

Family Conflict and Adolescent Aggression: A Structural Equation Modeling Study of Parental Psychological Control, Autonomy Frustration, and Anger Dysregulation

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ABSTRACT

Objective: This study aimed to test a structural equation model examining the direct and sequential indirect relationships between family conflict and adolescent aggression through parental psychological control, autonomy frustration, and anger dysregulation among Canadian adolescents.

Methods and Materials: This cross-sectional correlational study included 624 adolescents aged 13 to 18 years who were recruited from public secondary schools in Ontario, Canada, through multistage cluster sampling. Participants completed measures of family conflict, parental psychological control, autonomy frustration, anger dysregulation, and reactive-proactive aggression. Data were analyzed using confirmatory factor analysis and structural equation modeling with robust maximum likelihood estimation. Model fit was evaluated using the chi-square statistic, comparative fit index, Tucker–Lewis index, root mean square error of approximation, and standardized root mean square residual. Indirect effects were tested using 5,000 bootstrap resamples and bias-corrected 95% confidence intervals. Age, gender, family structure, and perceived family economic status were included as covariates.

Findings: Family conflict significantly predicted parental psychological control, autonomy frustration, anger dysregulation, and adolescent aggression. Parental psychological control significantly predicted autonomy frustration and anger dysregulation, whereas its direct effect on aggression was nonsignificant. Autonomy frustration significantly predicted both anger dysregulation and aggression, and anger dysregulation was the strongest direct predictor of aggression. The sequential indirect effect of family conflict on aggression through parental psychological control, autonomy frustration, and anger dysregulation was significant. The total indirect effect of family conflict on aggression was also significant, and the model explained 68% of the variance in adolescent aggression.

Conclusion: Family conflict appears to contribute to adolescent aggression largely through psychologically controlling parenting, frustration of autonomy, and impaired anger regulation, highlighting the importance of family-based and emotion-regulation-focused prevention and intervention strategies.

Keywords: Family conflict, adolescent aggression, parental psychological control, autonomy frustration, anger dysregulation, structural equation modeling

1. Introduction

Adolescence is a developmental period characterized by substantial biological, cognitive, emotional, and relational change. During these years, young people increasingly seek independence, construct a more differentiated identity, expand their social worlds, and become more sensitive to interpersonal evaluation and restrictions on personal choice. These developmental processes create opportunities for growth, but they may also intensify emotional reactivity and family tension, particularly when parents and adolescents disagree about rules, privacy, friendships, responsibilities, and decision-making authority. Aggression is one of the most consequential behavioral outcomes that may emerge when adolescents experience persistent relational strain and lack effective strategies for managing strong emotions. Adolescent aggression includes verbal hostility, physical aggression, impulsive retaliation, coercion, bullying, and other behaviors intended to harm or dominate others. Such behaviors can undermine academic adjustment, peer relationships, family functioning, and psychological well-being and may contribute to longer-term patterns of behavioral and interpersonal difficulty. Evidence concerning adolescents with psychiatric, neurodevelopmental, and behavioral vulnerabilities further indicates that aggression frequently co-occurs with irritability, impulsivity, emotional reactivity, and inadequate self-regulation (Kalvin et al., 2025; Moise et al., 2025).

Aggression during adolescence should not be understood solely as an individual trait or isolated behavioral problem. It develops within relational systems in which emotional experiences are elicited, interpreted, expressed, and regulated. The family is particularly important because it is the primary context in which children and adolescents learn how to respond to frustration, disagreement, rejection, and anger. Family members influence one another through repeated patterns of communication, behavioral modeling, emotional contagion, support, discipline, and co-regulation. Contemporary family-based perspectives therefore conceptualize emotion regulation as a process that occurs not only within the individual but also between family members and across the family system (Paley & Hajal, 2022). When caregivers respond to difficult emotions with validation, guidance, and appropriate boundaries, adolescents are more likely to develop adaptive regulatory capacities. By contrast, when family interactions are marked by hostility, invalidation, unpredictability, or coercion, adolescents may

learn that anger is either dangerous and must be suppressed or that aggressive expression is an acceptable means of influence.

Family conflict represents a central relational risk factor in this process. It includes recurring arguments, criticism, hostility, unresolved disagreement, emotional tension, and confrontational exchanges among family members. Occasional disagreement is a normal part of family life and may support development when it occurs within a secure and respectful relationship. Constructive conflict can permit adolescents to express preferences, negotiate boundaries, and practice problem solving. However, frequent, intense, or poorly resolved conflict can create an emotionally threatening family climate. Research on family social climate has linked negative family conditions with anxiety, depression, stress, deviance propensity, and emotional maladjustment (Revollar et al., 2023; Saladino et al., 2020). Family conflict may increase adolescents' vigilance toward threat, reduce their sense of interpersonal safety, and expose them to models of hostile communication. Over time, these experiences may normalize coercive interaction and strengthen the expectation that disagreements will be managed through anger, intimidation, or aggression.

The emotional significance of family conflict is also evident at the psychophysiological level. Conflict discussions between parents and young people can evoke measurable changes in arousal, affect, and behavior, suggesting that family disagreements engage both regulatory and physiological systems (Vanwoerden et al., 2026). Adolescents who are repeatedly exposed to emotionally intense conflict may become highly reactive to perceived criticism or control and may respond before they can evaluate the situation or inhibit an aggressive impulse. Nevertheless, exposure to stress does not inevitably result in aggression. Family processes can either amplify or interrupt the association between adverse experiences and emotional reactivity. For example, observed supportive socialization processes may weaken the connection between frequent discriminatory experiences and emotional reactivity among adolescents, illustrating that family communication can serve a protective regulatory function even under conditions of external stress (Dunbar et al., 2022). Thus, the developmental consequences of family conflict depend partly on how parents interpret adolescents' emotions and how they attempt to manage adolescents' behavior.

One parenting process that may connect family conflict with adolescent aggression is parental psychological control. Psychological control refers to intrusive strategies that

manipulate the adolescent's thoughts, emotions, attachments, or sense of self. These strategies may include guilt induction, withdrawal of affection, invalidation of feelings, personal criticism, shaming, constraining verbal expression, and pressuring the adolescent to think or behave in parentally approved ways. Psychological control differs from behavioral control. Appropriate behavioral control involves clear expectations, monitoring, supervision, and consistent consequences, whereas psychological control intrudes into the adolescent's internal world and limits emotional and psychological independence. Research distinguishing parental acceptance from control suggests that controlling parenting is relevant to multiple forms of aggression, while supportive parenting may protect against hostile and dysregulated behavior (Şahin et al., 2026). Similarly, parental bonding and family relational processes have been associated with bullying perpetration through emotional mechanisms involving anxiety and anger (Lee & Shin, 2021).

Psychological control may be especially salient during adolescence because the developmental need for autonomy becomes increasingly prominent. Adolescents seek greater participation in decisions, increased privacy, and opportunities to act in accordance with their emerging values and preferences. Parents may interpret these changes as defiance or loss of authority, particularly in families already characterized by conflict. In response, they may intensify psychologically intrusive strategies to restore compliance. This can create a coercive cycle in which adolescent resistance elicits greater parental control, and parental control produces greater resentment, secrecy, anger, and oppositional behavior. Findings concerning cyberbullying and cybervictimization indicate that parental psychological control may also shape adolescents' behavior in digital environments and interact with dispositional vulnerabilities to predict harmful online conduct (Wei et al., 2026). The influence of psychologically controlling parenting is therefore unlikely to be restricted to face-to-face family interactions; it may extend to peer aggression, online behavior, and broader psychosocial adjustment.

Other forms of intrusive parenting provide additional evidence for this pathway. Maternal overprotection has been linked with problematic outcomes through reactive anger and adverse interpersonal experiences, suggesting that excessive restriction may contribute to maladjustment by heightening anger-related processes (Li et al., 2025). Parenting practices may also interact with individual characteristics such as neuroticism in predicting depressive

symptoms, indicating that the psychological consequences of parenting depend on both relational and personal vulnerabilities (Zhao et al., 2025). These findings support a transactional interpretation in which parenting does not simply produce adolescent behavior in a linear manner. Rather, adolescent characteristics and parental responses influence one another over time. Nonetheless, psychologically controlling parenting remains theoretically important because it directly obstructs the adolescent's developing need to experience choice, ownership, and authenticity.

Self-determination theory offers a useful framework for understanding how psychological control may contribute to aggression. According to this perspective, autonomy is a basic psychological need involving the experience that one's actions are self-endorsed and consistent with personal values. Autonomy does not imply detachment from family or unrestricted independence; instead, it refers to a sense of volition within relationships and responsibilities. Autonomy frustration occurs when individuals feel pressured, coerced, manipulated, or prevented from expressing their authentic preferences. Studies examining parental attitudes, psychological needs, self-regulation, and adolescent symptoms indicate that need frustration and maladaptive parenting cluster with emotional and psychological difficulties (Haspolat et al., 2023). Parental overprotection has similarly been examined in relation to psychological need satisfaction and harmful behaviors, with anger expression shaping the strength of these associations (Lu et al., 2023).

The distinction between autonomy support and an absence of boundaries is important. Healthy autonomy development occurs when parents combine emotional connection with developmentally appropriate choice, explanation, and negotiated limits. Family leisure research suggests that even frustration may have constructive effects when it arises within supportive activities that promote competence, persistence, and autonomy rather than humiliation or coercion (Borrell & Albertos, 2023). Likewise, guidance for parents emphasizes the integration of discipline, love, and authenticity, indicating that effective parenting requires both structure and respect for the young person's developing selfhood (Pagán, 2025). Therefore, the central issue is not whether parents establish limits but whether those limits are communicated in ways that preserve dignity, emotional connection, and meaningful participation.

Attachment and family security perspectives also help explain why psychological control and autonomy frustration

may be harmful. Adolescents need a relational secure base from which they can explore, make decisions, and manage distress while remaining confident that support is available. Family interventions informed by attachment theory emphasize that security is constructed through patterns of availability, responsiveness, and coherent communication (George & Aikins, 2023). Psychological control may undermine this secure base because affection or approval can become conditional on compliance. Adolescents may then experience autonomy as threatening to family connection, generating internal conflict between self-expression and belonging. In families affected by emotion dysregulation, these dynamics can influence siblings as well as the identified adolescent. Qualitative work on support-seeking siblings has shown that emotional difficulties within one family member may produce an often-unrecognized burden for other family members and alter their experiences of connection and support (Huffman et al., 2024, 2025).

Autonomy frustration may contribute to aggression by increasing anger and reducing the adolescent's willingness or ability to regulate that anger constructively. Anger is an adaptive emotion when it signals injustice, blocked goals, or interpersonal violation. However, its behavioral consequences depend on how it is interpreted, expressed, and regulated. Autonomy-restrictive socialization of anger may shape children's physiological responses, distress, anxiety, and relationship closeness, suggesting that efforts to suppress or control anger without supporting its regulation can have broad developmental consequences (Smiley et al., 2020). Adolescents who repeatedly experience coercion may interpret parental demands as disrespectful or illegitimate, become more sensitive to perceived provocation, and respond with oppositional or aggressive behavior. In this sense, anger may function as an emotional bridge between the experience of being controlled and the enactment of aggression.

Anger dysregulation refers to difficulty modulating the intensity, duration, expression, and behavioral consequences of anger. It may involve rapid escalation, impulsive action, rumination, hostile interpretation, prolonged arousal, and difficulty returning to an emotional baseline. Emotional dysregulation is widely recognized as a transdiagnostic process across child and adolescent psychiatric disorders (Paulus et al., 2021). It has also been described as a core mechanism underlying diverse psychopathological manifestations rather than as a feature limited to a single diagnosis (Pop-Jordanova, 2023). Developmental research further indicates that anger and impulsivity may share

underlying etiological influences, highlighting the importance of considering their joint contribution to behavioral problems (Miadich et al., 2020). Accordingly, adolescents who are both easily angered and poor at inhibiting action may be particularly vulnerable to reactive aggression.

Parents play a central role in the development of anger regulation through emotion socialization. They communicate beliefs about emotions, model regulatory strategies, reinforce or punish emotional expression, and help adolescents interpret emotionally challenging events. Research on parent responses to adolescent emotions has underscored the need to assess the specific ways caregivers react to young people's emotional experiences (Hu et al., 2024). A systematic review of parenting and emotion regulation among Asian adolescents similarly identified parenting factors as meaningful correlates of regulatory development (Rosharudin et al., 2023). Parent-adolescent emotional communication patterns have also been associated with adolescent depressive symptoms, demonstrating that the quality and reciprocity of emotional exchanges are relevant to psychological adjustment (Zhou et al., 2025). Although these studies focus on different outcomes, they collectively support the proposition that family communication and parental emotional responses shape the adolescent's regulatory capacities.

The association between parenting and regulation may be especially complex among adolescents with neurodevelopmental vulnerabilities. Parent emotion socialization has been identified as an important but insufficiently studied context for emotionality and emotion regulation among adolescents with neurodevelopmental disorders (Breux et al., 2021). Similarly, smartphone addiction, executive functioning, and mother-child relationships have been examined together in relation to early emotion dysregulation, suggesting that regulatory development reflects the intersection of family relationships, cognitive control, and environmental habits (Warmansyah et al., 2023). These findings reinforce the need for models that do not isolate aggression from its relational and regulatory antecedents.

Clinical and intervention research further supports the centrality of emotion regulation to aggressive behavior. Evidence-based treatments for irritability and aggression commonly target emotion identification, cognitive appraisal, frustration tolerance, problem solving, parental responses, and behavioral regulation (Kalvin et al., 2025). Cognitive-behavioral interventions for children with attention-

deficit/hyperactivity disorder and emotion dysregulation have specifically been designed to reduce aggressive behavior by strengthening regulatory skills (Vacher et al., 2022; Vacher et al., 2021). More recent reviews of psychosocial interventions for children and adolescents with attention-deficit/hyperactivity disorder likewise emphasize the importance of emotion-regulation mechanisms in treatment planning (Breux et al., 2026). Process-based interventions for youth with substance-use difficulties have also targeted attachment insecurity and emotion dysregulation together, reflecting growing recognition that behavioral problems frequently arise from interacting relational and regulatory processes (Nassif et al., 2024).

Despite this expanding literature, important conceptual gaps remain. Many studies examine only one segment of the proposed developmental process, such as the relationship between family climate and aggression, parenting and psychological symptoms, autonomy restriction and distress, or emotion dysregulation and behavioral problems. Fewer studies simultaneously evaluate family conflict, parental psychological control, autonomy frustration, anger dysregulation, and aggression within an integrated structural model. Examining these variables separately may obscure the mechanisms through which distal family experiences become translated into proximal aggressive behavior. Family conflict may directly increase aggression by modeling hostility and increasing stress, but it may also foster psychologically controlling parenting. Psychological control may then frustrate autonomy, autonomy frustration may intensify anger, and anger dysregulation may increase the likelihood that anger will be expressed aggressively. Such a sequential model can clarify why some adolescents exposed to family conflict develop aggressive behavior while others do not.

An integrated model also has practical value. When aggression is viewed only as misconduct, intervention may focus narrowly on punishment or suppression. However, when aggression is understood as the endpoint of relational pressure, frustrated psychological needs, and regulatory difficulty, prevention can address multiple levels of risk. Family-based approaches may reduce hostile conflict, replace psychological control with autonomy-supportive structure, improve emotion communication, and strengthen co-regulation. Adolescent-focused interventions may simultaneously develop anger awareness, cognitive flexibility, distress tolerance, and nonaggressive problem solving. By identifying direct and indirect pathways, structural equation modeling can determine whether parental

psychological control, autonomy frustration, and anger dysregulation function as distinct mechanisms and whether family conflict retains an independent association with aggression after these mechanisms are considered.

Accordingly, the aim of this study was to test a structural equation model examining the direct and sequential indirect relationships between family conflict and adolescent aggression through parental psychological control, autonomy frustration, and anger dysregulation among Canadian adolescents.

2. Methods and Materials

2.1. Study Design and Participants

This study employed a cross-sectional, correlational design and used structural equation modeling to examine the direct and indirect relationships between family conflict and adolescent aggression through parental psychological control, autonomy frustration, and anger dysregulation. The study population consisted of adolescents enrolled in public secondary schools in Ontario, Canada. Participants were recruited from urban and suburban schools to ensure adequate socioeconomic and demographic diversity. A multistage cluster-sampling procedure was used. First, participating school boards were identified, after which schools were selected from different geographical areas. Within each participating school, classes were randomly selected from Grades 8 through 12, and all eligible students in the selected classes were invited to participate. The final analytical sample consisted of 624 adolescents between 13 and 18 years of age, with a mean age of 15.47 years and a standard deviation of 1.42 years. The sample included 321 girls, 289 boys, and 14 adolescents who identified as nonbinary or reported another gender identity.

Eligibility criteria included being between 13 and 18 years of age, being enrolled in a participating secondary school, living with at least one parent or primary caregiver for the preceding 12 months, and possessing sufficient English-language proficiency to understand and complete the questionnaires. Adolescents were excluded when they submitted questionnaires with more than 20% missing responses, demonstrated clearly patterned or indiscriminate responding, or completed the survey in an unrealistically short period that suggested insufficient engagement with the questionnaire items. Participation was voluntary, and students were informed that choosing not to participate would have no effect on their school standing, grades, or access to educational services.

Before data collection, authorization was obtained from the relevant school boards and school administrators. Written informed consent was obtained from a parent or legal guardian, and written assent was obtained from each adolescent before participation. Students who had reached the age at which independent consent was legally permitted provided their own informed consent in accordance with institutional and provincial requirements. Participants were informed about the objectives of the research, the voluntary nature of participation, the confidentiality of their responses, and their right to discontinue participation at any time without providing a reason.

The questionnaires were administered during regular school hours in quiet classroom settings under the supervision of trained research assistants who were not members of the participants' teaching staff. Teachers were asked not to remain near students while the questionnaires were being completed to reduce perceived pressure and promote honest responses. Participants completed the questionnaires individually using a secure electronic survey platform. The order of the measures was standardized for all participants, although items within longer measures were presented in a randomized order to reduce order-related response bias. Completion of the full assessment battery required approximately 30 to 40 minutes. No personally identifying information was entered into the analytical dataset. Each participant was assigned a numerical identification code, and all electronic data were stored on encrypted, password-protected servers accessible only to the research team.

The target sample size was determined before data collection on the basis of the complexity of the proposed structural equation model. The model included five principal constructs, multiple direct and indirect pathways, and a sequential mediation pathway extending from family conflict to parental psychological control, autonomy frustration, anger dysregulation, and adolescent aggression. A sample of more than 500 participants was considered appropriate for obtaining stable parameter estimates, sufficient statistical power for detecting small indirect effects, and reliable evaluation of the measurement and structural models. The final sample of 624 adolescents exceeded this requirement and provided an adequate ratio of participants to freely estimated model parameters.

2.2. Measures

Family conflict was assessed using the Conflict subscale of the Family Environment Scale. This measure evaluates the extent to which anger, disagreement, criticism, and interpersonal hostility are openly expressed within the family. The items address common manifestations of family conflict, including frequent arguments, unresolved disagreements, hostile exchanges, and tension among family members. Participants rated each item according to how accurately it described the general atmosphere of their family. Responses were recorded on a five-point scale ranging from 1, indicating strongly disagree, to 5, indicating strongly agree. Negatively worded items were reverse-scored before the total score was calculated. Higher scores reflected greater perceived conflict within the family environment. In the present study, family conflict was conceptualized as an adolescent-perceived family-level characteristic rather than conflict involving only one specific parent. The measure was selected because it captures both overt confrontation and the broader emotional climate created by recurring family disagreements.

Parental psychological control was measured using the Psychological Control Scale–Youth Self-Report. This instrument assesses adolescents' perceptions of psychologically intrusive parenting behaviors that interfere with emotional independence and personal autonomy. The scale evaluates strategies such as guilt induction, withdrawal of affection, invalidation of the adolescent's feelings, personal attacks, constraining verbal expression, and attempts to control the adolescent's thoughts or emotions. Participants indicated the degree to which each statement described the behavior of the parent or caregiver who was most involved in their daily upbringing. Responses were provided on a three-point scale ranging from 1, indicating not like my parent, to 3, indicating very much like my parent. Item scores were summed, with higher scores representing greater perceived parental psychological control. When adolescents lived with more than one parent or caregiver, they were instructed to respond with reference to the caregiver whose behavior had the greatest influence on their daily decisions and emotional experiences. The scale was used to operationalize psychologically controlling parenting as distinct from reasonable behavioral monitoring, rule setting, or parental supervision.

Autonomy frustration was assessed using the autonomy-frustration subscale of the Basic Psychological Need Satisfaction and Frustration Scale. This subscale measures

the extent to which adolescents feel pressured, controlled, restricted, or prevented from acting in accordance with their personally endorsed values and preferences. The items capture experiences such as feeling forced to behave in particular ways, perceiving that important choices are determined by others, and feeling unable to express one's authentic opinions or interests. Participants rated each item on a five-point scale ranging from 1, indicating completely untrue, to 5, indicating completely true. A total autonomy-frustration score was calculated by averaging the item responses. Higher scores indicated stronger feelings of coercion, restricted choice, and externally imposed behavior. Autonomy frustration was treated as conceptually different from low autonomy satisfaction because it represents the active obstruction of the adolescent's need for volition rather than merely the absence of opportunities for independent choice.

Anger dysregulation was measured using the dysregulated anger-expression component of the Children's Anger Management Scale. This measure evaluates difficulties controlling anger-related emotional arousal and behavioral responses. The items assess tendencies to lose control when angry, react impulsively, express anger in socially inappropriate ways, remain emotionally activated after a provoking event, and experience difficulty calming down. Participants indicated how often each statement applied to them using a three-point response format ranging from 1, indicating hardly ever, to 3, indicating often. The relevant item scores were summed to produce an overall index of anger dysregulation, with higher scores indicating greater difficulty modulating anger and inhibiting impulsive anger-related reactions. The construct was defined as impaired regulation of anger rather than the frequency or intensity of anger alone. This distinction was important because adolescents may experience anger without necessarily responding aggressively when they possess effective emotion-regulation skills.

Adolescent aggression was assessed using the Reactive–Proactive Aggression Questionnaire. The questionnaire contains 23 items measuring reactive and proactive forms of aggressive behavior. Reactive aggression refers to impulsive, emotionally charged aggression occurring in response to perceived provocation, frustration, or threat, whereas proactive aggression refers to deliberate and goal-directed aggression used to obtain rewards, dominance, or social advantage. Participants indicated how often they had engaged in each behavior using a three-point scale ranging from 0, indicating never, to 2, indicating often. Eleven items

assess reactive aggression, and 12 items assess proactive aggression. Scores may be calculated separately for the two dimensions or combined to produce a total aggression score. In the primary structural model, the total aggression score was used as the principal outcome variable because the study focused on adolescents' overall aggressive tendencies. Supplementary analyses examined whether the proposed pathways differed across reactive and proactive aggression. Higher scores indicated more frequent engagement in aggressive behavior.

A demographic questionnaire was used to collect information regarding participants' age, gender, school grade, family structure, number of siblings, parental education, perceived family economic status, and the identity of the primary caregiver. Family structure was categorized according to whether the adolescent lived with two parents or caregivers, one parent or caregiver, or another caregiving arrangement. Perceived family economic status was assessed using a subjective rating rather than requesting exact household income because adolescents may not possess accurate knowledge of family finances. These demographic variables were used to characterize the sample and to identify potential covariates for the structural model.

Before the main analysis, the internal consistency of each scale was evaluated using Cronbach's alpha and McDonald's omega coefficients. Coefficients of .70 or higher were interpreted as indicating acceptable internal consistency. The factorial validity of the measures was examined as part of the measurement model. Items with reverse wording were recoded before scale scores were calculated. For participants with a small number of missing responses within a scale, scores were calculated only when at least 80% of the items on that scale had been completed. Scale scores were not computed for participants who failed to meet this requirement.

2.3. Data Analysis

Data analysis was conducted using IBM SPSS Statistics and Mplus. SPSS was used for data screening, descriptive statistics, reliability analysis, and preliminary correlation analysis, whereas Mplus was used to evaluate the measurement and structural models. Before the primary analyses, the dataset was examined for coding errors, duplicate records, missing responses, univariate outliers, multivariate outliers, and implausible response patterns. Univariate outliers were evaluated using standardized scores, and observations with absolute standardized values

greater than 3.29 were examined individually. Multivariate outliers were assessed using Mahalanobis distance. Cases were not removed automatically solely because they were statistically unusual; exclusion occurred only when the response pattern suggested invalid or insufficiently attentive participation.

The amount and pattern of missing data were examined before model estimation. Missingness was evaluated across participants, items, and study variables. Little's test and comparisons between participants with and without missing responses were used to assess whether the data were consistent with a missing-completely-at-random or missing-at-random mechanism. Because structural equation modeling can provide biased results when incomplete cases are deleted, the primary analyses used full-information maximum likelihood estimation, allowing all available responses to contribute to parameter estimation. This procedure reduced the loss of statistical power and produced less biased estimates than listwise deletion under the assumption that the missing data were missing at random.

Descriptive statistics, including means, standard deviations, observed ranges, skewness, and kurtosis, were calculated for all study variables. The distributions were considered reasonably acceptable when absolute skewness values were below 2 and absolute kurtosis values were below 7. Multivariate normality was also examined because violations may affect standard errors and chi-square statistics. When evidence of non-normality was present, the model was estimated using robust maximum likelihood estimation, which provides standard errors and model-fit statistics adjusted for non-normality. Pearson correlation coefficients were calculated to examine the preliminary relationships among family conflict, parental psychological control, autonomy frustration, anger dysregulation, and adolescent aggression. Correlations were also inspected to identify potential multicollinearity. Variance inflation factors and tolerance statistics were evaluated, with variance inflation factors below 5 and tolerance values above .20 considered indicative of an acceptable absence of problematic multicollinearity.

Structural equation modeling was performed using a two-stage analytical procedure. First, a confirmatory factor analysis was conducted to evaluate the measurement model and determine whether the observed indicators adequately represented the proposed latent constructs. Family conflict, parental psychological control, autonomy frustration, anger dysregulation, and adolescent aggression were specified as separate but correlated latent variables. Items from shorter

measures were entered as individual indicators. For longer multidimensional measures, theoretically balanced item parcels were created only after the dimensional structure of the corresponding scale had been confirmed. The measurement model was evaluated by examining standardized factor loadings, residual variances, factor correlations, and overall model fit. Standardized factor loadings of .40 or higher were considered acceptable. Convergent validity was evaluated through the magnitude and statistical significance of the factor loadings and by calculating average variance extracted. Composite reliability was also calculated for each latent construct. Discriminant validity was examined by comparing the square root of the average variance extracted for each construct with its correlations with the remaining constructs and by inspecting whether confidence intervals around latent correlations included 1.00.

After an acceptable measurement model had been established, the hypothesized structural model was tested. Family conflict was specified as the exogenous predictor, and adolescent aggression was specified as the final endogenous outcome. Direct pathways were estimated from family conflict to parental psychological control, autonomy frustration, anger dysregulation, and aggression. Parental psychological control was specified as a predictor of autonomy frustration, anger dysregulation, and aggression. Autonomy frustration was specified as a predictor of anger dysregulation and aggression, and anger dysregulation was specified as a direct predictor of aggression. This specification permitted the simultaneous examination of the direct association between family conflict and aggression and several indirect pathways, including the sequential pathway from family conflict to parental psychological control, from parental psychological control to autonomy frustration, from autonomy frustration to anger dysregulation, and from anger dysregulation to adolescent aggression.

Age, gender, school grade, family structure, and perceived family economic status were initially evaluated as potential covariates. Covariates that demonstrated statistically significant associations with at least one endogenous variable were retained in the final adjusted model. Gender differences in the primary pathways were explored through multigroup structural equation modeling when the number of participants in each comparison group was sufficient. Configural, metric, and structural invariance models were compared to determine whether the measurement properties and structural coefficients were

comparable across groups. Changes in the comparative fit index and root mean square error of approximation were considered alongside chi-square difference tests when evaluating model constraints.

Model fit was assessed using multiple indices rather than relying exclusively on the chi-square statistic, which is sensitive to large sample sizes. The reported indices included the chi-square statistic, the comparative fit index, the Tucker–Lewis index, the root mean square error of approximation with its 90% confidence interval, and the standardized root mean square residual. Comparative fit index and Tucker–Lewis index values of .90 or higher were considered indicative of acceptable fit, whereas values of .95 or higher indicated good fit. Root mean square error of approximation values of .08 or lower and standardized root mean square residual values of .08 or lower were considered acceptable. Modification indices were examined only when the initial model demonstrated inadequate fit. Model modifications were implemented only when they were theoretically defensible and did not involve adding pathways solely to improve statistical fit.

Indirect effects were evaluated using 5,000 bootstrap resamples. Bias-corrected 95% confidence intervals were calculated for each specific indirect effect and for the total indirect effect. An indirect effect was considered statistically significant when its confidence interval did not include zero. Standardized direct, indirect, and total effects were reported to facilitate comparison of the relative strengths of the proposed pathways. The proportion of explained variance was calculated for parental psychological control, autonomy frustration, anger dysregulation, and adolescent aggression. Statistical significance was evaluated using a two-tailed alpha level of .05, while the magnitude, confidence interval, and theoretical relevance of each effect were considered when interpreting the findings.

3. Findings and Results

A total of 624 adolescents were included in the final analyses. Participants ranged in age from 13 to 18 years, with a mean age of 15.47 years and a standard deviation of 1.42 years. The sample consisted of 321 girls (51.4%), 289 boys (46.3%), and 14 adolescents (2.2%) who identified as nonbinary or reported another gender identity. Regarding school grade, 93 participants (14.9%) were enrolled in Grade 8, 118 (18.9%) in Grade 9, 139 (22.3%) in Grade 10, 146 (23.4%) in Grade 11, and 128 (20.5%) in Grade 12. Most participants, comprising 432 adolescents (69.2%), lived with two parents or caregivers, whereas 151 participants (24.2%) lived with one parent or caregiver and 41 participants (6.6%) lived in another caregiving arrangement, including shared custody, foster care, or residence with extended family members. In terms of perceived family economic status, 96 adolescents (15.4%) described their family's economic situation as below average, 402 (64.4%) described it as average, and 126 (20.2%) described it as above average. A total of 276 participants (44.2%) reported having one sibling, 191 (30.6%) reported having two siblings, 86 (13.8%) reported having three or more siblings, and 71 (11.4%) were only children. Preliminary comparisons showed that aggression scores were slightly higher among boys than girls, whereas girls reported marginally higher autonomy frustration and anger dysregulation. However, the magnitudes of these differences were small. Age was weakly and positively associated with autonomy frustration and anger dysregulation, but it was not significantly associated with family conflict or parental psychological control. Family structure and perceived family economic status were significantly associated with several endogenous variables and were therefore retained as covariates in the adjusted structural model.

Table 1

Descriptive Statistics, Internal Consistency Coefficients, and Correlations Among the Study Variables

Variable	Mean	Standard Deviation	Observed Range	Skewness	Kurtosis	Cronbach's Alpha	McDonald's Omega	1	2	3	4	5
1. Family conflict	24.63	6.18	9–43	0.38	-0.27	.88	.89	1.00				
2. Parental psychological control	20.71	5.42	8–35	0.41	-0.19	.90	.91	.61**	1.00			
3. Autonomy frustration	18.92	5.07	6–30	0.29	-0.34	.87	.88	.49**	.57**	1.00		
4. Anger dysregulation	17.34	4.62	7–29	0.46	0.08	.89	.90	.45**	.51**	.63**	1.00	
5. Adolescent aggression	18.61	8.13	1–42	0.64	0.21	.92	.93					1.00

As shown in Table 1, the distributions of all study variables were within acceptable limits for structural equation modeling. Skewness values ranged from 0.29 to 0.64, and kurtosis values ranged from -0.34 to 0.21, indicating that none of the variables demonstrated substantial univariate non-normality. Family conflict had a mean score of 24.63, parental psychological control had a mean of 20.71, autonomy frustration had a mean of 18.92, anger dysregulation had a mean of 17.34, and adolescent aggression had a mean of 18.61. Internal consistency was strong for all measures. Cronbach's alpha coefficients ranged from .87 for autonomy frustration to .92 for adolescent aggression, whereas McDonald's omega coefficients ranged from .88 to .93. These findings indicated that each measure demonstrated satisfactory reliability in the present sample. All correlations among the principal study variables were positive and statistically significant at the .01 level. Family conflict was strongly correlated with parental

psychological control, suggesting that adolescents who perceived greater conflict within their families also tended to report more psychologically intrusive parenting. Family conflict was also moderately associated with autonomy frustration, anger dysregulation, and aggression. Parental psychological control was positively related to autonomy frustration, anger dysregulation, and aggression. Autonomy frustration showed a strong positive association with anger dysregulation and a moderately strong association with aggression. The strongest bivariate relationship was observed between anger dysregulation and adolescent aggression, indicating that adolescents who experienced greater difficulty controlling anger were considerably more likely to report aggressive behavior. Nevertheless, none of the correlations exceeded .80, suggesting that the constructs were related but empirically distinguishable and that problematic multicollinearity was unlikely.

Table 2

Confirmatory Factor Analysis and Measurement Model Results

Measurement Model	χ^2	df	χ^2/df	CFI	TLI	RMSEA	90% CI for RMSEA	SRMR	AIC
One-factor model	1842.76	299	6.16	.68	.65	.091	.087–.095	.112	32784.51
Three-factor model	1097.43	296	3.71	.84	.82	.066	.062–.070	.081	32045.18
Four-factor model	764.28	293	2.61	.91	.90	.051	.047–.055	.057	31618.36
Hypothesized five-factor model	618.94	289	2.14	.95	.94	.043	.038–.047	.041	31382.74
Latent Construct	Number of Indicators		Standardized Loading Range		Composite Reliability		Average Variance Extracted		
Family conflict	5		.67–.84		.89		.61		
Parental psychological control	6		.70–.87		.91		.63		
Autonomy frustration	4		.72–.86		.88		.65		
Anger dysregulation	5		.69–.88		.90		.64		
Adolescent aggression	6		.71–.89		.93		.68		

The confirmatory factor analysis supported the hypothesized five-factor measurement structure. The one-factor model, in which all indicators were constrained to load on a single general factor, demonstrated poor fit to the data, suggesting that the study measures did not represent a single undifferentiated construct. The three-factor and four-factor alternatives produced progressively better fit but remained inferior to the proposed five-factor model. The hypothesized model distinguishing family conflict, parental psychological control, autonomy frustration, anger dysregulation, and adolescent aggression yielded a statistically significant chi-square value, $\chi^2(289) = 618.94$, $p < .001$. Given the sensitivity of chi-square statistics to large samples, the remaining indices were considered more informative. The comparative fit index was .95, the Tucker–Lewis index was

.94, the root mean square error of approximation was .043 with a 90% confidence interval ranging from .038 to .047, and the standardized root mean square residual was .041. Collectively, these indices indicated good fit. The chi-square-to-degrees-of-freedom ratio of 2.14 also fell within an acceptable range. The hypothesized model had the lowest Akaike information criterion value, providing further evidence that it represented the data more efficiently than the competing models. All standardized factor loadings were statistically significant at $p < .001$ and ranged from .67 to .89. Composite reliability values ranged from .88 to .93, and average variance extracted values ranged from .61 to .68, exceeding conventional thresholds for convergent validity. The square root of the average variance extracted for each latent construct was greater than its correlations with the

other constructs. In addition, no confidence interval surrounding the latent correlations included 1.00. These results supported both convergent and discriminant validity

and confirmed that the five constructs could be included as separate latent variables in the structural model.

Table 3

Standardized Direct Effects in the Structural Equation Model

Predictor	Outcome	Standardized Coefficient	Standard Error	z	p	95% Confidence Interval
Family conflict	Parental psychological control	.62	.04	15.50	<.001	.54 to .69
Family conflict	Autonomy frustration	.18	.05	3.60	<.001	.08 to .27
Family conflict	Anger dysregulation	.12	.04	3.00	.003	.04 to .20
Family conflict	Adolescent aggression	.11	.04	2.75	.006	.03 to .19
Parental psychological control	Autonomy frustration	.46	.05	9.20	<.001	.36 to .55
Parental psychological control	Anger dysregulation	.19	.05	3.80	<.001	.09 to .28
Parental psychological control	Adolescent aggression	.07	.04	1.75	.080	-.01 to .15
Autonomy frustration	Anger dysregulation	.51	.04	12.75	<.001	.43 to .58
Autonomy frustration	Adolescent aggression	.17	.04	4.25	<.001	.09 to .25
Anger dysregulation	Adolescent aggression	.49	.04	12.25	<.001	.41 to .56

Table 3 presents the standardized direct effects estimated in the structural model. Family conflict had a strong positive effect on parental psychological control, indicating that a one-standard-deviation increase in perceived family conflict was associated with a .62-standard-deviation increase in perceived psychological control. Family conflict also had smaller but statistically significant direct effects on autonomy frustration, anger dysregulation, and aggression. These findings indicated that family conflict remained independently associated with each subsequent variable even after accounting for the proposed mediating processes. Parental psychological control had a substantial direct effect on autonomy frustration and a smaller significant effect on anger dysregulation. Its direct association with adolescent aggression was not statistically significant after autonomy frustration and anger dysregulation were entered into the model. This result suggested that psychological control was related to aggression primarily through its effects on adolescents' frustrated need for autonomy and impaired

anger regulation rather than through a strong independent pathway. Autonomy frustration had a strong positive effect on anger dysregulation and a smaller but significant direct effect on aggression. Thus, adolescents who experienced greater pressure, restriction, and obstruction of personal choice were more likely to report difficulty controlling anger and were also more likely to engage in aggressive behavior. Anger dysregulation had the strongest direct effect on aggression among the proximal predictors. Its standardized coefficient of .49 indicated that difficulty regulating anger constituted a central mechanism through which adverse family experiences were associated with aggressive conduct. The pattern of coefficients supported the proposed developmental sequence in which conflictual family environments were related to psychologically controlling parenting, psychological control was associated with autonomy frustration, autonomy frustration contributed to anger dysregulation, and anger dysregulation was subsequently associated with aggression.

Table 4

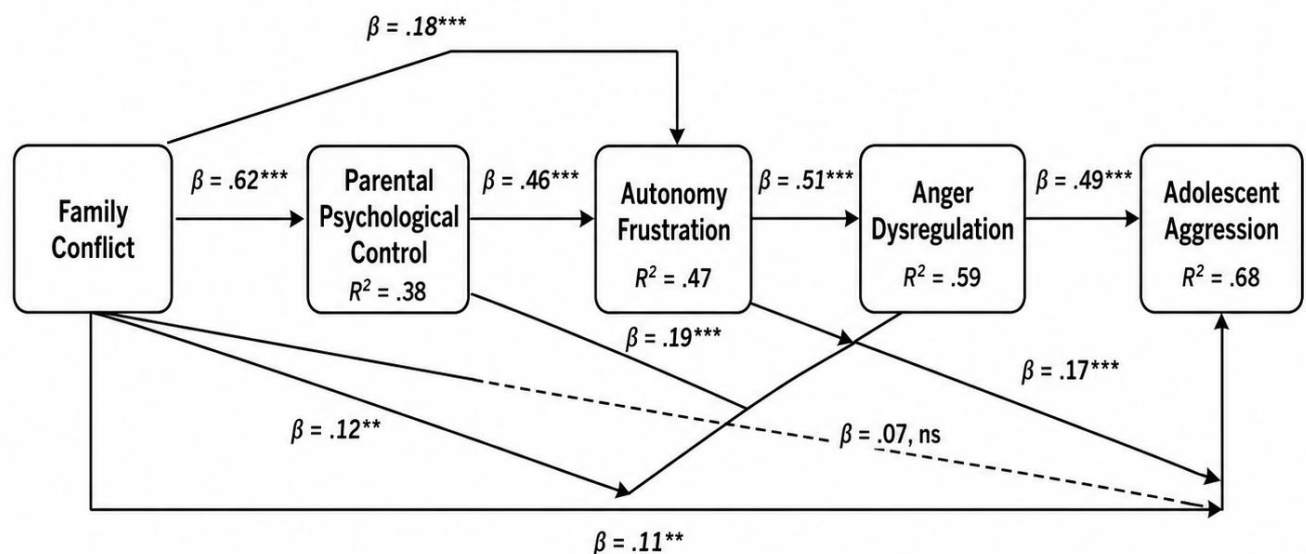
Standardized Indirect Effects, Total Effects, and Explained Variance

Indirect or Total Pathway	Standardized Effect	Bootstrapped Standard Error	95% Bootstrapped Confidence Interval	p
Family conflict → Parental psychological control → Autonomy frustration	.29	.04	.22 to .37	<.001
Family conflict → Parental psychological control → Anger dysregulation	.12	.03	.07 to .18	<.001

Family conflict → Autonomy frustration → Anger dysregulation	.09	.03	.04 to .14	<.001
Family conflict → Anger dysregulation → Aggression	.06	.02	.02 to .10	.002
Family conflict → Parental psychological control → Autonomy frustration → Anger dysregulation	.15	.03	.10 to .21	<.001
Family conflict → Parental psychological control → Anger dysregulation → Aggression	.05	.02	.02 to .09	<.001
Family conflict → Autonomy frustration → Anger dysregulation → Aggression	.04	.02	.02 to .08	<.001
Family conflict → Parental psychological control → Anger dysregulation → Aggression	.06	.02	.03 to .10	<.001
Family conflict → Parental psychological control → Autonomy frustration → Anger dysregulation → Aggression	.07	.02	.04 to .11	<.001
Total indirect effect of family conflict on aggression	.31	.04	.24 to .39	<.001
Total effect of family conflict on aggression	.42	.05	.33 to .51	<.001
Total indirect effect of psychological control on aggression	.32	.04	.25 to .40	<.001
Total effect of psychological control on aggression	.39	.05	.30 to .48	<.001
Endogenous Variable	R ²	Explained Variance		
Parental psychological control	.38	38%		
Autonomy frustration	.47	47%		
Anger dysregulation	.59	59%		
Adolescent aggression	.68	68%		

Figure 1

Standardized Structural Model of the Relationships Among Family Conflict, Parental Psychological Control, Autonomy Frustration, Anger Dysregulation, and Adolescent Aggression



The bootstrap analysis provided strong evidence for the proposed indirect pathways. Family conflict had a significant indirect effect on autonomy frustration through parental psychological control, indicating that conflictual family environments were associated with adolescents' frustrated autonomy partly because such environments were characterized by greater psychological intrusion and control. Family conflict also predicted anger dysregulation through several pathways. It exerted indirect effects through parental psychological control alone, through autonomy frustration

alone, and through the sequential combination of psychological control and autonomy frustration. The sequential pathway from family conflict to parental psychological control, from psychological control to autonomy frustration, and from autonomy frustration to anger dysregulation was statistically significant, with a standardized indirect effect of .15. This result indicated that adolescents exposed to greater family conflict were more likely to perceive their parents as psychologically controlling, which was associated with stronger frustration

of autonomy and, in turn, greater difficulty regulating anger. The final sequential pathway extending from family conflict through parental psychological control, autonomy frustration, and anger dysregulation to aggression was also significant. The bootstrapped confidence interval for this effect ranged from .04 to .11 and did not include zero. The total indirect effect of family conflict on aggression was .31, whereas its total effect was .42. Because the direct effect of family conflict on aggression remained statistically significant after the mediators were included, the results supported partial rather than complete mediation. Parental psychological control also showed a significant total indirect effect on aggression. Its nonsignificant direct path, combined with its substantial indirect effect, suggested that autonomy frustration and anger dysregulation largely accounted for the relationship between psychological control and aggressive behavior. The model explained 38% of the variance in parental psychological control, 47% of the variance in autonomy frustration, 59% of the variance in anger dysregulation, and 68% of the variance in adolescent aggression. The relatively high proportion of explained variance in aggression indicated that the proposed combination of family relational processes, need frustration, and emotion-regulation difficulties accounted for a substantial portion of individual differences in adolescents' aggressive behavior.

The final structural model demonstrated good overall fit to the data, $\chi^2(347) = 731.28$, $p < .001$, $\chi^2/df = 2.11$, comparative fit index = .95, Tucker–Lewis index = .94, root mean square error of approximation = .042 with a 90% confidence interval of .038 to .046, and standardized root mean square residual = .044. The figure summarizes the standardized pathways among the five principal constructs. The strongest pathway originating from family conflict was directed toward parental psychological control, whereas the strongest proximal pathway to adolescent aggression originated from anger dysregulation. The structural pattern supported a progressive mechanism through which adverse family interactions were associated with increasingly proximal psychological processes. Family conflict was associated with psychologically controlling parenting, psychological control was related to frustration of the adolescent's need for autonomy, autonomy frustration was associated with impaired regulation of anger, and anger dysregulation was strongly related to aggression. Although family conflict retained a modest direct association with aggression, most of its total association was transmitted through the mediating variables. The nonsignificant direct

path from parental psychological control to aggression further demonstrated that the influence of psychological control became understandable primarily when autonomy frustration and anger dysregulation were taken into account. Examination of the covariates indicated that boys reported higher aggression than girls, whereas girls reported slightly higher anger dysregulation. Adolescents from single-caregiver or alternative-caregiving households reported somewhat higher family conflict and aggression than adolescents living with two caregivers. Lower perceived family economic status was also associated with higher family conflict and aggression. However, inclusion of these covariates did not materially alter the magnitude or significance of the main structural pathways. The hypothesized associations therefore remained robust after adjustment for relevant demographic characteristics.

4. Discussion

The present study examined a structural model linking family conflict to adolescent aggression through parental psychological control, autonomy frustration, and anger dysregulation. The findings supported the proposed model and demonstrated that family conflict was positively associated with all major study variables. Family conflict had a strong direct association with parental psychological control and smaller but statistically significant direct associations with autonomy frustration, anger dysregulation, and aggression. Parental psychological control significantly predicted autonomy frustration and anger dysregulation, but its direct association with aggression became nonsignificant after the mediating variables were included. Autonomy frustration significantly predicted both anger dysregulation and aggression, while anger dysregulation emerged as the strongest proximal predictor of adolescent aggression. The indirect-effect analysis further showed that family conflict was associated with aggression through several pathways, including the sequential pathway from family conflict to parental psychological control, autonomy frustration, anger dysregulation, and aggression. Overall, the model explained 68% of the variance in adolescent aggression, indicating that the combined contribution of family relational conditions, psychologically controlling parenting, frustrated autonomy, and impaired anger regulation accounted for a substantial proportion of adolescents' aggressive behavior.

The strong association between family conflict and parental psychological control suggests that conflictual family environments may foster increasingly intrusive forms

of parental regulation. In families characterized by recurring arguments, hostility, criticism, and unresolved tension, parents may attempt to regain authority by relying on guilt induction, emotional pressure, invalidation, or withdrawal of affection. Rather than reducing conflict, these strategies may intensify adolescents' resistance and create a coercive interactional cycle. This interpretation is consistent with findings showing that parental acceptance and control are important predictors of different forms of aggression and that controlling parenting is associated with poorer behavioral adjustment (Şahin et al., 2026). It is also aligned with evidence that parental psychological control can contribute to harmful adolescent behavior in digital and peer contexts, including cyberbullying, particularly when it interacts with individual vulnerability factors (Wei et al., 2026). The present findings extend this literature by positioning psychological control as one of the principal relational mechanisms through which a conflictual family climate may influence adolescent aggression.

Family conflict also retained a direct association with aggression after the intervening variables were included. This finding indicates that conflict may affect aggressive behavior through additional mechanisms beyond psychological control, need frustration, and anger dysregulation. Repeated exposure to hostile family exchanges may normalize aggression as a legitimate response to disagreement, increase threat sensitivity, and strengthen hostile interpretations of other people's behavior. Adolescents may imitate the confrontational communication patterns they observe at home or carry heightened arousal from family interactions into school and peer contexts. Previous research has similarly connected negative family climate with deviance propensity and anger dysregulation during adolescence (Saladino et al., 2020). Family social climate has also been associated with anxiety, depression, and stress, suggesting that emotionally adverse family conditions have broad implications for psychological functioning (Revollar et al., 2023). The direct effect found in the current study therefore supports the view that family conflict is not merely a background condition but an active developmental risk factor for aggressive behavior.

The association between family conflict and anger dysregulation may also reflect the psychophysiological intensity of parent-adolescent disagreements. Conflict discussions can activate physiological arousal and influence observable behavior, indicating that family confrontation engages regulatory systems at multiple levels (Vanwoerden et al., 2026). Adolescents who repeatedly experience intense

family conflict may become emotionally sensitized and develop a lower threshold for anger activation. Once activated, they may find it difficult to return to an emotional baseline, especially when family members do not provide effective co-regulation. This interpretation is consistent with the conceptualization of emotion regulation as a family-level phenomenon in which family members mutually shape emotional arousal and recovery (Paley & Hajal, 2022). The present study therefore supports a systemic account of aggression in which adolescents' regulatory difficulties are partly embedded in repeated family interaction patterns.

Parental psychological control showed a strong positive association with autonomy frustration. This result is theoretically coherent because psychological control directly interferes with adolescents' efforts to experience volition, authenticity, and participation in decisions. When parents use emotional manipulation, shame, guilt, or affection withdrawal to secure compliance, adolescents may perceive that their preferences and internal experiences are unacceptable. This can create a sense that their behavior is externally imposed rather than personally endorsed. Previous research examining parental attitudes, psychological needs, self-regulation, and adolescent symptoms has similarly demonstrated that maladaptive parenting and frustrated psychological needs are closely linked with poorer adjustment (Haspolat et al., 2023). Research on parental overprotection has also shown that intrusive parenting can undermine psychological need satisfaction and interact with anger expression in predicting harmful behaviors (Lu et al., 2023). The current findings add to this evidence by showing that autonomy frustration is not simply correlated with psychological control but functions as a central explanatory pathway connecting controlling parenting with subsequent emotional and behavioral problems.

The findings also help clarify the distinction between appropriate parental structure and psychologically controlling parenting. Adolescents require guidance, supervision, and limits, but these practices are unlikely to be harmful when they are communicated respectfully and allow meaningful participation. Constructive family experiences can even involve frustration when such experiences promote persistence, shared problem solving, and autonomy rather than humiliation or coercion (Borrell & Albertos, 2023). Parenting approaches that combine discipline with love and authenticity similarly emphasize that boundaries can coexist with respect for the adolescent's developing selfhood (Pagán, 2025). In contrast, the psychological control

assessed in the present study involved intrusion into the adolescent's thoughts and emotions. The strong pathway from psychological control to autonomy frustration therefore indicates that the manner in which parental authority is exercised may be more important than the mere presence of rules or restrictions.

Parental psychological control also significantly predicted anger dysregulation. Adolescents who experience psychologically intrusive parenting may become angry because they perceive that their emotions are invalidated and their choices are constrained. At the same time, controlling parents may provide few opportunities for adolescents to practice independent emotional problem solving. Instead of learning how to identify, tolerate, and express anger constructively, adolescents may learn to suppress it, ruminate on it, or express it impulsively. Research on autonomy-restrictive socialization of anger has shown that restrictive parental responses are associated with children's physiological arousal, distress, anxiety, and relationship closeness (Smiley et al., 2020). Studies of parent responses to adolescent emotions also indicate that parental reactions play a significant role in shaping emotional development (Hu et al., 2024). The positive association found in this study is therefore consistent with the broader emotion-socialization literature.

Importantly, the direct path from parental psychological control to aggression was not statistically significant after autonomy frustration and anger dysregulation were entered into the model. This result suggests that psychologically controlling parenting may not lead directly to aggression in a simple linear fashion. Rather, its influence appears to operate mainly through adolescents' internal experiences of blocked autonomy and impaired anger regulation. This finding is aligned with research showing that intrusive parenting may affect problematic behavior through emotional mediators. For example, maternal overprotection has been associated with maladaptive outcomes through reactive anger and adverse interpersonal experiences (Li et al., 2025). Parental bonding has also been linked to bullying perpetration through sequential emotional mechanisms involving anxiety and anger (Lee & Shin, 2021). The present study extends these findings by demonstrating that autonomy frustration and anger dysregulation may jointly explain why psychological control is associated with aggressive behavior.

Autonomy frustration significantly predicted anger dysregulation and had an additional direct association with aggression. The stronger pathway was directed toward anger

dysregulation, indicating that frustrated autonomy primarily contributes to aggression by intensifying emotional dyscontrol. Adolescents who feel repeatedly pressured or prevented from making meaningful choices may experience resentment, helplessness, and anger. When they lack effective regulation strategies, these emotions may escalate rapidly and become difficult to manage. The remaining direct effect on aggression suggests that autonomy frustration may also promote oppositional or coercive behavior independently of anger dysregulation. Aggression may sometimes be used instrumentally to reclaim control, resist perceived domination, or assert independence. This interpretation is compatible with research indicating that need frustration and self-regulatory difficulties co-occur with adolescent psychological symptoms (Haspolat et al., 2023).

Anger dysregulation was the strongest direct predictor of adolescent aggression, supporting the view that difficulty regulating anger is a proximal mechanism underlying aggressive behavior. Adolescents who are unable to inhibit impulsive reactions, reduce physiological arousal, or reconsider hostile interpretations are more likely to respond aggressively when frustrated or provoked. This finding accords with literature describing emotional dysregulation as a transdiagnostic feature of numerous psychiatric and behavioral conditions (Paulus et al., 2021). Emotional dysregulation has also been characterized as a core problem underlying diverse psychopathological manifestations (Pop-Jordanova, 2023). Research on childhood irritability and aggression similarly emphasizes the importance of emotion regulation, frustration tolerance, and behavioral inhibition in the development and treatment of aggressive behavior (Kalvin et al., 2025). The strong coefficient observed in the present study therefore reinforces the central role of anger regulation in understanding adolescent aggression.

The association between anger dysregulation and aggression may also reflect the interaction of emotional reactivity and impulsivity. Developmental evidence suggests that anger and impulsivity may share etiological influences, making some young people particularly vulnerable to rapid and poorly controlled responses (Miadich et al., 2020). Aggressive behavior among adolescents with neurodevelopmental conditions has likewise been linked to regulatory and behavioral vulnerabilities (Moise et al., 2025). Studies of adolescents with neurodevelopmental disorders have called for greater attention to emotionality, regulation, and parent emotion socialization as interconnected processes (Breaux et al.,

2021). Although the current sample was community-based, the results indicate that these mechanisms are relevant beyond clinical populations.

The sequential indirect pathway from family conflict to aggression through parental psychological control, autonomy frustration, and anger dysregulation was one of the most important findings. This pathway provides a theoretically meaningful explanation of how a distal relational condition can be transformed into a proximal behavioral outcome. Conflictual family interactions may encourage controlling parental responses; those responses may obstruct adolescents' need for autonomy; frustrated autonomy may intensify anger; and dysregulated anger may increase aggressive behavior. This sequence is consistent with evidence that parenting factors influence adolescents' emotion-regulation development (Rosharudin et al., 2023) and that parent-adolescent emotional communication patterns are relevant to adolescent psychological adjustment (Zhou et al., 2025). It also accords with attachment-informed perspectives emphasizing that secure family relationships provide a foundation for exploration and emotion management (George & Aikins, 2023). When family relationships do not provide such a secure base, adolescents may struggle to balance connection, independence, and emotional expression.

The significant total indirect effect of family conflict on aggression further indicates that much of the association between these constructs was transmitted through intermediate family and emotional mechanisms. Nevertheless, the direct effect remained significant, supporting partial rather than complete mediation. This implies that the proposed model captures major but not exhaustive pathways. Factors such as parental modeling of aggression, peer influence, hostile attribution bias, sleep difficulties, impulsivity, discrimination, and broader contextual stress may also contribute. For example, family socialization processes can weaken the impact of discriminatory experiences on emotional reactivity, illustrating how family interactions may moderate external stressors (Dunbar et al., 2022). Smartphone-related behavior, executive functioning, and parent-child relationships may also interact in the development of emotional dysregulation (Warmansyah et al., 2023). The remaining direct effect is therefore consistent with a multidetermined understanding of aggression.

The findings have implications for intervention because they indicate that reducing aggression may require more than directly targeting aggressive acts. Effective interventions

may need to address anger regulation, family communication, psychologically controlling parenting, and adolescents' experience of autonomy. Existing treatment models for aggressive behavior and irritability commonly include emotion identification, cognitive restructuring, frustration tolerance, problem solving, and parent-focused components (Kalvin et al., 2025). Cognitive-behavioral interventions have also been designed specifically for aggression among young people with emotion dysregulation (Vacher et al., 2022; Vacher et al., 2021). Reviews of emotion-regulation interventions for young people with attention-deficit/hyperactivity disorder likewise emphasize skills-based and family-sensitive approaches (Breux et al., 2026). Process-based treatments targeting attachment insecurity and emotion dysregulation further suggest that relational and regulatory mechanisms can be addressed together (Nassif et al., 2024). The present results provide empirical support for such multilevel interventions.

5. Conclusion

The study also highlights the wider family impact of emotion dysregulation. Difficulties within one family member can affect the emotional experiences, support needs, and relational security of other family members, including siblings (Huffman et al., 2024, 2025). Consequently, adolescent aggression should not be treated exclusively as an individual deficit. Interventions that focus only on the adolescent may overlook reciprocal patterns that maintain dysregulation and conflict. Family-based work may be especially useful when aggression occurs in a context of psychological intrusion, invalidation, or recurrent hostility.

6. Limitations & Suggestions

Several limitations should be considered when interpreting the findings. First, the cross-sectional design does not permit firm conclusions regarding temporal or causal direction. Although the proposed ordering was theoretically grounded, aggressive adolescents may also elicit greater parental control and family conflict, creating reciprocal effects that could not be examined in the present design. Second, all principal variables were assessed through adolescent self-report, which may have increased shared-method variance and may reflect participants' perceptions rather than independently verified family behavior. Third, the use of a school-based Canadian sample may limit generalizability to adolescents who are not enrolled in school, those living in other cultural contexts, and young

people with severe clinical or behavioral problems. Fourth, the study assessed family conflict as a broad construct and did not distinguish conflict between parents, parent-adolescent conflict, and sibling conflict. Fifth, the model did not include other potentially relevant variables such as peer aggression, neighborhood adversity, parental psychopathology, temperament, sleep, impulsivity, or exposure to violence. Finally, although the model explained a large proportion of variance in aggression, structural equation modeling cannot establish that the specified model is the only or best possible representation of the relationships among the variables.

Future studies should use longitudinal and cross-lagged designs to examine the temporal ordering and reciprocal relationships among family conflict, parental psychological control, autonomy frustration, anger dysregulation, and aggression. Multi-informant assessments involving adolescents, parents, teachers, and siblings would help reduce shared-method bias and provide a more complete representation of family interaction and aggressive behavior. Observational methods could be used to assess psychological control, emotional communication, and anger regulation during real parent-adolescent conflict discussions. Future research should also distinguish between reactive and proactive aggression because anger dysregulation may be more strongly related to reactive aggression, whereas other family or peer mechanisms may be more relevant to planned aggression. Cross-cultural studies are needed to determine whether the meaning and effects of parental control vary across cultural contexts. Researchers should additionally test protective factors, including parental warmth, autonomy support, secure attachment, adaptive coping, peer support, and school connectedness. Experimental and intervention studies could evaluate whether reductions in psychological control and improvements in anger regulation produce corresponding decreases in aggression.

Practitioners working with aggressive adolescents should assess family conflict, parenting style, autonomy-related experiences, and anger regulation rather than focusing solely on observable misconduct. Parent training should help caregivers replace guilt induction, emotional withdrawal, shaming, and intrusive control with clear expectations, consistent limits, collaborative problem solving, and developmentally appropriate choice. Family sessions should promote respectful communication, conflict de-escalation, emotional validation, and repair after disagreements. Adolescents may benefit from training in identifying anger

triggers, monitoring physiological arousal, tolerating frustration, challenging hostile interpretations, delaying impulsive responses, and expressing needs assertively. Schools should coordinate with families when aggression occurs across settings and provide structured emotion-regulation and conflict-resolution programs. When family conflict is severe, services should involve multiple family members and address the relational patterns that maintain coercion and dysregulation. Intervention plans should preserve appropriate parental authority while ensuring that adolescents experience dignity, participation, and increasing responsibility for their decisions.

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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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