



Predicting Aggressive Behavior From Exposure to Violence and Emotion Dysregulation in Adolescents

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Article Info

Article type:

Original Research

How to cite this article:

Gong, J., & Popescu, A. (2024). Predicting Aggressive Behavior From Exposure to Violence and Emotion Dysregulation in Adolescents. *Journal of Adolescent and Youth Psychological Studies*, 5(7), 163-171.

<https://doi.org/10.61838/kman.jayps.5.7.18>



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ABSTRACT

Objective: This study aimed to examine the predictive roles of exposure to violence and emotion dysregulation in aggressive behavior among adolescents.

Methods and Materials: This research employed a correlational descriptive design and was conducted with a sample of 399 Romanian adolescents selected based on the Morgan and Krejcie sample size table. Participants were recruited from secondary schools using stratified random sampling. Data were collected using three standardized instruments: the Aggression Questionnaire (AQ) to assess aggressive behavior, the Children's Exposure to Violence Scale (CEVS) to measure exposure to violence, and the Difficulties in Emotion Regulation Scale (DERS) to evaluate emotion dysregulation. Data were analyzed using SPSS-27 software. Pearson correlation coefficients were computed to assess the bivariate relationships between variables, and multiple linear regression analysis was used to examine the joint predictive power of the independent variables on aggression.

Findings: Descriptive results showed that both exposure to violence and emotion dysregulation were positively correlated with aggressive behavior. Pearson correlation analyses revealed significant relationships between aggression and exposure to violence ($r = .48, p < .001$), as well as between aggression and emotion dysregulation ($r = .55, p < .001$). Multiple linear regression analysis indicated that both exposure to violence ($\beta = .31, p < .001$) and emotion dysregulation ($\beta = .41, p < .001$) were significant predictors of aggressive behavior, accounting for 42.7% of the variance in the dependent variable ($R^2 = .427, F(2,396) = 147.53, p < .001$).

Conclusion: The findings suggest that both environmental factors such as violence exposure and individual emotional vulnerabilities like emotion dysregulation significantly contribute to adolescent aggression. Interventions targeting emotion regulation skills and reducing exposure to violence may be effective strategies for aggression prevention.

Keywords: Aggressive behavior, Adolescents, Emotion dysregulation, Exposure to violence, Romania.

1. Introduction

Adolescence is a developmental period marked by significant emotional, cognitive, and behavioral changes that can increase vulnerability to aggressive behavior. Aggression in adolescents has become an urgent concern for educators, parents, and mental health professionals due to its association with various negative outcomes such as academic failure, substance abuse, interpersonal conflict, and involvement in the juvenile justice system (Jakobi et al., 2022; Sevecke et al., 2016). Understanding the underlying psychological mechanisms and contextual risk factors that contribute to adolescent aggression is therefore essential for designing effective prevention and intervention strategies.

One prominent risk factor for aggressive behavior is exposure to violence, which encompasses witnessing or directly experiencing acts of aggression in family, school, or community environments. Adolescents exposed to violence are more likely to internalize aggressive scripts and develop hostile worldviews, which in turn increase the likelihood of reactive and proactive aggression (Hatfield et al., 2024; Meaney et al., 2016). Chronic exposure to violence disrupts emotional regulation processes and heightens arousal systems, making aggressive reactions more likely during interpersonal conflict (Clear et al., 2019). Research indicates that parenting style and family dynamics play a crucial mediating role in this relationship, as inconsistent discipline, harsh parenting, and low emotional warmth can further exacerbate aggressive tendencies in children exposed to violence (Rademacher et al., 2023).

In addition to environmental factors, individual emotional processes—particularly emotion dysregulation—have been strongly linked to aggression. Emotion dysregulation refers to difficulties in monitoring, evaluating, and modulating emotional responses to stimuli (Ford, 2021). Adolescents who struggle with emotion regulation may have difficulty controlling anger, interpreting social cues accurately, and responding appropriately in conflictual situations (Garofalo et al., 2018). These deficits in emotional control can manifest in various forms of aggression, ranging from impulsive outbursts to calculated acts of hostility (Garofalo et al., 2020; Velotti et al., 2017). Studies have found that emotion dysregulation not only predicts aggressive behavior independently but also interacts with other factors such as trauma, impulsivity, and inhibitory

control to increase aggression risk (Bell et al., 2020; Bounoua et al., 2022).

The interaction between exposure to violence and emotion dysregulation provides a compelling framework for understanding the complexity of adolescent aggression. According to transactional models, environmental stressors such as violence exposure can overwhelm an adolescent's capacity to regulate emotion, thereby triggering maladaptive behavioral responses such as aggression (Hatfield et al., 2024; Miles et al., 2015). Adolescents with poor emotion regulation skills may be particularly vulnerable to the negative effects of violent environments, leading to a synergistic effect that amplifies aggressive tendencies (Toro et al., 2024). Furthermore, recent neurobiological research supports this perspective, showing that the combination of high emotional reactivity and low inhibitory control predicts greater activation in aggression-related brain regions such as the amygdala and prefrontal cortex (Bounoua et al., 2022; Harmsel et al., 2022).

There is also emerging evidence that specific dimensions of emotion dysregulation, such as lack of emotional clarity and impulse control difficulties, may differentially predict aggressive outcomes (Espírito-Santo et al., 2022; Velotti et al., 2017). For instance, adolescents with high levels of alexithymia, a trait related to difficulties in identifying and describing emotions, often display heightened aggression, especially when under stress (Garofalo et al., 2018; Meaney et al., 2016). In addition, impulsivity has been found to mediate the link between emotion dysregulation and aggression, suggesting that some adolescents may resort to aggression not out of malice, but as a failure to inhibit immediate reactions (Espírito-Santo et al., 2022). These findings underscore the multifaceted nature of emotion dysregulation and its relevance in understanding aggressive behavior.

Cultural and contextual factors also shape how emotion dysregulation and exposure to violence influence aggression. For example, adolescents in high-risk environments may normalize aggressive behavior as a survival strategy, and their emotion regulation patterns may adapt accordingly (Çelebi & Acar, 2024). This has important implications for research in diverse populations. In the Romanian context, where youth may face socioeconomic adversity and community instability, the intersection of violence exposure and emotion dysregulation may play a particularly salient role in predicting aggression. Yet, studies

focusing specifically on Romanian adolescents remain limited, highlighting the need for localized empirical investigation.

Several studies have emphasized the need to distinguish between reactive and proactive aggression, as each may be driven by distinct psychological mechanisms. Reactive aggression is typically emotionally driven and occurs in response to perceived provocation or threat, while proactive aggression is more instrumental and goal-oriented (Garofalo & Velotti, 2017; Jakobi et al., 2022). Emotion dysregulation is more strongly associated with reactive aggression due to its impulsive nature and emotional intensity, whereas exposure to violence may contribute to both forms through social learning processes (Oberle et al., 2017). Investigating these pathways can inform targeted interventions that address specific types of aggression based on their unique antecedents.

Recent advancements in clinical psychology have provided a more nuanced understanding of the emotion-aggression link. For example, dysregulated anger has been associated with physiological markers such as elevated cortisol levels and reduced vagal tone, which reflect poor emotional homeostasis and heightened threat sensitivity (Oberle et al., 2017). Neuroimaging studies have shown abnormal connectivity patterns in emotion regulation circuits among aggressive adolescents, further corroborating the biological basis of emotion dysregulation in this population (Harmsel et al., 2022; Jakobi et al., 2022). These findings point to the potential utility of integrating biological, psychological, and environmental data in aggression research.

Moreover, emotion dysregulation often co-occurs with other maladaptive behaviors such as self-injury, substance abuse, and risk-taking, indicating a broader pattern of behavioral dysregulation (Bresin et al., 2021; Northrup et al., 2022). Adolescents who experience trauma or chronic stress may resort to such behaviors as coping mechanisms, further entrenching them in cycles of emotional and behavioral instability. These behavioral patterns frequently overlap with aggression, suggesting that interventions aimed at improving emotional regulation could have broad-reaching benefits beyond reducing aggression alone.

Despite a growing body of literature, several gaps remain. Few studies have jointly examined the predictive role of both exposure to violence and emotion dysregulation on adolescent aggression using robust statistical methods in non-clinical, community-based populations. While both factors have been studied independently, the extent to which

they independently and jointly contribute to aggressive tendencies in adolescents remains underexplored. Furthermore, research that integrates both psychological and environmental variables in a predictive framework could offer more comprehensive insights for designing targeted interventions.

Given this background, the present study aims to investigate the predictive roles of exposure to violence and emotion dysregulation in aggressive behavior among adolescents in Romania.

2. Methods and Materials

2.1. Study Design and Participants

This study employed a correlational descriptive design to examine the relationship between exposure to violence, emotion dysregulation, and aggressive behavior in adolescents. The target population included high school students from Romania. A total of 399 adolescents participated in the study, selected through stratified random sampling to ensure adequate representation across gender and grade levels. The sample size was determined using the Morgan and Krejcie sample size table, ensuring sufficient statistical power for the intended analyses. Inclusion criteria required participants to be between the ages of 14 and 18, enrolled in secondary education, and willing to provide informed consent. Exclusion criteria included a history of neurological disorders or current psychiatric treatment, as self-reported.

2.2. Measures

2.2.1. Aggressive Behavior

Aggressive behavior in adolescents was measured using the Aggression Questionnaire (AQ) developed by Buss and Perry in 1992. This self-report tool consists of 29 items that assess four subscales: Physical Aggression, Verbal Aggression, Anger, and Hostility. Each item is rated on a 5-point Likert scale ranging from 1 (extremely uncharacteristic of me) to 5 (extremely characteristic of me), with higher scores indicating greater levels of aggressive behavior. The AQ has been widely validated across diverse adolescent populations and demonstrates strong psychometric properties, including high internal consistency (Cronbach's alpha coefficients typically ranging from .72 to .89 for subscales) and test-retest reliability. Numerous studies have confirmed its validity in measuring both overt and covert

forms of aggression in adolescent samples (Hatfield et al., 2024; Rademacher et al., 2023; Zhang et al., 2023).

2.2.2. Exposure to Violence

To assess adolescents' exposure to violence, the Children's Exposure to Violence Scale (CEVS) developed by Fox and Leavitt in 1995 was used. This instrument includes 25 items designed to evaluate both direct victimization and witnessed violence across various contexts such as home, school, and community. Respondents rate the frequency of their exposure using a Likert scale ranging from 0 (never) to 4 (very often), allowing researchers to capture the cumulative impact of violence over time. The CEVS is divided into two main domains: Direct Exposure and Indirect Exposure (witnessed events). The scale has been validated in multiple studies involving adolescent populations and has demonstrated high reliability, with Cronbach's alpha values frequently exceeding .80. It is recognized as a comprehensive and sensitive tool for measuring violence exposure in developmental research (Cenk, 2019; Heinze et al., 2017; LaBrenz et al., 2019).

2.2.3. Emotion Dysregulation

Emotion dysregulation was measured using the Difficulties in Emotion Regulation Scale (DERS), developed by Gratz and Roemer in 2004. This 36-item self-report questionnaire evaluates individuals' typical levels of emotion regulation difficulties across six subscales: Nonacceptance of Emotional Responses, Difficulties Engaging in Goal-Directed Behavior, Impulse Control Difficulties, Lack of Emotional Awareness, Limited Access to Emotion Regulation Strategies, and Lack of Emotional Clarity. Each item is rated on a 5-point Likert scale ranging from 1 (almost never) to 5 (almost always), with higher scores indicating greater emotion dysregulation. The DERS

has shown strong internal consistency (Cronbach's alpha values typically above .85), test-retest reliability, and construct validity across clinical and non-clinical adolescent populations, making it a widely accepted and empirically supported tool in psychological research (Kun et al., 2022; Perry, 2023; Simonič et al., 2024).

2.3. Data Analysis

For data analysis, the Statistical Package for the Social Sciences (SPSS) version 27 was used. Descriptive statistics were first calculated to summarize the demographic characteristics and mean scores for all variables. Pearson correlation coefficients were computed to examine the bivariate relationships between the dependent variable (aggressive behavior) and each independent variable (exposure to violence and emotion dysregulation). In addition, a standard linear regression analysis was conducted to evaluate the predictive power of exposure to violence and emotion dysregulation on aggressive behavior. All statistical analyses were conducted using a significance level of $p < .05$.

3. Findings and Results

The final sample consisted of 399 adolescents from Romania, including 212 females (53.13%) and 187 males (46.87%), aged between 14 and 18 years ($M = 16.21$, $SD = 1.14$). Regarding grade level, 109 participants (27.32%) were in 9th grade, 98 (24.56%) in 10th grade, 96 (24.06%) in 11th grade, and 96 (24.06%) in 12th grade. In terms of residential area, 237 participants (59.40%) resided in urban settings, while 162 (40.60%) lived in rural areas. The majority of participants ($n = 345$, 86.47%) reported living with both parents, while 54 (13.53%) lived in single-parent households or with extended family members.

Table 1

Descriptive Statistics for Study Variables

Variable	Mean	Standard Deviation
Aggressive Behavior	83.47	12.36
Exposure to Violence	57.29	10.45
Emotion Dysregulation	92.14	13.87

The data in Table 1 show that participants reported relatively high levels of emotion dysregulation compared to aggression and exposure to violence. These values are

consistent with the nature of the adolescent sample and the scoring ranges of the standardized tools.

Prior to conducting the regression analysis, key assumptions were assessed and confirmed. The assumption

of normality was supported by inspecting the skewness and kurtosis values for the main variables, which fell within acceptable ranges (e.g., skewness for aggressive behavior = 0.34, kurtosis = -0.41). Linearity was verified through scatterplots, which demonstrated linear relationships between the dependent variable and each independent variable. The assumption of homoscedasticity was confirmed by plotting the standardized residuals against

predicted values, showing no clear pattern or funneling. Independence of errors was supported by the Durbin-Watson statistic, which was 1.94, indicating no autocorrelation. Finally, multicollinearity was assessed through Variance Inflation Factor (VIF) values, all of which were below the threshold of 5 (VIF for exposure to violence = 1.38, VIF for emotion dysregulation = 1.38), confirming that multicollinearity was not a concern.

Table 2

Pearson Correlations Between Aggressive Behavior and Predictor Variables

Variable	1. Aggression	2. Exposure to Violence	3. Emotion Dysregulation
1. Aggression	—	.48** (p < .001)	.55** (p < .001)
2. Exposure to Violence	.48** (p < .001)	—	.43** (p < .001)
3. Emotion Dysregulation	.55** (p < .001)	.43** (p < .001)	—

Next, Pearson correlation coefficients were calculated to examine the relationships between aggressive behavior (dependent variable) and the two independent variables. As shown in Table 2, aggression was significantly and positively correlated with both exposure to violence ($r = .48$,

$p < .001$) and emotion dysregulation ($r = .55$, $p < .001$), suggesting that higher levels of violence exposure and emotion regulation difficulties are associated with greater aggressive tendencies.

Table 3

Summary of Regression Model Predicting Aggressive Behavior

Source	Sum of Squares	df	Mean Square	R	R ²	Adj. R ²	F	p
Regression	32457.12	2	16228.56	.65	.43	.42	147.53	<.001
Residual	43562.81	396	109.98					
Total	76019.93	398						

To evaluate the combined predictive power of exposure to violence and emotion dysregulation on aggressive behavior, a multiple linear regression analysis was conducted. Table 3 presents a summary of the regression

model, which was statistically significant, $F(2, 396) = 147.53$, $p < .001$, with an R^2 value of .43. This indicates that approximately 43% of the variance in aggressive behavior was explained by the two predictors.

Table 4

Regression Coefficients for Predictors of Aggressive Behavior

Predictor	B	SE	β	t	p
Constant	21.38	3.62	—	5.91	<.001
Exposure to Violence	0.74	0.09	.31	7.83	<.001
Emotion Dysregulation	0.62	0.06	.41	9.67	<.001

Finally, the multivariate regression coefficients presented in Table 4 show that both exposure to violence and emotion dysregulation significantly predicted aggressive behavior. Emotion dysregulation had a standardized beta (β) of .41, $t = 9.67$, $p < .001$, while exposure to violence had a beta of .31, $t = 7.83$, $p < .001$. These results indicate that while both

variables are important, emotion dysregulation is the stronger predictor of aggression in this model.

4. Discussion and Conclusion

The present study aimed to explore the predictive roles of exposure to violence and emotion dysregulation in

aggressive behavior among Romanian adolescents. The results of the Pearson correlation analyses revealed significant positive associations between aggressive behavior and both independent variables: exposure to violence and emotion dysregulation. Furthermore, the multiple linear regression analysis indicated that both exposure to violence and emotion dysregulation significantly predicted aggressive behavior, with emotion dysregulation showing a slightly stronger predictive weight. These findings confirm the central hypothesis that both contextual and psychological variables contribute independently and additively to the manifestation of aggression in adolescents.

The positive relationship found between exposure to violence and aggressive behavior aligns with a large body of literature documenting the harmful behavioral consequences of witnessing or experiencing violent events during adolescence. Adolescents who are chronically exposed to violence—whether in the family, peer group, or community—are more likely to adopt aggressive strategies as learned responses to social conflict (Hatfield et al., 2024; Toro et al., 2024). These individuals may internalize violence as a normative behavior, particularly when violence is unpunished or rewarded in their environments (Rademacher et al., 2023). In line with social learning theory, repeated exposure to aggressive models fosters cognitive scripts and beliefs that support the use of aggression as a problem-solving tool. Our findings echo those of earlier studies showing that exposure to violence not only predicts overt aggression but also plays a role in reactive forms of aggression characterized by emotional arousal and retaliatory motives (Clear et al., 2019; Garofalo & Velotti, 2017).

Moreover, the data demonstrated a strong positive correlation between emotion dysregulation and aggressive behavior, which is consistent with extensive empirical evidence linking poor emotional regulation to various forms of maladaptive behavior. Adolescents who lack effective emotion regulation strategies may find it difficult to manage anger, frustration, or perceived rejection, increasing the likelihood of aggressive responses in emotionally charged situations (Darmadi & Badayai, 2021; Ford, 2021). Our results support previous findings indicating that difficulties with impulse control, emotional awareness, and acceptance are among the most influential dimensions of emotion dysregulation contributing to aggression (Garofalo et al., 2018; Velotti et al., 2017). In particular, deficits in impulse control and clarity of emotional experiences may lead to

heightened physiological arousal and reduced capacity for inhibition, which can manifest as verbal or physical aggression during interpersonal conflict (Bounoua et al., 2022; Espírito-Santo et al., 2022).

The regression analysis revealed that both exposure to violence and emotion dysregulation remained significant predictors of aggression when entered simultaneously into the model. This suggests that these two constructs independently contribute to adolescent aggression and may operate through different but complementary mechanisms. The slightly higher predictive power of emotion dysregulation may indicate that internal emotional processes mediate the behavioral outcomes of environmental stressors. Adolescents with poor regulation skills might be particularly vulnerable to the effects of violence, as they lack the emotional tools necessary to process and adaptively respond to such experiences (Hatfield et al., 2024; Miles et al., 2015). This finding is supported by research indicating that the interaction of emotional dysregulation and environmental adversity creates a synergistic risk profile for externalizing problems, including aggression (Bell et al., 2020; Meaney et al., 2016).

Neurobiological studies further validate the emotional-behavioral link observed in this research. For instance, adolescents with elevated levels of aggression have demonstrated hyperactivation in brain regions involved in threat detection and emotion regulation, such as the amygdala and prefrontal cortex (Harmsel et al., 2022; Jakobi et al., 2022). These neural patterns are often accompanied by reduced cognitive control and inhibitory functioning, particularly in youth with emotion dysregulation, suggesting that aggressive behavior may emerge when the capacity for emotional inhibition is overwhelmed by arousal systems. The current findings echo such models by emphasizing how impaired self-regulation contributes to the escalation from emotional arousal to behavioral aggression.

It is also worth noting that emotion dysregulation is often intertwined with other psychological vulnerabilities such as impulsivity, alexithymia, and trauma-related symptoms, which have also been shown to increase the likelihood of aggression in adolescents (Bresin et al., 2021; Garofalo et al., 2020; Northrup et al., 2022). For example, adolescents with trauma histories may exhibit heightened emotional reactivity and reduced regulation capacity, making them more prone to aggression when triggered by reminders of past violence (Hatfield et al., 2024). In our study, although trauma exposure was not directly measured, the link between

exposure to violence and aggression may partly reflect underlying trauma-related processes.

The consistency of our findings with previous literature also extends to studies examining gender, temperament, and family context as moderating factors. Although gender was not a primary focus of this analysis, past research has indicated that males may be more likely to express aggression externally, while females may internalize distress or display relational aggression (Sevecke et al., 2016; Stefanile et al., 2017). Similarly, child temperament—particularly high negative affectivity—has been shown to amplify the effect of parental stress on children’s emotional well-being and behavioral outcomes (Çelebi & Acar, 2024). In families characterized by high stress and low emotional responsiveness, children may lack appropriate models for managing emotion, further increasing aggression risk in emotionally dysregulated youth.

Additionally, physiological mechanisms such as cortisol dysregulation have been explored as mediators of the emotion-aggression relationship. For instance, studies have shown that dysregulated cortisol patterns are linked to greater peer-reported aggression and poor anger control in children, suggesting that biological reactivity plays a role in how adolescents respond to emotionally charged situations (Oberle et al., 2017). Our findings resonate with such work by highlighting emotion dysregulation as a core mechanism underlying the behavioral manifestation of internal emotional states.

In sum, the current study adds to a growing body of evidence showing that both environmental and emotional factors are essential in predicting adolescent aggression. Exposure to violence contributes to aggression by modeling and reinforcing hostile behavior, while emotion dysregulation increases aggression by impairing the adolescent’s ability to process and manage emotional responses. When considered together, these variables offer a robust explanatory framework that can inform clinical and educational interventions.

5. Limitations & Suggestions

Despite its strengths, the study has several limitations that should be acknowledged. First, the cross-sectional design precludes any inference of causal relationships among the variables. While the correlations and regression findings suggest predictive associations, longitudinal studies are needed to establish temporal ordering. Second, all data were collected through self-report instruments, which may

introduce bias due to social desirability or inaccurate recall. Although validated measures were used, reliance on subjective reporting may limit the objectivity of the results. Third, the study was conducted with adolescents from Romania, and while this offers valuable cultural insights, the findings may not generalize to adolescents in other cultural or socioeconomic contexts. Fourth, the study did not control for potential confounding variables such as trauma history, parental involvement, or peer relationships, all of which could influence both emotion regulation and aggression. Finally, the study did not differentiate between types of aggression (e.g., reactive vs. proactive), which may be differentially predicted by the variables studied.

Future research should consider longitudinal designs to explore how exposure to violence and emotion dysregulation interact over time to influence the development and persistence of aggressive behavior. Such designs would allow for a better understanding of causality and developmental trajectories. It would also be beneficial to include multi-informant data, such as teacher or parent reports, to enhance the reliability and ecological validity of the findings. Exploring potential moderators, such as gender, socioeconomic status, or family functioning, could provide a more nuanced understanding of the pathways leading to aggression. In addition, future studies could incorporate physiological and neurobiological measures to assess how biological responses mediate the relationship between emotional and environmental risk factors. Finally, differentiating between subtypes of aggression and examining their distinct predictors may yield more precise insights for intervention strategies.

The findings of this study highlight the importance of developing comprehensive prevention and intervention programs that address both emotion regulation skills and environmental stressors. School-based programs should incorporate emotional literacy, impulse control, and conflict resolution strategies to help adolescents manage intense emotions constructively. Simultaneously, efforts should be made to reduce adolescents’ exposure to violence through community safety initiatives and supportive family interventions. Educators, counselors, and mental health professionals working with adolescents should be trained to identify signs of emotional dysregulation and provide timely support. Implementing trauma-informed approaches in schools and clinics can also help adolescents who have been exposed to violence process their experiences safely and avoid the development of maladaptive behaviors such as aggression. Tailored interventions that consider both the

emotional and environmental contexts of each adolescent are likely to be most effective in reducing aggressive behavior and promoting psychological well-being.

Acknowledgments

We would like to express our appreciation and gratitude to all those who cooperated in carrying out this study.

Declaration

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

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethics Considerations

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

Transparency of Data

In accordance with the principles of transparency and open research, we declare that all data and materials used in this study are available upon request.

Funding

This research was carried out independently with personal funding and without the financial support of any governmental or private institution or organization.

Authors' Contributions

All authors contributed equally.

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