingly conceptualizes adaptation following adversity as a dynamic process influenced by interacting individual and environmental resources rather than as a fixed personal characteristic (Pasteuning et al., 2024). Therefore, adolescents exposed to similar levels of peer aggression may differ substantially in psychological adjustment depending on whether they also possess supportive friendships, family security, effective emotion-regulation skills, and positive school relationships.

The present findings also have implications for more severe behavioral outcomes associated with toxic peer

environments. Although self-injury was not directly assessed, the combination of high victimization, emotional dysregulation, low self-esteem, and elevated depression identified in the High-Toxicity group overlaps with risk patterns reported in studies of non-suicidal self-injury. Peer bullying has been associated with increased likelihood of self-injurious behavior (Çiçek et al., 2022), and interpersonal and psychological vulnerabilities have been identified as relevant predictors of non-suicidal self-injury in adolescents (Iswanti et al., 2024). Clinical evidence likewise indicates associations among bullying experiences, depression, relationship difficulties, and self-injury (Zhanget al., 2021). These convergent findings suggest that adolescents displaying a high-toxicity relational profile may warrant particular attention in psychological screening, not because toxic peer experiences inevitably lead to self-harm, but because the combination of interpersonal adversity and emotional dysregulation may signal increased vulnerability.

The results should also be understood in the context of contemporary digital peer environments. Toxic peer interactions increasingly move across face-to-face and online settings, potentially extending exposure to relational aggression beyond school hours and reducing opportunities for psychological disengagement. Online toxicity can influence the broader school ecosystem and intensify the continuity between digital and offline peer relationships (Marshall, 2026). The growing clinical relevance of adolescent cyberbullying victimization has also been documented among adult mental health service users, suggesting that digital victimization may have enduring psychological significance (Iffland et al., 2023). Furthermore, problematic technology use, internet-related behaviors, and school-based victimization may operate within interconnected pathways influencing well-being (Akintunde et al., 2025; Nwanosike et al., 2022). Although the present study focused on general peer-relationship patterns rather than separating online from offline experiences, the identified profiles may reflect relational processes that increasingly span both environments.

The findings are additionally compatible with evidence that specific forms of victimization may carry distinctive psychological burdens. Homophobic bullying, for example, has been associated with emotional problems and psychopathological symptoms among adolescents (Garaigordobil et al., 2025). Gender-related trauma frameworks similarly emphasize that social threat and interpersonal rejection may be intensified when negative experiences are linked to identity, stigma, or discrimination

(Tishelman, 2026). These findings suggest that the latent profiles identified in the present research should not be interpreted as psychologically identical across all adolescents. Similar levels of victimization may carry different meanings depending on the social context, identity relevance, duration of exposure, and perceived availability of support. The current person-centered framework therefore represents a useful starting point for distinguishing relational configurations, but more detailed analyses are needed to clarify how specific forms of toxic peer experiences interact with identity and context.

5. Conclusion

Overall, the present findings reinforce the value of examining adolescent peer relationships as multidimensional patterns rather than as isolated indicators. The four identified profiles demonstrated that adolescents can experience substantially different combinations of victimization, aggression, conflict, trust, communication, and alienation, and these configurations were systematically associated with psychological functioning. The strongest psychological difficulties occurred when multiple adverse dimensions converged and positive relational qualities were simultaneously absent. This result supports developmental models in which cumulative interpersonal adversity is particularly harmful when it combines exposure to stress with reduced access to supportive resources. It also helps explain why studies focused solely on bullying frequency may underestimate the complexity of adolescent relational risk. The findings therefore extend existing evidence on peer victimization, emotional regulation, self-esteem, and psychopathology by demonstrating that the configuration of peer experiences is itself psychologically meaningful.

6. Limitations & Suggestions

A number of limitations should be considered when interpreting these findings. First, the cross-sectional design prevents conclusions regarding temporal or causal relationships among peer toxicity and psychological outcomes. It is possible that toxic peer relationships contribute to emotional dysregulation and psychological distress, but adolescents with greater distress or regulatory difficulties may also experience or perceive peer interactions differently. Second, all major variables were assessed through self-report measures, which may increase common-method variance and introduce recall or social-desirability biases. Third, although the sample included adolescents

from multiple schools in France, the findings may not generalize to adolescents in different cultural, socioeconomic, educational, or clinical contexts. Fourth, the latent profiles are sample-dependent statistical classifications and should not be interpreted as fixed diagnostic categories. Fifth, the study did not distinguish systematically between offline and online peer experiences, nor did it examine specific identity-based forms of bullying, duration of victimization, peer-group status, family functioning, or school climate, each of which could further clarify the meaning of the identified profiles.

Future research should use longitudinal designs to examine the stability and developmental transitions of the identified profiles and to determine whether adolescents move between low-toxicity, conflict-dominant, alienated-victimized, and high-toxicity patterns over time. Repeated assessments would allow stronger examination of directionality between peer experiences and psychological outcomes. Future studies should also integrate reports from peers, parents, teachers, and school personnel with adolescent self-reports to reduce shared-method bias. Separate assessment of cyberbullying, face-to-face victimization, relational aggression, identity-based harassment, and friendship instability would provide a more differentiated representation of toxic peer environments. Researchers should additionally examine potential mediators and moderators such as loneliness, self-compassion, attachment security, family support, school connectedness, resilience, coping style, and emotion-regulation strategies. Replication across different countries, cultural settings, and socioeconomic groups would help establish whether the same profiles emerge consistently or whether culturally specific configurations are present.

From a practical perspective, the findings suggest that school-based assessment and prevention should extend beyond identifying whether an adolescent is simply a victim or aggressor. Screening procedures should consider relational patterns involving conflict, mistrust, poor communication, alienation, and simultaneous victimization and aggression. Adolescents characterized by high toxicity or pronounced alienation may benefit from early psychological assessment focused on depressive symptoms, anxiety, stress, self-esteem, and emotion-regulation difficulties. Prevention programs should combine anti-bullying strategies with interventions designed to strengthen communication, trust, social problem-solving, emotional regulation, and access to supportive peers and adults. Schools should also establish clear procedures for

identifying persistent relational exclusion and covert aggression, which may be less visible than physical bullying. Collaboration among school psychologists, counselors, teachers, families, and students can facilitate earlier recognition of harmful relational patterns and support the development of safer, more supportive peer environments.

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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.

References

- Akintunde, T. Y., Isangha, S. O., Ssewanyana, D., Adewusi, O. O., Olurin, T. K., Akongnwi, S. N., & Akintunde, O. D. (2025). Modeling the Pathways From Antisocial Media Exposure to Subjective Well-Being Through School-Based Victimization in Nigeria. *Cambridge Prisms Global Mental Health*, 13. <https://doi.org/10.1017/gmh.2025.10116>
- Ali, S. F., & Khan, A. (2022). Association Between Bullying or Peer Victimization and Psychopathology Symptoms Among Adolescents. *Cultural Communication and Socialization Journal*, 3(2), 31-33. <https://doi.org/10.26480/ccsj.02.2022.31.33>
- Berger, L., & Möhler, E. (2026). Bullying as an Adverse Childhood Experience?—State of the Art. *Children*, 13(5), 609. <https://doi.org/10.3390/children13050609>
- Campbell, A., Sarraf, L., Daniels, T., Sharp, R., & Makris, K. (2026). The Moderating Effects of Classroom Social Support

- on the Relationship Between Peer Victimization and Children's Emotional-Behavioral Functioning. *Canadian Journal of School Psychology*, 41(3), 183-206. <https://doi.org/10.1177/08295735261471624>
- Carapeto, M., Agostinho, I., Grácio, L., & Santos, D. L. d. (2025). Between Support and Risk: The Dual Role of Peer Relationships in Adolescents' Mental Health. *Children*, 12(11), 1569. <https://doi.org/10.3390/children12111569>
- Çiçek, A. U., Ucuz, İ., Sarı, S. A., Arslan, S. C., & Doğru, H. (2022). Does Involvement in Peer Bullying Invite Self-Injury? *The Journal of Nervous and Mental Disease*, 211(2), 108-114. <https://doi.org/10.1097/nmd.0000000000001574>
- Çiçek, İ., Korkmaz, Z., Ünsal, F., Gómez-Salgado, J., & Yıldırım, M. (2025). The Effect of Secure Attachment on Family Relationships and Peer Bullying in Adolescents: The Mediating Role of Positive Childhood Experiences. *Frontiers in psychology*, 16. <https://doi.org/10.3389/fpsyg.2025.1700648>
- Cubillo, A. (2022). Neurobiological Correlates of the Social and Emotional Impact of Peer Victimization: A Review. *Frontiers in Psychiatry*, 13. <https://doi.org/10.3389/fpsyg.2022.866926>
- Deniz, E., Noret, N., Chow, A. R. W., Baldwin, J. R., & Toseeb, U. (2026). Bullying Trajectories From Childhood to Adolescence: The Relationship With Mental Health Outcomes for Autistic and Neurotypical Youth. *Autism Research*, 19(5). <https://doi.org/10.1002/aur.70227>
- Garaigordobil, M., Mollo-Torrico, J. P., & Rodríguez-Enríquez, M. (2025). Homophobic Bullying Among Adolescents: Prevalence, Associations With Emotional Factors, Psychopathological Symptoms, and Predictors. *Healthcare*, 13(23), 3119. <https://doi.org/10.3390/healthcare13233119>
- Gökdağ, C., & Kızıltepe, R. (2023). Risk Factors in Depression and Anxiety Disorders From the Framework of Developmental Psychopathology. *Psikiyatride Guncel Yaklasimlar - Current Approaches in Psychiatry*, 15(2), 257-274. <https://doi.org/10.18863/pgy.1118163>
- Gupta, N., Gupta, M., Madabushi, J. S., & Zubiar, F. (2023). Integrating Psychosocial Risks With Emerging Evidence for Borderline Personality Disorders in Adolescence: An Update for Clinicians. *Cureus*. <https://doi.org/10.7759/cureus.40295>
- Iffland, B., Bartsch, L. M., Kley, H., & Neuner, F. (2023). Growing Relevance of Reports of Adolescent Cyberbullying Victimization Among Adult Outpatients. *BMC public health*, 23(1). <https://doi.org/10.1186/s12889-023-16342-y>
- Iswanti, D. I., Lai, L. L., Saifudin, I. M. M. Y., Kandar, K., Dewi, R. K., & Cahyaningrum, D. D. (2024). The Predictor of Non-Suicidal Self-Injury Behavior Among Adolescents: A Cross-Sectional Study. *Jurnal Ners*, 19(2), 125-133. <https://doi.org/10.20473/jn.v19i2.54610>
- Kawabata, Y., Kinoshita, M., & Onishi, A. (2025). Trajectories and Latent Classes of School Enjoyment in Adolescence: Associations With Peer Victimization and Mental Health. *School Psychology*, 40(3), 379-387. <https://doi.org/10.1037/spq0000619>
- Lin, J. (2023). Protective and Risk Factors of Peer Victimization Among Adolescents: A Perspective From Victims. *Journal of Education Humanities and Social Sciences*, 11, 273-281. <https://doi.org/10.54097/ehss.v11i.7674>
- Lin, J., & Guo, W. (2024). The Research on Risk Factors for Adolescents' Mental Health. *Behavioral Sciences*, 14(4), 263. <https://doi.org/10.3390/bs14040263>
- Manvelian, A., Szkody, E., Cohen, K. A., & Schleider, J. L. (2026). Interpersonal Stressors and Adolescent Mental Health During COVID-19: Investigating the Role of Loneliness. <https://doi.org/10.21203/rs.3.rs-9544734/v1>
- Marshall, B. D. (2026). The Impact of Online Toxicity on the School Ecosystem: An Integrative Review and Conceptual Framework. *Frontiers in Public Health*, 14. <https://doi.org/10.3389/fpubh.2026.1783128>
- Martínez, R. F., Fernández-Pereira, C., Pérez-Rodríguez, D., Salgado-Barreira, Á., Veiga, C., Teso-Cuesta, S., Prieto-González, J. M., Díez, J. M., & Agís-Balboa, R. C. (2022). Association Between Peer Victimization (PV) in Childhood/Adolescence and Personality Disorders Among Adult Patients. *International Journal of Translational Medicine*, 3(1), 12-26. <https://doi.org/10.3390/ijtm3010002>
- Mutmainnah, A., & Hendrawan, D. (2024). "Falling at the First Hurdle": Phenomenological Analysis of Students Suicide in Indonesia From the Perspective of Developmental Psychopathology and Its Implications for School Counseling. *Jurnal Kependidikan Jurnal Hasil Penelitian Dan Kajian Kepustakaan Di Bidang Pendidikan Pengajaran Dan Pembelajaran*, 10(2), 498. <https://doi.org/10.33394/jk.v10i2.10822>
- Múzquiz, J., García, A. M. P., & Bermúdez, J. (2022). Relationship Between Direct and Relational Bullying and Emotional Well-Being Among Adolescents: The Role of Self-Compassion. *Current Psychology*, 42(18), 15874-15882. <https://doi.org/10.1007/s12144-022-02924-3>
- Naeem, S., Gilbert, K., Vogel, A. C., Huntington, C., Tillman, R., Barch, D. M., Luby, J. L., & Whalen, D. J. (2025). Unique Features of Peer Relationships in Specific Developmental Periods Predict Borderline Personality Disorder vs. Major Depressive Disorder in Late Adolescence. <https://doi.org/10.21203/rs.3.rs-7983367/v1>
- Nwanosike, C. L., Ujoatuonu, I. V. N., Kanu, G. C., Ike, O. O., & Okeke, T. J. (2022). Social Bullying Among Undergraduates: The Roles of Internet Gaming Disorder, Risk-Taking Behavior, and Internet Addiction. *Frontiers in psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.830794>
- Palamarchuk, I., & Vaillancourt, T. (2022). Integrative Brain Dynamics in Childhood Bullying Victimization: Cognitive and Emotional Convergence Associated With Stress Psychopathology. *Frontiers in Integrative Neuroscience*, 16. <https://doi.org/10.3389/fnint.2022.782154>
- Pasteuning, J., Gathier, A. W., Vinkers, C. H., & Sep, M. S. C. (2024). Resilience Following Childhood Adversity: The Need for a Heuristic Multilevel Dynamic Framework. *Neuroscience Applied*, 3, 104069. <https://doi.org/10.1016/j.nsa.2024.104069>
- Permana, Z. (2024). Exploring Non-Suicidal Self-Injury Among Young Muslims: An Integrative Study From an Islamic Perspective and Contemporary Mental Health Insights. *Ajics*, 1(1), 32-38. <https://doi.org/10.53893/qjw5a97>
- Rosén, L., Scott, S. D., & Paulman, B. (2023). Peer Victimization and Eating Behaviors in College Students: The Mediating Role of Perceived Stress. *Journal of Aggression Conflict and Peace Research*, 15(4), 260-273. <https://doi.org/10.1108/jacpr-05-2022-0719>
- Tishelman, A. (2026). Gender-Related Trauma. 111-130. <https://doi.org/10.1037/0000494-007>
- Vacca, M., Cerolini, S., Zegretti, A., Zagaria, A., & Lombardo, C. (2023). Bullying Victimization and Adolescent Depression, Anxiety and Stress: The Mediation of Cognitive Emotion Regulation. *Children*, 10(12), 1897. <https://doi.org/10.3390/children10121897>
- Yang, J. (2024). Childhood Maltreatment, Peer Victimization, Borderline Personality Feature, Suicidal Risk in Adolescents: Direct and Indirect Associations Among Developmental Trajectories. *Journal of adolescence*, 96(6), 1278-1292. <https://doi.org/10.1002/jad.12337>

- Zhang, J., Liu, Y. D., Zhang, H., Huang, Z. H., Wang, F., Yang, J., Wang, S., Jia, F. J., & Hou, C. L. (2021). Bullying, Present Romantic Relationship and Depression as Predictive Factors of Non-Suicidal Self-Injury in Adolescent Psychiatric Patients. <https://doi.org/10.21203/rs.3.rs-1080316/v1>
- Zhou, Y., Li, Y., Fan, X., & Xie, G. (2025). Relations Between Peer Bullying and Adolescent Depression: The Mediating Effect of Cellphone Usage. *Frontiers in Psychiatry*, 16. <https://doi.org/10.3389/fpsyt.2025.1486628>
- Μάρκου, Μ., Χαράλαμπος, Κ., Τανταρός, Σ., & Σταυρινίδης, Π. (2021). Childhood Peer Victimization, Identity Diffusion and Disordered Eating Behaviors in Emerging Adults. *Emerging Adulthood*, 10(3), 667-678. <https://doi.org/10.1177/21676968211020565>