

## Path Analysis of Psychological Resilience Based on Mentalizing, Epistemic Trust, and Cognitive Flexibility with the Mediating Role of Cognitive Emotion Regulation in Adolescents

Maryam. Salar<sup>1</sup>, Shima. Darang<sup>2\*</sup>, Bahar. Jamali<sup>3</sup>, Malake. Jahangiri<sup>4</sup>, Fakhri Sadat. Hosseini<sup>5</sup>

<sup>1</sup> Department of Clinical Psychology, Am.C., Islamic Azad University, Amol, Iran

<sup>2</sup> Department of Psychology, Yas.C., Islamic Azad University, Yasuj, Iran

<sup>3</sup> Department of Clinical Psychology, Faculty of Psychology, University of Mohaghegh Ardabili, Ardabil, Iran

<sup>4</sup> Department of Clinical Psychology, To.C., Islamic Azad University, Tonekabon, Iran

<sup>5</sup> Department of Psychology and Counseling, Faculty of Physical Education and Behavioral Sciences, Farhangian University, Tehran, Iran

\* Corresponding author email address: Shima.darang@gmail.com

### Article Info

#### Article type:

Original Research

#### How to cite this article:

Salar, M., Darang, S., Jamali, B., Jahangiri, M., & Hosseini, F. S. (2027). Path Analysis of Psychological Resilience Based on Mentalizing, Epistemic Trust, and Cognitive Flexibility with the Mediating Role of Cognitive Emotion Regulation in Adolescents. *International Journal of Education and Cognitive Sciences*, 8(3), 1-15.

<https://doi.org/10.61838/kman.ijecs.461>



© 2027 the authors. Published by Iranian Association for Intelligence and Talent Studies, Tehran, Iran. This is an open access article under the terms of the Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

### ABSTRACT

**Purpose:** This study aimed to test a path model of psychological resilience based on mentalizing, epistemic trust, and cognitive flexibility, with adaptive cognitive emotion regulation as a mediating mechanism among adolescents.

**Methods and Materials:** This quantitative, non-experimental, cross-sectional correlational study employed path analysis. The statistical population comprised senior high school students in grades 10–12 in Tehran during the 2025–2026 academic year. Using multistage cluster sampling, 415 adolescents aged 15–18 years were included in the final sample. Data were collected using the Connor–Davidson Resilience Scale, Reflective Functioning Questionnaire, Epistemic Trust, Mistrust, and Credulity Questionnaire, Cognitive Flexibility Inventory, and the short-form Cognitive Emotion Regulation Questionnaire. Data were analyzed using SPSS 28 and AMOS 28. Maximum likelihood estimation was applied to evaluate direct and indirect pathways, while mediation effects were examined using bootstrapping with 5,000 resamples and 95% bias-corrected confidence intervals.

**Findings:** The proposed path model demonstrated excellent fit ( $\chi^2/df = 1.86$ , CFI = .991, TLI = .982, RMSEA = .045, SRMR = .028). Mentalizing ( $\beta = .28$ ,  $p < .001$ ), epistemic trust ( $\beta = .21$ ,  $p < .001$ ), and cognitive flexibility ( $\beta = .33$ ,  $p < .001$ ) significantly predicted adaptive cognitive emotion regulation, explaining 42% of its variance. Psychological resilience was significantly predicted by mentalizing ( $\beta = .16$ ,  $p < .001$ ), epistemic trust ( $\beta = .12$ ,  $p = .010$ ), cognitive flexibility ( $\beta = .24$ ,  $p < .001$ ), and adaptive cognitive emotion regulation ( $\beta = .36$ ,  $p < .001$ ), with the model explaining 54% of resilience variance. Bootstrapping further indicated significant indirect effects of mentalizing ( $\beta = .101$ , 95% CI [.062, .153],  $p = .001$ ), epistemic trust ( $\beta = .075$ , 95% CI [.041, .120],  $p = .003$ ), and cognitive flexibility ( $\beta = .118$ , 95% CI [.078, .179],  $p = .001$ ) on resilience through adaptive cognitive emotion regulation.

**Conclusion:** Psychological resilience in adolescents appears to arise from the coordinated contribution of socio-cognitive and neurocognitive capacities, with adaptive cognitive emotion regulation functioning as a significant partial mediator. Strengthening mentalizing, epistemic trust, cognitive flexibility, and adaptive emotion regulation may therefore provide an integrated framework for psychological and educational interventions designed to promote resilient functioning during adolescence.

**Keywords:** *Psychological Resilience; Mentalizing; Epistemic Trust; Cognitive Flexibility; Cognitive Emotion Regulation; Adolescents.*

## 1. Introduction

Adolescence represents a particularly consequential developmental period in which rapid biological maturation, cognitive reorganization, increasing autonomy, and major transformations in social relationships converge to create both opportunities for growth and heightened vulnerability to psychological difficulties. Developmental science increasingly emphasizes adolescence as a sensitive period during which experiences can have enduring effects on mental health, identity, interpersonal functioning, and adaptation across the life course (Dahl et al., 2018). At the same time, adolescents encounter expanding academic expectations, peer pressures, family transitions, uncertainty about the future, and increasingly complex social environments. Social disruption and deprivation can be especially consequential during this stage because adolescents become progressively more dependent on peer affiliation, interpersonal feedback, and social learning for healthy development (Orben et al., 2020). Accordingly, understanding why some adolescents maintain adaptive psychological functioning despite significant challenges whereas others develop emotional or behavioral difficulties has become a central question in developmental psychopathology. Within this framework, psychological resilience has emerged as an important construct for explaining individual differences in adaptation under conditions of stress, adversity, and developmental change.

Psychological resilience is currently conceptualized not as a fixed personality characteristic or simple resistance to distress but as a dynamic process through which individuals achieve or maintain positive adaptation despite exposure to significant stressors. Contemporary perspectives emphasize that resilience develops through interactions among personal capacities, interpersonal relationships, environmental resources, and broader social systems (Ungar & Theron, 2020). This multisystemic perspective is particularly relevant to adolescence because successful adaptation depends simultaneously on intrapersonal competencies, supportive relationships, educational contexts, and opportunities for social participation. Masten similarly describes resilience as emerging from ordinary yet powerful adaptive systems that allow young people to recover, reorganize, and continue development when challenged by adversity (Masten, 2021). Interdisciplinary approaches have further highlighted the conceptual complexity of resilience,

emphasizing variability across individuals, contexts, developmental stages, and types of adversity (Southwick et al., 2023). Evidence from Iranian populations has also demonstrated the importance of resilience for favorable psychological outcomes, including better mental health and life satisfaction (Samani et al., 2007). Thus, identifying the psychological mechanisms that contribute to resilience during adolescence has substantial theoretical and practical importance.

Recent scholarship suggests that resilience should be understood through integrated models rather than through isolated protective factors. Adolescents rarely respond to adversity through a single psychological mechanism; instead, adaptation emerges through interactions among social understanding, cognitive control, emotion regulation, interpersonal learning, and environmental resources. Contemporary work on family transitions, for example, emphasizes that resilience is shaped jointly by emotion regulation, cognitive flexibility, identity-related development, social support, and contextual resources (Xu, 2026). This integrative orientation is consistent with developmental systems perspectives, which conceptualize adaptive functioning as the outcome of mutually reinforcing cognitive, emotional, and relational capacities. One potentially important pathway involves the interaction of mentalizing and epistemic trust as socio-cognitive resources, cognitive flexibility as an executive-cognitive capacity, and cognitive emotion regulation as a proximal self-regulatory mechanism. Although each of these constructs has independently been associated with adjustment, their combined contribution to psychological resilience remains less clearly understood. Examining them simultaneously may therefore provide a more comprehensive explanation of how adolescents transform interpersonal and cognitive resources into adaptive responses when encountering adversity.

Mentalizing is one of the socio-cognitive capacities that may be particularly important for resilient functioning. Mentalizing, also described as reflective functioning, refers to the capacity to understand one's own behavior and the behavior of others in relation to underlying mental states, including intentions, beliefs, emotions, desires, and motivations. Rather than responding only to observable behavior, effective mentalizing enables individuals to consider the internal experiences that may explain behavior

and interpersonal events. The Reflective Functioning Questionnaire was developed to facilitate the empirical assessment of individual differences in this capacity (Fonagy et al., 2016), and the psychometric evaluation of its Persian version has provided support for examining reflective functioning within Iranian populations (Taheri, 2020). Contemporary mentalizing theory considers this capacity fundamental to psychological adaptation because accurate representations of internal and interpersonal experience can prevent rigid, distorted, or excessively threatening interpretations of emotionally charged situations (Luyten et al., 2020). During adolescence, when social evaluation becomes especially salient and interpersonal relationships increasingly complex, the ability to interpret mental states flexibly may therefore serve as an important psychological resource.

The relevance of mentalizing to resilience becomes particularly apparent when considering its relationship with affect regulation and interpersonal stress. Adolescents frequently encounter ambiguous social situations in which the intentions of peers, parents, or teachers cannot be inferred directly. Poor mentalizing may contribute to misinterpretation, heightened emotional arousal, interpersonal conflict, or maladaptive assumptions regarding rejection and hostility. In contrast, stronger reflective functioning can enable adolescents to place emotional experiences within a meaningful psychological context, distinguish between subjective interpretations and external reality, and reconsider initial reactions. Empirical findings indicate meaningful associations between reflective functioning and emotion regulation during adolescence, supporting the proposition that understanding mental states can facilitate more effective management of emotional experience (Morosan et al., 2020). Mentalizing-oriented work with adolescents further emphasizes the importance of creating relational contexts in which young people can safely explore uncertainty regarding their own and others' mental states rather than relying on rigid explanations (Malberg et al., 2023). Research conducted during periods of major social disruption has similarly indicated that mentalizing may play a protective role in adolescent adjustment (Locati et al., 2022). These findings suggest that mentalizing may contribute to resilience both directly and through regulatory mechanisms.

Closely related to mentalizing is epistemic trust, which refers to an individual's willingness to regard socially communicated information as trustworthy, personally relevant, and potentially generalizable beyond the

immediate interaction. The construct emerged from developmental and attachment-based accounts seeking to explain how individuals learn effectively from others and become receptive to socially transmitted knowledge (Fonagy & Allison, 2014). Epistemic trust is not synonymous with indiscriminate acceptance; rather, it involves an adaptive capacity to identify information that is sufficiently credible and relevant to guide learning and behavior. Its empirical study has been strengthened through the development and validation of measures differentiating epistemic trust from epistemic mistrust and credulity (Campbell et al., 2021). In adolescence, this capacity may be particularly consequential because young people increasingly encounter social information outside the family and must determine which messages, norms, coping strategies, and perspectives are reliable. Appropriate epistemic trust may allow adolescents to benefit from supportive adults, peers, educators, and other social resources, thereby expanding the range of adaptive strategies available to them when they confront psychological stress.

Disruptions in epistemic trust, conversely, may restrict access to the interpersonal resources that support resilience. Developmental accounts propose that attachment experiences and interpersonal adversity can influence whether social communication is experienced as trustworthy or threatening, thereby shaping vulnerability to later psychological difficulties (Fonagy & Luyten, 2018). When epistemic mistrust becomes excessive, adolescents may discount useful guidance, remain hypervigilant toward others' intentions, or resist potentially corrective interpersonal experiences. In contrast, excessive credulity may leave individuals vulnerable to unreliable information. Clinical observations among adolescents with significant personality-related difficulties have highlighted the complex associations among attachment, hypermentalizing, and disturbances in epistemic trust (Bo et al., 2017). More broadly, theoretical formulations suggest that mentalizing and epistemic trust are mutually interconnected: successful mentalizing may help individuals evaluate the reliability of communicators, while epistemic trust facilitates openness to new social information capable of modifying internal beliefs and expectations (Fonagy et al., 2019). This reciprocal relationship provides a plausible basis for considering epistemic trust as an important contributor to adolescent resilience, particularly when adaptation depends on learning from supportive social relationships.

In addition to socio-cognitive capacities, resilience requires the ability to modify cognition in response to

changing demands. Cognitive flexibility refers to the capacity to shift perspectives, generate alternative interpretations, adjust behavioral or cognitive strategies, and perceive difficult situations as manageable rather than fixed and uncontrollable. Developmental and clinical neuroscience identifies cognitive flexibility as a central component of adaptive executive functioning that allows individuals to modify ongoing responses when environmental contingencies change (Dajani & Uddin, 2015). Dennis and Vander Wal operationalized cognitive flexibility in terms of recognizing alternative explanations and solutions and perceiving greater control over difficult circumstances, providing an influential framework for its assessment (Dennis & Vander Wal, 2010). The Cognitive Flexibility Inventory has also demonstrated acceptable psychometric characteristics in Iranian samples, supporting its application within the cultural context relevant to the present investigation (Shareh et al., 2014). Cognitive flexibility may be especially important during adolescence because this developmental period involves repeated encounters with novelty, rapidly changing social contexts, competing demands, and emotionally intense experiences that require continual adjustment of thought and behavior.

From a resilience perspective, cognitive inflexibility may increase vulnerability by maintaining maladaptive interpretations and restricting access to alternative responses. An adolescent who rigidly interprets an academic failure as evidence of permanent inadequacy or an interpersonal disagreement as irreversible rejection may be more likely to engage in rumination, catastrophizing, or behavioral withdrawal. Cognitive flexibility provides the capacity to disengage from such rigid appraisals, consider alternative explanations, and generate new coping responses. Empirical research has connected cognitive flexibility with important aspects of adolescent behavioral and emotional functioning, including impulsivity and adaptation (Martín-Rodríguez, 2022). Research involving adolescents exposed to childhood trauma has also highlighted meaningful relationships between cognitive flexibility and emotion regulation, suggesting that flexible cognitive processing may support adaptive management of difficult emotional experiences even in the presence of significant developmental adversity (Bozorgi Kazerooni & Gholamipour, 2023). More recent findings have further implicated cognitive flexibility in pathways linking social resources with serious maladaptive outcomes such as nonsuicidal self-injury, underscoring its potential mediating and protective significance in adolescence (Shen, 2024).

Collectively, these findings position cognitive flexibility as a plausible neurocognitive foundation of resilient adaptation.

Although mentalizing, epistemic trust, and cognitive flexibility may independently support resilience, their effects may be partly realized through cognitive emotion regulation. Cognitive emotion regulation refers to the cognitive processes through which individuals interpret, manage, and modify the emotional consequences of stressful or threatening events. These strategies include more adaptive responses, such as positive reappraisal, planning, acceptance, and putting events into perspective, as well as less adaptive strategies, such as rumination, self-blame, catastrophizing, and blaming others. Emotion regulation is particularly important during adolescence because emotional intensity increases while regulatory capacities are still developing. A comprehensive review of coping and emotion regulation in childhood and adolescence demonstrated that regulatory processes are centrally involved in both adaptive development and psychopathology (Compas et al., 2017). Meta-analytic evidence likewise indicates that different emotion regulation strategies show distinct associations with depressive and anxiety symptoms in young people (Schäfer et al., 2017). More specifically, cognitive emotion regulation strategies have demonstrated differential relationships with adolescent emotional symptoms, highlighting the importance of distinguishing adaptive from maladaptive regulatory patterns (Garnefski & Kraaij, 2018). The Cognitive Emotion Regulation Questionnaire and its validated psychometric properties have also facilitated systematic examination of these strategies in Iranian research contexts (Hassani, 2010).

Cognitive emotion regulation may function as the mechanism through which broader socio-cognitive and executive resources become translated into resilience. Mentalizing may facilitate adaptive regulation because accurately recognizing emotions, intentions, and psychological states provides the representational foundation required for reappraisal and perspective-taking. Epistemic trust may contribute by enabling adolescents to receive, evaluate, and internalize regulatory guidance from supportive social partners. Cognitive flexibility, meanwhile, may provide the executive capacity required to abandon an ineffective appraisal and substitute a more adaptive interpretation. These processes are theoretically complementary rather than independent. An adolescent may understand that distress is influenced by subjective interpretations through mentalizing, remain receptive to alternative perspectives offered by trusted others through

epistemic trust, and possess sufficient cognitive flexibility to reorganize the original appraisal. Cognitive emotion regulation may then constitute the immediate mechanism through which these capacities influence adaptation. Recent research showing that cognitive emotion regulation and resilience can operate as intervening mechanisms between stressful life events and psychological or health-related outcomes further supports the importance of examining regulatory pathways rather than direct associations alone (Zhu et al., 2025). Such evidence suggests that resilience may emerge partly from the effective conversion of underlying cognitive and interpersonal resources into adaptive regulatory responses.

Despite increasing evidence regarding these constructs individually, an important gap concerns their simultaneous organization within an integrated developmental model. Much research has examined mentalizing in relation to psychopathology, epistemic trust within attachment or therapeutic frameworks, cognitive flexibility in relation to executive functioning and maladaptive behavior, and emotion regulation as an independent predictor of psychological adjustment. Consequently, less is known about whether socio-cognitive capacities and cognitive flexibility converge on a common regulatory mechanism that subsequently contributes to psychological resilience. This limitation is important because examining only bivariate associations cannot clarify whether the influence of a predictor operates directly, indirectly through a mediator, or through both pathways. Mediation analysis provides an appropriate framework for investigating the processes through which one variable may transmit part of the association between antecedent factors and psychological outcomes (Hayes, 2022). Similarly, path analytic approaches permit the simultaneous estimation of multiple theoretically specified direct and indirect relationships among observed variables and therefore provide a rigorous means of testing an integrated explanatory model (Kline, 2023). Applying such an approach to adolescent resilience can move the literature beyond isolated correlates toward a more mechanistic account of resilient functioning.

An integrated model is also valuable from an intervention perspective because the proposed variables represent potentially modifiable psychological capacities. If resilience is partly supported by mentalizing, strengthening adolescents' capacity to understand internal states and interpersonal intentions may improve their responses to relational stress. If epistemic trust contributes to adaptation, supportive and credible relationships with parents, teachers,

counselors, and peers may facilitate more effective social learning. If cognitive flexibility represents an executive basis for adapting to adversity, interventions can promote perspective shifting, alternative generation, and flexible problem solving. Most importantly, if these capacities influence resilience partly through adaptive cognitive emotion regulation, programs designed to strengthen reappraisal, perspective-taking, acceptance, and other constructive regulatory strategies may provide a mechanism through which broader developmental resources can be translated into improved psychological functioning. Such a framework is consistent with contemporary conceptualizations of resilience as a dynamic and context-sensitive developmental process rather than a static attribute (Southwick et al., 2023; Ungar & Theron, 2020). It also offers a theoretically coherent basis for identifying pathways that can be targeted in preventive and school-based psychological interventions during a developmental period in which patterns of emotional and interpersonal functioning remain comparatively malleable.

Therefore, the present study aimed to test a path model of psychological resilience in adolescents based on mentalizing, epistemic trust, and cognitive flexibility, with adaptive cognitive emotion regulation examined as a mediating mechanism.

## 2. Methods and Materials

### 2.1. Study Design and Participants

The present study employed a quantitative, non-experimental, cross-sectional correlational design. Specifically, path analysis—a specialized extension of multiple regression used to evaluate causal models by examining the relationships between a dependent variable and two or more independent variables—was utilized. In accordance with the study's objectives, path analysis of observed variables (composite scores) was selected over full structural equation modeling (SEM) with latent variables. This approach allows for the precise, simultaneous estimation of direct, indirect, and total effects among the explicitly measured variables (mentalizing, epistemic trust, cognitive flexibility, cognitive emotion regulation, and psychological resilience) without the added complexity of measurement models, providing a clear mathematical mapping of the hypothesized mediational pathways.

The statistical population comprised all senior high school students (grades 10 to 12) enrolled in public and private schools in the Tehran during the 2025-2026

academic year. To ensure a representative sample, a multi-stage cluster sampling method was employed. In the first stage, out of the existing educational districts, three districts were randomly selected. In the second stage, four senior high schools (two male and two female) were randomly chosen from each selected district (totaling 12 schools). In the final stage, three classes from each school were randomly selected, and all students within those classes who met the inclusion criteria were invited to participate.

Based on Kline's (2015) recommendation of a minimum of 10 to 20 participants per estimated parameter for path analysis, and considering the potential for attrition and invalid responses, an initial sample of 450 adolescents was targeted. After data collection, 35 questionnaires were excluded due to significant missing data (more than 10% incomplete), patterned responding, or being identified as multivariate outliers (assessed via Mahalanobis distance at  $p < 0.001$ ). The final effective sample size was 415 adolescents (48% male, 52% female), with a mean age of 16.4 years ( $SD = 0.85$ ).

To ensure sample homogeneity and validity of the self-report data, specific criteria were established.

- Inclusion Criteria: (1) Willingness to participate and provision of informed consent/assent; (2) Aged between 15 and 18 years; (3) Current enrollment in a senior high school; and (4) Fluency in the Persian language to comprehend the questionnaires.

- Exclusion Criteria: (1) A documented history of severe neurological disorders or cognitive impairments; (2) Current diagnosis of severe psychiatric disorders (e.g., psychosis, bipolar disorder) that would interfere with questionnaire completion; (3) Currently receiving intensive pharmacological or psychological treatment; and (4) Submitting incomplete questionnaires (missing more than 10% of items).

Following the acquisition of ethical approval and requisite permissions from the Department of Education, the researchers coordinated with the principals and school counselors of the selected high schools. Data collection was conducted during regular school hours in a quiet classroom environment to minimize distractions. Prior to administration, the research objectives were briefly explained to the students. Participants were assured of the strict confidentiality of their responses, emphasizing that data would be analyzed aggregately and their names would not be recorded. Written informed assent from the students and informed consent from their parents/guardians were obtained. The battery of questionnaires took approximately

35 to 45 minutes to complete. A trained research assistant was present throughout the sessions to address any ambiguities and ensure standardized administration.

## 2.2. Data Collection Tools

Psychological resilience was assessed using the 25-item Connor-Davidson Resilience Scale (CD-RISC) developed by Connor and Davidson (2003). Items are rated on a 5-point Likert scale ranging from 0 (not true at all) to 4 (true nearly all the time). Higher total scores (range 0-100) indicate greater resilience. The original scale demonstrated excellent internal consistency ( $\alpha = 0.89$ ). The Persian version of the CD-RISC has been extensively validated in Iranian adolescent and young adult populations. Samani, Jokar, and Sahragard (2007) reported high internal consistency (Cronbach's  $\alpha = 0.87$ ) and robust test-retest reliability ( $r = 0.89$ ). In the present study, the Cronbach's alpha coefficient for the CD-RISC was calculated at .88, confirming its high reliability.

Mentalizing capacity was measured using the 8-item Reflective Functioning Questionnaire (RFQ-8; Fonagy et al., 2016). The RFQ-8 captures two dimensions of mentalizing: Certainty about mental states (RFQ-C) and Uncertainty about mental states (RFQ-U, reflecting hypermentalizing or hypomentalizing). Items are scored on a 7-point Likert scale (1 = completely disagree, 7 = completely agree). Following the scoring manual, specific items are recoded to form the two subscales. The original scale shows strong validity and reliability. The Persian validation by Taheri et al. (2020) confirmed the two-factor structure in Iranian samples, reporting acceptable internal consistency for both RFQ-C ( $\alpha = 0.78$ ) and RFQ-U ( $\alpha = 0.75$ ). For the path analysis in this study, the adaptive dimension (Certainty) and the inverse of the maladaptive dimension (Uncertainty) were used to compute a composite mentalizing score. The alpha in the current sample was 0.79.

Epistemic trust was evaluated using the 15-item Epistemic Trust, Mistrust, and Credulity Questionnaire (ETMCQ) (Campbell et al., 2021). The instrument measures three dimensions: Trust (belief in the reliability of social knowledge), Mistrust (suspicion toward information from others), and Credulity (vulnerability to misinformation). Responses are on a 7-point scale. The Persian version, translated and validated in recent Iranian psychometric studies (e.g., Zare et al., 2023), demonstrated good construct validity and internal consistency. The Trust subscale, specifically utilized in this path model as the primary

predictor, yielded a Cronbach's alpha of 0.82 in the present study.

The 20-item Cognitive Flexibility Inventory (CFI), developed by Dennis and Vander Wal (2010), was used to measure cognitive flexibility. It comprises two subscales: Alternatives (the ability to perceive multiple alternative explanations for life occurrences) and Control (the perception of control over difficult situations). Items are scored on a 7-point Likert scale. Shareh, Farmani, and Soltani (2014) validated the Persian version of the CFI, reporting a Cronbach's alpha of 0.90 for the total scale, .89 for the Alternatives subscale, and 0.87 for the Control subscale. In this study, the total CFI score was used as the observed variable for cognitive flexibility, yielding a Cronbach's alpha of 0.89.

The mediating variable, cognitive emotion regulation, was measured using the 18-item short version of the CERQ (Garnefski & Kraaij, 2006). The scale assesses nine distinct cognitive coping strategies, which are grouped into two higher-order dimensions: Adaptive strategies (e.g., positive reappraisal, putting into perspective) and Maladaptive strategies (e.g., rumination, catastrophizing). The Persian short version of the CERQ was validated by Hassani (2010), demonstrating strong psychometric properties. For the purpose of the current path analysis, the composite score of the Adaptive strategies was utilized, as the theoretical framework hypothesizes that mentalizing and cognitive flexibility enhance adaptive regulatory processes. The Cronbach's alpha for the adaptive composite score in this sample was 0.84.

### 2.3. Data Analysis

Data analysis was conducted in two primary phases using IBM SPSS Statistics (Version 28) and AMOS (Version 28). In the first phase, preliminary analyses were performed using SPSS. This included data screening for missing values (handled via Expectation-Maximization due to being missing completely at random [MCAR]), identification of univariate and multivariate outliers, and testing the fundamental assumptions of path analysis: normality (assessed via skewness and kurtosis within the  $\pm 2$  range), linearity, and absence of severe multicollinearity (Tolerance  $> .10$ , VIF  $< 10$ ). Descriptive statistics and Pearson zero-order correlation coefficients were then calculated to examine the bivariate associations among the study variables.

In the second phase, path analysis was performed in AMOS using Maximum Likelihood (ML) estimation. Unlike SEM which includes a measurement model for latent factors, path analysis directly models the structural relationships among the calculated composite scores of the observed variables. The proposed model evaluated the direct paths from mentalizing, epistemic trust, and cognitive flexibility to psychological resilience, as well as the indirect paths mediated by cognitive emotion regulation.

Model fit was evaluated using a combination of absolute and incremental fit indices: the Chi-square/degrees of freedom ratio ( $\chi^2/df < 3$  indicates good fit), the Comparative Fit Index (CFI  $\geq .95$ ), the Tucker-Lewis Index (TLI  $\geq .95$ ), the Root Mean Square Error of Approximation (RMSEA  $\leq .06$ ), and the Standardized Root Mean Square Residual (SRMR  $\leq .08$ ) (Kline, 2015). Finally, to rigorously test the significance of the specific indirect (mediating) effects, a non-parametric bootstrapping procedure with 5,000 resamples and 95% bias-corrected confidence intervals (BC-CI) was employed. A mediational path was considered statistically significant if the 95% confidence interval did not contain zero (MacKinnon et al., 2004).

### 3. Findings and Results

The final sample consisted of 415 senior high school adolescents. In terms of gender distribution, 199 participants (48%) were male, and 216 participants (52%) were female. The participants' ages ranged from 15 to 18 years, with a mean age of 16.42 years ( $SD = 0.85$ ). Regarding educational level, 34.5% ( $n = 143$ ) were in the 10th grade, 33.3% ( $n = 138$ ) were in the 11th grade, and 32.2% ( $n = 134$ ) were in the 12th grade. The demographic profile indicates a well-balanced sample across gender and high school grade levels.

Prior to conducting the primary analyses, data were rigorously screened to ensure that the fundamental assumptions of path analysis were met. Missing data (accounting for less than 2% of total data points) were imputed using the Expectation-Maximization (EM) algorithm, as Little's MCAR test confirmed the data were missing completely at random,  $\chi^2(45) = 52.18$ ,  $p = .214$ . Multivariate outliers were evaluated using Mahalanobis distance; no cases exceeded the critical value at  $p < .001$ , thus all 415 cases were retained.

Univariate normality was assessed via skewness and kurtosis indices. As presented in Table 1, all skewness and kurtosis values fell well within the acceptable bounds of  $\pm 2$ , indicating normal distribution of the variables.

Multicollinearity among predictor variables was checked using Variance Inflation Factor (VIF) and Tolerance statistics. Tolerance values ranged from .68 to .82 (all > .10), and VIF values ranged from 1.21 to 1.47 (all < 10), confirming the absence of severe multicollinearity. Furthermore, the Durbin-Watson statistic was 1.94, suggesting that the assumption of independent errors was satisfied.

**Table 1**

*Descriptive Statistics and Pearson Correlation Matrix (N = 415)*

| Variables                   | Mean  | SD    | Skewness | Kurtosis | 1     | 2     | 3     | 4     | 5 |
|-----------------------------|-------|-------|----------|----------|-------|-------|-------|-------|---|
| 1. Mentalizing              | 34.52 | 6.18  | -0.42    | 0.15     | 1     |       |       |       |   |
| 2. Epistemic Trust          | 28.14 | 5.45  | -0.28    | -0.31    | .42** | 1     |       |       |   |
| 3. Cognitive Flexibility    | 92.65 | 12.30 | -0.55    | 0.48     | .48** | .38** | 1     |       |   |
| 4. Adaptive CER (Mediator)  | 36.80 | 7.25  | -0.34    | -0.12    | .51** | .45** | .55** | 1     |   |
| 5. Psychological Resilience | 68.45 | 14.12 | -0.61    | 0.22     | .47** | .41** | .58** | .63** | 1 |

The hypothesized path model was tested using Maximum Likelihood (ML) estimation in AMOS. The initial evaluation of the model fit indices revealed an excellent fit to the empirical data. As shown in Table 2, the relative chi-square ( $\chi^2/df$ ) was below the conservative threshold of 3.0. The Comparative Fit Index (CFI) and Tucker-Lewis Index

Descriptive statistics (means and standard deviations) and Pearson zero-order correlation coefficients for all study variables are presented in Table 1. As hypothesized, all predictor variables (mentalizing, epistemic trust, and cognitive flexibility) demonstrated significant positive correlations with the mediator (adaptive cognitive emotion regulation) and the outcome variable (psychological resilience) at the  $p < .01$  level.

(TLI) were both greater than .95, indicating strong incremental fit. Furthermore, the RMSEA was .042 (with a narrow 90% confidence interval), and the SRMR was .031, both well below their respective cut-off values. Thus, no modification indices were required, and the hypothesized model was retained as the final model.

**Table 2**

*Goodness-of-Fit Indices for the Path Model*

| Fit Index   | $\chi^2$ | Df | $\chi^2/df$ | p-value | CFI  | TLI  | RMSEA<br>[90% CI] | SRMR |
|-------------|----------|----|-------------|---------|------|------|-------------------|------|
| Model Value | 3.72     | 2  | 1.86        | .155    | .991 | .982 | .045 [.000, .098] | .028 |

The unstandardized (B) and standardized ( $\beta$ ) path coefficients, standard errors (SE), and critical ratios (t-values) for the direct effects are detailed in Table 3. The analysis revealed that Mentalizing ( $\beta = .28$ ,  $p < .001$ ), Epistemic Trust ( $\beta = .21$ ,  $p < .001$ ), and Cognitive Flexibility ( $\beta = .33$ ,  $p < .001$ ) significantly and directly predicted Adaptive Cognitive Emotion Regulation. Together, these

three predictors accounted for 42% of the variance ( $R^2 = .42$ ) in adaptive CER.

Regarding Psychological Resilience, the direct paths from Mentalizing ( $\beta = .16$ ,  $p < .001$ ), Epistemic Trust ( $\beta = .12$ ,  $p = .010$ ), Cognitive Flexibility ( $\beta = .24$ ,  $p < .001$ ), and Adaptive CER ( $\beta = .36$ ,  $p < .001$ ) were all significant and positive. The full model explained 54% of the variance ( $R^2 = .54$ ) in adolescents' psychological resilience.

**Table 3**

*Standardized and Unstandardized Direct Effects of the Path Model*

| Path / Direction                 | Unstandardized B | SE    | Standardized $\beta$ | C.R. (t-value) | p-value |
|----------------------------------|------------------|-------|----------------------|----------------|---------|
| Paths to Adaptive CER (Mediator) |                  |       |                      |                |         |
| Mentalizing → Adaptive CER       | 0.328            | 0.051 | .280                 | 6.431          | < .001  |
| Epistemic Trust → Adaptive CER   | 0.279            | 0.056 | .210                 | 4.982          | < .001  |

|                                                        |       |       |      |       |        |
|--------------------------------------------------------|-------|-------|------|-------|--------|
| Cognitive Flexibility<br>→ Adaptive CER                | 0.194 | 0.026 | .330 | 7.461 | < .001 |
| Paths to Psychological Resilience (Dependent Variable) |       |       |      |       |        |
| Adaptive CER → Resilience                              | 0.701 | 0.091 | .360 | 7.703 | < .001 |
| Mentalizing → Resilience                               | 0.365 | 0.103 | .160 | 3.543 | < .001 |
| Epistemic Trust → Resilience                           | 0.310 | 0.120 | .120 | 2.583 | .010   |
| Cognitive Flexibility<br>→ Resilience                  | 0.275 | 0.052 | .240 | 5.288 | < .001 |

To test the significance of the mediating role of Adaptive CER, a bias-corrected bootstrapping method with 5,000 resamples was performed. As demonstrated in Table 4, all three indirect paths were statistically significant, as zero did not fall within the 95% Confidence Intervals (BC-CI). Specifically, Adaptive CER partially mediated the relationship between Mentalizing and Resilience ( $\beta = .101$ ,

$p < .01$ ), Epistemic Trust and Resilience ( $\beta = .075$ ,  $p < .01$ ), and Cognitive Flexibility and Resilience ( $\beta = .118$ ,  $p < .01$ ). These findings confirm that socio-cognitive and neurocognitive capacities foster resilience not only directly but also by enhancing adaptive emotion regulation strategies.

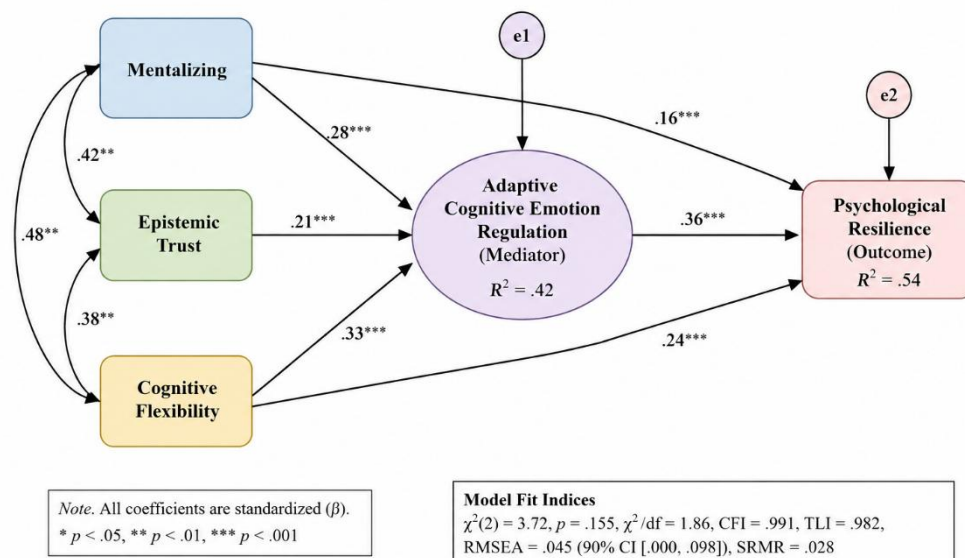
**Table 4**

*Bootstrapping Results for the Indirect Effects (N=5000 resamples)*

| Indirect Path                                | Point Estimate ( $\beta$ ) | SE   | Lower 95% CI | Upper 95% CI | p-value |
|----------------------------------------------|----------------------------|------|--------------|--------------|---------|
| Mentalizing → Adaptive CER → Resilience      | .101                       | .023 | .062         | .153         | .001    |
| Epistemic Trust → Adaptive CER → Resilience  | .075                       | .019 | .041         | .120         | .003    |
| Cog. Flexibility → Adaptive CER → Resilience | .118                       | .026 | .078         | .179         | .001    |

**Figure 1**

*Conceptual Diagram of the Final Path Model*



Note. Double-headed arrows represent significant zero-order correlations between exogenous variables.

#### 4. Discussion and Conclusion

The present study examined a path model of psychological resilience in adolescents based on mentalizing, epistemic trust, and cognitive flexibility, with adaptive cognitive emotion regulation considered as a mediating mechanism. The findings supported the proposed model and showed that the overall structural pattern fit the observed data well. Specifically, the model demonstrated excellent goodness-of-fit indices, with  $\chi^2/df = 1.86$ ,  $CFI = .991$ ,  $TLI = .982$ ,  $RMSEA = .045$ , and  $SRMR = .028$ . Mentalizing, epistemic trust, and cognitive flexibility significantly and positively predicted adaptive cognitive emotion regulation, jointly explaining 42% of its variance. In addition, mentalizing, epistemic trust, cognitive flexibility, and adaptive cognitive emotion regulation all had significant positive direct effects on psychological resilience, and the complete model explained 54% of the variance in resilience. Bootstrapping analyses further indicated that adaptive cognitive emotion regulation significantly and partially mediated the effects of mentalizing, epistemic trust, and cognitive flexibility on psychological resilience. Thus, the findings indicate that adolescents' resilience is associated not only with their socio-cognitive and cognitive capacities themselves but also with the extent to which these capacities facilitate adaptive cognitive management of emotional experiences. The first major finding was that mentalizing significantly predicted adaptive cognitive emotion regulation and

psychological resilience. Mentalizing had a standardized direct effect of  $\beta = .28$  on adaptive cognitive emotion regulation and  $\beta = .16$  on psychological resilience. In addition, mentalizing exerted a significant indirect effect on resilience through adaptive cognitive emotion regulation, with  $\beta = .101$ . This finding is consistent with the broader mentalizing literature, which conceptualizes reflective functioning as a central capacity through which individuals interpret their own and others' behaviors in terms of underlying psychological states (Fonagy et al., 2016; Luyten et al., 2020). It is also consistent with empirical evidence showing an association between reflective functioning and emotion regulation in adolescents (Morosan et al., 2020). Mentalizing allows adolescents to identify and contextualize emotions rather than responding to them as undifferentiated or overwhelming internal events. By recognizing that emotional responses are linked to interpretations, expectations, needs, and beliefs, adolescents may gain sufficient psychological distance to regulate those responses more adaptively. This capacity is especially important during adolescence because interpersonal relationships become increasingly complex and emotionally salient, and the adolescent must frequently infer others' intentions under uncertain conditions (Malberg et al., 2023).

The association between mentalizing and resilience can also be understood through its role in reducing rigid and threatening interpretations of interpersonal events. Adolescents with limited reflective functioning may be more likely to interpret rejection, criticism, or ambiguity as

evidence of hostility, abandonment, or personal inadequacy. Such interpretations can intensify emotional arousal and contribute to rumination, catastrophizing, or impulsive reactions. In contrast, effective mentalizing enables adolescents to recognize alternative explanations for both their own emotional states and the behavior of others. This process can reduce the emotional impact of stressful interpersonal encounters and facilitate more adaptive cognitive reappraisal. The present findings therefore align with evidence that mentalizing can operate as a protective capacity during periods of significant social stress (Locati et al., 2022). They are also consistent with the theoretical position that mentalizing supports resilience by improving both intrapsychic regulation and interpersonal adaptation (Fonagy et al., 2019). The significant indirect effect observed in the present model suggests that part of the protective contribution of mentalizing occurs because adolescents who better understand mental states are more capable of engaging in adaptive cognitive emotion regulation.

The second major finding concerned epistemic trust. Epistemic trust significantly predicted adaptive cognitive emotion regulation with  $\beta = .21$  and directly predicted psychological resilience with  $\beta = .12$ . Moreover, its indirect effect on resilience through adaptive cognitive emotion regulation was significant, with  $\beta = .075$ . Although the magnitude of the direct effect on resilience was smaller than those of mentalizing and cognitive flexibility, the finding remains theoretically meaningful because epistemic trust concerns the adolescent's openness to socially communicated knowledge. The construct refers to the capacity to regard information conveyed by others as sufficiently trustworthy, relevant, and generalizable to guide future behavior (Campbell et al., 2021; Fonagy & Allison, 2014). Adolescents do not develop coping strategies solely through individual reflection; they also acquire regulatory knowledge through interactions with parents, peers, teachers, and other significant figures. When social information is perceived as trustworthy, adolescents may be more receptive to advice, emotional validation, alternative perspectives, and models of effective coping.

The present finding is compatible with developmental accounts linking epistemic trust with adaptive functioning and reduced vulnerability. Attachment and relational experiences are believed to shape whether individuals remain open to social learning or instead develop epistemic mistrust, hypervigilance, or excessive credulity (Fonagy & Luyten, 2018). In adolescents with significant psychological

difficulties, disturbances in epistemic trust have been discussed alongside attachment insecurity and maladaptive mentalizing processes (Bo et al., 2017). In this context, the positive association identified in the present study suggests that healthy epistemic trust may strengthen resilience because it allows adolescents to use their social environment as a source of adaptive information. This mechanism may be particularly relevant during adolescence, when individuals are increasingly exposed to new relationships, social expectations, and sources of information beyond the family. Adolescents who are capable of selectively trusting credible social input may have greater access to strategies that help them reinterpret stressful events, regulate emotional responses, and maintain adaptive functioning.

The mediating role of adaptive cognitive emotion regulation in the relationship between epistemic trust and resilience is particularly informative. Epistemic trust alone does not guarantee adaptive functioning; rather, the information acquired from trusted others must be translated into usable regulatory strategies. An adolescent may receive guidance to reconsider a negative event, distinguish temporary difficulty from permanent failure, or place a stressful experience into a broader perspective. When such social knowledge is trusted and internalized, it may subsequently become part of the adolescent's own cognitive emotion regulation repertoire. This interpretation is compatible with theoretical formulations proposing that epistemic trust facilitates social learning and the internalization of psychologically useful information (Fonagy et al., 2019). The finding also complements evidence that mentalizing and epistemic trust may protect adolescents under socially stressful conditions (Locati et al., 2022). Thus, epistemic trust may contribute to resilience partly by functioning as a relational gateway through which adaptive regulatory knowledge is acquired and incorporated into self-regulation.

The third major finding was that cognitive flexibility was the strongest predictor of adaptive cognitive emotion regulation among the three exogenous variables, with  $\beta = .33$ , and also had a substantial direct effect on psychological resilience, with  $\beta = .24$ . Its indirect effect on resilience through adaptive cognitive emotion regulation was also the largest of the three mediated effects, with  $\beta = .118$ . These results are consistent with conceptualizations of cognitive flexibility as a core executive capacity that allows individuals to shift cognitive sets, generate alternative interpretations, and adapt responses in accordance with changing environmental demands (Dajani & Uddin, 2015).

They also align with the operational framework proposed by Dennis and Vander Wal, in which cognitive flexibility includes the ability to recognize alternatives and perceive difficult situations as potentially controllable (Dennis & Vander Wal, 2010). The relevance of this construct to the present sample is further supported by previous validation of the Cognitive Flexibility Inventory in Iranian populations (Shareh et al., 2014).

The association between cognitive flexibility and adaptive cognitive emotion regulation is theoretically straightforward. Many adaptive regulation strategies require the individual to shift away from an initial, emotionally charged interpretation toward a more constructive alternative. Positive reappraisal, perspective-taking, and planning all depend on the capacity to generate and maintain alternative cognitive representations. Conversely, rumination and catastrophizing are characterized by cognitive rigidity, in which attention remains fixed on negative interpretations. Adolescents with greater cognitive flexibility may therefore be better able to disengage from maladaptive thought patterns and select regulatory strategies that fit the demands of the situation. The present results are consistent with findings linking cognitive flexibility to emotion regulation in adolescents, including those with histories of childhood trauma (Bozorgi Kazerooni & Gholamipour, 2023). They also accord with evidence connecting cognitive flexibility with impulsivity and broader adaptive functioning during adolescence (Martín-Rodríguez, 2022). More recent findings have further emphasized the role of cognitive flexibility in pathways involving social support and maladaptive outcomes such as nonsuicidal self-injury (Shen, 2024). Together, these studies support the interpretation of cognitive flexibility as an important cognitive resource for both regulation and resilience.

The direct effect of cognitive flexibility on psychological resilience may also reflect the importance of flexible problem solving during adversity. Resilience requires more than emotional control; it also requires the ability to adjust goals, expectations, and behavioral strategies when circumstances change. An adolescent who can generate multiple explanations and solutions may be less likely to experience stressors as absolute or uncontrollable. Instead, challenges may be interpreted as temporary, specific, or manageable. This perspective can preserve a sense of agency and facilitate continued engagement with academic, interpersonal, and developmental tasks. The relatively strong direct and indirect effects of cognitive flexibility in

the present model therefore suggest that this construct operates through both regulatory and broader adaptive pathways. Recent theoretical work similarly places cognitive flexibility alongside emotion regulation, social support, and contextual factors as a central component of resilience during periods of family and developmental transition (Xu, 2026).

Another central finding was the significant direct effect of adaptive cognitive emotion regulation on psychological resilience, with  $\beta = .36$ . This was the strongest direct predictor of resilience in the model, indicating that the way adolescents cognitively manage emotional experiences is closely associated with their capacity to adapt successfully to stress. This result is consistent with extensive developmental evidence indicating that coping and emotion regulation processes are central to psychological adjustment and psychopathology during childhood and adolescence (Compas et al., 2017). Meta-analytic evidence has shown that particular emotion regulation strategies are systematically associated with depressive and anxiety symptoms in young people (Schäfer et al., 2017), while research specifically examining cognitive emotion regulation has demonstrated that adaptive and maladaptive strategies show different patterns of association with adolescent emotional symptoms (Garnefski & Kraaij, 2018). The psychometric validation of the Cognitive Emotion Regulation Questionnaire in Iranian populations also provides a sound basis for examining this construct within the cultural context of the present study (Hassani, 2010).

The strong association between adaptive cognitive emotion regulation and resilience can be explained by the functional role of regulatory strategies in determining how stress is psychologically processed. Adolescents inevitably encounter negative experiences, but the consequences of those experiences are influenced by how they are interpreted. Adaptive strategies such as positive reappraisal and putting events into perspective can reduce the perceived severity and permanence of adversity, preserve problem-solving capacity, and prevent emotional reactions from becoming prolonged. Conversely, persistent rumination or catastrophic thinking may magnify the psychological impact of stress and restrict adaptive behavior. In this sense, cognitive emotion regulation represents a proximal mechanism through which more distal personal and interpersonal resources are converted into resilient functioning. The present findings are also compatible with recent evidence demonstrating that cognitive emotion regulation and resilience can operate as interconnected

mediating processes linking stressful life events to important psychological and behavioral outcomes (Zhu et al., 2025).

The significant mediating effects represent one of the most important contributions of the present study. Adaptive cognitive emotion regulation partially mediated all three relationships between the antecedent variables and psychological resilience. Because the mediation was partial rather than complete, mentalizing, epistemic trust, and cognitive flexibility appear to contribute to resilience through multiple pathways. Some of their influence is transmitted through adaptive cognitive emotion regulation, while additional effects remain independent of the mediator. This pattern is consistent with contemporary models of resilience that reject single-factor explanations and instead emphasize interactions among psychological, interpersonal, and contextual systems (Masten, 2021; Ungar & Theron, 2020). Resilience is therefore unlikely to result from any isolated competence. Rather, socio-cognitive understanding, openness to social learning, executive flexibility, and regulatory strategies appear to work together in supporting adaptation.

From a developmental perspective, this interpretation is particularly appropriate because adolescence involves concurrent changes across cognitive, emotional, and social domains. Rapid developmental transitions make adolescents both vulnerable to disruption and responsive to protective influences (Dahl et al., 2018). Heightened sensitivity to peer relationships and social inclusion may increase the importance of mentalizing and epistemic trust, while continuing maturation of executive systems may make cognitive flexibility especially relevant. At the same time, adolescents are still consolidating emotion regulation repertoires. Social disruption or deprivation during this developmental stage can have meaningful consequences for emotional and social functioning (Orben et al., 2020). The current model therefore integrates capacities that correspond closely to the core developmental tasks of adolescence: understanding self and others, learning from social relationships, adapting cognition to changing demands, and regulating emotionally salient experiences.

The amount of variance explained by the model further supports the usefulness of an integrated framework. Mentalizing, epistemic trust, and cognitive flexibility explained 42% of the variance in adaptive cognitive emotion regulation, while the full set of predictors accounted for 54% of the variance in psychological resilience. Although substantial unexplained variance remains, these values indicate that the included variables capture a meaningful

portion of individual differences in adolescent resilience. From a methodological standpoint, the use of path analysis made it possible to estimate the simultaneous direct and indirect relationships among observed constructs rather than treating them as unrelated predictors. Such an approach is appropriate when testing theoretically specified networks of associations among multiple variables (Kline, 2023). The mediation analysis likewise provides a stronger account of process than would be obtained from examining simple correlations alone (Hayes, 2022). The findings therefore contribute to the literature by offering an integrated explanatory model in which socio-cognitive capacities and cognitive flexibility are linked to resilience both directly and through adaptive regulatory processes.

More broadly, the findings reinforce contemporary conceptualizations of psychological resilience as dynamic rather than trait-like. Resilience does not appear to depend solely on an adolescent possessing a stable internal strength. Instead, it reflects the coordinated functioning of several adaptive systems, including the ability to understand mental states, evaluate socially communicated knowledge, flexibly reconsider situations, and cognitively regulate emotional responses. This interpretation accords with multisystemic accounts emphasizing that resilience emerges through interactions among individual capacities and relational contexts (Ungar & Theron, 2020), as well as broader interdisciplinary formulations highlighting the complexity and context dependence of resilient outcomes (Southwick et al., 2023). The present study extends these perspectives by identifying a specific set of potentially modifiable psychological pathways through which resilient functioning may develop during adolescence.

Several limitations should be considered when interpreting the findings. First, the cross-sectional correlational design does not permit definitive conclusions regarding temporal ordering or causality, even though the tested paths were specified according to a theoretically grounded model. Second, all study variables were assessed using self-report questionnaires, which may introduce common-method variance, social desirability effects, recall bias, and individual differences in introspective accuracy. Third, the sample was restricted to senior high school students in Tehran, which may limit generalizability to adolescents from rural regions, other cultural contexts, clinical populations, adolescents who are not attending school, or young people exposed to more severe forms of adversity. Fourth, although the model explained a substantial proportion of variance in psychological resilience, other

potentially important variables such as family functioning, attachment security, socioeconomic conditions, peer support, temperament, personality, exposure to trauma, and school climate were not included. Finally, path analysis based on composite observed scores does not explicitly model measurement error, and therefore the estimated associations may differ from those obtained using a full latent-variable structural equation model.

Future studies should evaluate the proposed model using longitudinal and multi-wave designs to determine whether changes in mentalizing, epistemic trust, and cognitive flexibility prospectively predict changes in emotion regulation and resilience over time. Experimental and intervention studies would also be valuable for testing whether deliberately enhancing these capacities produces corresponding improvements in resilience. Future research could employ multi-informant assessments incorporating adolescents, parents, teachers, and clinicians, as well as behavioral or performance-based measures of cognitive flexibility and emotion regulation, to reduce dependence on self-report data. Replication in culturally, geographically, and socioeconomically diverse adolescent populations is also needed. Researchers should further examine whether the model differs by age, gender, developmental stage, exposure to trauma, or psychiatric status. More comprehensive models may incorporate family functioning, attachment, social support, school belonging, personality, and environmental adversity as moderators or additional mediators. Finally, latent-variable modeling and longitudinal mediation analysis could provide more rigorous tests of measurement validity, reciprocal effects, and developmental directionality.

The findings suggest that interventions aimed at strengthening adolescent resilience may benefit from targeting several interconnected capacities rather than focusing exclusively on stress reduction. School counselors, psychologists, teachers, and prevention programs can incorporate activities that help adolescents identify and reflect on their own and others' mental states, tolerate uncertainty about interpersonal intentions, and consider multiple explanations for social situations. Supportive relationships with parents, teachers, and counselors should also be structured in ways that promote appropriate trust, openness to credible guidance, and safe social learning. Cognitive flexibility can be strengthened through perspective-shifting exercises, problem-solving tasks, generation of alternative interpretations, and practice adapting strategies when initial responses are ineffective.

Programs should additionally provide explicit training in adaptive cognitive emotion regulation, including positive reappraisal, planning, acceptance, and putting stressful experiences into perspective. Integrating these components within school-based, family-oriented, and clinical programs may help adolescents develop a coordinated set of socio-cognitive, cognitive, and emotional resources that support more stable adaptation when facing developmental and environmental stressors.

### 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.

### Acknowledgments

We hereby thank all individuals for participating and cooperating us in this study.

### Declaration of Interest

The authors report no conflict of interest.

### Funding

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

### 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 interview and participated in the research with informed consent.

### References

- Bo, S., Sharp, C., Fonagy, P., & Kongerslev, M. (2017). Hypermentalizing, attachment, and epistemic trust in adolescent BPD: Clinical illustrations. *Personality Disorders: Theory, Research, and Treatment*, 8(2), 172-182.
- Bozorgi Kazerooni, S., & Gholamipour, S. (2023). Cognitive flexibility and emotion regulation in adolescence with

- childhood trauma. *Journal of Research in Health*, 13(2), 133-142.
- Campbell, C., Tanzer, M., Saunders, R., Booker, T., Allison, E., Li, E., & Fonagy, P. (2021). Development and validation of a self-report measure of epistemic trust. *PLoS One*, 16(4), e0250264.
- Compas, B. E., Jaser, S. S., Bettis, A. H., Watson, K. H., Gruhn, M. A., Dunbar, J. P., & Thigpen, J. C. (2017). Coping, emotion regulation, and psychopathology in childhood and adolescence. *Psychological bulletin*, 143(9), 939-991.
- Dahl, R. E., Allen, N. B., Wilbrecht, L., & Suleiman, A. B. (2018). Importance of investing in adolescence from a developmental science perspective. *Nature*, 554(7693), 441-450.
- Dajani, D. R., & Uddin, L. Q. (2015). Demystifying cognitive flexibility: Implications for clinical and developmental neuroscience. *Trends in Neurosciences*, 38(9), 571-578.
- Dennis, J. P., & Vander Wal, J. S. (2010). The cognitive flexibility inventory: Instrument development and estimates of reliability and validity. *Cognitive therapy and research*, 34(3), 241-253.
- Fonagy, P., & Allison, E. (2014). The role of mentalizing and epistemic trust in the therapeutic relationship. *Psychotherapy*, 51(3), 372-380.
- Fonagy, P., & Luyten, P. (2018). Attachment, epistemic trust, and the developmental origins of vulnerability. *Development and Psychopathology*, 30(3), 1109-1122.
- Fonagy, P., Luyten, P., Allison, E., & Campbell, C. (2019). Mentalizing, epistemic trust and the phenomenology of psychotherapy. *Psychopathology*, 52(2), 94-103.
- Fonagy, P., Luyten, P., Moulton-Perkins, A., Lee, Y. W., Warren, F., Howard, S., & Lowyck, B. (2016). Development and validation of a self-report measure of mentalizing: The Reflective Functioning Questionnaire. *PLoS One*, 11(7), e0158678.
- Garnefski, N., & Kraaij, V. (2018). Specificity of relations between adolescents' cognitive emotion regulation strategies and symptoms of depression and anxiety. *Cognition and Emotion*, 32(7), 1401-1408.
- Hassani, J. (2010). The psychometric properties of the cognitive emotion regulation questionnaire (CERQ). *Journal of Clinical Psychology*, 2(3), 73-84.
- Hayes, A. F. (2022). *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach* (3rd ed.). Guilford Publications.
- Kline, R. B. (2023). *Principles and Practice of Structural Equation Modeling* (5th ed.). Guilford Publications.
- Locati, F., Milesi, A., Conte, F., Campbell, C., Fonagy, P., Ensink, K., & Parolin, L. (2022). Adolescence in lockdown: the protective role of mentalizing and epistemic trust. *Journal of Clinical Psychology*, 79(3), 969-984.
- Luyten, P., Campbell, C., Allison, E., & Fonagy, P. (2020). The mentalizing approach to psychopathology: State of the art and future directions. *Annual Review of Clinical Psychology*, 16, 297-325.
- Malberg, N. T., Steele, M., & Steele, H. (2023). Co-Constructing Mentalizing Contexts in Therapeutic Work with Adolescents. *Psychoanalytic Inquiry*, 44(2), 1-15.
- Martín-Rodríguez, A. (2022). Cognitive flexibility and impulsivity in adolescents. *Frontiers in psychology*, 13, 891234.
- Masten, A. S. (2021). Resilience of children in disasters: A multisystem perspective. *International journal of psychology*, 56(1), 1-11.
- Morosan, L., Fonagy, P., Luyten, P., & Badoud, D. (2020). The relationship between reflective functioning and emotion regulation in adolescents. *Child Psychiatry & Human Development*, 51(4), 606-614.
- Orben, A., Tomova, L., & Blakemore, S. J. (2020). The effects of social deprivation on adolescent development and mental health. *The Lancet Child & Adolescent Health*, 4(8), 634-640.
- Samani, S., Jokar, B., & Sahragard, N. (2007). Effects of resilience on mental health and life satisfaction. *Iranian Journal of Psychiatry and Clinical Psychology*, 13(3), 290-295.
- Schäfer, J. Ö., Naumann, E., Holmes, E. A., Tuschen-Caffier, B., & Samson, A. C. (2017). Emotion regulation strategies in depressive and anxiety symptoms in youth: A meta-analytic review. *Journal of youth and adolescence*, 46(2), 261-276.
- Shareh, H., Farmani, A., & Soltani, E. (2014). Investigating the reliability and validity of the Cognitive Flexibility Inventory (CFI-I) among Iranian university students. *Practice in Clinical Psychology*, 2(1), 43-50.
- Shen, Y. (2024). The mediating role of cognitive flexibility in the relationship between social support and non-suicidal self-injury among adolescents. *Frontiers in psychology*, 15, 1546751.
- Southwick, S. M., Bonanno, G. A., Masten, A. S., Panter-Brick, C., & Yehuda, R. (2023). Resilience definitions, theory, and challenges: interdisciplinary perspectives. *European Journal of Psychotraumatology*, 5(1), 25338.
- Taheri, A. (2020). Psychometric properties of the Persian version of the Reflective Functioning Questionnaire (RFQ). *Iranian Journal of Psychiatry*, 15(4), 312-321.
- Ungar, M., & Theron, L. (2020). Resilience and mental health: how multisystemic processes contribute to positive outcomes. *The Lancet Psychiatry*, 7(5), 441-448.
- Xu, M. (2026). Resilience Factors in Family Structure Transitions: Emotion Regulation, Cognitive Flexibility, Identity Development, Social Support, and Contextual Considerations. *Family Transitions*, 1-30. <https://doi.org/10.1080/28375300.2026.2622851>
- Zhu, B., Gao, X., Zhou, M., & Wang, H. (2025). The Mediating Roles of Cognitive Emotion Regulation and Resilience in the Association Between Life Events and Sleep Quality Among Medical Students. *Frontiers in Psychiatry*, 16. <https://doi.org/10.3389/fpsyt.2025.1466138>