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Investigating the Mediating Role of Mentalization in the Relationship Between Emotional Maltreatment and Emotional Disorders

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A B S T R A C T

Mentalization is a crucial skill for emotional regulation. Difficulties in emotional regulation are a primary feature in all personality disorders and the ability to mentalize is closely associated with attachment style. In essence, when a caregiver can deeply understand a child's experience and provide feedback based on this understanding, a functional model for comprehending the child's internal world is presented. This helps children attend to and understand their experiences. Gradually, this modeling becomes internalized in the child, assisting them in recognizing mental states. This transition from dependency to independence is dependent on a healthy and stable emotional interaction between parent and child, which occurs when secure attachment is present. Identifying factors influencing emotional disorders during adolescence is a significant issue that can assist behavioral science professionals in developing preventative and therapeutic programs. Considering the importance of this issue, the current study aimed to determine the role of the research model of mentalization dysregulation as a mediator in the relationship between emotional maltreatment and emotional disorders in adolescents. The research was correlational and conducted in the adolescent population aged 12 to 17 residing in Tehran province. The study involved 550 participants who responded to the Childhood Trauma Questionnaire (CTQ) and the Reflective Functioning Questionnaire for Youths (RFQ-Y). Data analysis was performed using SPSS 19.0 and Amos-24. The results indicated that the research model of mentalization dysregulation as a mediator between emotional maltreatment and emotional disorders is well-fitted ($\chi^2/df = 3.627$, CFI = 0.983, IFI = 0.983, RFI = 0.957, RMSEA = 0.070) and that mentalization mediates the relationship between emotional maltreatment and emotional disorders ($P = 0.001$, $\beta = 0.201$). Overall, it can be concluded that emotional dysregulation and mentalization are mediators between childhood traumatic experiences and symptoms of emotional disorders during adolescence.

Keywords: *Mentalization, Emotional Dysregulation, Adolescents, Psychological Model.*

1. Introduction

One potential mediator between emotional maltreatment and emotional disorders is mentalization (1). Mentalization is the capacity that allows us to understand our own and others' behaviors based on mental states and cognitive processing in the domains of thoughts, feelings, desires, and wishes. Mentalization is a key developmental capacity deeply rooted in the quality of early object relations, and its impairment is viewed as a significant aspect in the psychopathology of borderline personality disorder. Mentalization enables the comprehension of actions of oneself and others from the perspectives of thoughts, emotions, desires, and wishes. This ability underlies all human interactions; without mentalization, a robust sense of self, constructive social interactions, and a sense of personal security are impossible. Mentalization involves awareness of mental states in oneself or others, especially to explain behaviors, extending beyond the impact of mental states on behavior. Beliefs, desires, feelings, and thoughts, whether conscious or outside of awareness, always influence what we do. Mentalization encompasses a broad spectrum of capabilities, including the integrated perception of one's behavior from the perspective of mental states and the psychological differentiation of oneself from others. These abilities are notably absent in individuals with personality disorders, especially during moments of interpersonal stress. Alternatively defined, mentalization is understanding one's and others' experiences and behaviors based on mental phenomena such as assumptions, attitudes, emotions, desires, knowledge, intentions, plans, dreams, hopes, and misconceptions (2).

Mentalization is a fundamental psychological process that plays a role in essential psychiatric disorders. The theory of mentalization regarding emotional problems assumes that, in addition to innate vulnerability, unusual environmental conditions, such as emotional maltreatment in early relationships, cause vulnerability to emotional and personality disorders and disrupt the development of cognitive capacities necessary for mentalization. Children exposed to emotional maltreatment also face difficulties in identifying and regulating their emotions; such that emotional maltreatment during childhood is associated with poor emotional awareness and a deficit in identifying and distinguishing one's emotions (3). Therefore, a second set of transdiagnostic mechanisms that link emotional maltreatment during childhood with psychological pathology includes altered patterns of emotional processing, such as increased emotional reactivity, low emotional awareness, and difficulties in emotion regulation (4, 5). According to biases in social information processing, youths exposed to psychological harms display a pattern of emotional reactivity characterized by increased alertness and larger emotional responses to potential threats in the environment. One of the most consistent emotional patterns observed among children exposed to trauma is intense emotional reactivity, such that negative cues in the environment (e.g., angry or fearful faces, social situations evoking negative emotions) provoke greater emotional responses in traumatized children. This increased emotional reactivity has been observed in studies using behavioral tasks, self-report measures, and ecological momentary assessment (i.e., real-time ecological evaluation), as well as biological neural responses, including increased activation of the amygdala and anterior nuclei, brain areas that encode emotional responses to neutral and negative stimuli. In addition to high emotional reactivity, being exposed to childhood emotional maltreatment seems to alter learning patterns about threats in the environment (6-8). Young children exposed to psychological harms show earlier avoidance learning compared to children not exposed; as evidenced by the ability to form a conditioned fear response to a previously neutral cue predicting an adverse stimulus. The Unified Protocol for Transdiagnostic Treatment of Emotional Disorders in Children (UP-C) is an intervention for children aged 7 to 13 that targets negative emotions, emotional reactivity, and typical emotion regulation deficits found in emotional disorders. This protocol is based on evidence-based treatment plans with cognitive-behavioral and third-wave behavioral therapy elements, aimed at eliminating distress from intense emotional states and reducing problematic behaviors among children with emotional disorders. It is a cognitive-behavioral and emotion-focused guide that targets common underlying mechanisms of emotional disorders. Preliminary evidence suggests that UP-C is as effective in treating anxiety compared to treatment protocols with empirical support. However, observed differences in treatment response over a longer follow-up period, including reduced depressive

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symptoms and cognitive reassessment, were in favor of UP-C, with this treatment achieving greater progress in emotion regulation (4, 9). Adolescence is a period of rapid emotional, physical, and social changes, as well as a time of exploration, self-reliance, self-control, independent decision-making, and choice. It also involves acquiring responsibility and making decisions about health, family, career, and peers. Due to the instability of adolescents' psychological state, they are often faced with numerous problems that can lead to emotional-behavioral issues. One variable that is highly significant in relation to adolescence is emotion management as internal and external processes responsible for controlling, assessing, and altering an individual's emotional responses towards achieving their goals, and any malfunction or defect in emotion regulation can make an individual vulnerable to psychiatric disorders such as depression and anxiety (10). Studies have shown that optimal emotion regulation is associated with proper performance in cognitive tasks in adults. However, since emotion regulation is a process learned during development, it may be problematic due to an inappropriate family environment, lack of suitable learning models, physical and sexual maltreatment, or disorders like Asperger's syndrome, affecting an individual's management and organization of emotions (6, 7, 11). Adolescents with effective emotion regulation display better social skills. Conversely, those with emotion regulation issues have impaired social functioning and thus benefit less from social support. Poor emotion regulation is a fundamental cause of dysfunction among children and adolescents and is associated with many psychological disorders. Research has shown that managing emotions plays a crucial role in preventing the emergence of emotional and behavioral disorders during adolescence. The skill of emotion regulation, especially during adolescence, is necessary for psychological adaptation, personal satisfaction, a sense of competence, social efficacy, academic success, and overall physical and mental health. Therefore, understanding how the skill of emotion regulation develops is highly important and has attracted significant attention from researchers in recent years. Based on this, the current study aims to answer whether mentalization and emotional dysregulation play a mediating role in the relationship between emotional maltreatment and emotional syndromes and which one better fulfills the role of mediator (8, 12).

The World Health Organization (2001) predicted that the prevalence of this disorder and the range of disabilities resulting from it would continue to increase, to the point where it would become the second leading cause of illness and disability worldwide by 2020 (1, 13, 14). In Iran, several studies have investigated the prevalence of depression in various regions of the country; Although there is no recent domestic report on the prevalence of this disorder in recent years, it can be expected that domestic statistics, in line with global growth, are increasing.

2. Methods and Materials

2.1. Study Design and Participants

The design of the present study is fundamentally aimed and correlational in terms of data collection, wherein the relationships between variables are examined. Structural equation modeling has been used to find the most fitting explanatory model. The study population includes male and female adolescents aged 12 to 17. Data collection for this research was conducted during the academic year 2020-2021. The sample size was calculated using Kline's formula (2011), which recommends 10 to 20 participants for each parameter to be estimated. In this study, the number of parameters in the initial hypothetical model (the model with mentalization as a mediator) was 40. Therefore, the sample size should be between 400 to 600 participants; taking this into account, 550 participants were selected through convenience sampling. All tools have been selected among standard an validated measures.

2.2. Measures

2.2.1. Emotional Symptoms

This questionnaire consists of 53 items covering 9 psychological symptoms: somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobias, paranoid thoughts, and psychosis.

2.2.2. Emotional Missbehavior

The Childhood Trauma Questionnaire is a 28-item self-report instrument for adults and adolescents aged 12 and

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older, retrospectively measuring five areas of childhood maltreatment: emotional abuse, physical abuse, sexual abuse, emotional neglect, and physical neglect (15). In this study, only the subscale of emotional abuse was administered.

2.2.3. Reflective Functioning (Mentalization)

This questionnaire is a 46-item self-report instrument used to assess reflective functioning in adolescents and measures mentalization. Items are rated on a six-point Likert scale from strongly disagree (score 1) to strongly agree (score 6) (2).

2.3. Data Analysis

The method of data analysis for this study used software SPSS 19.0 and Amos-24 for classifying, processing, and analyzing data and testing research hypotheses. The fit of the hypothetical model was tested using structural equation modeling. Data analysis was conducted using a two-step approach. In the first step, confirmatory factor analysis was used to assess the measurement model's fit, and in the second step, the hypothetical structural model was tested using structural equation modeling. Additionally, the maximum likelihood method was used for parameter estimation. Fit indices calculated include: Chi-square, Chi-square to degrees of freedom ratio, root mean square error of approximation, standardized root mean square residual, goodness-of-fit index, comparative fit index, normed fit index, incremental fit index, and Tucker-Lewis index. After determining the fit of the hypothetical model, residual statistics and modification indices were reviewed to make necessary adjustments to the model.

3. Findings and Results

In this study, 550 questionnaires were distributed, but in total, 530 questionnaires were analyzable for the emotional regulation mediation model and 502 for the mentalization mediation model. With the use of Mahalanobis distance, 20 outlier data points were identified and excluded from the analysis. The mean and standard deviation of the age of the research sample was 15.84 ± 2.84 years, with an age range of 12 to 17 years. Regarding educational status, 107 participants (16.8%) were in 6th grade, 323 participants (50.7%) in 9th grade, 204 participants (32.01%) in 8th grade, and 3 participants (0.5%) were in 7th grade. Descriptive indices of the research variables are presented in Table 1.

Table 1

Descriptive Indices of Research Variables (N=550)

Variable	Minimum	Maximum	Mean	Standard Deviation	Skewness	Kurtosis
Emotional Abuse	5	22	7.93	3.43	1.34	1.22
Awareness	10	24	15.36	3.81	-0.876	-0.377
Nonacceptance	10	26	15.92	3.85	-0.726	-0.592
Impulsivity	10	27	15.64	3.81	-0.936	-0.177
Goals	10	25	15.28	3.85	-0.900	-0.362
Clarity	10	26	15.60	3.85	-0.951	-0.148
Strategies	10	25	15.54	3.77	-0.798	-0.425
Anxiety	0	36	13.14	7.12	0.548	0.961
Depression	0	47	11.59	9.44	0.693	0.095
Phobia	0	25	7.27	4.71	0.847	0.635
Hostility	1	25	7.80	2.98	1.00	2.71
Self-focused Mentalization	0	9	2.97	2.86	0.669	-0.751
Other-focused Mentalization	0	9	2.59	2.97	1.039	-0.247

The mean and standard deviation of research variables are presented in Table 1. Additionally, indices of skewness and kurtosis are reported to assess the normality of data distribution; since all are within the range of -2 to 2, the data are normally distributed, allowing for parametric tests to be performed.

In the hypothetical model, mentalization mediates the effect of emotional maltreatment on symptoms of emotional disorders. Emotional maltreatment affects both mentalization and symptoms of emotional disorders, and mentalization also impacts symptoms of emotional disorders. Fit indices related to this model can be seen in

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Table 2. All indices indicate a very good fit of the hypothetical model.

Table 2

Fit Indices of Structural Model with Mentalization as Mediator

Fit Index	Acceptable Range	Value
Chi-square ($\chi 2$)	-	39.902
Chi-square/DF ($\chi 2$/DF)	Less than 5	3.627
Goodness of Fit Index (GFI)	Greater than 0.90	0.980
Comparative Fit Index (CFI)	Greater than 0.90	0.983
Incremental Fit Index (IFI)	Greater than 0.90	0.983
Relative Fit Index (RFI)	Greater than 0.90	0.957
Normed Fit Index (NFI)	Greater than 0.90	0.977
Root Mean Square Error of Approximation (RMSEA)	Less than 0.08	0.070

Results in Table 2 show that the fit indices from the structural equation model with mentalization as a mediator are satisfactory ($\chi 2$/df = 3.627, CFI = 0.983, IFI = 0.983, RFI = 0.957, RMSEA = 0.070), confirming the main hypothesis of the research.

Figure 1 illustrates the hypothetical structural model with standardized coefficients, showing mentalization as a mediator. Emotional maltreatment impacts mentalization and symptoms of emotional disorders with standardized coefficients of -0.34 and 0.04, respectively. Additionally, results indicated that mentalization impacts symptoms of emotional disorders with a standardized coefficient of 0.12. All effects are significant at P > 0.001.

In the current study, the bootstrap test was used to assess mediation relationships. Bootstrap provides the most powerful and logical method for evaluating indirect effects. The significance of these relationships can be examined in two ways: the first method refers to significance levels, and the second method examines confidence intervals. If the upper and lower bounds of the 95% confidence interval for the mediating path are of the same sign (both positive or both negative) and, specifically, if the value zero does not fall between these two bounds, the path is significant at $p < .05$. Before examining mediation effects, Table 3 presents the direct effects with mentalization as a mediator for the hypothetical model.

Table 3

Direct Effects of the Hypothetical Model with Mentalization as Mediator

Effects	Standardized Coefficient	Standard Error	CR	Lower Bound 95%	Upper Bound 95%	Significance Level
Emotional Maltreatment to Mentalization	-0.744	0.038	-9.997	-0.821	-0.672	0.001
Emotional Maltreatment to Emotional Disorder Symptoms	0.121	0.047	3.834	0.089	0.299	0.019
Mentalization to Emotional Disorder Symptoms	-0.443	0.089	-5.431	-0.673	-0.266	0.001

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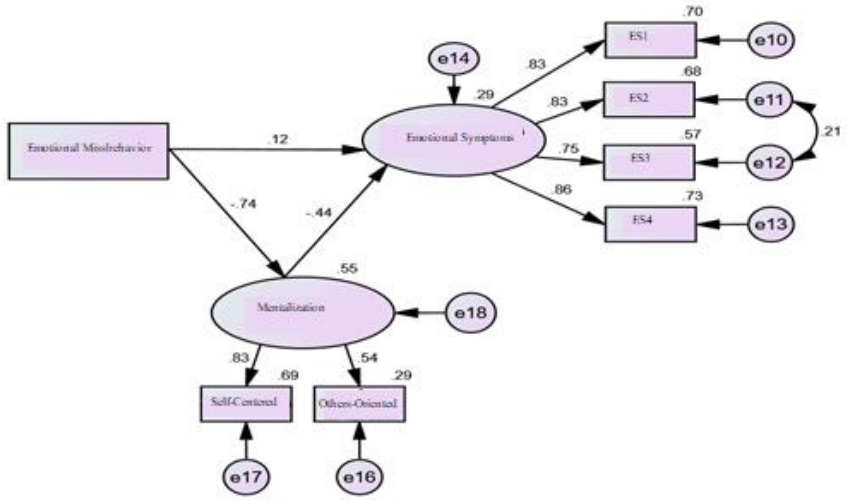
Figure 1

Model with Beta Coefficients



The current study utilized the bootstrap test to assess mediation relationships. Bootstrap is considered the most powerful and logical approach for assessing indirect effects. The significance of these relationships can be verified through two methods: the first by checking the significance levels, and the second through examining confidence intervals. If the upper and lower bounds of the 95% confidence interval for the mediation path are of the same sign (either both positive or both negative), and importantly, if zero does not lie between these bounds, the pathway is considered significant at $p < .05$. Before examining the mediation effect, Table 4 presents the direct effects with mentalization as a mediator for the hypothetical model.

Table 4

Direct, Indirect, and Total Effects of the Hypothetical Model with Mentalization as Mediator

Effects	Standardized Coefficient	Standard Error	CR	Lower Bound 95%	Upper Bound 95%	Significance Level
Emotional Maltreatment to Mentalization	-0.744	0.038	-9.997	-0.821	-0.672	0.001
Emotional Maltreatment to Emotional Disorder Symptoms	0.121	0.047	3.834	0.089	0.299	0.019
Mentalization to Emotional Disorder Symptoms	-0.443	0.089	-5.431	-0.673	-0.266	0.001

The results from Table 4 indicate that emotional maltreatment has a direct effect on mentalization (-0.744 = β) and on symptoms of emotional disorders (0.121 = β). Emotional maltreatment also directly affects symptoms of emotional disorders (0.121 = β), and these effects are significant ($p < .05$). Table 4 shows the indirect or mediating effects for the hypothetical model.

Table 5

Mediating Effects of the Hypothetical Model with Mentalization as Mediator

Mediating Pathways	Unstandardized Coefficient	Standardized Coefficient (Effect Size)	Upper Bound	Lower Bound	Bootstrap (Standardized Confidence Intervals at 95% Confidence Level)	Standard Error	Significance Level
Emotional Maltreatment to Emotional Symptoms via Mentalization	0.103	0.201	0.539	0.201		0.082	0.001

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According to the contents Table 5, the effect of emotional maltreatment on symptoms of emotional disorders mediated by mentalization focused on self and others has a standardized coefficient of 0.201 (p = 0.001). The results in Table 5 show that mentalization focused on self and others mediates the relationship between emotional maltreatment and emotional disorder symptoms with an effect size of 0.201, which is significant at p < .05. Thus, the second hypothesis of the study is confirmed.

4. Discussion and Conclusion

The results of the study confirmed the research hypothesis that childhood traumas, through difficulties in emotional regulation, predict symptoms of emotional disorders. These findings are consistent with the prior research (6, 7, 16). To explain these findings, it can be said that in childhood emotional traumas, as the individual is continuously placed in negative emotional conditions, their ability to properly regulate negative emotions becomes compromised. Furthermore, in childhood trauma, instead of expressing and displaying their emotions, victims often ignore their feelings and, sometimes, due to punishments received for expressing them, their emotions are suppressed. As a result, the child's ability to express, describe, and interpret their emotions is jeopardized, and emotions become an unknown source that may cause distress (16).

Another possible explanation is that experiencing childhood trauma delays the development of capabilities to recognize and label various emotional states, thus the normal process of acquiring these capabilities encounters difficulties. The ability to identify and describe different emotional states is necessary for processing emotional experiences and integrating and combining these experiences into an individual's daily life, while childhood traumas prevent the formation of this important tool. Therefore, when a child is placed in damaging situations, they may not have the necessary and complete ability to regulate their emotions. For example, when a person's facial expression is not easily recognizable or clear to others, some children tend to interpret this facial expression as nervous or aggressive (8, 11). In this context, the interactional model of Frost and colleagues (2005) indicates that a combination of difficulty in emotional regulation and a specific type of family environment where a child's reactions and emotions are neglected plays a significant role in the development of emotional problems and personality disorders. They believe that the lack of validation of a child's experiences by the family creates emotional sensitivities because, in these conditions, the child is conditioned to be particularly alert to situations that lead to negative emotions (4). For instance, a child may be very interested in participating in a new activity, but the parents, considering the activity ridiculous, do not support the child, despite the child's keen interest. If the child experiences distressing times, in the following days they show increased sensitivity to new activities that generate negative and distressing emotions; this heightened arousal itself causes the child to fail to receive adequate validation. The non-validation of the child's emotions and experiences also creates problems in the process of labeling emotions and properly regulating them. Consequently, the child will not be able to differentiate their own various emotions from those of others. This capability to recognize emotions and understand internal feelings is necessary for proper emotional regulation (6, 7). In another explanation of this hypothesis, Lee and colleagues (2020) argue that when children's acceptance is based on conditional acceptance, children must suppress important aspects of their personality to achieve love or approval from others. In most of these families, instead of paying attention to and valuing the child's unique needs, parents consider their own emotional needs or social status more important; as a result, parents, in satisfying their own needs, not only fail to meet the child's need for unconditional attention but also emotionally exploit the child, leading the child ultimately to believe that they must always satisfy the needs of others. In this regard, some children may resort to schemas of self-sacrifice and compliance (11).

In other words, abusive parents, through their actions and reactions, convey that if the child does not do what they want, the child probably does not love them. This tactic often causes the child to feel guilty, thus the child tries to avoid disappointing the parents and disobeying their orders as much as possible. These children eventually conclude that the needs and desires of others are more important than their own. As a result, this guilt and emotional conflict between the desires of the parents and the child's inner feelings pave the way for the development of depression in adulthood (16). In another interpretation of this hypothesis, when parents or

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caregivers behave emotionally abusively and place the child in an ambiguous state of emotional clarity and conflict, the child finds the necessary or sufficient conditions to learn independent functioning and autonomous experience of emotion and its expression. Also, when the child internalizes the messages sent through emotional abuse directly or implicitly, and acquires a negative view of themselves, because they attribute the reason for these abuses to something bad in themselves and ultimately consider themselves deserving of mistreatment. Kimet al. (2023) conclude that when a child blames themselves and lacks the ability to understand their own and others' emotions, the likelihood of developing depression increases (17).

Moreover, the study's findings confirmed the research hypothesis about the mediating role of mentalization in the relationship between childhood traumas and symptoms of emotional disorders. These results align with the prior findings (1, 5, 15). In explaining this finding, it can be said that the link between childhood problems and weak mentality, measured as low reflective functioning (mentalization), can be accounted for by reduced motivation and pathological avoidance, for organizing representations of relationships, focusing on mental states as a result of experiences of neglect or more significantly, maltreatment. On the other hand, in some individuals, the experience of childhood difficulties causes them to overly attend to the emotional states of others, which in turn leads them to inappropriate identification of others' emotional states. It has also been determined that early neglect is an important predictor of emotional disorders because it impairs the natural emergence of mentalization, thereby specifically exposing these individuals to subsequent interpersonal harm (18). Liberman identified four dimensions of mentalization: automatic versus controlled, self versus other, internal versus external features, and cognitive versus emotional. The ability to mentalize requires individuals not only to maintain a balance in these dimensions but also to be able to use the dimensions appropriately according to environmental conditions. The mentalization profile of individuals with borderline personality disorder is characterized by emphasizing the automatic, others, external, and emotional dimensions of mentalization (15, 18).

Authors' Contributions

H.S. conceptualized the study, designed the research methodology, and supervised the data collection process. P.M., the corresponding author, performed the data analysis using SPSS and Amos, interpreted the results, and led the drafting and revising of the manuscript. P.K. assisted in the recruitment of participants, facilitated the administration of the questionnaires, and contributed to the literature review. All authors participated in discussing the findings, critically reviewed the manuscript for important intellectual content, and approved the final version for publication.

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.

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Declaration of Interest

The authors report no conflict of interest.

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Ethics Considerations

The study placed a high emphasis on ethical considerations. Informed consent obtained from all participants, ensuring they are fully aware of the nature of the study and their role in it. Confidentiality strictly maintained, with data anonymized to protect individual privacy. The study adhered to the ethical guidelines for research with human subjects as outlined in the Declaration of Helsinki.

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