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Presenting a Causal Model of Mentalization with the Mediating Role of Mothers' Emotional Regulation and Emotional Instability in Adolescents' Emotional-Behavioral Disorders

Marzieh. Zabihi¹ , Mehdi. Ghasemi Motlagh^{1*} 

¹ Department of Psychology, Boj.C., Islamic Azad University, Bojnord, Iran

* Corresponding author email address: mehdi.gasemi@iau.ac.ir

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ABSTRACT

Purpose: The present study aimed to develop and examine a causal model of mothers' mentalization with the mediating roles of mothers' emotion regulation and emotional instability in adolescents' emotional-behavioral disorders.

Methods and Materials: The present study employed a correlational design using path analysis within the framework of fundamental research. The statistical population consisted of all mothers and their adolescent children aged 16 to 18 years in Mashhad during the 2024–2025 academic year. Using multistage cluster sampling, 420 mothers and their 420 adolescent children were selected. The research instruments included the Emotional and Behavioral Problems Questionnaire developed by Achenbach and Rescorla (2003), the Mentalization Questionnaire developed by Dimitrijevic et al. (2017), the Mentalized Affectivity Scale (MAS) developed by Greenberg et al. (2017), and the Difficulties in Emotion Regulation Scale (DERS) developed by Gratz and Roemer (2004). Data were analyzed using Structural Equation Modeling (SEM) through IBM SPSS Statistics and LISREL software packages.

Findings: The findings indicated that the proposed model demonstrated satisfactory fit indices (RMSEA = .02, CFI = .99, IFI = .99, GFI = .99, $\chi^2/df = 1.13$). Mothers' mentalization had a significant direct negative effect on adolescents' internalizing problems ($\beta = -0.41$, $p = .001$) and externalizing problems ($\beta = -0.12$, $p = .023$). In addition, mothers' mentalization showed a significant positive effect on mothers' emotion regulation ($\beta = 0.45$, $p = .001$) and a significant negative effect on mothers' emotional instability ($\beta = -0.12$, $p = .008$). The indirect effects analysis revealed that mothers' emotion regulation and emotional instability significantly mediated the relationship between maternal mentalization and adolescents' emotional-behavioral disorders.

Conclusion: The findings suggest that mothers' mentalization plays a substantial role in reducing adolescents' emotional-behavioral disorders both directly and indirectly through improving emotion regulation and reducing emotional instability.

Keywords: *Mentalization, Emotion Regulation, Emotional Instability, Emotional-Behavioral Disorders*

1. Introduction

Adolescence is considered one of the most sensitive developmental periods characterized by extensive biological, emotional, cognitive, and social transformations. During this developmental stage, adolescents encounter multiple psychological and environmental challenges that may contribute to the emergence of emotional-behavioral disorders. Internalizing problems, including anxiety, depression, social withdrawal, and somatic complaints, as well as externalizing problems such as aggression, impulsivity, defiance, and rule-breaking behaviors, are among the most prevalent psychological difficulties observed during adolescence. These disorders not only impair psychological well-being and academic functioning but also negatively affect interpersonal relationships, social adjustment, and long-term mental health outcomes. Contemporary psychological research has increasingly emphasized the role of family processes and parental psychological characteristics in the development and maintenance of adolescents' emotional-behavioral disorders. In particular, maternal emotional functioning and relational capacities have attracted considerable attention as fundamental determinants of children's emotional and behavioral adjustment (Ghanjali et al., 2022; Robinson et al., 2024). Studies have demonstrated that maladaptive parenting processes, poor emotional responsiveness, and dysfunctional emotional interactions within the family system substantially increase adolescents' vulnerability to emotional dysregulation and psychopathology (Babapour et al., 2023; Shafiei et al., 2023). Consequently, identifying the psychological mechanisms underlying adolescents' emotional-behavioral disorders remains a major priority in developmental and clinical psychology.

One of the central constructs that has gained increasing prominence in recent decades is mentalization. Mentalization refers to the capacity to understand one's own and others' behaviors in terms of underlying mental states such as thoughts, emotions, desires, intentions, and beliefs. This construct is closely associated with reflective functioning, emotional awareness, interpersonal sensitivity, and adaptive social cognition. Mothers with higher mentalization capacity are generally more capable of accurately interpreting their adolescents' emotional needs, responding sensitively to psychological distress, and regulating interpersonal interactions in a supportive and coherent manner. Conversely, impaired mentalization is associated with emotional misunderstanding, relational

instability, and maladaptive parenting behaviors that may increase the likelihood of emotional-behavioral disorders in adolescents. Theoretical perspectives derived from attachment theory and developmental psychopathology suggest that maternal mentalization contributes substantially to the formation of emotional security, self-regulation, and adaptive interpersonal functioning in children and adolescents (Faraji et al., 2024; Seadatee Shamir & Zahamatkesh, 2022). Empirical studies have also shown that stronger parental mentalization abilities are associated with greater emotional resilience, psychological flexibility, and adaptive coping strategies in children (Nikooyeh et al., 2025; Robinson et al., 2024). Furthermore, maternal mentalization has been linked to improved emotional communication and reduced behavioral conflicts within the family environment (Moeinzadeh et al., 2025; Zandkarimi et al., 2025).

Emotion regulation represents another essential construct associated with adolescents' psychological adjustment. Emotion regulation refers to the processes through which individuals monitor, evaluate, modify, and manage emotional experiences in order to achieve adaptive functioning. Mothers with effective emotion regulation capacities are more capable of managing stress, controlling impulsive reactions, maintaining emotional stability, and modeling adaptive coping behaviors for their children. In contrast, deficits in emotion regulation are associated with heightened emotional reactivity, maladaptive coping strategies, family conflict, and psychological distress. Research indicates that parental emotion regulation significantly influences adolescents' emotional development through observational learning, emotional socialization, and family interaction patterns (Shaterdalal Yazdi et al., 2022a, 2022b). Adolescents exposed to maladaptive parental emotional responses are more likely to develop difficulties in emotional self-regulation, interpersonal relationships, and behavioral control (Seadatee Shamir & Mousavi Fazl, 2022; Shafiei et al., 2023). Moreover, interventions focused on improving emotional regulation capacities have demonstrated beneficial effects on psychological flexibility, emotional intelligence, and adaptive functioning among both parents and adolescents (Babapour et al., 2023; Moeinzadeh et al., 2025). The growing emphasis on emotion regulation in psychological research reflects its central role in understanding the mechanisms through which family processes influence adolescent mental health.

Emotional instability is another influential factor that may contribute to adolescents' emotional-behavioral disorders. Emotional instability is characterized by rapid mood

fluctuations, heightened emotional sensitivity, impulsivity, emotional reactivity, and difficulties maintaining emotional equilibrium. Mothers with elevated emotional instability may exhibit inconsistent parenting behaviors, unpredictable emotional responses, and difficulties establishing stable emotional relationships with their adolescents. Such relational instability can create emotionally insecure environments that increase adolescents' vulnerability to internalizing and externalizing problems. Previous studies have consistently demonstrated that parental emotional instability is associated with increased family stress, ineffective communication patterns, and greater behavioral difficulties among adolescents (Babapour et al., 2023; Zandkarimi et al., 2025). Emotional instability may also interfere with maternal mentalization processes because heightened emotional arousal often impairs reflective functioning and accurate interpretation of mental states. Consequently, emotionally unstable mothers may experience greater difficulty understanding adolescents' emotional experiences and responding appropriately to their psychological needs. These dysfunctional relational processes may ultimately contribute to the development of anxiety, depression, aggression, oppositional behaviors, and social maladjustment in adolescents (Faraji et al., 2024; Robinson et al., 2024).

Recent psychological literature increasingly supports the conceptual integration of mentalization, emotion regulation, and emotional instability within developmental and family-based models of psychopathology. Maternal mentalization may directly influence adolescents' emotional-behavioral functioning while simultaneously exerting indirect effects through emotion regulation and emotional instability mechanisms. Mothers with stronger mentalization abilities are more likely to regulate emotions effectively, demonstrate emotional consistency, and establish psychologically secure family environments. These adaptive emotional processes may reduce adolescents' exposure to emotional stressors and facilitate the development of self-regulation capacities. Conversely, impaired mentalization may contribute to emotional dysregulation and instability, thereby increasing adolescents' risk for emotional and behavioral difficulties. Studies examining cognitive-emotional functioning have repeatedly emphasized the interdependence of reflective capacities, emotional processing, executive functioning, and psychological adjustment (Abbasi et al., 2025; Ershadi Chahardeh et al., 2024). Research on educational and cognitive interventions has similarly demonstrated that enhanced cognitive-emotional capacities improve emotional

resilience, self-control, and adaptive social functioning (Zelli et al., 2024, 2025). Furthermore, investigations into emotional intelligence and psychological flexibility indicate that adaptive emotional functioning serves as a protective factor against psychological maladjustment and behavioral disorders (Shaterdalal Yazdi et al., 2022a, 2022b). These findings collectively suggest that maternal emotional processes may play a crucial mediating role in the relationship between mentalization and adolescents' emotional-behavioral outcomes.

In addition to emotional functioning, several contemporary studies have highlighted the significance of broader psychological and cognitive capacities in shaping adolescent adjustment and resilience. Research on fluid intelligence, metacognitive functioning, cognitive flexibility, and executive processes has demonstrated substantial associations with emotional adaptation and behavioral self-control (Seadatee Shamir, 2025; Shams et al., 2025). Cognitive empowerment interventions have been found to improve attention, inhibition, processing speed, and emotional functioning in educational settings (Abbasi et al., 2025; Ershadi Chahardeh et al., 2024). Similarly, investigations into future thinking, moral judgment, and self-control indicate that adaptive cognitive-emotional functioning contributes to healthier social and emotional development among children and adolescents (Dashti Esfahani et al., 2023, 2024). Studies focusing on educational psychology and motivational factors further emphasize that psychological resilience and adaptive emotional regulation are associated with academic buoyancy, mental toughness, and positive adjustment outcomes (Seadatee Shamir, 2024; Tammeh et al., 2025). In family contexts, parental emotional competencies and psychological resources have been linked to healthier relational functioning and stronger adolescent adjustment capacities (Faridi Sfanjany et al., 2025; Hadiyan et al., 2025). These findings support the broader theoretical assumption that psychological functioning emerges from the interaction between emotional, cognitive, interpersonal, and environmental systems.

Despite the growing body of literature on adolescent psychopathology and family emotional functioning, several conceptual and empirical gaps remain. First, although maternal mentalization has been examined in relation to child resilience and emotional adjustment, fewer studies have simultaneously investigated the mediating roles of maternal emotion regulation and emotional instability within a unified structural model (Faraji et al., 2024; Nikooyeh et al., 2025). Second, many previous studies have focused on

isolated emotional constructs without considering the complex interplay among reflective functioning, emotional regulation capacities, and emotional instability in predicting adolescents' internalizing and externalizing problems. Third, cultural and contextual differences may significantly influence family emotional dynamics, highlighting the need for studies conducted within diverse sociocultural settings. In Iranian society, family relationships and maternal roles hold substantial emotional and developmental significance, making the investigation of maternal psychological functioning particularly important in understanding adolescents' mental health outcomes (Mirarabshahi et al., 2023; Shariati et al., 2022). Moreover, previous investigations into emotional functioning have frequently emphasized intervention outcomes rather than comprehensive causal modeling approaches capable of clarifying direct and indirect pathways among variables (Amini et al., 2024; Khandani et al., 2023). Addressing these gaps may contribute to the development of more effective preventive and therapeutic interventions targeting family emotional processes and adolescent psychopathology.

Given the theoretical and empirical importance of maternal mentalization, emotion regulation, and emotional instability in adolescent psychological adjustment, the present study aimed to develop and examine a causal model of maternal mentalization with the mediating roles of mothers' emotion regulation and emotional instability in predicting adolescents' emotional-behavioral disorders.

2. Methods and Materials

2.1. Study Design and Participants

The present study employed a correlational design using path analysis and was categorized as a fundamental research study. The primary objective was to expand theoretical knowledge regarding the relationship between mothers' mentalization capacity, emotional instability, and emotion regulation and adolescents' emotional-behavioral disorders through identifying the fundamental relationships among the research variables. The statistical population of the present study consisted of all mothers and their adolescent children (aged 16–18 years) in the city of Mashhad who met the inclusion criteria. The adolescents were between 16 and 18 years old and were enrolled in upper secondary education. The gender of the adolescents included both females and males without restriction. The mother and adolescent were required to be living together. In this study, a multistage cluster sampling method was employed. From the seven

districts of Mashhad, three districts representing deprived, middle-income, and affluent areas were selected. From each district, three schools were selected, and from each school, one classroom from each grade level was chosen. The final sample consisted of 420 mothers and their 420 adolescent children. The literature on Structural Equation Modeling (SEM) indicates that there is no precise strategy for determining sample size. However, multivariate analyses require larger sample sizes compared to univariate analyses. The most common method for estimating sample size in path analysis is based on the recommendation of Rex B. Kline (1998), who suggested that the sample size should be at least 10 times the number of model parameters and ideally 20 times the number of model parameters. Power analysis was also utilized. Initially, the necessary permissions were obtained from the Department of Education in Mashhad. Following the cluster sampling procedure, the selected participants completed the Mentalization Scale developed by Dimitrijevic et al. (2017), the Mentalized Affectivity Scale (MAS), and the Difficulties in Emotion Regulation Scale (DERS) developed by Kim Gratz and Lizabeth Roemer, while the adolescents completed the Emotional and Behavioral Problems Questionnaire developed by Thomas Achenbach and Leslie Rescorla. Participants were assured regarding the confidentiality of the questionnaire data, and the beneficial significance of the research findings was emphasized.

2.2. Measures

The research instruments used in the present study included the Emotional and Behavioral Problems Questionnaire developed by Thomas Achenbach and Leslie Rescorla (2003). The adolescent emotional-behavioral problems form is a self-report scale designed for individuals aged 11 to 18 years and is part of the Achenbach System of Empirically Based Assessment (ASEBA) parallel forms. Responses to the questionnaire items are scored on a three-point Likert scale ranging from 0 to 2. The questionnaire classifies children's and adolescents' problems into two broad domains: internalizing problems, which include excessively inhibited behaviors directed inward, and externalizing problems, which involve outward-directed difficulties that create conflict with other individuals and the environment. Among the eight emotional-behavioral problem factors assessed by this scale, three factors— anxiety/depression, withdrawal, and somatic complaints— are categorized as internalizing problems; two factors—rule-

breaking behavior and aggressive behavior—are categorized as externalizing problems; and three factors—social problems, thought problems, and attention problems—are categorized as intermediate syndromes, meaning they are neither completely internalizing nor entirely externalizing in nature. The scoring ranges for the questionnaire include withdrawal (0–14), anxiety/depression (0–32), somatic complaints (0–18), social problems (0–16), thought problems (0–14), attention problems (0–18), delinquent behavior (0–22), aggressive behavior (0–36), total psychological status score (0–224), externalizing component (0–64), internalizing component (0–58), and intermediate component (0–48). Lower scores on each scale indicate better psychological health, whereas higher scores reflect greater difficulties in the corresponding domain. Minayi (2006) reported internal consistency coefficients ranging from .63 to .95 for the subscales. Temporal stability assessed through the test–retest method ranged from .32 to .67. Inter-rater agreement coefficients ranged from .09 to .67. The author concluded that the questionnaire possesses satisfactory validity and reliability and can confidently be used to assess emotional-behavioral disorders among children and adolescents aged 6 to 18 years. Yazdkhasti and Arizi (2011) reported a Cronbach’s alpha coefficient of .82 for the questionnaire. Furthermore, Mohammadi Nasab, Seyed Mousavi, and Behzadpour (2019) reported an internal consistency coefficient of .92 using Cronbach’s alpha.

The Mentalization Questionnaire developed by Dimitrijevic et al. (2017) is a self-report instrument designed to assess mentalization capacity. This scale consists of 28 items and three subscales, including self-related mentalization (MentS-S) with 8 items, other-related mentalization (MentS-O) with 10 items, and motivation for mentalization (MentS-M) with 10 items. Responses are scored on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Items 8, 9, 11, 14, 18, 19, 21, 22, 26, and 27 are reverse-scored, whereas the remaining items are scored positively. The maximum possible score on the scale is 140, and the total scores on the subscales indicate the individual’s level of mentalization capacity. Higher scores indicate more efficient mentalization abilities. To evaluate the validity and reliability of the scale, Dimitrijevic et al. (2017) examined the psychometric properties of the instrument in two separate samples, including 288 employed adults and 278 university students. The results demonstrated that the MentS possessed high reliability (.89), and all three subscales exhibited Cronbach’s alpha coefficients above .78. In the study conducted by Francoeur et al. (2019), the overall

alpha coefficient was reported as .86, while the alpha coefficients for self-related mentalization, other-related mentalization, and motivation for mentalization were .78, .76, and .70, respectively. Mousavi et al. (2021) reported Cronbach’s alpha coefficients ranging from .73 to .86 for the total score and the three subcomponents, indicating satisfactory reliability of the questionnaire. Confirmatory factor analysis findings demonstrated that the scale in the Iranian population consists of three components and that the model fit indices and factor loadings were satisfactory. Mentalization and its components showed positive correlations with mindfulness, secure attachment style, and social cognition, indicating desirable convergent validity. Additionally, the scale demonstrated negative correlations with avoidant and anxious attachment styles, supporting its divergent validity. Overall, the Persian version of the Mentalization Questionnaire demonstrated appropriate psychometric properties for use in psychological research within the Iranian population.

The Mentalized Affectivity Scale (MAS) is a self-report instrument developed by Leslie Greenberg et al. (2017) based on the mentalized affectivity model. This scale consists of 60 items and three subscales rated on a seven-point Likert continuum ranging from “strongly disagree” to “strongly agree.” Higher scores indicate more mature and healthier identification, processing, and expression of emotions and feelings. The subscales assess emotion identification, emotion processing, and emotion expression, which collectively evaluate the individual’s capacity for mentalized affectivity. The scale was initially developed with 76 items and four subscales by experts in the field. During factor analysis on the preliminary sample, items with factor loadings below .40 were removed due to the excessive length of the scale and the likelihood of participant fatigue. In addition, the fourth subscale failed to explain an acceptable proportion of variance and was therefore removed from the final version of the scale. The instrument was administered to a population of 2,840 individuals, and reliability coefficients were calculated using Cronbach’s alpha for each of the three dimensions. The reliability coefficients were .93 for the 24 items related to the identification dimension, .90 for the 23 processing items, and .88 for the 13 expression items. Convergent validity was also examined through the correlation between each dimension of mentalized affectivity and the total emotional intelligence score as well as partial scores including cognitive empathy, social skills, and emotional reactivity. The correlations between the constructs were statistically

significant, with the correlations between the dimensions of identification, processing, and expression and the overall emotional intelligence score reported as .35, .37, and .15, respectively. In addition, correlations between this scale and other psychological measures, including the Ten-Item Personality Inventory (TIPI), the Satisfaction with Life Scale (SWLS), and the Trauma Experience Scale (TES), were examined and found to be statistically significant.

The Difficulties in Emotion Regulation Scale (DERS) developed by Kim Gratz and Lizabeth Roemer (2004) is a 36-item instrument designed to assess difficulties in emotion regulation. The scale measures deficiencies and impairments in emotion regulation on a five-point scale ranging from 1 (almost never) to 5 (almost always) across six domains: nonacceptance of negative emotions, difficulties engaging in goal-directed behaviors during distress, difficulties controlling impulsive behaviors during distress, limited access to effective emotion regulation strategies, lack of emotional awareness, and lack of emotional clarity. Items 1, 2, 6, 7, 8, 10, 17, 20, 22, 24, and 34 are reverse-scored.

Higher scores on the questionnaire indicate greater difficulties in emotion regulation. The scale yields one total score based on the sum of all items as well as six subscale scores. The psychometric properties of the scale have been confirmed in numerous studies. Internal consistency for the total scale has been reported as .93, and all six subscales demonstrated Cronbach's alpha coefficients above .80 (Gratz & Roemer, 2004). In Iran, the Cronbach's alpha coefficient for the questionnaire has been estimated at .92.

2.3. Data Analysis

The questionnaire data were analyzed using Structural Equation Modeling (SEM) techniques through IBM SPSS Statistics and LISREL software packages.

3. Findings and Results

The demographic characteristics of the adolescents are presented in Table 1.

Table 1

Demographic Characteristics of Adolescents

Variable	Group	Frequency	Percentage
Gender	Female	345	82.1
	Male	75	17.9
Age	16 years	126	30.0
	17 years	101	24.0
	18 years	193	46.0
Educational Grade	10th grade	142	33.8
	11th grade	84	20.0
	12th grade	194	46.2
Field of Study	Humanities	166	39.5
	Experimental Sciences	98	23.3
	Mathematics and Physics	156	37.1
Birth Order	First child	389	92.6
	Second child	26	6.2
	Third child or above	5	1.2

Table 1 indicates that 82.1% of the students were female and 17.9% were male. Regarding age distribution, 30.0% of the students were 16 years old, 24.0% were 17 years old, and 46.0% were 18 years old. In terms of educational grade, 33.8% were studying in the 10th grade, 20.0% in the 11th grade, and 46.2% in the 12th grade. Concerning academic

field, 39.5% were enrolled in the humanities track, 23.3% in experimental sciences, and 37.1% in mathematics and physics. Finally, 92.6% of the students were first-born children, 6.2% were second-born, and 1.2% were third-born or later children in their families.

Table 2

Descriptive Statistics of the Research Variables

Variables	Minimum	Maximum	Mean	SD	Skewness	Kurtosis
Mothers' Mentalization	32	72	51.75	8.05	-0.10	-0.44
Mothers' Emotion Regulation	75	175	123.08	21.66	0.06	-0.57
Mothers' Emotional Instability	60	100	78.67	8.54	0.27	-0.43
Internalizing Problems	18	56	38.70	8.74	-0.36	-0.20
Externalizing Problems	23	46	34.00	4.63	0.14	0.30

The above table demonstrates that the mean and standard deviation of mothers' mentalization were 51.75 and 8.05, respectively. These indices for mothers' emotion regulation were 123.08 and 21.66, respectively, while for mothers' emotional instability they were 78.67 and 8.54, respectively. The mean and standard deviation of internalizing problems were 38.70 and 8.74, respectively. These indices for externalizing problems were 34.00 and 4.63, respectively. Prior to conducting the path analysis, the assumptions of univariate and multivariate normality, absence of

multicollinearity, and independence of errors were examined. Table 3 indicates that, considering skewness within ± 2 and kurtosis within ± 7 , the assumption of univariate normality was satisfied. To assess multivariate normality, after calculating the standardized residual values, the residual distribution was examined using the Kolmogorov-Smirnov Test. The results demonstrated that the residual distribution was normal ($Z = 0.04$, $df = 420$, $p > .05$).

Table 3

Correlation Coefficients Among the Research Variables

Variables	1	2	3	4	5
1. Mothers' Mentalization	—				
2. Mothers' Emotion Regulation	.52**	—			
3. Mothers' Emotional Instability	.43**	.55**	—		
4. Internalizing Problems	-.32**	-.28**	-.20**	—	
5. Externalizing Problems	-.47**	-.60**	-.46**	.29**	—
6. Emotional-Behavioral Problems	-.34**	-.36**	-.35**	.38**	.24**

The above table demonstrates that mothers' mentalization had a positive relationship with mothers' emotion regulation and a significant negative relationship with mothers' emotional instability, internalizing problems, and externalizing problems ($p \leq .01$). Mentalization showed the strongest correlation with internalizing problems ($r = -.60$). Mothers' emotional instability also demonstrated the strongest correlation with externalizing problems ($r = .36$). Subsequently, the conceptual model of the research and its fit were examined. Model estimation was performed using the Maximum Likelihood method, and significance testing was conducted using the bootstrap procedure. The model fit

indices were then evaluated. The chi-square statistic is one of the indicators of model fit, and small values close to zero indicate good model fit. However, this index is often significant in large samples. Therefore, the chi-square statistic is adjusted by degrees of freedom (χ^2/df), with values between 1 and 3 indicating acceptable model fit. The Root Mean Square Error of Approximation (RMSEA) is considered acceptable when values are below .05 for good models, up to .08 for moderate models, and above .10 for poor models. The Incremental Fit Index (IFI), Comparative Fit Index (CFI), and Goodness-of-Fit Index (GFI) are considered satisfactory when values exceed .95.

Table 4

Fit Indices of the Emotional-Behavioral Disorders Prediction Model

Index	Criterion	Coefficient	Status
χ^2	—	2.25	—
Degrees of Freedom	—	2	—
Significance Level	$p > .05$	.32	Acceptable
χ^2/df	< 3	1.13	Acceptable
RMSEA	$< .08$	.02	Acceptable
IFI	$> .95$	.99	Acceptable
CFI	$> .95$	.99	Acceptable
GFI	$> .95$	.99	Acceptable

Table 4 demonstrates that the Root Mean Square Error of Approximation (RMSEA) was .02, the Incremental Fit Index (IFI) was .99, the Comparative Fit Index (CFI) was .99, and

the Goodness-of-Fit Index (GFI) was .99. The chi-square to degrees of freedom ratio was also 1.13. Accordingly, the model demonstrated a satisfactory fit.

Figure 1

Standardized Path Coefficients of the Emotional-Behavioral Disorders Prediction Model

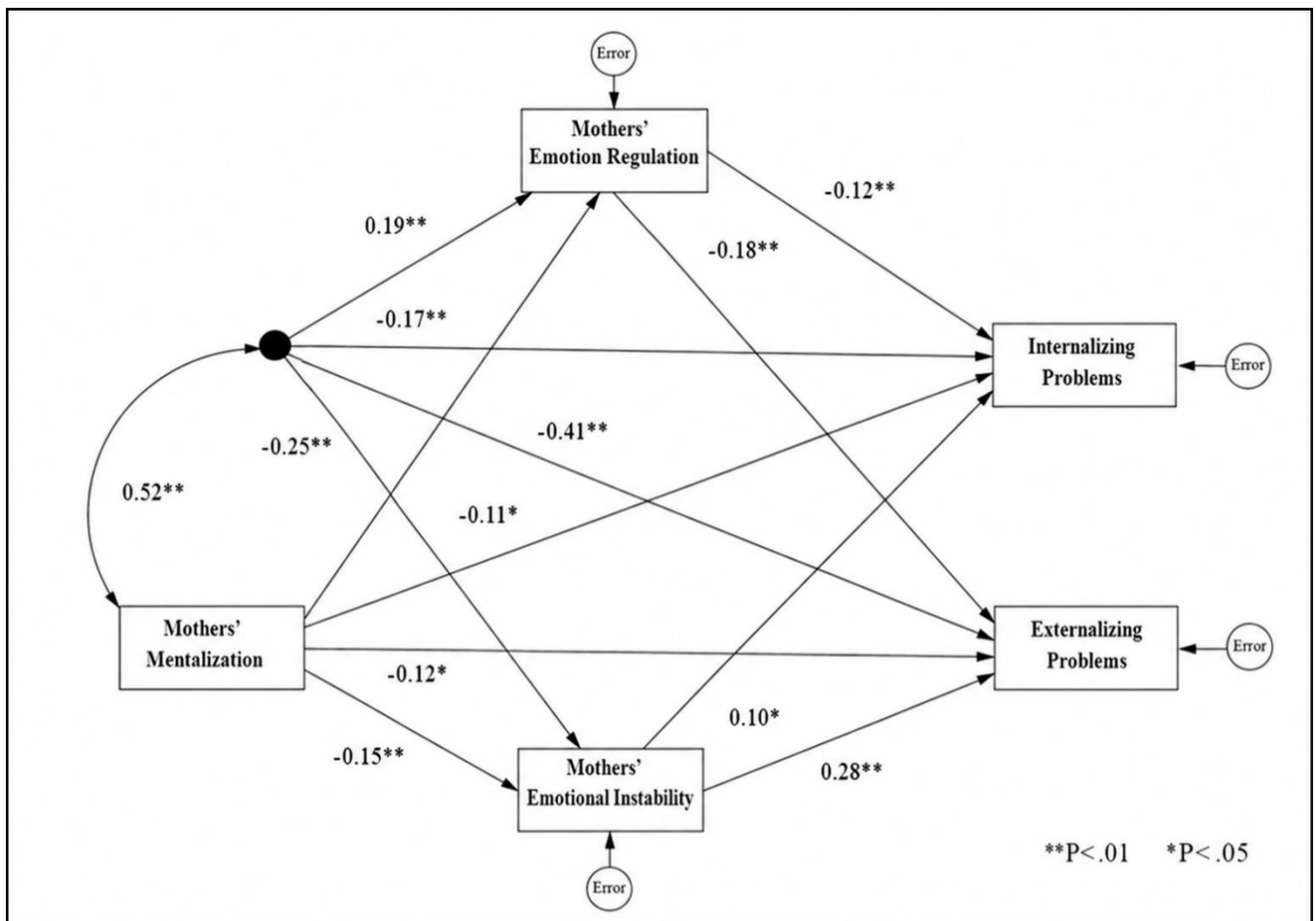


Figure 1 indicates that all path coefficients were statistically significant ($p < .05$). The proportion of explained variance for internalizing problems and

externalizing problems based on the predictor variables was $R^2 = .41$ and $R^2 = .25$, respectively.

Table 5

Direct and Indirect Effects of Mothers' Mentalization on Adolescents' Emotional-Behavioral Disorders

Paths	B	β	p	95% CI Lower Bound	95% CI Upper Bound
Mothers' Mentalization → Internalizing Problems	-0.44	-0.41	.001	-0.50	-0.32
Mothers' Mentalization → Externalizing Problems	-0.07	-0.12	.023	-0.23	-0.01
Mothers' Mentalization → Mothers' Emotion Regulation	1.21	0.45	.001	0.35	0.54
Mothers' Mentalization → Mothers' Emotional Instability	-0.07	-0.12	.008	-0.25	-0.05
Mothers' Mentalization → Mothers' Emotion Regulation → Internalizing Problems	-0.109	-0.10	.001	-0.150	-0.053
Mothers' Mentalization → Mothers' Emotion Regulation → Externalizing Problems	-0.069	-0.12	.001	-0.180	-0.061
Mothers' Mentalization → Mothers' Emotional Instability → Internalizing Problems	-0.041	-0.038	.001	-0.070	-0.015
Mothers' Mentalization → Mothers' Emotional Instability → Externalizing Problems	-0.049	-0.086	.001	-0.131	-0.048

Table 5 presents the direct and indirect effects of mothers' mentalization on adolescents' emotional-behavioral disorders. The findings demonstrated that mothers' mentalization had a significant direct negative effect on adolescents' internalizing problems ($\beta = -0.41, p = .001$) and externalizing problems ($\beta = -0.12, p = .023$). In addition, mothers' mentalization showed a significant positive direct effect on mothers' emotion regulation ($\beta = 0.45, p = .001$) and a significant negative direct effect on mothers' emotional instability ($\beta = -0.12, p = .008$). The indirect effects analysis further indicated that mothers' mentalization significantly reduced adolescents' internalizing and externalizing problems through the mediating role of mothers' emotion regulation. Specifically, the indirect effect on internalizing problems was significant ($\beta = -0.10, p = .001$), as was the indirect effect on externalizing problems ($\beta = -0.12, p = .001$). Moreover, mothers' mentalization exerted significant indirect negative effects on adolescents' internalizing problems ($\beta = -0.038, p = .001$) and externalizing problems ($\beta = -0.086, p = .001$) through the mediating role of mothers' emotional instability. The confidence intervals for all direct and indirect paths did not include zero, confirming the statistical significance of the effects.

4. Discussion and Conclusion

The present study aimed to develop and examine a causal model of mothers' mentalization with the mediating roles of mothers' emotion regulation and emotional instability in adolescents' emotional-behavioral disorders. The findings demonstrated that the proposed model possessed satisfactory fit indices, indicating that the conceptual relationships

among maternal mentalization, emotion regulation, emotional instability, and adolescents' emotional-behavioral problems were empirically supported. The results further revealed that mothers' mentalization had a significant direct negative effect on adolescents' internalizing and externalizing problems. In addition, mothers' mentalization demonstrated a significant positive effect on mothers' emotion regulation and a significant negative effect on mothers' emotional instability. The indirect pathway analyses also confirmed that maternal emotion regulation and emotional instability significantly mediated the relationship between mothers' mentalization and adolescents' emotional-behavioral disorders. These findings suggest that maternal reflective capacities and emotional functioning play substantial roles in shaping adolescents' psychological adjustment and behavioral functioning.

The finding indicating that mothers' mentalization negatively predicted adolescents' internalizing and externalizing problems is consistent with contemporary developmental and attachment-based theories emphasizing the importance of reflective functioning in parent-child relationships. Mentalization enables mothers to understand adolescents' emotional states, behavioral motivations, and interpersonal needs in a coherent and psychologically meaningful manner. Mothers with higher mentalization capacities are more capable of responding sensitively and adaptively to emotional distress, thereby reducing adolescents' vulnerability to anxiety, depression, aggression, impulsivity, and behavioral dysregulation. This finding aligns with the results of studies demonstrating that adaptive parental emotional functioning and relational awareness contribute significantly to adolescents' emotional resilience and psychological adjustment (Faraji et al., 2024;

Robinson et al., 2024). Similarly, findings reported by (Nikoooyeh et al., 2025) suggested that emotional intelligence and parenting-related variables are strongly associated with adolescents' school adjustment and emotional adaptation. The present findings are also conceptually consistent with studies emphasizing the role of emotional and cognitive empowerment in improving adaptive functioning and psychological flexibility (Abbasi et al., 2025; Ershadi Chahardeh et al., 2024). From a theoretical perspective, mothers with strong mentalization abilities may create emotionally secure environments that facilitate adolescents' development of self-awareness, emotional control, and adaptive interpersonal functioning.

Another important finding of the study was that mothers' mentalization positively predicted mothers' emotion regulation. This result supports theoretical assumptions proposing that reflective functioning and emotional regulation are closely interconnected psychological processes. Individuals who are able to understand and interpret emotional experiences accurately are generally more capable of regulating emotional responses effectively. Mothers with stronger mentalization capacities are likely to demonstrate greater awareness of emotional triggers, enhanced emotional flexibility, and more adaptive coping strategies during stressful interpersonal interactions. Consequently, they may regulate negative emotions more successfully and exhibit calmer, more consistent parenting behaviors. This finding is congruent with previous studies demonstrating that interventions targeting emotional awareness, psychological flexibility, and positive intelligence improve emotional regulation capacities and adaptive functioning (Shaterdalal Yazdi et al., 2022a, 2022b). In addition, research conducted by (Moeinzadeh et al., 2025) showed that mindfulness-based and compassion-based interventions contribute significantly to reducing dysfunctional communication patterns and improving emotional functioning. The findings also correspond with research highlighting the relationship between cognitive-emotional processes and adaptive psychological functioning (Seadatee Shamir, 2025; Zelli et al., 2025). These results collectively suggest that mentalization serves as an important cognitive-emotional mechanism supporting effective emotion regulation in mothers.

The study also demonstrated that mothers' mentalization negatively predicted mothers' emotional instability. This finding suggests that mothers with higher reflective functioning are less likely to experience rapid emotional fluctuations, impulsive emotional reactions, and emotional

inconsistency. Mentalization may reduce emotional instability by enhancing self-awareness, emotional understanding, and cognitive processing of affective experiences. When individuals can accurately identify and interpret emotional states, they are less likely to become overwhelmed by emotional arousal or engage in maladaptive emotional reactions. This result is theoretically consistent with studies emphasizing the protective role of emotional intelligence, psychological flexibility, and self-regulation capacities in reducing emotional dysregulation and psychological vulnerability (Babapour et al., 2023; Shafiei et al., 2023). Furthermore, the findings support the broader literature suggesting that adaptive emotional processing and reflective capacities contribute to healthier interpersonal functioning and emotional stability (Hadiyan et al., 2025; Zandkarimi et al., 2025). Mothers with lower emotional instability are likely to provide more predictable and emotionally secure family environments, which may subsequently reduce adolescents' emotional-behavioral difficulties.

The mediating role of mothers' emotion regulation in the relationship between maternal mentalization and adolescents' emotional-behavioral disorders constitutes another important contribution of the present study. The findings indicated that mothers' mentalization indirectly reduced adolescents' internalizing and externalizing problems through enhancing maternal emotion regulation capacities. This result highlights the importance of emotional regulation as a mechanism through which reflective functioning influences adolescent psychological adjustment. Mothers who effectively regulate their emotions are more likely to engage in supportive communication, maintain emotional consistency, and manage family conflicts adaptively. Such emotional environments may foster adolescents' emotional security and psychological resilience while reducing emotional distress and maladaptive behaviors. This finding is consistent with studies demonstrating that parental emotional competencies significantly affect children's emotional development and behavioral adjustment (Faraji et al., 2024; Robinson et al., 2024). The results also align with investigations indicating that emotional regulation training improves psychological flexibility, emotional self-control, and adaptive coping capacities (Moeinzadeh et al., 2025; Shafiei et al., 2023). In addition, the current findings correspond with studies emphasizing the role of emotional and cognitive training programs in improving social-emotional functioning and reducing psychological difficulties (Amini et al., 2024; Zelli

et al., 2024). These findings collectively support the notion that maternal emotion regulation serves as a critical pathway linking maternal psychological functioning to adolescents' mental health outcomes.

The study further demonstrated that mothers' emotional instability mediated the relationship between maternal mentalization and adolescents' emotional-behavioral disorders. Specifically, higher maternal mentalization predicted lower emotional instability, which subsequently reduced adolescents' internalizing and externalizing problems. This finding suggests that emotional instability may represent a maladaptive emotional process through which deficiencies in maternal reflective functioning influence adolescent psychopathology. Mothers with elevated emotional instability may exhibit inconsistent emotional responses, impulsive reactions, heightened irritability, and difficulties maintaining stable emotional interactions with adolescents. Such family environments may contribute to emotional insecurity, increased interpersonal conflict, and maladaptive behavioral patterns among adolescents. This result is consistent with findings reported by (Babapour et al., 2023), who emphasized the relationship between emotional dysregulation and borderline personality-related difficulties. Similarly, research examining emotional conflicts and maladaptive interpersonal functioning has highlighted the role of emotional instability in disrupting relational coherence and psychological adjustment (Zandkarimi et al., 2025). The findings are also supported by studies indicating that emotional and cognitive regulation capacities contribute significantly to resilience, social functioning, and adaptive behavior (Hadiyan et al., 2025; Tammeh et al., 2025). The mediating effect observed in the present study reinforces the theoretical assumption that emotional instability functions as an important emotional vulnerability factor influencing adolescents' psychological outcomes.

Another noteworthy aspect of the findings is the stronger association observed between maternal mentalization and adolescents' internalizing problems compared with externalizing problems. This pattern may reflect the particularly important role of emotional understanding and reflective parenting in adolescents' internal emotional experiences, including anxiety, depression, loneliness, and emotional withdrawal. Internalizing problems are often closely connected to emotional communication patterns, attachment security, and emotional validation within the family system. Mothers with poor mentalization capacities may fail to recognize or appropriately respond to

adolescents' emotional distress, thereby increasing adolescents' susceptibility to internal emotional suffering. These findings are consistent with studies emphasizing the significance of emotional responsiveness and supportive family relationships in preventing internalizing psychopathology (Nikooyeh et al., 2025; Robinson et al., 2024). Moreover, the findings correspond with broader psychological literature indicating that emotional awareness and cognitive-emotional functioning are central determinants of adaptive psychological development (Dashti Esfahani et al., 2023, 2024). These findings suggest that interventions targeting maternal reflective functioning and emotional responsiveness may be particularly effective in reducing adolescents' internal emotional difficulties.

The present findings also contribute to the broader literature emphasizing the interconnectedness of cognitive, emotional, and interpersonal processes in psychological functioning. Several studies included in the present research framework have highlighted the importance of cognitive flexibility, intelligence, executive functioning, emotional intelligence, and motivational factors in promoting adaptive behavior and psychological adjustment (Abbasi et al., 2025; Seadatee Shamir, 2024, 2025). The current study extends these perspectives by demonstrating that maternal reflective capacities and emotional functioning are similarly central to adolescents' emotional-behavioral outcomes. The findings further support ecological and systemic perspectives suggesting that adolescents' psychological development emerges through continuous interactions among cognitive, emotional, relational, and environmental processes. Consequently, interventions focused exclusively on adolescent symptoms without addressing parental emotional functioning may produce limited long-term effectiveness.

One important implication of the current findings is that maternal psychological functioning should be considered a central target in prevention and intervention programs addressing adolescents' emotional-behavioral disorders. Strengthening mothers' mentalization capacities, improving emotional regulation skills, and reducing emotional instability may contribute substantially to healthier family functioning and improved adolescent mental health outcomes. The integration of mentalization-based approaches, emotion regulation training, mindfulness interventions, and family-centered therapeutic models may therefore represent effective strategies for reducing adolescents' emotional and behavioral difficulties. Furthermore, educational systems and mental health professionals may benefit from incorporating parental

emotional training programs into broader adolescent mental health initiatives.

One of the limitations of the present study was the correlational and cross-sectional design, which limits the ability to establish definitive causal relationships among the variables. In addition, all measures were based on self-report questionnaires, which may increase the possibility of response bias and socially desirable responding. The sample was also limited to mothers and adolescents from the city of Mashhad, which may reduce the generalizability of the findings to other cultural or demographic populations. Another limitation was the exclusive focus on maternal variables without simultaneously examining paternal psychological functioning or broader family dynamics.

Future studies are recommended to employ longitudinal and experimental designs to clarify the causal relationships among maternal mentalization, emotional regulation, emotional instability, and adolescents' emotional-behavioral disorders over time. Researchers may also investigate the role of fathers, sibling relationships, attachment styles, family communication patterns, and socioeconomic variables within similar structural models. In addition, future studies could examine the effectiveness of mentalization-based and emotion regulation interventions in reducing adolescents' internalizing and externalizing problems. Comparative studies across different cultural and educational contexts may also provide valuable insights into the universality or cultural specificity of these psychological processes.

The findings of the present study have important practical implications for psychologists, counselors, educators, and family therapists. Mental health interventions targeting adolescents' emotional-behavioral disorders should incorporate parental emotional functioning and reflective capacities into assessment and treatment planning. Schools and counseling centers may benefit from implementing workshops focused on emotional awareness, reflective parenting, communication skills, and emotional regulation strategies for parents. Family-based interventions that strengthen emotional stability and adaptive interpersonal functioning may contribute substantially to improving adolescents' psychological well-being and reducing the prevalence of emotional-behavioral disorders.

Authors' Contributions

All authors significantly contributed to this study.

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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Ethical Considerations

In this study, to observe ethical considerations, participants were informed about the goals and importance of the research before the start of the study and participated in the research with informed consent.

References

- Abbasi, S., Dortaj, F., Sadipour, E., & Seadatee Shamir, A. (2025). The Effectiveness of Metacognitive Empowerment on Cognitive Flexibility, Speed of Information Processing, Cognitive Inhibition and Selective Attention. <https://doi.org/10.22059/japn.2025.378595.644956>
- Amini, R., Hosseini Khah, A., & Seadatee Shamir, A. (2024). Designing an Educational Intervention Package to Enhance Students' Artistic Intelligence Based on the Lived Experiences of Top Talents. *Journal of Cognition, Behavior, Learning*. <https://doi.org/10.61838/jcbl.1.4.1>
- Babapour, S., Shafiabadi, A., Seadatee Shamir, A., & Fattahi Andbil, A. (2023). The Effectiveness of Emotion-Oriented Therapy on the Treatment of Patients with Borderline Personality Disorder. *Journal of Adolescent and Youth Psychological Studies*, 4(9), 117-127. <https://doi.org/10.61838/kman.jayps.4.9.13>
- Dashti Esfahani, R., Seadatee Shamir, A., Kashani Vahid, L., & Nasrollahi, B. (2023). Investigating the Reliability and Validity of Children's Prospective Thinking Scale. *Journal of Military Psychology*. <https://ensani.ir/fa/article/download/549422>
- Dashti Esfahani, R., Seadatee Shamir, A., Kashani Vahid, L., & Nasrollahi, B. (2024). Investigating the Relationship Between Future Thinking and the Abilities of Moral Judgment and Self-Control in First Year of Elementary Schools. *Research in Islamic Education Issues*, 32(63), 11-30. <https://doi.org/20.1001.1.22516972.1403.32.63.1.8>



- Ershadi Chahardeh, S., Seadatee Shamir, A., & Zabihi, R. (2024). The Effectiveness of Lumosity-Based Cognitive Empowerment on Maher Fluid Intelligence and Cognitive Functions in Elementary School Boys. *International Journal of Education and Cognitive Sciences*, 5(3), 86-93. <https://doi.org/10.61838/kman.ijecs.5.3.11>
- Faraji, A., Karimifard, Z., Goudarzi, Z., Ramezania, F., & Ghanbari, S. (2024). The Mediating Role of Emotion Regulation in the Relationship Between Maternal Mentalization and Child Resilience.
- Faridi Sfanjany, J., Rezaee, S., & Seadatee Shamir, A. (2025). Identifying the Opportunities of Cyberspace in Learning Environments from the Perspective of Students. *Learner-based Curriculum and Instruction Journal*, 4(1), 87-106. <https://magiran.com/p2883189>
- Ghanjali, M., Seadatee Shamir, A., & Asaseh, M. (2022). Inquiry Factors Affecting Parents' Compatibility with Autism Child. *Journal of Psychological Science*, 21(117), 1867-1878. <https://psychologicalscience.ir/article-1-1599-fa.html>
- Hadiyan, S., Abolmaali Alhasani, K., Rafiepoor, A., & Seadatee Shamir, A. (2025). The Effect of Psychological Capital and Social Capital in the Organizational Citizenship Behaviors Mediated by Perception Management. *Journal of Psychological Science*, 24(146), 81-98. <https://doi.org/10.52547/JPS.24.146.81>
- Khandani, F., Farrokhi, N., & Seadatee Shamir, A. (2023). Comparison of the Effectiveness of Executive Function Training and Play Therapy on Promoting the Learning of Mathematical Concepts in Students with Learning Disabilities. *Journal of Exceptional Children*. <http://joec.ir/article-1-1735-en.html>
- Mirarabshahi, S. M., Seadatee Shamir, A., & Abulmaali, K. (2023). Comparing the Talent Management Model of Gifted Students in the Educational System of Iran and Canada and Presenting a Health-Based Talent Search Mode. *Quran and Medicine*, 7(5), 1-17. https://www.quraniimed.com/article_196521.html
- Moeinzadeh, N., Souri, A., & Seadatee Shamir, A. (2025). Comparison of the Effectiveness of Compassion-Based and Mindfulness-Based Therapies on Dysfunctional Communication Beliefs in Women with Multiple Sclerosis. *Iranian Journal of Neurodevelopmental Disorders*, 4(2), 1-10. <https://maherpub.com/jndd/article/view/538>
- Nikooyeh, E., Seadatee Shamir, A., & Mohammadi Aria, A. (2025). The Mediating Role of Cyberbullying, Self-Efficacy, and Parenting Styles in the Relationship Between Trait Emotional Intelligence and School Adjustment in Adolescents. *Journal of Cognition, Behavior, Learning*, 2(2), 11. <https://magiran.com/p2887242>
- Robinson, L. E., Valido, A., Rivas-Koehl, M., Espelage, D. L., Aguilar, T., & Wyman, P. (2024). Protective Factors for Multiple Forms of Interpersonal Violence Experienced by Adolescent Latinas. *Journal of Latinx Psychology*. <https://doi.org/10.1037/lat0000249>
- Seadatee Shamir, A. (2024). The Effectiveness of Teaching Math Skills on Increasing the Crystallized Intelligence of Secondary School Students of Shahed Schools. *Journal of Psychological Dynamics in Mood Disorders*. <https://sid.ir/filesserver/je/39911-284245-x-1363769.pdf>
- Seadatee Shamir, A. (2025). Standardization of the Five-Factor Model of the Maher Multifaceted Fluid Test of Intelligence (MMFTI) for Fourth to Sixth-Grade Students Based on Metacognition Theory. *International Journal of Body, Mind and Culture*, 12(1), 188-200. <https://doi.org/10.61838/ijbmc.v12i1.730>
- Seadatee Shamir, A., & Mousavi Fazl, A. I. (2022). The Effectiveness of Teaching Perceptual Skills and Skilled Attention Skills in Reducing Attention Disorders in Students with Attention Disorders. *Quran and Medicine*, 7(3), 181-196. <https://sid.ir/filesserver/jf/3004014010321.pdf>
- Seadatee Shamir, A., & Zahamatkesh, Y. (2022). Introducing a Test: Construction and Standardization of the First Version of Maher Multifunctional Fluid Intelligence Test (MMFIT) for Children Age 7 to 9 Years Old. *Journal of Childhood Health and Education*, 3(2), 57-84. <http://jeche.ir/article-1-85-en.html>
- Shafiei, Z., Ghamari, M., & Seadatee Shamir, A. (2023). The Effectiveness of Dialectical Behavior Therapy Training on Psychological Flexibility and Emotional Self-Regulation in Mothers with Children with Specific Learning Disorders. *RJMS*, 30(7), 1-10. <http://rjms.iuums.ac.ir/article-1-8408-en.html>
- Shams, S., Seadatee Shamir, A., & Sadat Kazemi, A. (2025). Psychometric Properties and Standardization of the Maher Multiple Fluid Intelligence Test (MMFTI) in Students Aged 4 to 6. *Quarterly of Experimental and Cognitive Psychology*, 2(2), 106-131. <https://quarterlyecp.com/index.php/ecp/article/view/200>
- Shariati, M., Ghadami, M., Seadatee Shamir, A., & Rezaei, S. (2022). Designing a Pattern of Responsibility of Managers Based on Nahj al-Balaghah in the Framework of the Fundamental Transformation Document of Education: A Qualitative Research. *Journal of Islamic Lifestyle Centered on Health*. <https://www.magiran.com/p2713461>
- Shaterdalal Yazdi, A., Seadatee Shamir, A., Asadzadeh, H., & Abolmaali, K. (2022a). Determining the Effectiveness of Positive Intelligence Training on Emotional Intelligence and Flow Experience of the Elementary School Teachers. *Middle Eastern Journal of Disability Studies*---. <https://sid.ir/paper/1124351/en>
- Shaterdalal Yazdi, A., Seadatee Shamir, A., Asadzadeh, H., & Abolmaali, K. (2022b). The Effectiveness of Positive Intelligence Training on Character Strengths and Life Meaning of the Elementary Teachers. *Journal of Psychological Achievements*. <https://doi.org/10.22055/psy.2022.38108.2724>
- Tammeh, B., Dortaj, F., Seadatee Shamir, A., & Farokhi, N. (2025). Developing a Structural Model for Academic Buoyancy Based on Motivational Factors and Mediator Roles of Grit, Mental Toughness, and Control. *Educational Psychology*, 20(74), 7-32. <https://doi.org/10.22054/jep.2024.33439.2302>
- Zandkarimi, G., Farhadi, F., & Seadatee Shamir, A. (2025). Treatment of Emotional Conflicts of Couples Based on the Criteria of the Field of Research (RDoC). <http://iranapsy.ir/en/Home/XMLArticle/48335>
- Zelli, M. H., Seadatee Shamir, A., & Kazemi, A. (2024). Effectiveness of Psycho-Educational Intervention of Maher Crystallized Intelligence on Increasing Socio-Cultural Intelligence in Elementary Second Period Students of Tehran City. *Sociology of Education*, 10(3), 275-288. <https://doi.org/10.22034/ijes.2021.541983.1184>
- Zelli, M. H., Seadatee Shamir, A., & Kazemi, A. (2025). The Effectiveness of the Maher Crystallized Intelligence Educational-Psychological Intervention on Enhancing Fluid Intelligence and Socio-Cultural Intelligence. *Mental Health and Lifestyle Journal*, 3(1), 1-14. <https://doi.org/10.61838/mhjl.3.1.3>