Rumination and Identity Confusion as Predictors of Emotional Exhaustion in Emerging Adult Women

Farhana. Rahman[1] , Zainab. Al-Taie[2]*

[1] Department of Psychology, University of Dhaka, Dhaka, Bangladesh
[2] Department of Health Psychology, University of Kufa, Najaf, Iraq

* Corresponding author email address: zainab.altaie@uokufa.edu.iq

A r t i c l e   I n f o

Article type:
Original Research

How to cite this article:

A B S T R A C T

Objective: This study aimed to investigate the predictive roles of rumination and identity confusion in emotional exhaustion among emerging adult women.

Methods and Materials: A correlational descriptive design was employed with a sample of 392 emerging adult women in Iraq, selected based on Morgan and Krejcie's sample size table. Participants completed standardized self-report instruments measuring emotional exhaustion, rumination, and identity confusion. Descriptive statistics, Pearson correlation coefficients, and multiple linear regression analyses were conducted using SPSS version 27. All assumptions for regression, including normality, linearity, homoscedasticity, multicollinearity, and independence of residuals, were checked and confirmed prior to analysis.

Findings: The results revealed significant and positive correlations between emotional exhaustion and both rumination ($r = .56$, $p < .001$) and identity confusion ($r = .48$, $p < .001$). Multiple linear regression analysis indicated that rumination ($B = 0.24$, $\beta = .46$, $t = 8.63$, $p < .001$) and identity confusion ($B = 0.19$, $\beta = .31$, $t = 6.02$, $p < .001$) significantly predicted emotional exhaustion. The overall regression model was statistically significant, $F(2, 389) = 127.36$, $p < .001$, accounting for 40% of the variance in emotional exhaustion ($R^2 = .40$, adjusted $R^2 = .39$).

Conclusion: This study provides empirical evidence that rumination and identity confusion are significant cognitive and developmental predictors of emotional exhaustion in emerging adult women. The findings highlight the importance of addressing maladaptive thought patterns and unresolved identity issues during this life stage to mitigate psychological fatigue and promote emotional well-being. Interventions targeting cognitive restructuring and identity coherence may be effective in reducing the risk of emotional exhaustion in this vulnerable population.

Keywords: *Emotional exhaustion; Rumination; Identity confusion; Emerging adulthood; Cognitive vulnerability; Women's mental health.*

1. Introduction

Rumination is a well-documented transdiagnostic factor that contributes to the intensification and prolongation of negative mood states, and is associated with a range of maladaptive outcomes, including aggression, anxiety, depression, and burnout. The repetitive nature of ruminative thoughts about anger and failure, in particular, increases physiological and emotional arousal, exacerbating psychological distress over time (Borders, 2020). Rumination is not merely a passive process but interacts with various cognitive biases and regulatory failures, as shown in studies linking it with cybervictimization, anger rumination, and online aggression in adolescents and young adults (Camacho et al., 2021). Trait anger and rumination have also been found to jointly predict aggression, with anger rumination mediating the link between internal emotional states and behavioral outcomes in academic contexts (Chen et al., 2025). These patterns demonstrate that rumination is more than a response to stress—it can perpetuate emotional dysregulation by reinforcing maladaptive mental scripts.

Clinical evidence supports this notion by highlighting how anger rumination interacts with cognitive rehearsals of violence, especially in psychiatric populations, potentially increasing the risk for aggressive behaviors and post-treatment symptom recurrence (Hardin et al., 2022). Furthermore, rumination has been identified as a cognitive mediator that translates personal vulnerabilities into behavioral risks. For instance, incarcerated individuals with elevated levels of anger rumination demonstrate more aggressive tendencies, often due to the co-activation of aggressive schemas and limited impulse control (Hosie et al., 2022). Gender differences also modulate this relationship, as women may be more inclined toward internalizing manifestations of anger rumination, such as depression or emotional burnout, while men may express these emotions externally through aggressive behavior (Isaksson et al., 2020). This gendered differentiation in emotional response strategies suggests the importance of focusing research specifically on emerging adult women.

The cognitive mechanism by which stress leads to emotional exhaustion is also mediated by frustration intolerance and ruminative tendencies, as seen in studies linking perceived stress with aggression through these dual mediators (Ju & Park, 2022). Similarly, hostile attribution bias, in interaction with anger rumination, has been shown to significantly predict reactive aggression, especially in individuals with a predisposition toward impulsive or emotionally intense reactions to social stimuli (Kim & Park, 2023). This interaction highlights how cognitive distortions can amplify emotional vulnerability, thereby accelerating the depletion of emotional resources.

A growing body of literature further supports the theoretical framework that identifies rumination as a sequential mediator between trait anger and externalizing behavior, such as reactive aggression and violence (Koposov et al., 2022). This aligns with neurocognitive models of aggression and stress, which emphasize the role of deficient self-regulatory control processes in sustaining maladaptive emotional cycles (Plessen et al., 2023). When applied to the construct of emotional exhaustion, it becomes clear that repeated mental rehearsal of anger, frustration, or personal failure not only hinders emotional recovery but also erodes cognitive and motivational resources, leaving individuals vulnerable to burnout.

Longitudinal research further reinforces this causal link. For example, rumination and hostile automatic thoughts have been found to mediate the relation between bullying victimization and later aggressive behavior, suggesting that early negative experiences may create entrenched cognitive patterns that shape future responses to stress (Quan et al., 2024). Sequential mediation involving hostile attribution and rumination has also been observed in the development of reactive aggression, providing evidence for the cumulative effects of maladaptive cognitive styles on emotional instability (Quan et al., 2022). Adolescents experiencing depressive symptoms often exhibit high levels of both anger and aggression, a relationship partly explained by their tendency to ruminate on negative interpersonal experiences (Ruchkin et al., 2023a).

This ruminative mechanism may also have internalizing consequences, as depressive symptoms and identity distress often co-occur with anger rumination in emotionally vulnerable populations, particularly among youth in transitional developmental stages (Ruchkin et al., 2023b). Disrupted identity development is another factor that can undermine emotional regulation. Emerging adulthood—a life stage marked by exploration, instability, and identity formation—is particularly sensitive to psychological disruptions. Identity confusion can lead to inconsistent self-concepts and low psychological resilience, thereby increasing susceptibility to emotional exhaustion.

From a cognitive-emotional perspective, metacognitive beliefs about rumination, as well as emotional schemas, influence both displaced aggression and internal distress, thereby increasing the risk of burnout or exhaustion when

emotional conflicts remain unresolved (Salguero et al., 2020). Physiological studies support this view; reduced vagal tone, a marker of compromised parasympathetic regulation, has been partially attributed to elevated anger rumination, indicating that chronic engagement in this cognitive process may have somatic consequences (Sarrate-Costa et al., 2022). Similarly, anger rumination predicts both internalizing and externalizing outcomes in adolescents, emphasizing its role as a broad-spectrum vulnerability factor (Scaini et al., 2024).

In behavioral domains, ruminative anger has been shown to impair forgiveness and increase retaliatory intentions, even in minor social transgressions, such as those involved in aggressive driving (Stephens et al., 2023). In narcissistic individuals, rumination exacerbates reactive aggression by reinforcing hostile attribution biases, a pathway that is also evident in covert personality traits (Sung & Kim, 2024). Additionally, anger rumination interacts with personal relative deprivation to intensify post-pandemic aggression, suggesting that environmental stressors can amplify the impact of cognitive vulnerabilities (Tao et al., 2023).

Family and developmental contexts are also relevant, as certain parental educational practices have been associated with stronger pro-aggression beliefs and increased behavioral aggression, further supporting the role of learned cognitive scripts and beliefs in emotional regulation deficits (Tran et al., 2024). Even when controlling for trait-level variables, anger rumination has been linked to emotionally charged and unsafe behaviors, such as dangerous driving in youth populations, with emotional intelligence moderating these effects (Umar, 2025). Finally, the functional mechanisms linking anger to reactive aggression often pass through cognitive pathways involving rumination and hostile interpretation of events, as evidenced in studies on adolescents and college populations (Wen et al., 2024).

In light of these findings, the current study seeks to expand existing literature by investigating how rumination and identity confusion jointly predict emotional exhaustion among emerging adult women in Iraq.

2. Methods and Materials

2.1. Study Design and Participants

This study employed a correlational descriptive design to investigate the predictive roles of rumination and identity confusion on emotional exhaustion in emerging adult women. A total of 392 participants were selected from various academic and community settings in Iraq using simple random sampling. The sample size was determined based on the Morgan and Krejcie (1970) sample size table for a population size exceeding 20,000, ensuring adequate statistical power. Inclusion criteria were: being female, aged 18–29 years (emerging adulthood range), and providing informed consent. Exclusion criteria included history of psychiatric diagnosis or ongoing psychological treatment, to ensure generalizability to non-clinical populations.

2.2. Measures

2.2.1. Emotional Exhaustion

Emotional exhaustion was assessed using the Emotional Exhaustion subscale of the Maslach Burnout Inventory–General Survey (MBI-GS), developed by Maslach, Jackson, and Leiter (1996). This subscale consists of 5 items that measure the extent to which individuals feel emotionally overextended and drained by their work or life roles. Respondents rate items on a 7-point Likert scale ranging from 0 (never) to 6 (every day), with higher scores indicating greater emotional exhaustion. The MBI-GS has been extensively validated across various populations, and the Emotional Exhaustion subscale has demonstrated strong internal consistency, with Cronbach's alpha coefficients typically exceeding 0.85. Numerous studies have confirmed its construct and criterion-related validity, making it a reliable measure for assessing emotional depletion in diverse psychological research contexts.

2.2.2. Rumination

Rumination was measured using the Ruminative Responses Scale (RRS) developed by Nolen-Hoeksema and Morrow (1991) and later revised by Treynor, Gonzalez, and Nolen-Hoeksema (2003). The revised version contains 22 items that assess the tendency to focus repetitively on the causes and consequences of one's distress. It includes two primary subscales: Brooding (reflecting a passive comparison of one's current situation with unachieved standards) and Reflection (involving purposeful turning inward to engage in cognitive problem-solving). Items are rated on a 4-point Likert scale ranging from 1 (almost never) to 4 (almost always). The RRS has demonstrated good psychometric properties, with reported Cronbach's alpha values typically above 0.85 for the total scale and its subscales. The scale's convergent and discriminant validity have been established in both clinical and non-clinical

populations, supporting its suitability for assessing cognitive vulnerability to emotional disorders.

2.2.3. Identity Confusion

Identity confusion was measured using the Identity Distress Survey (IDS) developed by Berman, Montgomery, and Kurtines (2004), a validated instrument designed to assess the degree of distress an individual experiences regarding unresolved identity issues. The IDS comprises 10 items covering key domains such as long-term goals, career choice, friendships, sexual orientation, religion, and values. Respondents rate each item on a 5-point Likert scale from 1 (not at all distressed) to 5 (very severely distressed), with higher scores indicating greater identity confusion. The IDS yields a total score without distinct subscales and has shown strong internal consistency (Cronbach's alpha typically above 0.80). Prior studies have affirmed its construct validity and its utility in research on adolescence and emerging adulthood, particularly in relation to psychosocial functioning and mental health.

2.3. Data Analysis

All data were analyzed using SPSS version 27. Descriptive statistics were calculated to summarize participant demographics. Pearson correlation coefficients were used to examine bivariate relationships between the dependent variable (emotional exhaustion) and the independent variables (rumination and identity confusion). To assess the predictive power of rumination and identity confusion on emotional exhaustion, a standard multiple linear regression analysis was conducted. Prior to inferential analyses, assumptions of normality, linearity, homoscedasticity, multicollinearity, and independence of residuals were tested and met.

3. Findings and Results

The final sample consisted of 392 emerging adult women from Iraq, with a mean age of 23.47 years (SD = 3.12). Among the participants, 154 individuals (39.28%) were between the ages of 18 and 22, 167 participants (42.60%) were aged 23 to 26, and 71 participants (18.11%) were between 27 and 29 years old. Regarding educational status, 213 participants (54.34%) were university undergraduates, while 179 participants (45.66%) were graduate students or had completed graduate-level education. Additionally, 286 participants (72.96%) were single, and 106 participants (27.04%) reported being married.

Table 1

Descriptive Statistics for Study Variables (N = 392)

Variable	Mean	Standard Deviation
Emotional Exhaustion	18.47	5.93
Rumination	52.16	10.84
Identity Confusion	31.79	7.42

The descriptive statistics in Table 1 indicate that participants reported a moderately high level of emotional exhaustion (M = 18.47, SD = 5.93). Rumination scores also reflected a moderately elevated cognitive style (M = 52.16, SD = 10.84), while identity confusion was somewhat lower but still present (M = 31.79, SD = 7.42), suggesting considerable variability in the psychological profiles of emerging adult women in the sample.

Prior to conducting the regression analysis, all necessary statistical assumptions were tested and confirmed. The data were normally distributed, as indicated by skewness values ranging from −0.41 to 0.58 and kurtosis values between −0.49 and 0.67 for all major variables. Linearity was confirmed through visual inspection of scatterplots and partial regression plots. Homoscedasticity of residuals was established using the Breusch-Pagan test (p = 0.284), indicating equal variance of residuals. Multicollinearity diagnostics showed variance inflation factors (VIF) of 1.38 for rumination and 1.42 for identity confusion, both well below the cutoff of 5, indicating no multicollinearity concerns. Independence of residuals was confirmed by a Durbin-Watson value of 1.87, which falls within the acceptable range of 1.5 to 2.5.

Table 2

Pearson Correlations Between Emotional Exhaustion and Predictor Variables

Variable	1	2	3
1. Emotional Exhaustion	—		
2. Rumination	.56** (p < .001)	—	
3. Identity Confusion	.48** (p < .001)	.41** (p < .001)	—

Table 2 displays significant and positive correlations between emotional exhaustion and both rumination (r = .56, p < .001) and identity confusion (r = .48, p < .001). Additionally, rumination and identity confusion were moderately correlated (r = .41, p < .001), indicating shared variance but distinctiveness between constructs. These findings support the suitability of proceeding with regression analysis.

Table 3

Summary of Regression Model – Predicting Emotional Exhaustion

Source	Sum of Squares	df	Mean Square	R	R²	Adj. R²	F	p
Regression	3147.62	2	1573.81	.63	.40	.39	127.36	<.001
Residual	4642.93	389	11.93					
Total	7789.55	391						

Table 3 presents the summary of the regression model predicting emotional exhaustion from rumination and identity confusion. The overall model was statistically significant, $F_{(2, 389)} = 127.36$, p < .001, with an R² of .40, indicating that approximately 40% of the variance in emotional exhaustion was explained by the two predictors combined. The adjusted R² value (.39) suggests a stable estimate of the model's predictive power in the population.

Table 4

Coefficients for Multivariate Linear Regression Predicting Emotional Exhaustion

Predictor	B	SE	β	t	p
Constant	3.86	1.21	—	3.19	<.01
Rumination	0.24	0.03	.46	8.63	<.001
Identity Confusion	0.19	0.04	.31	6.02	<.001

As shown in Table 4, both rumination (B = 0.24, β = .46, t = 8.63, p < .001) and identity confusion (B = 0.19, β = .31, t = 6.02, p < .001) made significant and positive contributions to the prediction of emotional exhaustion. The standardized beta coefficients indicate that rumination had a stronger effect on emotional exhaustion than identity confusion, though both predictors were statistically meaningful. The intercept was also significant (B = 3.86, t = 3.19, p < .01), suggesting a baseline level of emotional exhaustion even in the absence of these predictors.

4. Discussion and Conclusion

The results of this study demonstrated that both rumination and identity confusion significantly predict emotional exhaustion among emerging adult women. Pearson correlation coefficients revealed positive and significant relationships between rumination and emotional exhaustion, as well as between identity confusion and emotional exhaustion. Moreover, multiple linear regression results showed that both independent variables contributed uniquely and significantly to the prediction of emotional exhaustion. These findings align with a growing body of literature emphasizing the detrimental impact of maladaptive cognitive styles and unresolved identity development on emotional well-being.

The positive association between rumination and emotional exhaustion found in this study is consistent with numerous empirical investigations that identify rumination, particularly anger-related rumination, as a persistent cognitive process that exacerbates emotional dysregulation and psychological fatigue. Rumination has been shown to prolong negative emotional states and reinforce stress responses, which ultimately deplete psychological resources

and increase vulnerability to burnout-related symptoms such as emotional exhaustion (Borders, 2020). Specifically, the tendency to mentally rehearse anger-inducing events and maintain focus on perceived injustices is associated with heightened physiological arousal and cognitive rigidity, both of which undermine effective emotional recovery (Camacho et al., 2021). Within academic and interpersonal contexts, rumination has been linked to emotional strain, especially among individuals with low self-regulatory capacity (Chen et al., 2025).

This study also contributes to the literature by reinforcing the mediational role of cognitive distortions such as anger rumination in the development of emotional and behavioral problems. Research has shown that rumination mediates the relationship between trait anger and maladaptive outcomes such as reactive aggression, hostility, and stress-related psychopathology (Kim & Park, 2023; Quan et al., 2022). When applied to the domain of emotional exhaustion, these findings suggest that the repetitive processing of distressing thoughts not only facilitates externalized reactions but also internalizes distress through cumulative cognitive load and emotional wear. The cognitive-emotional framework that explains how hostile attribution and rumination interact to predict stress responses is particularly relevant for understanding the emotional depletion observed in our sample of emerging adult women (Quan et al., 2024).

In addition to rumination, identity confusion emerged as a significant predictor of emotional exhaustion, supporting theoretical models that link unresolved identity development to poor mental health outcomes. Emerging adulthood is a developmental period marked by intensified identity exploration, and the lack of coherence in self-concept can contribute to feelings of instability, self-doubt, and chronic psychological strain. These experiences may increase an individual's susceptibility to emotional exhaustion, particularly when combined with a ruminative thinking style. Previous research confirms that identity confusion is associated with lower levels of emotional resilience and higher levels of internalizing symptoms such as depression, anxiety, and stress-related exhaustion (Ruchkin et al., 2023a).

Moreover, individuals experiencing identity confusion are more likely to interpret social and personal challenges as threats to their self-concept, thereby activating defensive and repetitive cognitive strategies such as rumination. This interplay creates a self-reinforcing loop in which unresolved identity concerns exacerbate cognitive vulnerabilities, which in turn amplify emotional distress. The findings of this study are consistent with longitudinal research indicating that early psychological vulnerabilities—including identity disturbance and insecure self-schema—are predictive of later emotional exhaustion through cognitive and affective mediators (Plessen et al., 2023; Ruchkin et al., 2023b).

Another important implication of our findings is the potential cumulative effect of rumination and identity confusion. While each variable independently predicted emotional exhaustion, their combined presence may have an additive or even synergistic effect. This is supported by previous studies showing that individuals with both cognitive distortions and weak self-regulatory capacities are particularly vulnerable to emotional dysregulation (Hardin et al., 2022). In this regard, the current study aligns with research highlighting how deficits in self-regulatory control processes contribute to sustained anger ideation and emotional fatigue (Hosie et al., 2022). Furthermore, rumination may function as a coping mechanism for individuals struggling with identity issues, but paradoxically worsens psychological outcomes by preventing cognitive disengagement and emotional restoration (Sarrate-Costa et al., 2022).

These cognitive-affective dynamics are especially salient among women, who may be more likely than men to engage in internalizing coping strategies such as rumination when faced with interpersonal and identity-related stressors. Gender differences in the manifestation of psychological distress have been well documented, with women more prone to exhibit depressive and emotional exhaustion symptoms, while men may externalize distress through aggression (Isaksson et al., 2020). Thus, focusing on emerging adult women provides a unique lens for examining the internal psychological burdens that may remain underreported in general stress literature.

Furthermore, the findings of this study have implications for understanding the broader social and developmental antecedents of emotional exhaustion. Studies have shown that adverse early-life experiences, including invalidating parental practices and identity-threatening interactions, contribute to the internalization of cognitive patterns such as anger rumination, which later manifest in both internalizing and externalizing problems (Tran et al., 2024). In environments where identity development is constrained—due to cultural expectations, rigid gender roles, or limited autonomy—young women may experience heightened identity confusion and increased reliance on maladaptive cognitive processing such as rumination (Tao et al., 2023).

The theoretical contributions of this study are also supported by empirical work linking metacognitive beliefs about anger rumination with emotional exhaustion. For example, individuals who believe that ruminating helps them gain clarity or control over emotions may engage in this process more frequently, despite its negative psychological consequences (Salguero et al., 2020). Similarly, those with diminished vagal tone—a physiological marker of impaired emotional regulation—are more likely to exhibit heightened anger rumination and stress-related fatigue, providing biological evidence for the cognitive-emotional model of emotional exhaustion (Scaini et al., 2024). This highlights the importance of integrating both psychological and physiological variables in future research to develop a more holistic understanding of emotional exhaustion.

In sum, the results of this study provide robust evidence that both rumination and identity confusion are significant predictors of emotional exhaustion in emerging adult women. These findings emphasize the role of cognitive vulnerabilities and developmental challenges in shaping emotional outcomes during a critical life stage. Furthermore, the study supports existing literature that identifies anger rumination as a central mediator in the relationship between trait vulnerabilities and psychological distress (Stephens et al., 2023; Wen et al., 2024). By confirming these relationships in a non-Western, female sample from Iraq, this study contributes to the cross-cultural generalizability of cognitive-emotional models of burnout and psychological fatigue.

5. Limitations & Suggestions

Despite its valuable findings, this study is not without limitations. First, the use of a cross-sectional design limits the ability to infer causality between variables. While rumination and identity confusion were found to be predictors of emotional exhaustion, it is possible that emotional exhaustion could also exacerbate these cognitive vulnerabilities in a bidirectional relationship. Second, the reliance on self-report measures may introduce social desirability bias or inaccurate recall, especially for variables related to identity and emotional states. Third, although the sample size was statistically adequate, it was limited to emerging adult women in Iraq, which may affect the generalizability of the findings to other genders, cultures, or age groups. Finally, the absence of control variables such as socioeconomic status, trauma history, or family support may have limited the explanatory power of the model.

Future research should consider employing longitudinal designs to better capture the temporal dynamics and causal relationships between rumination, identity confusion, and emotional exhaustion. Such designs would allow for the examination of developmental trajectories and potential mediators or moderators such as emotional intelligence, self-compassion, or resilience. Expanding the demographic scope of the sample to include men, individuals from diverse cultural backgrounds, and clinical populations would also enhance the generalizability of findings. Additionally, incorporating physiological and neurobiological markers of emotional regulation (e.g., heart rate variability, cortisol levels) could provide a more comprehensive understanding of how cognitive vulnerabilities translate into somatic symptoms of exhaustion. Finally, experimental or intervention-based studies examining the effects of cognitive-behavioral or mindfulness-based strategies on reducing rumination and identity confusion could offer applied solutions to prevent emotional exhaustion.

The findings from this study highlight the importance of early intervention programs targeting maladaptive cognitive patterns such as rumination among young women. Psychological counseling centers, particularly those in academic institutions, should incorporate cognitive restructuring and emotional regulation strategies into their wellness programs. Interventions focusing on identity development—such as narrative therapy, group identity workshops, and values clarification exercises—may help reduce identity confusion and foster emotional resilience. Educators and mental health practitioners working with emerging adults should be trained to recognize early signs of cognitive vulnerability and emotional fatigue, enabling timely and culturally sensitive support. In community settings, promoting public awareness about the mental health risks of prolonged rumination and unresolved identity issues can contribute to destigmatization and increase help-seeking behaviors.

Authors' Contributions

Authors contributed equally to this article.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

Acknowledgments

We would like to express our gratitude to all individuals helped us to do the project.

Declaration of Interest

The authors report no conflict of interest.

Funding

According to the authors, this article has no financial support.

Ethical Considerations

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

References

Borders, A. (2020). Rumination, Anger, and Aggression. 73-100. https://doi.org/10.1016/b978-0-12-812545-8.00003-6

Camacho, A., Ruiz, R. O., & Romera, E. M. (2021). Longitudinal Associations Between Cybervictimization, Anger Rumination, and Cyberaggression. *Aggressive Behavior*, *47*(3), 332-342. https://doi.org/10.1002/ab.21958

Chen, S., Wang, X., Liu, Y., Teng, Z., & Luo, Y. (2025). How Does Trait Anger Associate With Aggression Among Chinese College Students? The Role of Anger Rumination and Locus of Control. *Psychology in the Schools*, *62*(4), 1217-1227. https://doi.org/10.1002/pits.23386

Hardin, K. M., Contreras, I. M., Kosiak, K., & Novaco, R. W. (2022). Anger Rumination and Imagined Violence as Related to Violent Behavior Before and After Psychiatric Hospitalization. *Journal of Clinical Psychology*, *78*(9), 1878-1895. https://doi.org/10.1002/jclp.23334

Hosie, J., Simpson, K., Dunne, A. L., & Daffern, M. (2022). A Study of the Relationships Between Rumination, Anger Rumination, Aggressive Script Rehearsal, and Aggressive Behavior in a Sample of Incarcerated Adult Males. *Journal of Clinical Psychology*, *78*(9), 1925-1939. https://doi.org/10.1002/jclp.23341

Isaksson, J., Sukhodolsky, D. G., Koposov, R., Stickley, A., & Ruchkin, V. (2020). The Role of Gender in the Associations Among Posttraumatic Stress Symptoms, Anger, and Aggression in Russian Adolescents. *Journal of Traumatic Stress*, *33*(4), 552-563. https://doi.org/10.1002/jts.22502

Ju, H.-J., & Park, J.-H. (2022). The Relation Between Perceived Stress and Aggression: The Dual Mediation Effects of Intolerance of Frustration and Anger Rumination. *The Association of Korea Counseling Psychology Education Welfare*, *9*(6), 193-209. https://doi.org/10.20496/cpew.2022.9.6.193

Kim, Y., & Park, K.-H. (2023). The Effects of Hostile Attribution Bias and Negative Urgency on Reactive Aggression: The Mediation Effect of Anger Rumination. *Korean Association for Learner-Centered Curriculum and Instruction*, *23*(22), 455-467. https://doi.org/10.22251/jlcci.2023.23.22.455

Koposov, R., Stickley, A., Sukhodolsky, D. G., & Ruchkin, V. (2022). Bulimia Symptoms and Anger and Aggression Among Adolescents. https://doi.org/10.21203/rs.3.rs-2275597/v1

Plessen, K. J., Constanty, L., Ranjbar, S., Turri, F., Miano, G., Lepage, C., & Urben, S. (2023). The Role of Self-Regulatory Control Processes in Understanding Aggressive Ideations and Behaviors: An Experience Sampling Method Study. *Frontiers in Psychiatry*, *13*. https://doi.org/10.3389/fpsyt.2022.1058814

Quan, F., Huang, J., Li, H., & Zhu, W. (2024). Longitudinal Relations Between Bullying Victimization and Aggression: The Multiple Mediation Effects of Anger Rumination and Hostile Automatic Thoughts. *PsyCh Journal*, *13*(5), 849-859. https://doi.org/10.1002/pchj.760

Quan, F., Wang, L., Gong, X., Lei, X., Liang, B., & Zhang, S. (2022). Hostile Attribution Bias and Anger Rumination Sequentially Mediate the Association Between Trait Anger and Reactive Aggression. *Frontiers in psychology*, *12*. https://doi.org/10.3389/fpsyg.2021.778695

Ruchkin, V., Stickley, A., Koposov, R., Sukhodolsky, D. G., & Isaksson, J. (2023a). Depressive Symptoms and Anger and Aggression in Russian Adolescents. *Child and adolescent psychiatry and mental health*, *17*(1). https://doi.org/10.1186/s13034-023-00677-w

Ruchkin, V., Stickley, A., Koposov, R., Sukhodolsky, D. G., & Isaksson, J. (2023b). Depressive Symptoms and Their Associations With Anger and Aggression in Russian Adolescents. https://doi.org/10.21203/rs.3.rs-3085432/v1

Salguero, J. M., García-Sancho, E., Ramos-Cejudo, J., & Kannis-Dymand, L. (2020). Individual Differences in Anger and Displaced Aggression: The Role of Metacognitive Beliefs and Anger Rumination. *Aggressive Behavior*, *46*(2), 162-169. https://doi.org/10.1002/ab.21878

Sarrate-Costa, C., Lila, M., Comes-Fayos, J., Moya-Albiol, L., & Romero-Martínez, Á. (2022). Reduced Vagal Tone in Intimate Partner Violence Perpetrators Is Partly Explained by Anger Rumination. *Current Psychology*, *42*(33), 29603-29615. https://doi.org/10.1007/s12144-022-03994-z

Scaini, S., Forresi, B., Torres, D., Piron, R., & Giani, L. (2024). The Role of Anger Cognitions and Anger Rumination in Predicting Externalizing and Internalizing Problems in Adolescence. *Journal of Cognitive Psychotherapy*, *39*(1), 38-55. https://doi.org/10.1891/jcp-2023-0050

Stephens, A. N., Collard, J., & Koppel, S. (2023). Don't Sweat the Small Stuff; Anger Rumination and Lack of Forgiveness Are Related to Aggressive Driving Behaviours. *Current Psychology*, *43*(7), 6338-6349. https://doi.org/10.1007/s12144-023-04744-5

Sung, J., & Kim, E.-J. (2024). The Relationship Between Covert Narcissism and Reactive Aggression: The Sequential Mediation Effect of Hostile Attribution Bias and Anger Rumination. *Soc Cognitive Enhancement Intervention*, *15*(4), 281-297. https://doi.org/10.21197/jcei.15.4.14

Tao, Y., Niu, H., Li, Y., Liu, X., Wang, S., Ma, Z., Hou, W., & Liu, X. (2023). Effects of Personal Relative Deprivation on the Relationship Between Anger Rumination and Aggression During and After the COVID-19 Pandemic Lockdown: A Longitudinal Moderated Network Approach. *Journal of*

adolescence, *95*(3), 596-608. https://doi.org/10.1002/jad.12140

Tran, T. T. C., Le, T. V., Cao, C. T., Dam, A. T. V., & Nguyen, Q. T. (2024). The Relationships Between Parental Educational Practices, Pro-Aggression Beliefs, and Aggressive Behavior: A Cross-Sectional Study. *Multidisciplinary Science Journal*, *6*(9), 2024197. https://doi.org/10.31893/multiscience.2024197

Umar, A. (2025). Anger on the Road: Moderating Role of Trait Emotional Intelligence in the Relationship Between Anger Rumination and Dangerous Driving Behaviors Among Young Motorbike Users. *Res. J. Social Affairs*, *3*(3), 125-134. https://doi.org/10.71317/rjsa.003.03.0205

Wen, J., Wang, G., & Miao, M. (2024). The Link Between Anger and Reactive Aggression: Insights Into Anger Rumination. *Aggressive Behavior*, *50*(3). https://doi.org/10.1002/ab.22157