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Relationship Between Moral Disengagement and Aggression Risk in Adolescents with Depression A Moderated Mediation Model

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Abstract

Adolescent depression constitutes a major public health concern and is frequently accompanied by pronounced aggressive behaviors that extend beyond core emotional symptoms. Moral disengagement has been identified as a stable predictor of aggressive behavior in general adolescent populations (Wang, Yang, & Yang, 2014). However, in adolescents with clinical depression, the mechanisms linking moral disengagement to aggression may be more complex than in non-depressed populations. Depressive symptoms—characterized by irritability, negative cognitive biases, and emotional dysregulation—could serve as an additional pathway through which moral disengagement translates into aggression, and family functioning may further condition this process. Grounded in social cognitive theory, the present study examines the relationship between moral disengagement and aggression risk in adolescents with depression, with particular attention to the mediating role of depressive symptoms and the moderating role of family functioning. A cross-sectional study was conducted involving 225 adolescents diagnosed with depression. The results indicated that moral disengagement significantly predicted aggression, and this relationship was partially mediated by depressive symptoms, but only under specific conditions of family cohesion. Family cohesion moderated the second stage—that is, the link between depressive symptoms and aggression—of the mediation pathway. These findings clarify the psychological mechanisms and boundary conditions through which moral disengagement contributes to aggression risk in individuals with depression, providing both a theoretical framework and practical guidance for clinical risk assessment and the development of targeted interventions, including cognitive remediation and systemic family support.

Keywords: moral disengagement; aggression; depression; adolescents; family functioning; moderated mediation model

1. Introduction

Adolescent depression is a prevalent psychological disorder whose clinical manifestations extend beyond core symptoms such as low mood and anhedonia to include irritability, anger, and aggressive behaviors (Zhang et al., 2024). Globally, the prevalence of depressive disorders among adolescents has risen steadily over the past three decades, with major depressive disorder now ranking among the leading causes of disability-adjusted life years (DALYs) in the 10–24 age group. This rising trend has been attributed to increased academic pressure, the pervasive influence of social media, and greater awareness of mental health conditions among youth. Recent estimates indicate that approximately 15–20% of adolescents experience clinically significant depressive symptoms (Stecher et al., 2024). In China, epidemiological data reveal a similarly concerning pattern: the age-standardized prevalence of depressive disorders among adolescents and young adults reached approximately 1,952 per 100,000 in 2021, with rates continuing to rise, particularly among females (Chen et al., 2025). These trends have been exacerbated by intense academic competition—exemplified by the gaokao (college entrance examination) system—and rapid urbanization. Beyond its toll on individual well-being, adolescent depression imposes substantial societal and economic burdens, including elevated risk for academic underachievement, school dropout, suicide, and long-term productivity losses extending into adulthood (Stecher et al., 2024). Critically, depression in adolescence often follows a recurrent course, with early onset predicting more severe and chronic illness trajectories across the lifespan. In clinical settings, these aggressive and disruptive presentations can severely complicate treatment and increase the challenges associated with patient management. Adolescence represents a particularly important developmental period for investigating these mechanisms. It is a sensitive window for the emergence of socio-emotional disorders, characterized by heightened neurocognitive plasticity that may confer both vulnerability to mental health problems and receptiveness to intervention

(Fuhrmann et al., 2015; Larsen & Luna, 2018). Understanding how cognitive risk factors such as moral disengagement interact with depressive symptoms in this age group is therefore of both theoretical and clinical significance. Consequently, elucidating the intrinsic mechanisms underlying aggression risk is of critical importance.

Among the factors influencing aggressive behavior, Bandura's (2002) theory of moral disengagement offers a particularly insightful explanatory framework. Moral disengagement refers to a psychological process through which individuals circumvent self-sanctions by employing cognitive strategies that reframe harmful conduct as acceptable. For instance, moral justification portrays aggression as serving a worthy purpose (e.g., "I was defending my friend"), diffusion of responsibility obscures personal accountability when harm occurs in a group context, and dehumanization strips victims of their human qualities, reducing empathic distress. Through such mechanisms, individuals are able to engage in unethical conduct without experiencing the guilt that would normally inhibit such behavior. Extensive research demonstrates that moral disengagement is a robust predictor of bullying, aggression, and other antisocial behaviors in general adolescent populations (Wang et al., 2017).

At the same time, studies consistently report a high comorbidity between aggressive behavior and depressive symptoms in adolescent populations (Wang & Wang, 2023). However, the literatures on moral disengagement and on depression–aggression comorbidity have largely proceeded independently, examining either the moral disengagement–aggression link or the depression–aggression link in isolation. A key theoretical and practical question therefore remains unresolved: among adolescents diagnosed with depression, how do moral disengagement and depressive symptoms jointly influence aggression risk?

It is important to clarify that the present study adopts a dimensional rather than categorical perspective on depression. Traditional categorical approaches classify individuals as either meeting or not meeting diagnostic thresholds; however, a growing body of evidence indicates

that this binary distinction may obscure meaningful variation in symptom severity and impairment (Kotov et al., 2021). A dimensional approach therefore allows for a more nuanced examination of whether and how depressive symptoms cumulatively or interactively combine with moral disengagement to shape aggression risk.

It is particularly noteworthy that core cognitive theories of depression, such as Beck's negative cognitive triad, emphasize negative views of the self, the world, and the future, whereas moral disengagement pertains to the cognitive rationalization of harmful behavior. These distinct cognitive profiles carry different implications for aggression. Moral disengagement is thought to facilitate aggression primarily by neutralizing self-regulatory processes—that is, by allowing individuals to bypass the guilt and self-condemnation that would normally inhibit harmful behavior (Bandura, 2002). Depressive symptoms, by contrast, may promote aggression through heightened irritability, hostile attribution biases, and impaired emotion regulation (Zhang et al., 2024). These distinct pathways raise the possibility that depressive symptoms and moral disengagement may operate independently, cumulatively, or interactively in shaping aggression risk, yet no study to date has examined their interplay in a clinically depressed adolescent sample.

Moreover, the translation of these cognitive vulnerabilities into overt aggression may depend critically on the broader family context in which adolescents are embedded. A substantial body of research indicates that family environments characterized by warmth and cohesion protect against the development of externalizing problems, whereas family conflict and emotional neglect increase risk for both depressive symptoms and aggression (Repetti et al., 2002). In Chinese adolescent samples specifically, family functioning has been consistently linked to psychological well-being and behavioral adjustment (Shek, 2002). From a family systems perspective, the family serves as a primary context for the development of emotion

regulation and behavioral norms, suggesting that family functioning may buffer or amplify the behavioral expression of individual vulnerabilities (Minuchin, 1974).

The present study examines two dimensions of family functioning as operationalized by the Family Adaptability and Cohesion Evaluation Scale (FACES; Olson, Portner, & Lavee, 1985). The FACES model, grounded in the Circumplex Model of Marital and Family Systems (Olson, 2000), posits that balanced levels of cohesion and adaptability are optimal for healthy family functioning, whereas extreme levels at either end of these dimensions are associated with dysfunction. Family cohesion refers to the emotional bonding among family members, while family adaptability captures the family's capacity for change in response to situational stress. Although both dimensions are theorized to contribute to family functioning, empirical evidence regarding their differential predictive validity has been mixed, with cohesion consistently emerging as a robust predictor of adolescent outcomes and adaptability showing less consistent predictive utility (Olson, 2000). Whether these two dimensions differentially moderate the moral disengagement–aggression link in clinically depressed adolescents remains underexplored, and the present study examines cohesion in a hypothesis-driven capacity and adaptability in a more exploratory manner.

The present study addresses this question by examining a moderated mediation model with four hypothesized pathways. The first pathway (H1)—the direct association between moral disengagement and aggression—is well-established in general adolescent populations, with meta-analytic evidence consistently demonstrating a moderate to strong positive association across diverse cultural contexts and age groups (Wang, Yang, & Yang, 2014); however, whether this association holds with comparable magnitude in adolescents with clinical depression has not been directly examined. The second pathway (H2)—the mediating role of depressive symptoms—integrates two previously separate lines of evidence: moral disengagement has been linked to internalizing distress as well as externalizing problems

(Bandura, 2002), and depressive symptoms are robust predictors of reactive aggression through heightened irritability, hostile attribution biases, and impaired emotion regulation (Zhang et al., 2024). This mediation has not been tested in clinically depressed adolescents. The third pathway (H3)—the moderating role of family cohesion on the depressive symptoms–aggression link—follows from family systems theory, which holds that supportive family relationships provide adolescents with alternative coping resources that reduce the likelihood of depressive distress escalating into aggression, whereas emotionally disengaged families may leave adolescents more vulnerable to acting out (Minuchin, 1974). The fourth pathway (H4)—the moderating role of family adaptability on the direct moral disengagement–aggression link—reflects the possibility that the congruence between ideal and actual family cohesion may alter the behavioral expression of moral disengagement cognitions, though prior evidence regarding this dimension has been inconsistent (Olson, 2000). Findings regarding these pathways may ultimately inform targeted clinical interventions by identifying modifiable cognitive and contextual risk factors.

2. Hypotheses

Based on the literature review, the following theoretical framework is proposed:

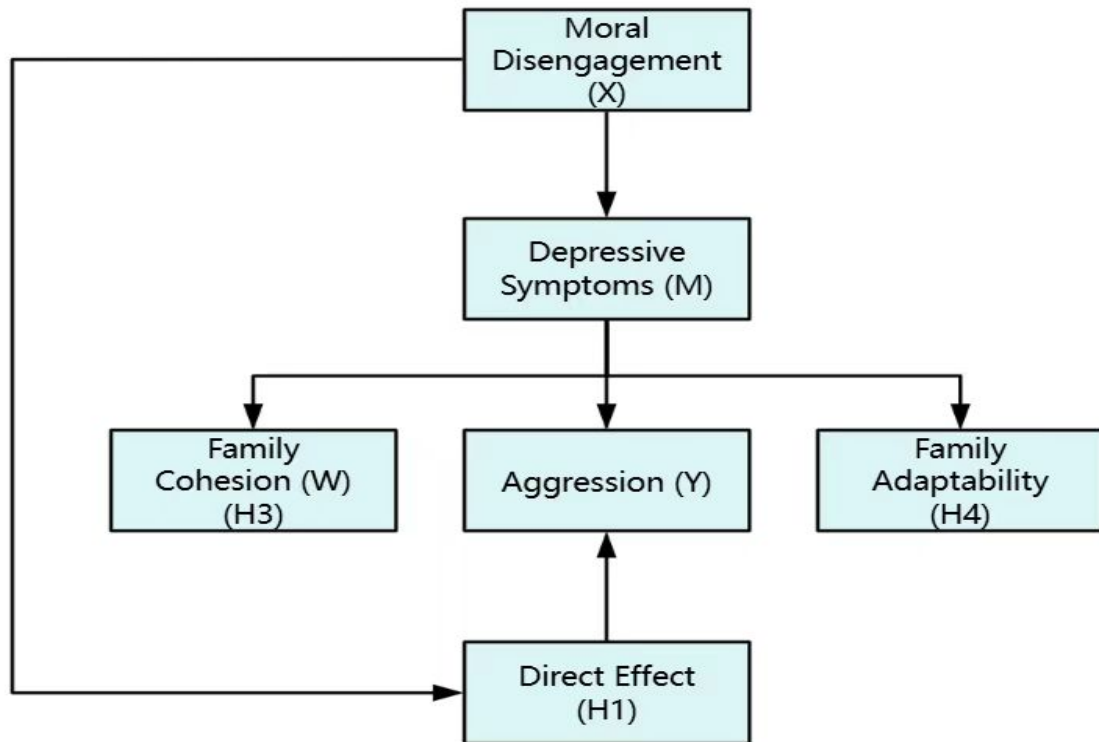


Figure 1 Theoretical Framework of the Moderated Mediation Model

Based on the literature reviewed above, the following hypotheses are proposed. H1 and H3 are tested in a confirmatory capacity, while H2 and H4 are examined more exploratorily.

- H1: Moral disengagement is positively associated with aggression.
- H2: Depressive symptoms mediate the relationship between moral disengagement and aggression.
- H3: Family cohesion moderates the relationship between depressive symptoms and aggression, such that this association is weaker when cohesion is high.
- H4: Family adaptability, operationalized as the discrepancy between ideal and actual cohesion, moderates the direct relationship between moral disengagement and aggression.

3. Methods

3.1 Participants and Sampling

This study employed a cross-sectional design. Data were collected from the adolescent psychiatric inpatient department of Zhejiang Provincial Hangzhou Seventh People's Hospital using a convenience sampling method. A total of 225 adolescents diagnosed with depression participated in the study.

3.1.1 Inclusion Criteria:

Aged 12–18 years, corresponding to the developmental period during which adolescents are particularly sensitive to socio-emotional influences and neurocognitive change (Fuhrmann et al., 2015; Larsen & Luna, 2018), consistent with the standard clinical definition of adolescence in Chinese psychiatric practice

Diagnosed with a depressive episode or recurrent depressive disorder according to ICD-10 criteria

Informed consent obtained from both the patient and their legal guardian

3.1.2 Exclusion Criteria:

Comorbidity with severe psychotic disorders, including schizophrenia or bipolar disorder

Intellectual disability or severe communication difficulties

Acute phase of illness characterized by suicide risk or severe agitation

The final sample comprised 225 adolescents (168 female, 57 male) aged 12–18 years.

3.2 Research Instruments

1. Demographic Questionnaire: A self-developed form used to collect information on gender, age, socioeconomic status, illness duration, and medication status.

2. Moral Disengagement Scale: The Chinese version of the scale originally developed by Bandura et al. (1996) and revised by Wang Xingchao et al. (2012). This 32-item scale uses a 5-point Likert format, with higher total scores indicating a stronger tendency toward moral disengagement. The scale has demonstrated good reliability and validity in Chinese adolescent populations. In the present sample, Cronbach's α was .89.

3. HAMD-24: A 24-item clinician-administered scale assessing depressive symptom severity. Scores of 0-8 indicate no depressive symptoms, 9-18 indicate mild depression, 19-24 indicate moderate depression, and 25 or above indicate severe depression. In the present sample, Cronbach's α was .92.

4. Aggression Questionnaire: A 20-item self-report instrument measuring aggressive behaviors, including physical aggression, verbal aggression, anger, and hostility (Buss & Perry, 1992). In the present sample, Cronbach's α was .90.

5. FACES, Second Edition, Chinese Version (FACES II-CV): Originally developed by Olson et al. (1985) and revised by Phillips et al. (1991), this 30-item scale includes two dimensions: Cohesion, reflecting actual emotional bonding, and Adaptability, operationalized as the difference between ideal and actual family cohesion (Ideal Family Cohesion – Actual Family Cohesion). In this calculation, "Actual Family Cohesion" refers to the Family Cohesion Total Score. Negative values indicate that actual cohesion exceeds the ideal level, reflecting enmeshed family relationships; zero or positive values indicate that actual cohesion meets or falls below the ideal level. In the present sample, Cronbach's α was .97 for the Cohesion subscale.

3.3 Research Procedure and Data Analysis

All procedures were approved by the Ethics Committee of Zhejiang Provincial Hangzhou Seventh Hospital. Assessments were conducted by uniformly trained researchers in a quiet, private setting. Prior to administering the questionnaires, researchers provided a detailed

explanation of the study to both participants and their legal guardians, who subsequently provided written informed consent. Participants completed the questionnaires in the following fixed order: (a) demographic information, (b) HAM-D-24, (c) Moral Disengagement Scale, (d) FACES II-CV, and (e) Aggression Questionnaire.

Following data collection, SPSS 26.0 was used for data entry, cleaning, and the removal of invalid responses. Descriptive statistics and correlation analyses were conducted. To test the moderated mediation model, Hayes's (2013) PROCESS macro was employed, specifically selecting Model 14 (which tests a mediated model with moderation occurring in the second stage) and Model 5 (which tests moderation of the direct effect). All continuous predictor variables were mean-centered prior to analysis. A bootstrap sampling method with 5,000 iterations was used to calculate 95% confidence intervals; if the confidence interval did not include zero, the effect was considered statistically significant. No covariates were included in the primary models. Prior to hypothesis testing, assumptions of linearity, normality of residuals, and homoscedasticity were examined via visual inspection of scatterplots and Q-Q plots; no substantial violations were detected.

4. Results

4.1 Descriptive Statistics

Table 1 presents the descriptive statistics for all study variables.

Variable	Mean	SD	Minimum	Maximum	Theoretical Range
Depressive Symptoms (HAMD-24)	26.51	9.832	6	48	0-76
Moral Disengagement Total Score	82.75	15.421	46	130	32-160
Family Cohesion Total Score	98.29	22.798	33	149	30-150
Family Adaptability (Difference Score)	-29.28	24.05	-144	30	(Difference score)
Aggression Total Score	61.96	14.474	29	96	20-100

Table 1 Descriptive Statistics of Study Variables

Note:Family Adaptability is a difference score (see Section 3.2 for details).

For family adaptability (difference score; see Section 3.2 for operational definition), the mean was -29.28 (SD = 24.05), which was significantly less than zero, $t(224) = -18.26$, $p < .001$, Cohen's $d = -1.22$. Scores ranged from -114 to +13, and 84.7% of the sample had negative values, indicating that the vast majority of participants perceived their families as more enmeshed than they ideally desired.

4.2 Intercorrelations among Variables

Variables	1	2	3	4	5
1. Moral Disengagement Total Score	-				
2. Depressive Symptoms	.238***	-			
3. Family Cohesion	.207**	.171*	-		

Variables	1	2	3	4	5
4. Family Adaptability	-.082	-.001	-.565***	-	
5. Aggression	.256***	.245***	.254***	-.147*	-

Table 2 Pearson Correlation Matrix (Key Variables)

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Key Findings:

1. Moral disengagement and aggression were positively correlated ($r = .256$, $p < .001$), supporting Hypothesis H1.

2. Family cohesion was positively correlated with both moral disengagement ($r = .207$, $p < .01$) and depressive symptoms ($r = .171$, $p < .05$), indicating that higher levels of family cohesion were associated with higher levels of moral disengagement and more severe depressive symptoms in this clinical sample.

3. Depressive symptoms and aggression were positively correlated ($r = .245$, $p < .001$).

4. Moral disengagement and depressive symptoms were positively correlated ($r = .238$, $p < .001$).

5. Family cohesion was positively correlated with aggression ($r = .254$, $p < .001$).

6. Family adaptability was negatively correlated with aggression ($r = -.147$, $p < .05$). However, as noted in Section 4.1, this difference score is mathematically dependent on the Family Cohesion total score; the observed correlation may therefore partly reflect the positive association between family cohesion and aggression (see Point 4) rather than an independent effect of adaptability per se.

4.3 Testing the Moderated Mediation Model (H2 and H3)

Model 14 of the PROCESS macro was employed to examine whether family cohesion moderates the relationship between depressive symptoms and aggression.

Predictor	Outcome: M (Depressive Symptoms)			Outcome: Y (Aggression)		
	b	t	p	b	t	p
Constant	13.96	4.00	<.001	2.84	0.23	.818
X (Moral Disengagement)	0.15	3.66	<.001	0.17	2.83	.005
M (Depressive Symptoms)	-	-	-	1.25	3.08	.002
W (Family Cohesion)		-	-	0.40	3.37	<.001
M × W		-	-	-0.01	- 2.51	.013
-						
-	.057			.159		
F	13.38***			10.36***		

Table 3 Regression Results for Conditional Process Model (Model 14)

Note: N = 225. X = Moral Disengagement, M = Depressive Symptoms, W = Family Cohesion, Y = Aggression. Unstandardized regression coefficients are reported. ***p < .001.

Family Cohesion (W)	b	t	p	95% CI
77.00 (16th percentile)	0.46	3.70	<.001	[0.22, 0.71]
100.00 (50th percentile)	0.23	2.36	.019	[0.04, 0.42]
120.00 (84th percentile)	0.02	0.17	.864	[-0.24, 0.29]

Table 4 Conditional Effects of Depressive Symptoms (M) on Aggression (Y) at Values of Family Cohesion (W)

Note: Conditional effects represent the simple slopes of M predicting Y at specific values of W.

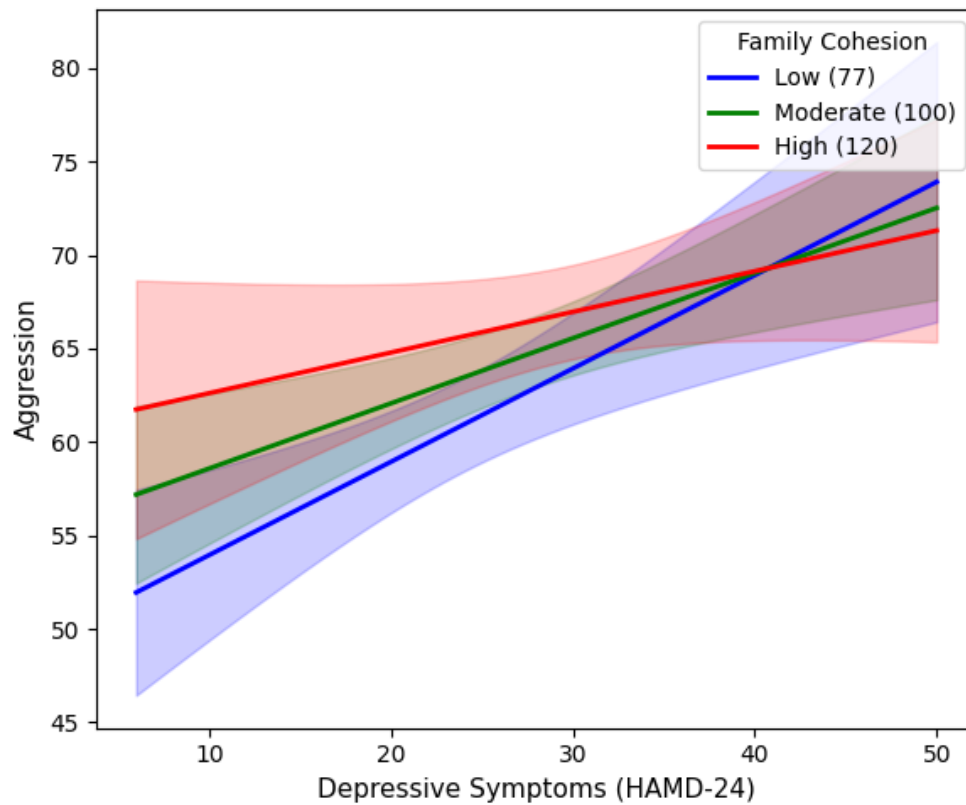


Figure 1. Simple slopes of depressive symptoms predicting aggression at three levels of family cohesion (low = 77, moderate = 100, high = 120). Shaded bands represent 95% confidence intervals. The slope was significant at low ($b = 0.46$, $p < .001$) and moderate ($b = 0.23$, $p = .019$) levels, but non-significant at high cohesion ($b = 0.02$, $p = .864$).

Family Cohesion (W)	Effect	BootLLCI	BootULCI
77.00 (16th percentile)	0.070	0.016	0.135
100.00 (50th percentile)	0.034	0.001	0.079
120.00 (84th percentile)	0.004	-0.045	0.054

Table 5 Conditional Indirect Effects of Moral Disengagement (X) on Aggression (Y) Through Depressive Symptoms (M) at Values of Family Cohesion (W)

Index of Moderated Mediation: -0.0015, 95% BootCI [-0.0034, -0.0001]

Note: Bootstrap sample size = 5,000. Confidence intervals that do not include zero indicate a significant effect.

Summary of Key Findings from Model 14:

Direct Effect: Moral disengagement exerted a significant direct effect on aggression ($b = 0.17$, $p = .005$).

Moderation Effect: Family cohesion significantly moderated the relationship between depressive symptoms and aggression ($b = -0.01$, $p = .013$), explaining an additional 2.4% of the variance ($\Delta R^2 = .024$).

Simple Slope Analysis:

At low family cohesion (16th percentile), depressive symptoms significantly and positively predicted aggression ($b = 0.46$, $p < .001$).

At moderate family cohesion (50th percentile), depressive symptoms significantly and positively predicted aggression ($b = 0.23$, $p = .019$).

At high family cohesion (84th percentile), depressive symptoms did not significantly predict aggression ($b = 0.02$, $p = .864$).

Conditional Indirect Effects:

At low family cohesion, the indirect effect was significant (Effect = 0.070, 95% CI [0.016, 0.135]).

At moderate family cohesion, the indirect effect was significant (Effect = 0.034, 95% CI [0.001, 0.079]).

At high family cohesion, the indirect effect was not significant (Effect = 0.004, 95% CI [-0.045, 0.054]).

Index of Moderated Mediation: The index was significant (Index = -0.0015, 95% CI [-0.0034, -0.0001]), indicating that the indirect effect of moral disengagement on aggression through depressive symptoms varied significantly across levels of family cohesion.

These findings support Hypotheses H2 and H3, indicating that the mediating effect of depressive symptoms on the relationship between moral disengagement and aggression is conditional on family cohesion.

4.4 Testing Moderation by Family Adaptability (H4)

Model 5 of the PROCESS macro was employed to examine whether family adaptability moderates the direct relationship between moral disengagement and aggression.

Table 6 Regression Results for Conditional Process Model (Model 5)

Predictor	Outcome: M (Depressive Symptoms)			Outcome: Y (Aggression)		
	b	t	p	b	t	p
Constant	13.96	4.00	<.001	33.62	4.30	<.001
X (Moral Disengagement)	0.15	3.66	<.001	0.22	2.32	.021
M (Depressive Symptoms)	-	-	-	0.29	2.95	.004
W (Family Adaptability)	-	-	-	-0.17	0.95	.345
X × W	-	-	-	0.001	0.52	.605
R ²	.057			.119		
F	13.38***			7.43***		

Table 6 Regression Results for Conditional Process Model (Model 5)

Note: N = 225. X = Moral Disengagement, M = Depressive Symptoms, W = Family Adaptability, Y = Aggression. Unstandardized regression coefficients are reported. ***p < .001.

Summary of Key Findings from Model 5:

Mediation Effect: Depressive symptoms significantly mediated the relationship between moral disengagement and aggression (indirect effect = 0.043, 95% Bootstrap CI [0.006, 0.095]).

Moderation Effect: The interaction between moral disengagement and family adaptability was not significant ($b = 0.001$, $p = .605$, $\Delta R^2 = .001$).

Direct Effect: The direct effect of moral disengagement on aggression remained significant across all levels of family adaptability:

At low adaptability (16th percentile; $W = -52.84$), the direct effect of moral disengagement on aggression was significant ($b = 0.17$, $p = .024$).

At moderate adaptability (50th percentile; $W = -28.00$), the direct effect was significant ($b = 0.19$, $p = .002$).

At high adaptability (84th percentile; $W = -6.00$), the direct effect was significant ($b = 0.22$, $p = .013$).

These findings indicate that Hypothesis H4 was not supported. Although the direct effect of moral disengagement on aggression remained significant across all levels of family adaptability, the nonsignificant interaction term suggests that the strength of this relationship did not vary as a function of the discrepancy between ideal and actual family cohesion.

5. Discussion

5.1 Summary of Key Findings

This study provides empirical evidence for the association between moral disengagement and aggression in adolescents with depression. The findings support Hypothesis H1, confirming that moral disengagement is a robust predictor of aggression in this clinical population. Moderated mediation analyses indicated that depressive symptoms partially mediate this relationship, and this indirect effect is conditional on family cohesion, providing support for Hypotheses H2 and H3. Specifically, the mediating pathway was significant only at low to moderate levels of family cohesion; at high cohesion, depressive symptoms no longer predicted aggression, suggesting a buffering effect. It should be noted, however, that the moderating effect, while significant, was small in magnitude ($\Delta R^2 = .024$). Hypothesis H4, which proposed that family adaptability would moderate the direct relationship between moral disengagement and aggression, was not supported. Notably, family cohesion was positively correlated with both moral disengagement and depressive symptoms in this sample. While cohesion is typically viewed as protective, this positive association likely reflects the high prevalence of enmeshed family patterns in our clinical sample (84.7% reported actual cohesion exceeding ideal cohesion), suggesting that the quality and boundaries of closeness, rather than its absolute level, may be critical in clinical populations.

5.2 Theoretical Implications

5.2.1 Moral Disengagement and Aggression

The present findings also shed light on the role of moral disengagement itself. Regarding the direct association between moral disengagement and aggression, the finding that this link remained significant even after accounting for depressive symptoms (partial mediation)

indicates that moral disengagement contributes to aggression through pathways that are at least partly independent of emotional distress. In depressed adolescents, the cognitive mechanisms of moral disengagement—such as justifying harmful behavior or displacing responsibility—may operate alongside, rather than entirely through, depressive symptomatology. This has implications for intervention: addressing moral disengagement cognitions directly may reduce aggression risk even when depressive symptoms are not fully remitted.

This finding is consistent with a growing body of research documenting the unique contribution of moral disengagement to aggressive behavior across diverse populations. Meta-analytic evidence has established that moral disengagement is among the most robust cognitive predictors of aggression in adolescence, with effect sizes typically exceeding those of other social-cognitive variables such as empathy deficits or hostile attribution biases alone (Wang, Yang, & Yang, 2014). The present findings extend this literature by demonstrating that moral disengagement retains its predictive utility even within a clinical sample characterized by elevated emotional distress. This is noteworthy because it suggests that the cognitive mechanisms underpinning moral disengagement—the ability to rationalize harmful conduct—operate relatively independently of emotional symptomatology. In other words, depressed adolescents who engage in moral disengagement are at heightened risk for aggression regardless of their current level of depressive severity.

The partial nature of the mediation observed here also aligns with studies showing that the moral disengagement–aggression link is multiply mediated. For instance, Wang et al. (2017) found that moral disengagement influenced aggression among Chinese juvenile delinquents both directly and indirectly through reduced empathy and increased hostility. Similarly, emerging evidence suggests that anger rumination may constitute an additional pathway through which moral disengagement relates to aggression. Cen et al. (2022) found that hostile rumination and moral disengagement mutually influenced each other over time and jointly

contributed to both reactive and proactive aggression in young adults. Relatedly, Wang, Fan, et al. (2021) demonstrated that anger rumination mediated the association between bullying victimization and cyberbullying perpetration among Chinese adolescents, with moral disengagement moderating this indirect effect. The present study adds depressive symptoms to this growing list of mediators, suggesting that the mechanisms linking moral disengagement to aggression are best understood as a network of interconnected cognitive and affective processes rather than a single linear pathway.

5.2.2 Family Functioning and Adolescent Mental Health

These findings provide clear evidence that family cohesion serves a protective function in adolescents with depression. Rather than merely replicating the well-documented association between cohesion and better mental health outcomes, our results identify a specific mechanism—the attenuation of the depressive symptoms–aggression link—through which this protection operates. At high levels of cohesion, depressive symptoms no longer significantly predicted aggression, effectively disrupting the second stage of the mediation pathway. This pattern aligns with family systems theory (Minuchin, 1974), which posits that supportive family relationships can buffer the behavioral expression of individual vulnerabilities. The magnitude of this moderation effect was modest ($\Delta R^2 = .024$), suggesting that family cohesion, while statistically significant as a moderator, accounts for only a small portion of the variance in the depressive symptoms–aggression link. This is consistent with the multifactorial nature of aggression risk in clinical populations and underscores the need to consider additional contextual and individual-level moderators in future research.

Beyond this overall protective effect, several specific aspects of the cohesion–aggression relationship merit closer examination. A particularly intriguing aspect of these findings concerns the apparently paradoxical role of family cohesion in this clinical sample. At the bivariate level, family cohesion was positively correlated with depressive symptoms,

aggression (see Section 4.2), and moral disengagement ($r = .207, p < .01$). The vast majority of participants (84.7%) reported actual cohesion exceeding their ideal level—a pattern typically interpreted as enmeshment (see Section 4.1). Yet, despite being subjectively experienced as excessive or aversive, high family cohesion nonetheless buffered the translation of depressive symptoms into aggression. This dissociation between the perceived and functional roles of family closeness warrants careful interpretation.

The positive correlation between family cohesion and moral disengagement appears counterintuitive at first glance, as cohesive families are generally thought to foster moral development and prosocial behavior. However, in the context of the predominantly enmeshed family patterns observed in this sample, this association becomes more interpretable. Enmeshed family systems, characterized by blurred interpersonal boundaries and excessive emotional involvement, may inadvertently model or reinforce cognitive strategies that justify harmful behavior, particularly when such behavior is perceived as protecting family members or maintaining family loyalty. Alternatively, adolescents in enmeshed families may develop moral disengagement tendencies as a coping mechanism to reconcile the discrepancy between the family's aversive closeness and the societal expectation of family harmony, though the specific mechanisms linking enmeshment to moral disengagement warrant further investigation.

One possible explanation for the broader pattern is that depressed adolescents' reports of family functioning are colored by negative cognitive biases—a core feature of depression. From this perspective, the same family environment may be appraised more negatively by a depressed adolescent than by an external observer, and the positive bivariate correlations between cohesion and both depressive symptoms and moral disengagement may partly reflect this reporting bias. Importantly, the functional buffering effect of cohesion suggests that, irrespective of how it is subjectively perceived, close family bonds may still provide regulatory

support that reduces the likelihood of depressive distress escalating into overt aggression. An alternative, though not mutually exclusive, interpretation is that the high cohesion scores in this sample indeed capture enmeshed family dynamics—characterized by blurred boundaries and excessive interdependence—which may simultaneously generate subjective distress while also constraining the behavioral expression of aggressive impulses through heightened parental monitoring and involvement. In either case, the findings suggest that depressed adolescents may under-appreciate the positive role of family cohesion, which nonetheless appears to protect them from aggressive behavior.

The protective role of family cohesion identified in this study contributes to a more nuanced understanding of family functioning in clinical adolescent populations. A substantial body of research conducted in community samples has consistently found that high family cohesion is associated with lower levels of externalizing problems and greater psychological well-being (Repetti et al., 2002; Shek, 2002). The present findings replicate this general pattern in a clinical sample, but with an important qualification: the protective effect of cohesion was observed despite the positive bivariate correlations noted above. This apparent paradox has not been widely reported in the literature and may be specific to clinical populations where family dynamics are often characterized by enmeshment rather than healthy closeness.

Indeed, the Circumplex Model upon which the FACES is based explicitly distinguishes between balanced cohesion (characterized by healthy emotional bonding and appropriate autonomy) and enmeshed cohesion (characterized by blurred boundaries and excessive togetherness) (Olson, 2000). In community samples, high cohesion scores typically reflect balanced functioning, and the expected negative correlations with psychopathology are observed. In the present clinical sample, however, high cohesion scores may predominantly reflect enmeshment. This interpretation is consistent with family systems theory, which holds that enmeshed family patterns, while experienced as aversive, may nonetheless constrain the

outward expression of aggression through heightened parental monitoring and involvement (Minuchin, 1974). The present findings thus underscore the importance of distinguishing between functional and dysfunctional forms of closeness when interpreting family cohesion data in clinical populations.

5.2.3 Depression–Aggression Comorbidity

The finding that depressive symptoms partially mediated the moral disengagement–aggression link extends the literature on depression–aggression comorbidity in several respects. First, it demonstrates that the well-documented association between depressive symptoms and aggression (Zhang et al., 2024) can be situated within a broader nomological network that includes upstream cognitive risk factors such as moral disengagement. This is consistent with integrative models of aggression that emphasize the interplay between cognitive vulnerabilities and emotional distress in shaping behavioral outcomes. Second, the fact that this mediation was conditional on family cohesion suggests that the depression–aggression link is not invariant across contexts but is instead modulated by the quality of family relationships. This finding resonates with developmental psychopathology frameworks that emphasize the role of social context in shaping the behavioral expression of emotional distress.

The modest effect size of the moderated mediation ($\Delta R^2 = .024$) is also consistent with the broader literature on aggression, which is recognized as a multidetermined phenomenon influenced by a wide range of biological, psychological, and social factors. Single moderators rarely account for large proportions of variance in complex behavioral outcomes, and the small but significant effect observed here is comparable to moderation effects reported in similar studies of family functioning and adolescent psychopathology. This underscores the need for future research to examine multiple contextual moderators simultaneously and to explore higher-order interactions that may better capture the complexity of aggression risk in clinical populations.

The non-significant moderating effect of family adaptability (H4) suggests that the discrepancy between ideal and actual family cohesion does not directly alter the moral disengagement–aggression link. However, it should be noted that the operationalization of adaptability as a difference score (ideal minus actual cohesion) makes it mathematically dependent on the Family Cohesion total score, which complicates its interpretation as an independent construct.

5.3 Clinical Implications

The findings of the present study carry several implications for clinical practice with depressed adolescents, particularly in Chinese psychiatric settings.

5.3.1 Routine Assessment of Moral Disengagement

The robust direct association between moral disengagement and aggression, even after accounting for depressive symptom severity, suggests that moral disengagement should be routinely assessed in clinical evaluations of depressed adolescents. Currently, standard clinical assessments for adolescent depression focus primarily on mood symptoms, suicidal ideation, and functional impairment, with less systematic attention to cognitive risk factors for aggression. Given that aggressive behavior can complicate treatment, endanger staff and other patients, and increase the likelihood of seclusion or restraint in inpatient settings, identifying adolescents at elevated behavioral risk is of considerable clinical importance. The Moral Disengagement Scale, which has demonstrated good psychometric properties in Chinese adolescent populations (Wang, Yang, & Yang, 2012), offers a brief and practical tool for this purpose. Clinicians might consider incorporating this scale into intake assessments, with particular attention to items reflecting moral justification and displacement of responsibility, which may be especially relevant to aggression risk. Adolescents scoring above clinical

thresholds on moral disengagement could be flagged for additional behavioral monitoring and targeted cognitive intervention.

5.3.2 Cognitive Restructuring of Moral Disengagement Cognitions

The finding that moral disengagement contributes to aggression partly independently of depressive symptoms suggests that addressing moral disengagement directly—rather than assuming it will remit as depressive symptoms improve—may be necessary to reduce aggression risk. Cognitive-behavioral interventions could be adapted to specifically target moral disengagement cognitions. For instance, clinicians might work with adolescents to identify and challenge beliefs that justify harmful behavior, such as "he deserved it" (attribution of blame) or "everyone does it" (diffusion of responsibility). Cognitive restructuring techniques, already well-established in the treatment of adolescent depression, could be extended to address these specific moral disengagement themes. Techniques such as perspective-taking exercises, in which adolescents are guided to consider the consequences of harmful actions from the victim's standpoint, may help counter dehumanization and distortion of consequences. Role-playing scenarios that require adolescents to generate moral justifications for hypothetical aggressive acts, followed by guided examination of alternative, non-aggressive responses, could strengthen self-regulatory capacities.

Importantly, several existing intervention programs for adolescent aggression already incorporate components targeting moral disengagement, though they may not use this specific terminology. For example, cognitive-behavioral programs such as Aggression Replacement Training and the Coping Power Program include modules on perspective-taking, moral reasoning, and anger management that implicitly address moral disengagement mechanisms. Adapting these evidence-based programs for depressed adolescents in Chinese clinical settings—with culturally sensitive modifications, such as incorporating scenarios relevant to

Chinese family and school contexts—represents a promising direction for intervention development.

5.3.3 Strengthening Family Cohesion as a Protective Mechanism

The finding that high family cohesion buffers the depressive symptoms–aggression link carries clear implications for family-based interventions. Rather than focusing exclusively on reducing family conflict—a common target in family therapy—interventions should also prioritize strengthening emotional bonds and supportive relationships within the family. Family-based interventions such as family psychoeducation, systemic family therapy, and attachment-based family therapy have demonstrated efficacy in improving family functioning and reducing adolescent behavioral problems. In the context of Chinese clinical settings, where family involvement in treatment is often expected and encouraged, these approaches may be particularly feasible and acceptable.

However, the findings also suggest that the relationship between family cohesion and adolescent outcomes is not straightforward in clinical populations. The high prevalence of enmeshment in this sample (84.7% reported actual cohesion exceeding ideal cohesion) indicates that interventions should aim to promote balanced cohesion—characterized by emotional closeness alongside appropriate autonomy—rather than simply increasing cohesion indiscriminately. Family therapists working with depressed adolescents should assess both actual and ideal family cohesion, attending to discrepancies that may indicate enmeshment. Interventions might then focus on helping families establish clear interpersonal boundaries while maintaining emotional support, for example through communication skills training that emphasizes both empathic listening and assertive self-expression.

5.3.4 Integrated Treatment Approaches

The moderated mediation model tested in this study highlights the interplay between cognitive, emotional, and familial factors in shaping aggression risk among depressed adolescents. This

suggests that interventions targeting a single domain are unlikely to be maximally effective. An integrated treatment approach that combines cognitive interventions addressing moral disengagement, family interventions enhancing balanced cohesion, and standard depression treatment (pharmacotherapy and/or psychotherapy) may yield the greatest reduction in aggression risk. In Chinese psychiatric inpatient settings, where multidisciplinary teams typically include psychiatrists, psychologists, and psychiatric nurses, coordinated treatment planning across these domains is feasible. For instance, psychiatrists might focus on pharmacological management of depressive and irritable symptoms, psychologists on cognitive restructuring of moral disengagement cognitions, and family therapists on improving family cohesion and boundary setting.

The modest effect sizes observed in this study, however, counsel against overly optimistic expectations. Family cohesion explained only a small portion of the variance in the depressive symptoms–aggression link ($\Delta R^2 = .024$), and moral disengagement, while a robust predictor, is only one of many factors contributing to aggression risk. Integrated interventions, while theoretically appealing, should be evaluated against simpler, more targeted approaches in future research to determine whether the additional complexity and cost are justified by superior outcomes.

5.4 Limitations

Several limitations of the present study should be acknowledged, some of which point to important directions for future research.

5.4.1 Cross-Sectional Design.

The cross-sectional nature of this study precludes causal inference regarding the relationships among moral disengagement, depressive symptoms, family functioning, and aggression. Although the theoretical model tested here specifies directional pathways—with moral

disengagement as the independent variable, depressive symptoms as the mediator, and family cohesion and adaptability as moderators—these temporal relationships cannot be empirically established with cross-sectional data. It is plausible, for instance, that aggressive behavior reciprocally influences moral disengagement, as adolescents who engage in aggression may increasingly deploy moral disengagement strategies to justify their actions and reduce cognitive dissonance. Similarly, depressive symptoms and family functioning may mutually influence each other over time, with family cohesion shaping depressive symptoms and depressive symptoms, in turn, coloring adolescents' perceptions of family relationships. Longitudinal designs with repeated assessments of all study variables are needed to establish temporal precedence and to examine potential bidirectional or reciprocal effects. Such designs would also permit the examination of within-person change processes—for example, whether changes in moral disengagement predict subsequent changes in aggression through changes in depressive symptoms—which would provide stronger evidence for the hypothesized mediation pathways.

5.4.2 Common Method Bias and Single Source of Data.

With the exception of the HAMD-24, which is a clinician-administered instrument, all measures in the present study were obtained through adolescent self-report. The reliance on self-report raises the possibility that shared method variance may have inflated the observed correlations among study variables. Depressed adolescents' negative cognitive biases may have systematically influenced their responses across these measures, potentially inflating associations among variables beyond what would be observed with multi-method assessment. Future research should incorporate multiple informants, such as parent reports of family functioning, teacher reports of aggression, and clinician ratings of moral disengagement where feasible. In addition, future studies could employ objective behavioral measures of aggression or observational assessments of family interactions to reduce reliance on self-report data.

5.4.3 Sample Size and Statistical Power.

Although the sample of 225 was sufficient for detecting main effects, it may have been underpowered for identifying small interaction effects. The power to detect a small interaction effect was approximately 35–45%. This limitation is particularly relevant to the non-significant moderation by family adaptability (H4) and to the gender-stratified sensitivity analyses (see Section 5.5), where the male subgroup ($n = 57$) provided severely limited power to detect effects. Given that the female-to-male ratio in the present sample was approximately 3:1 (74.6% vs. 25.4%), future research aiming to conduct adequately powered gender-stratified analyses should ensure that the male subgroup itself reaches a sufficient sample size (e.g., $n > 250$), which would require a total sample of approximately 1,000 participants or more in similar clinical settings.

5.4.4 Measurement of Family Adaptability.

The use of a difference score (ideal minus actual cohesion) to index family adaptability presents significant psychometric challenges. This score is mathematically dependent on the Family Cohesion total score, and its observed correlation with aggression may therefore be partially artifactual. Simpler analytic approaches could have been employed in the current study to attempt to disentangle these effects—for example, entering actual and ideal cohesion as separate predictors in the model, or testing their interaction directly. The non-significant moderation by adaptability in Model 5 should be interpreted with caution in light of these measurement concerns. Future research should employ alternative approaches to assessing family adaptability, such as direct measures of family flexibility or polynomial regression with response surface analysis.

5.4.5 Sample Characteristics and Generalizability.

The sample was drawn from a single inpatient psychiatric department in Hangzhou, China, and was predominantly female (74.6%), reflecting the higher prevalence of depression among adolescent females in clinical settings. While this gender distribution is consistent with the epidemiology of adolescent depression, it limits the generalizability of the findings to male adolescents with depression and to adolescents in outpatient or community settings. In addition, the sample was limited to adolescents aged 12 – 18 years, and findings may not generalize to younger children or to young adults. Future research should include larger, more diverse samples drawn from multiple sites and encompassing both inpatient and outpatient settings.

5.4.6 Unmeasured Confounders.

Several variables that may influence the relationships examined in this study were not controlled. Future research with larger samples should attempt to account for these potential confounders, including socioeconomic status, comorbidity with other psychiatric conditions, and the quality of peer relationships, which may independently influence both moral disengagement and aggression.

5.4.7 Cultural Specificity.

The findings of this study should be understood within the Chinese cultural context, which may influence family dynamics in ways that differ from Western populations. The high prevalence of enmeshment observed in this sample (84.7% reported actual cohesion exceeding ideal cohesion) may partly reflect cultural norms regarding family closeness in Chinese society, where strong familial interdependence is traditionally valued. As such, the distinction between balanced and enmeshed cohesion may operate differently in Chinese versus Western cultural contexts, and the protective function of cohesion observed here may not generalize to populations with different cultural norms regarding family relationships. Cross-cultural

research is needed to examine whether the moderated mediation model tested in this study operates similarly across cultural contexts.

5.5 Sensitivity Analysis by Gender

Preliminary independent-samples t-tests indicated that male and female participants did not differ significantly on depressive symptoms, moral disengagement, aggression, or family adaptability (all $ps > .05$). However, females reported significantly higher actual family cohesion ($M = 100.20$, $SD = 22.15$) than males ($M = 92.65$, $SD = 23.93$), $t(223) = 2.18$, $p = .030$, $d = 0.33$.

To assess the robustness of the primary moderated mediation findings, the Model 14 analysis was repeated separately for female ($n = 168$) and male ($n = 57$) participants. In the full sample, the interaction between depressive symptoms and family cohesion was significant ($b = -0.01$, $p = .013$, $\Delta R^2 = .024$). When stratified by gender, the interaction did not reach statistical significance in either subgroup: female ($p > .05$), male ($b = -0.0153$, $p = .082$). The conditional indirect effects were similarly non-significant across levels of family cohesion in both subgroups.

The attenuation of statistical significance in the gender-stratified analyses is most plausibly attributable to reduced statistical power resulting from partitioning the sample, rather than to genuine gender differences in the underlying mechanism. The overall effect size of the moderation was small ($\Delta R^2 = .024$), and detecting an effect of this magnitude requires the full sample size. Importantly, the direction of the interaction term was consistent across the full sample and both gender subgroups, suggesting a similar pattern of moderation across genders. We therefore interpret the full-sample model as the most reliable estimate of the relationships under investigation, while acknowledging that the gender-stratified results should be viewed as exploratory. Future research with larger, gender-balanced samples is needed to determine

whether the buffering effect of family cohesion on the depressive symptoms–aggression link differs in magnitude between male and female adolescents.

5.6 Future Research Directions

5.6.1 Larger Samples:

Future studies with larger samples ($N > 250$) will have increased power to detect small interaction effects and allow testing of more complex models.

5.6.2 Subgroup Analyses:

Stratified analyses based on family adaptability (reality $>$ ideal vs. reality $\leq$ ideal) may reveal distinct patterns of influence.

5.6.3 Distinguishing Aggression Types:

Future research should differentiate between proactive and reactive aggression, as moral disengagement may be more strongly associated with proactive (instrumental) aggression, whereas depressive symptoms may be more closely linked to reactive (impulsive) aggression.

5.6.4 Alternative Analytic Approaches:

Polynomial regression and response surface analysis could provide a more nuanced understanding of ideal-actual discrepancies in family functioning.

5.6.5 Longitudinal Follow-Up:

Longitudinal designs are needed to determine whether changes in moral disengagement precede changes in aggression and whether family functioning moderates this relationship over time.

6. Conclusion

Moral disengagement is a significant predictor of aggression in adolescents with depression, and this relationship is partially mediated by depressive symptoms under specific family conditions. Family cohesion moderates the second stage of this mediation, with the indirect effect being significant only at low to moderate levels of cohesion. These findings underscore the importance of assessing both cognitive factors (moral disengagement) and family dynamics (cohesion) in understanding and managing aggression risk among adolescents with depression.

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