

Parental Reflective Functioning and Object Relations in Adolescents: A Path Model of the Direct and Indirect Effects on Reactive Aggression through Mentalization

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ABSTRACT

Objective: The present study aimed to investigate the direct and indirect effects of parental reflective functioning and object relations on reactive aggression among adolescents through the mediating role of mentalization.

Methods and Materials: This study employed a descriptive-correlational design based on path analysis. The statistical population included adolescents enrolled in the second cycle of secondary education (grades 10–12) during the 2025–2026 academic year. Participants were selected using a multistage cluster sampling method, and after screening incomplete responses, the final sample consisted of 463 adolescents aged 15–18 years. Data were collected using the Parental Reflective Functioning Questionnaire–Adolescent Version (PRFQ-A), Bell Object Relations and Reality Testing Inventory (BORRTI), Reflective Functioning Questionnaire for Youth (RFQY), and Reactive–Proactive Aggression Questionnaire (RPQ). Data analysis was performed using SPSS version 27 and AMOS version 26. Descriptive statistics, Pearson correlation analysis, and path analysis with bootstrap estimation were used to examine direct and indirect relationships among variables.

Findings: The results showed that parental reflective functioning significantly and positively predicted mentalization ($\beta = 0.389, p < .001$), and object relations also had a significant positive effect on mentalization ($\beta = 0.208, p < .001$). Mentalization significantly and negatively predicted reactive aggression ($\beta = -0.447, p < .001$). Furthermore, parental reflective functioning ($\beta = -0.145, p < .001$) and object relations ($\beta = -0.183, p < .001$) had significant direct negative effects on reactive aggression. Bootstrap analysis confirmed the significant mediating role of mentalization in the relationship between parental reflective functioning and reactive aggression (indirect effect = $-0.174, 95\% \text{ CI } [-0.224, -0.129]$) and between object relations and reactive aggression (indirect effect = $-0.093, 95\% \text{ CI } [-0.140, -0.051]$). The final model explained 38.5% of the variance in reactive aggression.

Conclusion: The findings highlight the importance of parental reflective functioning and adaptive object relations in reducing adolescents' reactive aggression by strengthening mentalization capacities.

Keywords: parental reflective functioning; object relations; mentalization; reactive aggression; adolescents; path analysis

1. Introduction

Adolescence is a developmental period characterized by profound biological, cognitive, emotional, and social transformations that significantly influence psychological adjustment and behavioral functioning. During this stage, individuals experience heightened emotional sensitivity, increasing autonomy, expanding peer relationships, and substantial neurodevelopmental changes that shape their responses to interpersonal challenges and environmental stressors. Although these developmental transitions facilitate identity formation and social competence, they may also increase vulnerability to maladaptive behaviors, including various forms of aggression. Among the different manifestations of aggressive behavior, reactive aggression has received considerable attention because of its close association with emotional dysregulation, interpersonal conflict, and psychological maladjustment. Reactive aggression refers to impulsive, emotionally driven aggressive responses that occur following perceived provocation, frustration, or threat. Unlike proactive aggression, which is deliberate and instrumental, reactive aggression is characterized by heightened affective arousal and poor inhibitory control (Raine et al., 2006). Research has consistently demonstrated that reactive aggression during adolescence is associated with adverse outcomes, including peer rejection, academic difficulties, emotional problems, conduct disturbances, and increased risk for later psychopathology (Kokkinos et al., 2019; Mancinelli et al., 2021). Consequently, identifying the developmental and relational mechanisms underlying reactive aggression has become an important objective within developmental psychopathology and adolescent mental health research.

Recent theoretical and empirical developments increasingly emphasize the importance of social-cognitive processes in explaining adolescents' emotional and behavioral adjustment. One construct that has attracted substantial attention is mentalization. Mentalization refers to the capacity to understand one's own behavior and the behavior of others in terms of underlying mental states such as beliefs, desires, emotions, intentions, and motivations. Rather than simply observing behavior at a surface level, mentalization enables individuals to infer the psychological meanings that guide interpersonal interactions and emotional experiences (Fonagy et al., 2002; Katznelson, 2014). Mentalization is considered a cornerstone of adaptive social functioning because it facilitates emotional regulation,

empathy, perspective-taking, interpersonal understanding, and behavioral self-control. Individuals with stronger mentalizing capacities are generally better equipped to manage interpersonal conflicts, tolerate ambiguity in social situations, and regulate intense emotional reactions. In contrast, impairments in mentalization have been linked to emotional dysregulation, impulsivity, personality pathology, interpersonal difficulties, and aggressive behavior (Bateman & Fonagy, 2016; Fonagy & Luyten, 2009).

The significance of mentalization becomes particularly salient during adolescence. Contemporary developmental neuroscience suggests that adolescence represents a sensitive period for the maturation of social cognition, emotional regulation, and self-reflective capacities. During this developmental stage, neural systems associated with affective processing and social understanding undergo extensive reorganization, creating both opportunities and vulnerabilities for socio-emotional development (Crone & Dahl, 2012). Mentalizing abilities continue to evolve throughout adolescence as young people encounter increasingly complex interpersonal relationships and social expectations. Accordingly, adolescence has been described as a critical developmental window for mentalization, during which supportive relational environments can strengthen reflective capacities, whereas adverse relational experiences may contribute to mentalizing difficulties (Sharp & Hernandez, 2021; Sharp & Wall, 2021). Given the developmental importance of mentalization during this period, examining its role in aggressive behavior may provide valuable insights into mechanisms of adolescent adjustment.

The origins of mentalization are deeply embedded within attachment relationships and family interactions. According to attachment theory and mentalization-based developmental models, children develop the ability to understand mental states through repeated interactions with caregivers who accurately recognize, interpret, and respond to their emotional experiences. Through these interactions, children gradually internalize the capacity to reflect upon their own thoughts and feelings as well as those of others (Fonagy et al., 2002; Fonagy & Luyten, 2009). Within this framework, parental reflective functioning has emerged as a particularly important construct. Parental reflective functioning refers to parents' capacity to perceive and interpret their child's behavior in terms of underlying psychological states, including emotions, beliefs, intentions, and desires (Slade, 2005). Parents with strong reflective functioning recognize that behavior is driven by internal

experiences and are therefore more likely to respond with sensitivity, empathy, and emotional attunement.

Parental reflective functioning has been associated with numerous positive developmental outcomes. Reflective parents are generally more capable of supporting emotional regulation, fostering secure attachment relationships, and promoting social competence in their children. Their capacity to understand the child as a psychological agent creates an environment in which emotional experiences are validated and explored rather than dismissed or misunderstood (Sharp & Fonagy, 2008). Empirical evidence has demonstrated that parental reflective functioning contributes significantly to adolescents' psychological adjustment, emotional well-being, and interpersonal functioning (Benbassat & Priel, 2012). More recent studies have further shown that parental reflective functioning is associated with adolescents' peer relationships and social competence through mechanisms involving adolescent mentalizing capacities (Aitken et al., 2026). These findings suggest that parental reflective functioning may serve as an important protective factor against maladaptive behavioral outcomes, including reactive aggression.

The growing literature on parental reflective functioning has also stimulated efforts to develop and validate reliable measurement instruments. Research examining the psychometric properties of parental reflective functioning questionnaires across different cultural contexts has generally reported satisfactory reliability and validity. Studies conducted in both European and Middle Eastern populations have supported the utility of these measures for assessing parents' reflective capacities and their implications for child and adolescent adjustment (Goudarzi et al., 2022; Szabó et al., 2022). The availability of psychometrically sound instruments has facilitated further investigation into the developmental consequences of parental reflective functioning and its relationship with adolescent socio-emotional outcomes.

Another theoretical perspective relevant to understanding adolescent aggression is object relations theory. Object relations theory proposes that repeated interactions with caregivers become internalized as mental representations of self and others that guide future interpersonal experiences and emotional responses. These internal representations, commonly referred to as object relations, influence how individuals perceive relationships, interpret social information, regulate emotions, and respond to interpersonal challenges (Fonagy et al., 2002). Adaptive object relations are characterized by coherent, integrated, and realistic

representations of self and others, whereas maladaptive object relations involve fragmented, hostile, or unstable representations that may contribute to interpersonal difficulties and emotional vulnerability.

Object relations theory offers a valuable framework for understanding reactive aggression because aggressive responses often emerge within interpersonal contexts involving perceived rejection, criticism, or threat. Adolescents with maladaptive object representations may be more likely to interpret ambiguous social situations as hostile and react defensively or aggressively. Distorted representations of self and others may foster mistrust, hypersensitivity, and hostile attribution biases that increase vulnerability to reactive aggression. Conversely, coherent and integrated object relations may facilitate emotional stability, interpersonal trust, and adaptive conflict resolution. Although object relations have traditionally been examined within psychodynamic frameworks, contemporary research increasingly recognizes their relevance to developmental psychopathology and social-cognitive functioning (Fonagy et al., 2002).

Importantly, mentalization may provide a theoretical bridge linking parental reflective functioning and object relations to aggressive behavior. Developmental models propose that children and adolescents develop mentalizing capacities through reflective caregiving experiences and secure attachment relationships. Parents who consistently recognize and respond to the child's mental states help foster the child's ability to understand psychological experiences, whereas insensitive or non-reflective caregiving may impede this developmental process (Sharp & Fonagy, 2008; Slade, 2005). Similarly, adaptive object relations may support mentalization by providing coherent internal representations that facilitate understanding of oneself and others. In contrast, fragmented or hostile object representations may undermine reflective functioning and contribute to distorted interpretations of social interactions.

Empirical findings increasingly support the mediating role of mentalization in explaining links between relational experiences and behavioral outcomes. Adolescents with stronger mentalizing capacities demonstrate better emotional regulation, greater empathy, improved interpersonal functioning, and lower levels of behavioral problems (Martin-Gagnon et al., 2023; Seyed Mousavi et al., 2021). Research has shown that mentalization may mediate associations between attachment relationships and psychological adjustment, highlighting its role as a key developmental mechanism through which relational

experiences influence behavior (Seyed Mousavi et al., 2021). Furthermore, studies examining aggression have found that socio-cognitive capacities such as perspective-taking and reflective processing reduce the likelihood of hostile interpretations and emotionally driven aggressive reactions (Li et al., 2023). These findings suggest that mentalization may function as an important protective mechanism against reactive aggression.

The relationship between attachment experiences and reactive aggression has received growing empirical support. Studies have demonstrated that insecure attachment patterns are associated with increased emotional dysregulation, alexithymia, interpersonal difficulties, and aggressive behavior during adolescence (Mancinelli et al., 2021). Similarly, parental attachment has been linked to both proactive and reactive aggression through mediating variables such as self-control and perspective-taking (Li et al., 2023). Emotion regulation difficulties have also been identified as important contributors to relational aggression and other forms of maladaptive behavior among adolescents (Kokkinos et al., 2019). Collectively, these findings underscore the importance of examining relational and socio-cognitive mechanisms in understanding adolescent aggression.

Despite increasing interest in parental reflective functioning, mentalization, object relations, and aggression, important gaps remain within the literature. Many previous studies have examined these constructs independently rather than integrating them within a comprehensive explanatory framework. Although evidence suggests significant associations among attachment processes, reflective functioning, social cognition, and behavioral adjustment, relatively few investigations have simultaneously examined the direct and indirect pathways linking parental reflective functioning and object relations to reactive aggression through mentalization. Moreover, much of the existing literature has focused on childhood populations, whereas adolescence represents a unique developmental period characterized by rapid changes in social cognition, emotional regulation, and interpersonal relationships (Crone & Dahl, 2012; Sharp & Wall, 2021). Consequently, further research is needed to clarify how relational experiences influence aggressive behavior during adolescence through underlying socio-cognitive mechanisms.

In addition, the examination of complex developmental pathways requires sophisticated analytical approaches capable of evaluating both direct and indirect effects simultaneously. Structural equation modeling and path

analysis provide valuable tools for testing theoretically grounded models involving multiple mediating mechanisms and interrelated variables (Kline, 2023). Such approaches allow researchers to move beyond simple bivariate associations and develop a more comprehensive understanding of developmental processes underlying adolescent adjustment and maladjustment.

Given the theoretical significance of parental reflective functioning, object relations, and mentalization, as well as the practical importance of understanding reactive aggression during adolescence, the present study aimed to examine a path model of the direct and indirect effects of parental reflective functioning and object relations on reactive aggression through the mediating role of mentalization among adolescents.

2. Methods and Materials

2.1. Study Design and Participants

The present study employed a descriptive-correlational design using path analysis to investigate the direct and indirect relationships among parental reflective functioning, object relations, mentalization, and reactive aggression in adolescents. Path analysis was selected because it enables the simultaneous examination of direct and mediated relationships among multiple variables within a theoretically grounded structural framework. The proposed conceptual model was developed based on attachment theory, object relations theory, and mentalization-based approaches to adolescent psychopathology. The study was conducted during the 2025–2026 academic year among adolescents enrolled in secondary schools.

The statistical population of the present study consisted of all adolescents enrolled in the second cycle of secondary education (grades 10–12) in public and private high schools. Participants were selected using a multistage cluster sampling method. Initially, several educational districts were randomly selected. Subsequently, schools within each district were randomly chosen, followed by random selection of classrooms from each school. All eligible students within the selected classrooms were invited to participate in the study.

According to recommendations for structural equation modeling and path analysis, a minimum sample size of 10 to 20 participants per estimated parameter is generally recommended to ensure adequate statistical power and model stability (Kline, 2023). Considering the complexity of the proposed model and the possibility of incomplete

questionnaires, 520 adolescents were initially recruited. Following data screening and elimination of incomplete or invalid responses, the final sample consisted of 463 adolescents aged between 15 and 18 years ($M = 16.47$, $SD = 1.02$). Approximately 51.4% of participants were female and 48.6% were male.

The inclusion criteria were: (a) being enrolled in the second cycle of secondary education, (b) age range between 15 and 18 years, (c) ability to understand and complete self-report questionnaires, and (d) provision of informed consent by both adolescents and their parents or legal guardians. Exclusion criteria included: (a) diagnosis of severe psychiatric or neurodevelopmental disorders reported by school counselors or parents, (b) current use of psychiatric medication that could substantially affect cognitive functioning, (c) failure to complete more than 10% of questionnaire items, and (d) response patterns indicating random or inattentive answering.

After obtaining approval from the relevant educational authorities, permission was obtained from selected schools to conduct the study. School principals and counselors were informed about the objectives and procedures of the research. Written informed consent was obtained from parents or legal guardians, and adolescents provided assent prior to participation.

Data collection was conducted collectively in classroom settings during school hours under the supervision of trained research assistants. Participants were informed that participation was voluntary, responses would remain confidential, and withdrawal from the study was possible at any stage without penalty. The administration of the questionnaires required approximately 35–45 minutes. To minimize response bias, students were instructed to answer honestly and independently. Following data collection, questionnaires were screened for missing values, response inconsistencies, and multivariate outliers before statistical analyses were performed.

2.2. Measures

Parental Reflective Functioning Questionnaire – Adolescent Version (PRFQ-A). Parental reflective functioning was assessed using the Parental Reflective Functioning Questionnaire – Adolescent Version (PRFQ-A), originally developed based on the mentalization framework proposed by Luyten and colleagues. The PRFQ-A evaluates parents' capacity to understand adolescents' mental states and includes dimensions such as interest and

curiosity in mental states, certainty about mental states, and prementalizing modes. Items are rated on a Likert-type scale, with higher scores reflecting stronger parental reflective functioning. Previous studies have demonstrated satisfactory psychometric properties for the questionnaire in adolescent populations (Szabó et al., 2022). The Persian version of the PRFQ has also demonstrated acceptable validity and reliability indices in Iranian samples (Goudarzi et al., 2022). In the present study, Cronbach's alpha coefficients for the total scale and subscales ranged from .72 to .86.

Bell Object Relations and Reality Testing Inventory (BORRTI). Object relations were assessed using the Bell Object Relations and Reality Testing Inventory (BORRTI; Bell et al., 1986). The BORRTI is a widely used self-report instrument designed to assess maladaptive object relations and deficits in interpersonal representations. The questionnaire includes several subscales measuring alienation, insecure attachment, egocentricity, and social incompetence. Participants respond to items using a true–false format. Higher scores indicate greater disturbances in object relations. Previous research has supported the validity and reliability of the BORRTI in clinical and non-clinical populations. The Persian version of the BORRTI has also shown acceptable psychometric properties in Iranian samples. In the current study, Cronbach's alpha for the overall scale was .84.

Reflective Functioning Questionnaire for Youth (RFQY). Adolescents' mentalization capacity was assessed using the Reflective Functioning Questionnaire for Youth (RFQY), originally developed by Sharp and colleagues to evaluate adolescents' ability to understand mental states in themselves and others. The RFQY consists of self-report items rated on a Likert scale and measures certainty and uncertainty regarding mental states. Higher scores represent more adaptive reflective functioning and mentalization abilities. Previous studies have supported the reliability and construct validity of the RFQY among adolescents (Martin-Gagnon et al., 2023). Additionally, the Persian version of the RFQ has demonstrated satisfactory psychometric properties in Iranian adolescents (Seyed Mousavi et al., 2021). In the present study, Cronbach's alpha coefficient for the RFQY total score was .81.

Reactive–Proactive Aggression Questionnaire (RPQ). Reactive aggression was measured using the Reactive–Proactive Aggression Questionnaire (RPQ; Raine et al., 2006). The RPQ is a widely used instrument designed to distinguish reactive aggression from proactive aggression in adolescents and young adults. The reactive aggression

subscale assesses emotionally driven aggressive behaviors in response to provocation or frustration. Participants rate each item on a three-point Likert scale ranging from never to often. Previous studies have demonstrated good reliability and validity for the RPQ across diverse adolescent populations. Persian adaptations of the RPQ have also reported acceptable psychometric characteristics in Iranian samples. In the present study, Cronbach’s alpha coefficient for the reactive aggression subscale was .83.

2.3. Data Analysis

Data analyses were performed using SPSS version 27 and AMOS version 26. Initially, descriptive statistics including means, standard deviations, skewness, and kurtosis values were calculated. Pearson correlation coefficients were computed to examine bivariate relationships among the study variables. Prior to conducting path analysis, assumptions including normality, multicollinearity, independence of errors, and absence of multivariate outliers were evaluated.

Path analysis was subsequently employed to test the hypothesized direct and indirect relationships among

parental reflective functioning, object relations, mentalization, and reactive aggression. Model fit was evaluated using multiple fit indices, including the chi-square to degrees of freedom ratio (χ^2/df), Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), Goodness-of-Fit Index (GFI), and Root Mean Square Error of Approximation (RMSEA). According to conventional recommendations, CFI, TLI, and GFI values greater than .90 and RMSEA values below .08 were considered indicative of acceptable model fit (Kline, 2023). Indirect effects were examined using bootstrap procedures with 5,000 resamples and 95% confidence intervals.

3. Findings and Results

The final analysis included 463 adolescents from the second cycle of secondary education. The findings are organized into four parts: demographic characteristics, descriptive statistics and bivariate associations, preliminary assumption checks, and the path model testing the direct and indirect effects of parental reflective functioning and object relations on reactive aggression through mentalization.

Table 1

Demographic characteristics of the sample.

Characteristic	Category	n	%
Gender	Female	235	50.8%
Gender	Male	228	49.2%
Grade	Grade 10	150	32.4%
Grade	Grade 11	168	36.3%
Grade	Grade 12	145	31.3%
School type	Public	354	76.5%
School type	Private	109	23.5%

The adolescents were between 15 and 18 years old (M = 16.48, SD = 0.89). The sample was nearly balanced by

gender and included students from all three grades of the upper secondary cycle.

Table 2

Descriptive statistics for the study variables.

Variable	M	SD	Skewness	Kurtosis
Parental reflective functioning	3.62	0.61	0.04	0.00
Object relations	2.88	0.54	-0.04	-0.15
Mentalization	3.71	0.57	-0.18	-0.04
Reactive aggression	1.96	0.63	0.23	0.06

Table 3

Pearson correlations among the main variables.

	PRF	Object relations	Mentalization	Reactive aggression
PRF	—	0.321	0.456	-0.408
Object relations	0.321	—	0.333	-0.378
Mentalization	0.456	0.333	—	-0.574
Reactive aggression	-0.408	-0.378	-0.574	—

All bivariate associations were in the expected directions. Parental reflective functioning was positively associated with mentalization ($r = 0.456$) and negatively associated with reactive aggression ($r = -0.408$). Object relations showed a similar pattern, with a positive link to mentalization ($r = 0.333$) and a negative link to reactive aggression ($r = -0.378$). Mentalization was inversely related to reactive aggression ($r = -0.574$).

Before estimating the path model, the data were screened for missingness, outliers, linearity, normality, and

multicollinearity. The distributions of the four focal variables were close to normal, with skewness values ranging from -0.18 to 0.23 and kurtosis values ranging from -0.15 to 0.06. Variance inflation factors remained low, indicating no problematic multicollinearity, and Durbin-Watson values were close to 2, suggesting independent residuals. No influential multivariate outliers were retained after screening.

Table 4

Diagnostic indices for the path model assumptions.

Assumption	Index / criterion	Interpretation
Missing data	No retained missing cases after screening	No substantive data loss
Normality	Skewness = -0.18 to 0.23; kurtosis = -0.15 to 0.06	Acceptable
Multicollinearity	VIF = 1.17 to 1.33	Acceptable
Autocorrelation	Durbin-Watson = 2.02 and 2.04	Acceptable
Outliers	No influential cases retained after screening	Acceptable

The structural model was estimated in two sequential equations. In the first equation, parental reflective functioning and object relations jointly predicted mentalization. In the second equation, parental reflective

functioning, object relations, and mentalization were entered simultaneously as predictors of reactive aggression. The model explained 24.7% of the variance in mentalization and 38.5% of the variance in reactive aggression.

Table 5

Standardized direct effects in the path model.

Path	Beta	SE	t	p	LL	UL
Parental reflective functioning -> Mentalization	0.389	0.043	9.108	< .001	0.305	0.473
Object relations -> Mentalization	0.208	0.043	4.875	< .001	0.124	0.292
Mentalization -> Reactive aggression	-0.447	0.042	-10.585	< .001	-0.529	-0.364
Parental reflective functioning -> Reactive aggression	-0.145	0.042	-3.459	< .001	-0.228	-0.063
Object relations -> Reactive aggression	-0.183	0.040	-4.615	< .001	-0.261	-0.105

Parental reflective functioning positively predicted mentalization ($\beta = 0.39$, $SE = 0.04$, $t = 9.11$, $p < .001$), and object relations also made a significant positive contribution ($\beta = 0.21$, $SE = 0.04$, $t = 4.88$, $p < .001$). Together, these predictors accounted for nearly one quarter of the variance in mentalization ($R^2 = 0.247$).

In the second equation, mentalization was a robust negative predictor of reactive aggression ($\beta = -0.45$, $SE =$

0.04 , $t = -10.59$, $p < .001$). Even after accounting for mentalization, both parental reflective functioning ($\beta = -0.15$, $p < .001$) and object relations ($\beta = -0.18$, $p < .001$) retained significant direct effects on reactive aggression, indicating partial mediation. The final equation explained 0.385 of the variances in reactive aggression.

Table 6

Bootstrapped indirect and total effects on reactive aggression.

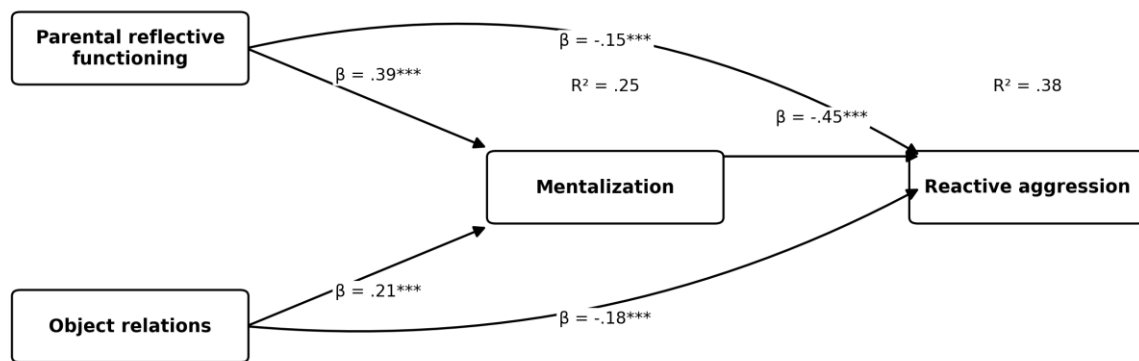
Predictor	Indirect	LL	UL	Total	LL	UL
Parental reflective functioning	-0.174	-0.224	-0.129	-0.320	-0.395	-0.243
Object relations	-0.093	-0.140	-0.051	-0.275	-0.362	-0.189

Bootstrap analyses (2,000 resamples) indicated significant indirect effects of parental reflective functioning on reactive aggression through mentalization (indirect effect = -0.174, 95% CI [-0.224, -0.129]) and of object relations through mentalization (indirect effect = -0.093, 95% CI [-0.140, -0.051]). Because neither confidence interval

included zero, both mediation pathways were statistically significant. The total effects remained negative and meaningful for both predictors, demonstrating that more adaptive parental reflective functioning and more coherent object relations were associated with lower reactive aggression, partly through higher mentalization.

Figure 1

Conceptual path diagram with standardized coefficients and R² values.



Standardized coefficients from the illustrative path model

Taken together, the findings support the hypothesized indirect pathway from parental reflective functioning and object relations to reactive aggression via mentalization, while also indicating that the two family-level predictors

retain unique direct associations with adolescents' aggressive reactivity.

4. Discussion

The present study examined the direct and indirect relationships among parental reflective functioning, object relations, mentalization, and reactive aggression in adolescents. The findings revealed that parental reflective functioning and object relations were both significant predictors of mentalization, while mentalization demonstrated a substantial negative association with reactive aggression. Furthermore, parental reflective functioning and object relations exerted both direct and indirect effects on reactive aggression through mentalization, indicating that mentalization functioned as a partial mediator within the proposed model. The model accounted for a meaningful proportion of the variance in both mentalization and reactive aggression, supporting the theoretical assumption that family relational experiences and socio-cognitive processes jointly contribute to adolescent behavioral adjustment.

One of the most important findings of the present study was the significant negative relationship between parental reflective functioning and reactive aggression. Adolescents who perceived their parents as more capable of understanding and responding to their emotional experiences exhibited lower levels of emotionally driven aggressive behavior. This finding is consistent with attachment and mentalization theories, which emphasize the importance of reflective caregiving in fostering emotional regulation and interpersonal security (Fonagy & Luyten, 2009; Slade, 2005). According to these perspectives, parents who can accurately interpret the mental states underlying their children's behavior provide a relational environment that supports emotional understanding and self-regulation. Such parenting practices reduce the likelihood that adolescents will perceive interpersonal situations as threatening or invalidating and consequently diminish the probability of reactive aggressive responses.

The present finding aligns closely with previous empirical evidence demonstrating that parental reflective functioning contributes positively to adolescent adjustment. Benbassat and Priel reported that higher levels of parental reflective functioning were associated with better emotional and interpersonal functioning among adolescents (Benbassat & Priel, 2012). Similarly, Aitken and colleagues found that parental reflective functioning played a significant role in promoting adolescents' social competence and peer relationship quality through enhanced mentalizing abilities (Aitken et al., 2026). The consistency of these findings

suggests that parental reflective functioning operates as a developmental resource that protects adolescents against maladaptive emotional and behavioral outcomes. In the context of reactive aggression, reflective parenting may reduce emotional reactivity by helping adolescents develop more adaptive interpretations of interpersonal events and more effective strategies for managing frustration and conflict.

The findings also demonstrated that object relations significantly predicted reactive aggression. Adolescents who reported more adaptive and coherent object relations exhibited lower levels of reactive aggression, whereas maladaptive object relations were associated with greater aggressive reactivity. This result supports object relations theory, which proposes that individuals develop internal representations of self and others through repeated interactions with caregivers and significant attachment figures (Fonagy et al., 2002). These representations influence emotional experiences, interpersonal expectations, and behavioral responses throughout development. When adolescents possess fragmented, unstable, or hostile representations of relationships, they may become more vulnerable to interpersonal misunderstandings, rejection sensitivity, and hostile attribution biases. Consequently, ambiguous social situations may be interpreted as threatening, increasing the likelihood of emotionally driven aggression.

This interpretation is supported by theoretical perspectives emphasizing the role of internalized relational experiences in emotion regulation and social behavior (Fonagy et al., 2002). Adolescents with coherent object representations are more likely to perceive others as trustworthy and predictable, enabling them to respond to interpersonal difficulties in a reflective rather than impulsive manner. In contrast, adolescents with maladaptive object relations may experience greater emotional instability and interpersonal mistrust, increasing susceptibility to reactive aggression. Therefore, the direct effect of object relations on aggression observed in the present study underscores the continuing influence of internalized relational experiences during adolescence.

Another major finding was the significant positive association between parental reflective functioning and mentalization. Adolescents whose parents demonstrated stronger reflective capacities reported higher levels of mentalization. This result is strongly consistent with mentalization theory, which proposes that the capacity to understand mental states develops primarily through

interactions with caregivers who treat the child as a psychological agent (Fonagy & Luyten, 2009; Sharp & Fonagy, 2008). Reflective parents provide opportunities for children and adolescents to explore emotions, intentions, and perspectives within a secure interpersonal context. Through repeated experiences of being understood psychologically, adolescents gradually internalize reflective processes and become more capable of understanding their own and others' mental states.

The present findings correspond closely with previous research. Sharp and Fonagy argued that parental reflective functioning constitutes one of the most important developmental foundations of mentalization (Sharp & Fonagy, 2008). Similarly, Aitken and colleagues demonstrated that parental reflective functioning contributes significantly to adolescent mentalizing capacities and subsequent interpersonal competence (Aitken et al., 2026). The results also complement psychometric and validation studies showing the relevance of parental reflective functioning for developmental outcomes across diverse populations (Goudarzi et al., 2022; Szabó et al., 2022). Collectively, these findings reinforce the proposition that adolescents' ability to understand complex social and emotional experiences is deeply rooted in reflective family interactions.

The study further found that object relations positively predicted mentalization. Adolescents with more adaptive object relations demonstrated stronger mentalizing capacities. This finding can be explained by the fact that coherent internal representations of self and others provide a cognitive and emotional foundation for understanding mental states. Individuals who perceive themselves and others in a stable and integrated manner are better able to interpret behavior in psychological terms and appreciate the complexity of interpersonal experiences. In contrast, fragmented object representations may interfere with accurate interpretation of intentions, emotions, and beliefs, thereby impairing mentalization (Fonagy et al., 2002; Katznelson, 2014).

The positive relationship between object relations and mentalization highlights the conceptual overlap between psychodynamic and mentalization-based perspectives. Both frameworks emphasize the importance of internal representations in shaping social understanding and emotional functioning. Adolescents who possess coherent object relations are likely to demonstrate greater flexibility in interpreting social situations and greater tolerance for ambiguity, both of which contribute to effective

mentalization. Thus, the present findings support the theoretical integration of object relations theory and mentalization theory as complementary explanations of adolescent socio-emotional development.

Perhaps the most influential result of the study was the strong negative relationship between mentalization and reactive aggression. Adolescents with stronger mentalizing capacities reported significantly lower levels of reactive aggression. This finding supports extensive theoretical and empirical literature identifying mentalization as a central mechanism underlying emotional regulation and interpersonal adaptation (Bateman & Fonagy, 2016; Katznelson, 2014). Mentalization enables individuals to pause and reflect upon the mental states underlying behavior rather than reacting impulsively to perceived threats or provocations. Consequently, adolescents with stronger mentalizing capacities are more capable of regulating emotional arousal and considering alternative explanations for others' actions.

This result is consistent with previous research demonstrating that mentalization serves as a protective factor against various forms of psychological maladjustment. Sharp and Hernandez emphasized that mentalizing difficulties are associated with emotional dysregulation, interpersonal conflict, and behavioral problems during adolescence (Sharp & Hernandez, 2021). Similarly, Sharp and Wall described adolescence as a sensitive developmental period for mentalization, during which reflective capacities contribute substantially to adaptive functioning (Sharp & Wall, 2021). Research examining the Reflective Functioning Questionnaire for Youth has further demonstrated that stronger mentalization is associated with healthier emotional and interpersonal functioning among adolescents (Martin-Gagnon et al., 2023; Seyed Mousavi et al., 2021). The present findings extend this literature by showing that mentalization is specifically associated with lower reactive aggression.

The mediation analyses provide particularly important insights into the mechanisms underlying adolescent aggression. Mentalization significantly mediated the relationships between parental reflective functioning and reactive aggression, as well as between object relations and reactive aggression. These findings suggest that the influence of family relational experiences on aggressive behavior is transmitted partly through adolescents' capacity to understand mental states. In other words, adolescents who experience reflective parenting and develop adaptive object relations are more likely to acquire strong mentalizing

abilities, which subsequently reduce their vulnerability to emotionally reactive aggression.

The mediating role of mentalization is consistent with developmental models proposed by Fonagy and colleagues, which emphasize that attachment experiences shape emotional and behavioral outcomes through their influence on reflective functioning (Fonagy et al., 2002; Fonagy & Luyten, 2009). Similar mechanisms have been reported in studies examining attachment, perspective-taking, self-control, and aggression. For example, Li and colleagues found that perspective-taking mediated the relationship between parental attachment and adolescent aggression (Li et al., 2023). Likewise, Mancinelli and colleagues demonstrated that emotional processing mechanisms explain associations between attachment experiences and aggressive behavior (Mancinelli et al., 2021). The present study contributes to this growing body of literature by identifying mentalization as a central explanatory pathway linking parental reflective functioning and object relations to reactive aggression.

The findings can also be interpreted within a neurodevelopmental framework. Adolescence is characterized by ongoing maturation of neural systems involved in emotional regulation, impulse control, and social cognition (Crone & Dahl, 2012). During this developmental period, environmental influences remain highly significant. Reflective parenting and adaptive relational experiences may support the development of neural and psychological systems involved in mentalization, whereas maladaptive relational environments may hinder these developmental processes. Consequently, mentalization may serve as a bridge connecting interpersonal experiences with behavioral regulation during adolescence.

5. Conclusion

Overall, the present findings support an integrated developmental model in which parental reflective functioning and object relations influence adolescent reactive aggression both directly and indirectly through mentalization. The results reinforce the importance of relational experiences and socio-cognitive processes in adolescent adjustment and provide empirical support for theoretical perspectives derived from attachment theory, object relations theory, and mentalization-based approaches. Furthermore, the findings suggest that interventions targeting mentalization and parental reflective functioning may represent promising strategies for reducing reactive

aggression and promoting psychological well-being among adolescents.

6. Limitations & Suggestions

Several limitations should be considered when interpreting the findings of the present study. First, the cross-sectional design prevents causal conclusions regarding the direction of the observed relationships. Although the proposed model is theoretically grounded, longitudinal evidence is necessary to establish temporal and developmental pathways among parental reflective functioning, object relations, mentalization, and reactive aggression. Second, all variables were measured using self-report instruments, which may have increased the possibility of social desirability bias, recall bias, and common method variance. Third, the participants were recruited exclusively from secondary school settings, potentially limiting the generalizability of the findings to adolescents outside formal educational environments or those with severe clinical difficulties. Finally, other potentially influential variables, such as trauma history, peer relationships, family functioning, socioeconomic status, and personality characteristics, were not included in the model.

Future studies should employ longitudinal and prospective designs to investigate developmental changes in mentalization and aggression across adolescence. Researchers are encouraged to incorporate multiple sources of data, including parent reports, teacher evaluations, observational methods, and clinical interviews, to obtain a more comprehensive assessment of the study variables. Future investigations may also examine additional mediators and moderators, such as emotion regulation, self-control, resilience, peer attachment, and family cohesion. Comparative studies involving clinical and non-clinical populations would further enhance understanding of the mechanisms underlying aggressive behavior. Moreover, cross-cultural research could clarify the extent to which the observed relationships are influenced by cultural norms, parenting practices, and social contexts.

The findings suggest that prevention and intervention programs targeting adolescent aggression should focus on strengthening reflective and relational capacities within families. Parenting programs can be designed to enhance parents' ability to recognize and respond effectively to their adolescents' emotional experiences. School-based interventions may incorporate activities that promote perspective-taking, empathy, emotional awareness, and

reflective thinking. Mentalization-focused therapeutic approaches could be implemented for adolescents exhibiting emotional dysregulation and aggressive behavior. In addition, collaboration among families, schools, counselors, and mental health professionals may help create supportive environments that foster healthy interpersonal relationships, adaptive emotional regulation, and reduced aggressive reactivity.

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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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