

Modeling Anxiety Sensitivity Based on Early Maladaptive Schemas and Cognitive Emotion Regulation Strategies with the Mediating Role of Parenting Styles

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ABSTRACT

Objective: Although most young individuals transition from adolescence successfully and without encountering significant issues, there can be challenges and obstacles during this period that prevent the full utilization of one's abilities and potential. The present study aimed to model anxiety sensitivity based on early maladaptive schemas and cognitive emotion regulation strategies with the mediating role of parenting styles.

Methods and Materials: This research is of a correlational type. The sample included 100 mothers of first-grade students from the city of Shiraz during the 2018-2019 academic year, selected through multi-stage cluster sampling. The sample size, based on Kline's (2010) criterion, was determined by selecting five individuals per item, resulting in a selection of 570 participants. Data were collected using the Taylor and Cox Revised Anxiety Sensitivity Index, the short form of Young's Early Maladaptive Schemas Questionnaire, the Garnefski and Kraaij Cognitive Emotion Regulation Questionnaire, and Diana Baumrind's Parenting Styles Questionnaire. To obtain preliminary information on the measured variables, statistical indices such as mean and standard deviation, as well as the correlation matrix of the variables, were calculated. SPSS and Amos software were used to analyze the data and examine the proposed research model.

Findings: The results of the study indicated that parenting styles played a mediating role in the relationship between exogenous variables (maladaptive schemas, maladaptive emotion regulation strategies, and adaptive emotion regulation strategies) and anxiety sensitivity.

Conclusion: Given the impact of maladaptive schemas on psychological disorders, it is recommended that schema therapy workshops be held for all patients suffering from depression and anxiety.

Keywords: Anxiety Sensitivity, Early Maladaptive Schemas, Cognitive Emotion Regulation Strategies, Parenting Styles.

1. Introduction

Although most young individuals transition from adolescence successfully and without encountering significant issues, challenges and obstacles during this period can hinder the full utilization of one's abilities and potential. Numerous psychological problems such as anxiety, depression, neurodevelopmental disorders, obsessive-compulsive disorders, psychotic disorders, and eating disorders are observed during adolescence (Umaphathi et al., 2021). One of the common psychological disorders during this period is anxiety disorders. From the DSM-5 perspective, anxiety disorders encompass conditions characterized by excessive fear and anxiety and related behavioral disturbances. Anxiety disorder is defined as a mental state or intense arousal characterized primarily by fear, doubt, and excessive worry. According to DSM-5, anxiety is the anticipation of future threat. Anxiety is associated with muscle tension, vigilance in preparation for future danger, and cautious or avoidant behaviors. The source of an anticipated threat can be internal or external (American Psychiatric Association, 2022).

The mother, as the primary caregiver, has the most significant influence on shaping the child's personality and behavior, fostering adaptation, and creating a sense of security. Therefore, the mother has a profound impact on the child's growth and development, even in addressing potential problems (Hasanpour et al., 2015). The mother's reactions, both emotional and affective, play a crucial role in establishing constructive social interactions and addressing the child's behavioral problems (Wang et al., 2022). A review study indicated that various factors from the mother's side could contribute to the development of this emotional problem.

One construct that has received extensive attention in the literature on anxiety disorders is anxiety sensitivity, which refers to the fear of anxiety and related symptoms and stems from the belief that these symptoms lead to potentially harmful physical, psychological, and social outcomes. According to Rajabi (2018), anxiety sensitivity is the constant worry about anxiety sensations, with the belief that these anxiety-related sensations are threatening and that they entail distressing and dangerous physical and non-physical consequences. Individuals with high anxiety sensitivity perceive not only stressful events but also relatively normal occurrences as catastrophic, whereas those with low anxiety sensitivity view these events as undesirable but do not catastrophize them (Rajabi, 2018). Therefore, it can be

concluded that an individual's assessment of a stressful situation plays a determining role in its subsequent outcomes. Two individuals may perceive a particular event differently, and this perception depends on their evaluation of the situation, with anxiety sensitivity influencing this evaluation (Byers et al., 2023; Dizaj Khalili et al., 2023; Lee et al., 2023). Consequently, studies have shown that anxiety sensitivity is a significant vulnerability factor in the development and maintenance of psychological disorders (Taylor et al., 2008). Anxiety sensitivity is acquired through genetics and learning, leading to biases in the marketing and processing of information related to anxiety-triggering symptoms (Byers et al., 2023; Wheaton et al., 2012). According to vulnerability models, anxiety sensitivity may lead to psychological distress or disorder (diathesis model), influence the manifestation or course of a disorder (pathoplasty model), be affected by the experience of the disorder (scar model), and be associated with the disorder, indicating an underlying common issue (spectrum or continuity model) (Alacreu-Crespo et al., 2022; Ranney et al., 2022). Research evidence indicates that anxiety sensitivity plays a role in the development of anxiety disorders (Alacreu-Crespo et al., 2022; Byers et al., 2023; Cha et al., 2022; Lee et al., 2023; Mehrmanesh et al., 2023; Ranney et al., 2022; Sepas et al., 2022; Stern et al., 2018; Tran & Smith, 2004; Venta et al., 2012).

One variable that has recently gained attention in psychotherapy concerning mental health is early maladaptive schemas. Early maladaptive schemas can influence an individual's perception of external reality, cognitive and emotional processing, and interpersonal relationships and lead to emotional problems such as anxiety. Early maladaptive schemas are pervasive, dysfunctional patterns or themes that are formed during childhood and adolescence, persist into adulthood, and operate at the deepest level of cognition, often outside of the individual's awareness. The formation of schemas involves the interaction of innate temperament with early non-adaptive relational experiences (Rezaei et al., 2013). In the schema model, schemas are divided according to five unmet emotional needs, referred to as "schema domains," which include: 1) Disconnection and Rejection, 2) Impaired Autonomy and Performance, 3) Impaired Limits, 4) Other-Directedness, and 5) Over-vigilance and Inhibition. Schemas cause individuals to be susceptible to depression, anxiety, ineffective interpersonal relationships, and psychosomatic disorders (Young et al., 2006).

Emotional regulation refers to actions taken to change or modify an emotional state and is a specific form of self-regulation. Emotional regulation is a fundamental factor for well-being and successful functioning, playing an essential role in adapting to stressful life events. Although emotions have a biological basis, individuals can master their emotions and their expression (Ashori et al., 2022). Regarding emotion regulation, cognitive emotion regulation strategies were proposed by Garnefski and colleagues. The concept of cognitive emotion regulation refers to cognitive coping methods and involves regulating emotions through thoughts and cognitions, which are inevitably linked to human life. It also helps individuals manage their emotions after experiencing stressful events. There are nine cognitive strategies individuals use to regulate their emotions: self-blame, other-blame, rumination, catastrophizing, positive refocusing, positive reappraisal, acceptance, refocusing on planning, and perspective-taking (Preece et al., 2022). These strategies are divided into two categories: adaptive (positive refocusing, refocusing on planning, acceptance, perspective-taking) and maladaptive (self-blame, catastrophizing, rumination, other-blame). Adaptive emotion regulation allows individuals to function effectively in their environment (Mikaeili et al., 2024) and engage in goal-directed behaviors when facing a problematic emotional experience. In contrast, those who use maladaptive emotion regulation cannot adjust their behaviors to achieve their goals in the environment when confronted with a problematic experience (Wang et al., 2024).

The concept of parenting style has been recognized in developmental psychology for over 50 years as a tool for parents to control their children. Parenting style refers to a set of attitudes, behaviors, and tools that parents consistently use across various contexts to manage their children's behavior. Parenting practices can be defined as specific behaviors parents use for socializing and interacting with their children. Parenting styles can be understood as a set of psychological structures representing standardized strategies used by parents in the child-rearing process, typically including dimensions such as rejection, emotional warmth, and overprotection (Wang et al., 2022). The present study aimed to model anxiety sensitivity based on early maladaptive schemas and cognitive emotion regulation strategies with the mediating role of parenting styles.

2. Methods and Materials

2.1. Study Design and Participants

This study was correlational in nature and employed structural equation modeling (SEM) to analyze the relationships between the proposed model variables. The variables in this study were latent and included early maladaptive schemas and cognitive emotion regulation strategies as exogenous variables, anxiety sensitivity as the endogenous variable, and parenting styles as the mediating variable. The sample size for this study was estimated to be 100 students. To determine the sample size, Kline's (2010) criterion of five individuals per item was used, resulting in a selection of 570 participants.

2.2. Measures

2.2.1. Anxiety Sensitivity

The Revised Anxiety Sensitivity Index (ASI-R) is a 36-item self-report tool that measures the fear of anxiety-related symptoms. This tool is specifically designed to assess lower-order factors of the anxiety sensitivity construct, as identified by Reiss (1991) and McNally (1985). Taylor and Cox (1998) concluded that ASI-R has a hierarchical four-factor structure based on a factor analysis of 155 psychiatric outpatients. These factors include: 1) fear of respiratory symptoms, 2) fear of publicly observable anxiety reactions, 3) fear of cardiovascular symptoms, and 4) fear of cognitive dyscontrol. Respondents indicate their agreement with each item on a Likert scale ranging from very little (score 0) to very much (score 4). Scores range from 0 to 144, indicating the lowest and highest levels of anxiety sensitivity, respectively. Taylor and Cox (1998) reported internal consistency coefficients for the subscales ranging from .91 to .89 using Cronbach's alpha formula. They also reported a correlation coefficient of .94 between ASI and ASI-R, indicating high concurrent validity. Furthermore, inter-factor correlations ranged from .28 to .40, and correlations with the overall ASI-R score ranged from .66 to .77, demonstrating good construct validity for the test. Overall, studies show that this questionnaire has very acceptable validity and reliability and is a useful and effective tool for assessing anxiety sensitivity (Rajabi, 2018; Ranney et al., 2022). In the present study, Cronbach's alpha was used to determine the reliability of this questionnaire.

2.2.2. Early Maladaptive Schemas

The short form of the Young Schema Questionnaire is a 75-item questionnaire that assesses 15 early maladaptive schemas. Each of the 75 statements is scored on a 6-point Likert scale ranging from completely untrue (score 1) to completely true (score 6). The score for each schema is obtained by summing the scores of the 5 items related to that schema, with a range of 6 to 36. Higher scores indicate the presence of more early maladaptive schemas. In the present study, only the Disconnection and Rejection domain (emotional deprivation, abandonment, mistrust, social isolation, defectiveness/shame) and the subscale of unrelenting standards from the Over-vigilance and Inhibition domain, comprising 30 items from the Young Schema Questionnaire, were used. The first comprehensive study on the psychometric properties of this questionnaire was conducted by Schmidt et al. (1995). The results showed Cronbach's alpha coefficients ranging from .83 for the undeveloped/self-trapped schema to .96 for the defectiveness/shame schema, with test-retest reliability coefficients in a non-clinical population ranging from .50 to .82. Additionally, the questionnaire demonstrated good convergent and divergent validity with scales of psychological distress, self-esteem, cognitive vulnerability to depression, and personality disorder symptomatology. In the Persian version of this scale, Cronbach's alpha coefficients for internal consistency of each schema ranged from .69 to .83 in a student sample (Rezaei et al., 2013). In the present study, Cronbach's alpha was used to determine the reliability of the Young Schema Questionnaire.

2.2.3. Cognitive Emotion Regulation

The Cognitive Emotion Regulation Questionnaire (ERQ) by Garnefski and Kraaij (2006) is an 18-item tool that measures cognitive emotion regulation strategies in response to threatening and stressful life events on a five-point scale ranging from 1 (never) to 5 (always). It assesses nine subscales: self-blame, other-blame, rumination, catastrophizing, positive refocusing, positive reappraisal, acceptance, refocusing on planning, and perspective-taking. The minimum and maximum scores for each subscale are 2 and 10, respectively, with higher scores indicating greater use of the cognitive strategy. Cognitive emotion regulation

strategies in the ERQ are divided into two categories: adaptive (positive refocusing, refocusing on planning, acceptance, perspective-taking) and maladaptive (self-blame, other-blame, rumination, catastrophizing). The Cronbach's alpha coefficients for the subscales of this questionnaire range from .71 to .81. To examine the convergent and divergent validity of this questionnaire in Iran, the Depression Anxiety Stress Scale (DASS), consisting of 21 items rated on a four-point scale (from "very much like me" to "not at all like me"), was used to evaluate the three factors of depression, stress, and anxiety. Each item assesses one emotional disorder factor (Ashori et al., 2022; Mikaeili et al., 2024). In the present study, Cronbach's alpha was used to determine the reliability of this questionnaire.

2.2.4. Parenting Styles

This questionnaire is derived from Baumrind's theory, based on three parenting styles: permissive, authoritarian, and authoritative. It consists of 30 items, with 10 items related to permissive style, 10 items to authoritarian style, and 10 items to authoritative style. Esfandiari assessed the validity and reliability of this questionnaire, reporting test-retest reliability of .69 for permissive, .77 for authoritarian, and .73 for authoritative parenting styles. In a study by Tonekaboni and Bandchi, the questionnaire's reliability was reported as .72, indicating its research validity (Younesi et al., 2021; Zabeti & Jafari, 2018). In the present study, Cronbach's alpha was used to determine the reliability of this questionnaire.

2.3. Data analysis

Given that SEM is closely related to multiple regression in some aspects, selecting five individuals per item seems appropriate. In the present study, SPSS and AMOS version 23 software were used to analyze the data and examine the proposed research model.

3. Findings and Results

Regarding demographic characteristics in the present study, the mean (standard deviation) age of the participants was 32.51 (6.16) years. Descriptive information related to the research variables is presented in Table 1.

Table 1

Means, Standard Deviations, Skewness, and Kurtosis of Participants' Scores on Research Variables

Variable	Mean	Standard Deviation	Skewness	Kurtosis
Disconnection and Rejection	41.16	6.92	0.461	-0.677
Impaired Autonomy and Performance	45.92	9.31	0.511	-0.713
Impaired Limits	42.81	10.50	0.591	0.255
Other-Directedness	44.32	9.77	0.617	0.311
Over-Vigilance and Inhibition	40.30	8.42	-0.544	0.366
Maladaptive Emotion Regulation Strategies	30.64	4.94	-0.519	-0.770
Adaptive Emotion Regulation Strategies	12.44	1.91	-1.132	-0.919
Permissive Parenting Style	13.42	1.16	-0.918	-0.144
Authoritarian Parenting Style	14.56	1.42	-0.409	0.281
Authoritative Parenting Style	14.19	1.64	0.570	0.698

In this section, the bivariate relationships between the independent variables with the mediator and dependent

variables were examined by calculating the Pearson correlation coefficient.

Table 2

Correlation Matrix of Proposed Model Variables

Variables	Permissive Parenting Style	Authoritarian Parenting Style	Authoritative Parenting Style	Anxiety Sensitivity
Disconnection and Rejection	0.130*	0.139*	-0.160*	0.252*
Impaired Autonomy and Performance	0.141*	0.128*	-0.166*	0.230*
Impaired Limits	0.124*	0.149*	-0.188*	0.144*
Other-Directedness	0.171*	0.157*	-0.180*	0.168*
Over-Vigilance and Inhibition	0.202*	0.199*	-0.159*	0.177*
Maladaptive Emotion Regulation Strategies	0.191*	0.144*	-0.169*	0.173*
Adaptive Emotion Regulation Strategies	-0.142*	-0.160*	0.151*	-0.195*
Anxiety Sensitivity	0.155*	0.163*	-0.199*	1

*p<0.01

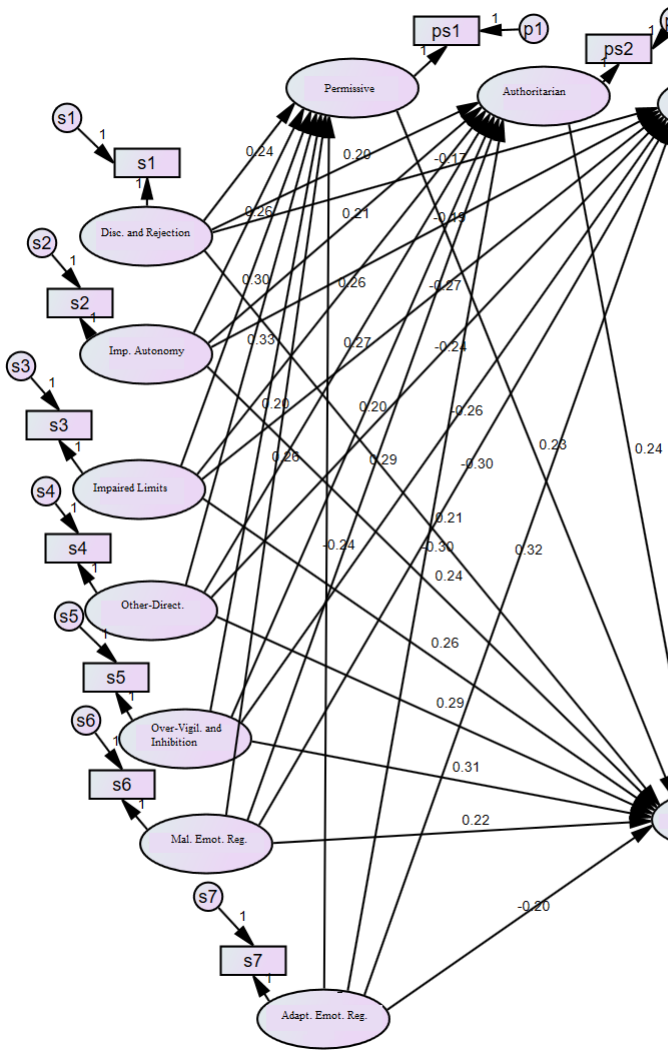
The results of [Table 2](#) show a significant correlation between all variables in the proposed model. Subsequently, to test the research model and examine the hypothesized relationships, structural equation modeling (SEM) was used. Before testing the research model, after screening the initial data (including checking for missing and outlier data), univariate and multivariate normality of the data were checked to ensure that the research data met the underlying assumptions of the SEM method. The normality of the univariate distribution was assessed by calculating the skewness and kurtosis indices of the observed variables in AMOS software. The range of skewness coefficients was from -0.74 to 0.22, and the range of kurtosis coefficients was from -0.48 to 0.41. Overall, the skewness and kurtosis values for all observed variables were less than one, indicating that none of the variables' distributions differed significantly from the normal distribution. Furthermore, the normal probability plot and multivariate normality using Mardia's coefficient were assessed in AMOS software. The results

indicated the normality of the observed variables, with Mardia's coefficient of 3.83 and a critical value of 2.36, confirming multivariate normality.

Direct, indirect, and total effects of the research variables are shown in

Figure 1

Model with Standard Coefficient



. Additionally, Figure 1 illustrates the results of applying structural equation modeling to test the research model. It is noteworthy that in this figure, to summarize and avoid line and coefficient clutter, only significant paths are depicted.

Figure 1

Model with Standard Coefficient

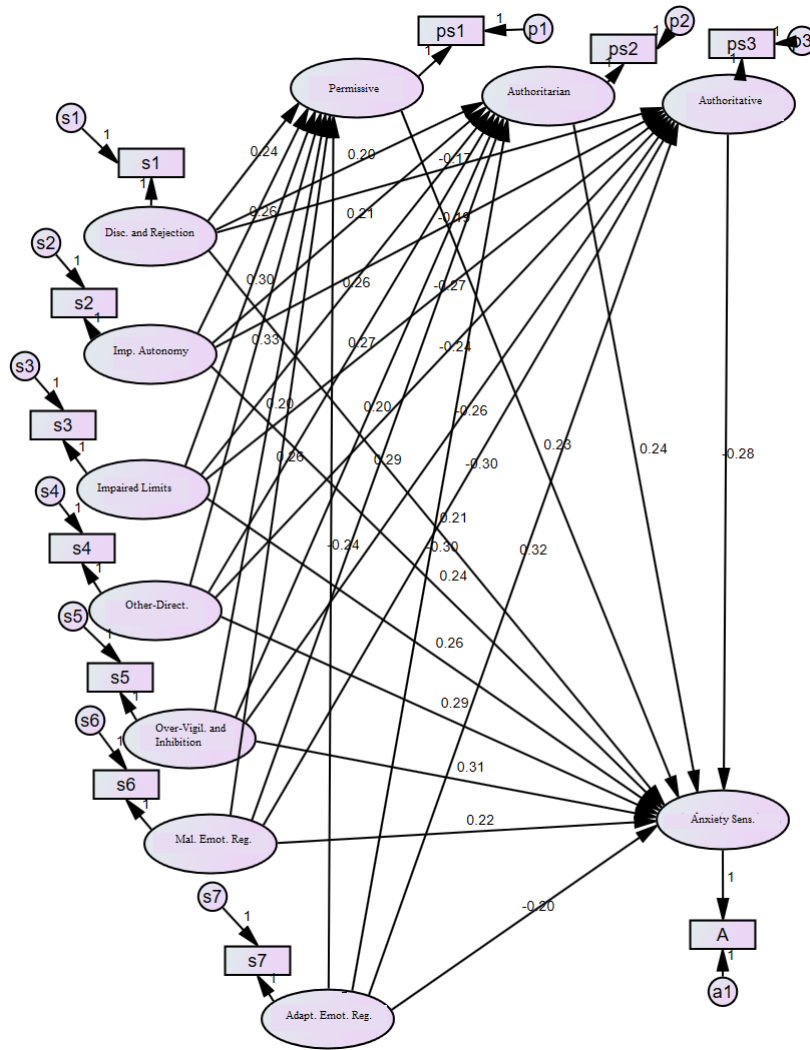


Table 3

Standardized Path Coefficients for Direct Effects in the Research Model

Predictor Variable	Criterion Variable	Direct Effect (Beta)	t	p
Disconnection and Rejection	Anxiety Sensitivity	0.21	3.24	<.01
Impaired Autonomy and Performance	Anxiety Sensitivity	0.24	3.57	<.01
Impaired Limits	Anxiety Sensitivity	0.26	3.77	<.01
Other-Directedness	Anxiety Sensitivity	0.29	3.92	<.01
Over-Vigilance and Inhibition	Anxiety Sensitivity	0.31	4.14	<.01
Maladaptive Emotion Regulation Strategies	Anxiety Sensitivity	0.22	3.31	<.01
Adaptive Emotion Regulation Strategies	Anxiety Sensitivity	-0.20	3.15	<.01
Permissive Parenting Style	Anxiety Sensitivity	0.23	3.38	<.01
Authoritarian Parenting Style	Anxiety Sensitivity	0.24	3.40	<.01
Authoritative Parenting Style	Anxiety Sensitivity	-0.28	3.88	<.01
Disconnection and Rejection	Permissive Parenting Style	0.24	3.41	<.01
Impaired Autonomy and Performance	Permissive Parenting Style	0.26	3.79	<.01
Impaired Limits	Permissive Parenting Style	0.30	4.03	<.01
Other-Directedness	Permissive Parenting Style	0.33	4.42	<.01
Over-Vigilance and Inhibition	Permissive Parenting Style	0.20	3.13	<.01
Maladaptive Emotion Regulation Strategies	Permissive Parenting Style	0.26	3.79	<.01
Adaptive Emotion Regulation Strategies	Permissive Parenting Style	-0.24	3.54	<.01
Disconnection and Rejection	Authoritarian Parenting Style	0.20	3.15	<.01
Impaired Autonomy and Performance	Authoritarian Parenting Style	0.21	3.24	<.01

Impaired Limits	Authoritarian Parenting Style	0.26	3.80	<.01
Other-Directedness	Authoritarian Parenting Style	0.27	3.89	<.01
Over-Vigilance and Inhibition	Authoritarian Parenting Style	0.20	3.12	<.01
Maladaptive Emotion Regulation Strategies	Authoritarian Parenting Style	0.29	3.95	<.01
Adaptive Emotion Regulation Strategies	Authoritarian Parenting Style	-0.30	4.12	<.01
Disconnection and Rejection	Authoritative Parenting Style	-0.17	2.94	<.01
Impaired Autonomy and Performance	Authoritative Parenting Style	-0.19	3.12	<.01
Impaired Limits	Authoritative Parenting Style	-0.27	3.90	<.01
Other-Directedness	Authoritative Parenting Style	-0.24	3.55	<.01
Over-Vigilance and Inhibition	Authoritative Parenting Style	-0.36	4.56	<.01
Maladaptive Emotion Regulation Strategies	Authoritative Parenting Style	-0.30	4.10	<.01
Adaptive Emotion Regulation Strategies	Authoritative Parenting Style	0.32	4.33	<.01

Based on the results, the present research model explains 41% of the variance in anxiety sensitivity. [Table 4](#) presents

the indirect effects of exogenous variables on anxiety sensitivity mediated by parenting styles.

Table 4

Indirect and Total Effects of Exogenous Variables on Anxiety Sensitivity Mediated by Parenting Styles

Exogenous Variables	Mediator Variable	Endogenous Variable	Indirect Effect	Total Effect	p
Disconnection and Rejection	Permissive Parenting Style	Anxiety Sensitivity	0.06	0.27	<.01
Impaired Autonomy and Performance	Permissive Parenting Style	Anxiety Sensitivity	0.06	0.30	<.01
Impaired Limits	Permissive Parenting Style	Anxiety Sensitivity	0.07	0.33	<.01
Other-Directedness	Permissive Parenting Style	Anxiety Sensitivity	0.08	0.37	<.01
Over-Vigilance and Inhibition	Permissive Parenting Style	Anxiety Sensitivity	0.05	0.36	<.01
Maladaptive Emotion Regulation Strategies	Permissive Parenting Style	Anxiety Sensitivity	0.06	0.28	<.01
Adaptive Emotion Regulation Strategies	Permissive Parenting Style	Anxiety Sensitivity	-0.06	-0.26	<.01
Disconnection and Rejection	Authoritarian Parenting Style	Anxiety Sensitivity	0.05	0.26	<.01
Impaired Autonomy and Performance	Authoritarian Parenting Style	Anxiety Sensitivity	0.05	0.29	<.01
Impaired Limits	Authoritarian Parenting Style	Anxiety Sensitivity	0.06	0.32	<.01
Other-Directedness	Authoritarian Parenting Style	Anxiety Sensitivity	0.06	0.37	<.01
Over-Vigilance and Inhibition	Authoritarian Parenting Style	Anxiety Sensitivity	0.05	0.27	<.01
Maladaptive Emotion Regulation Strategies	Authoritarian Parenting Style	Anxiety Sensitivity	0.07	0.27	<.01
Adaptive Emotion Regulation Strategies	Authoritarian Parenting Style	Anxiety Sensitivity	-0.07	-0.30	<.01
Disconnection and Rejection	Authoritative Parenting Style	Anxiety Sensitivity	-0.05	-0.26	<.01
Impaired Autonomy and Performance	Authoritative Parenting Style	Anxiety Sensitivity	-0.05	-0.29	<.01
Impaired Limits	Authoritative Parenting Style	Anxiety Sensitivity	-0.08	-0.34	<.01
Other-Directedness	Authoritative Parenting Style	Anxiety Sensitivity	-0.07	-0.36	<.01
Over-Vigilance and Inhibition	Authoritative Parenting Style	Anxiety Sensitivity	-0.10	-0.41	<.01
Maladaptive Emotion Regulation Strategies	Authoritative Parenting Style	Anxiety Sensitivity	-0.08	-0.30	<.01
Adaptive Emotion Regulation Strategies	Authoritative Parenting Style	Anxiety Sensitivity	0.09	0.29	<.01

Based on [Table 4](#), parenting styles mediate the relationship between exogenous variables (maladaptive schemas, maladaptive emotion regulation strategies, and adaptive emotion regulation strategies) and anxiety sensitivity.

Several valid indices were used to evaluate the fit of the research model. The results are presented in [Table 4](#). The first index examined was the chi-square divided by degrees of freedom (normed chi-square), which had a numerical value of 2.31, falling within the acceptable range of less than 3, indicating a good fit for the model. The comparative fit index (CFI), which compares the target model to a null model, was 0.94, higher than the threshold of 0.90,

indicating a very good fit. The incremental fit index (IFI) was also 0.94, which is above 0.90, indicating a very good fit. The goodness-of-fit index (GFI), which indicates the amount of variance and covariance explained by the model, was 0.91, very close to the acceptable threshold of 0.90, and thus acceptable. The adjusted goodness-of-fit index (AGFI), which adjusts the GFI for sample size and degrees of freedom, can range from 0 to 1, with values close to 1 indicating a better fit. The AGFI for the final research model was 0.89, which is acceptable. The last index examined was the root mean square error of approximation (RMSEA), which should be between 0.05 and 0.08 for the model fit to be confirmed. The obtained value of 0.052 for this index

indicates a good fit for the research model. Given that the P-value was greater than the significance level of 0.05, and equal to 0.22, it can be concluded that the RMSEA value is acceptable.

4. Discussion and Conclusion

The present study aimed to model anxiety sensitivity based on early maladaptive schemas and cognitive emotion regulation strategies with the mediating role of parenting styles. Structural equation modeling results showed that anxiety sensitivity directly influences early maladaptive schemas. This finding is consistent with the prior research (D'Rozario & Pilkington, 2022; Ghadampour et al., 2018; Naderi et al., 2016; Riskind & Kleiman, 2012; Shahamat et al., 2010; Stern et al., 2018; Tremblay & Dozois, 2009; Zabeti & Jafari, 2018).

To explain this hypothesis, it can be stated that maladaptive schemas, as cognitive substrates, lead to the formation of irrational beliefs. Schemas have cognitive, emotional, and behavioral components. When early maladaptive schemas are activated, levels of emotion are released, which directly or indirectly lead to various forms of psychological distress such as depression, anxiety, occupational incapacity, substance abuse, interpersonal conflicts, and similar issues. Maladaptive schemas do not directly cause specific personality disorders but increase the individual's vulnerability to these disorders (Ghadampour et al., 2018; Naderi et al., 2016).

Anxious individuals with the mistrust/abuse schema perceive the world as full of cruelty and injustice, believing that people must harm and exploit others to meet their interests and needs. Accordingly, these individuals view their hostile behaviors towards others as preventive measures against being harmed. Those with the dependency schema have expectations from themselves and their surroundings that hinder their ability to differentiate themselves from parental figures and achieve independent functioning (Young et al., 2006). These individuals cannot set specific goals for themselves or master necessary skills, and thus, they function like young children in adulthood. Sometimes, these individuals may resort to violence to demonstrate their separation from their family and show their competence by excessively compensating for their schema. On the other hand, individuals with the vulnerability schema try to cope with the perceived imminent harm by harming others. This is because, in families that support unhealthy other-directedness, children learn to prioritize

others' desires, feelings, and responses excessively, neglecting their legitimate needs. This pattern leads to the formation of schemas such as subjugation, self-sacrifice, and approval-seeking/recognition. Cognitive-behavioral theorists believe that individuals with social anxiety disorder have dysfunctional beliefs about themselves (Rezaei et al., 2013). They believe they are exceptional people who deserve better treatment than ordinary individuals. They do not understand or care about others' feelings. The term realistic limitations refers to the individual's capacity for discipline, impulse control, and appropriately attending to others' needs. Children who benefit from realistic limitations on their behaviors can learn self-restraint and consider others. Schemas of entitlement/grandiosity and insufficient self-control arise when children face excessive permissiveness from parents, allowing them to do whatever they want without considering others' needs (Wang et al., 2022; Wang et al., 2024).

In explaining the findings, it should be noted that the method of raising children is highly important and sensitive and can prevent many psychological and social harms. Parenting style can predict future psychosocial development, academic performance, well-being, and behavioral problems. Generally, parental responsiveness predicts social competence and psychosocial functioning. It appears that parents who spend more time supervising and raising their children have children who are less inclined towards risky and inappropriate behaviors. Since permissive parents pay excessive attention to their children, have few expectations, and often grant them significant independence and freedom, they usually do not set clear goals and expectations for their children. Consequently, due to the low control and supervision over their children's behaviors, they unintentionally create conditions conducive to their children's addiction.

Permissive parents have no control over their children, leading to two possible outcomes. These children may have the lowest levels of self-confidence, curiosity, and self-control due to parental neglect, or they may have high levels of self-confidence and self-control because their parents show no authoritarianism in their upbringing. In authoritative parenting, parents establish clear rules and expectations and negotiate with their children about these rules. They recognize the child's perspective and use logic and authority to enforce their standards. The authoritative style resembles a balanced family system model. These families range from connected to cohesive in the cohesion (intimacy) domain and from structured to flexible in the

flexibility domain. Significant research in parenting has shown that children from balanced family systems are emotionally healthier, happier, and more successful in life and school (Wang et al., 2022).

Since cognition, emotion, and behavior are entirely interactive, cognitive emotion regulation through attention control and cognitive consequences of emotion results in changes in cognitive systems (such as memory, attention, awareness) and then emotion regulation (D'Rozario & Pilkington, 2022; Tremblay & Dozois, 2009).

Unlike early theories, today, there is an emphasis on the usefulness of emotions in behaviors. The general view is that emotions occur before behavior and optimize individual adaptation to physical and social environmental demands. Emotions stabilize an individual's condition in relation to the environment by coordinating mental, biological, and motivational processes (Naderi et al., 2016; Riskind & Kleiman, 2012). Emotions equip individuals with specific and efficient responses to issues, ultimately ensuring physical and social survival (D'Rozario & Pilkington, 2022).

Emotions play a significant role in forming, maintaining, and terminating interpersonal relationships by regulating the distance between individuals, as emotions draw us closer or push us apart (D'Rozario & Pilkington, 2022). For instance, anger and joy impact social relationships: happiness establishes relationships, sadness maintains them during separation, and anger prompts necessary actions to terminate harmful relationships. Some cognitive emotion regulation strategies are associated with mental health problems and predict emotional and psychological issues, including catastrophizing, which has the highest correlation with anxiety, depression, somatic symptoms, and impaired social functioning. This strategy can directly affect an individual's emotional state, manifesting as stress and anxiety in some, depression and sadness in others, and physical and social problems in yet others.

5. Limitations & Suggestions

Anxiety disorder is one of the most critical issues for global health organizations. Numerous studies worldwide have shown that generalized anxiety disorder causes significant professional, physical, and social harm compared to major depressive disorder. Medication is the most important treatment for anxiety disorder, making research on these disorders highly significant. Many specialists find treating anxiety challenging, while some suggest psychotherapy, as these individuals are often reluctant to

undergo treatment. The only proposed solution is to prevent conditions that initially lead to anxiety disorders. Therefore, it is recommended that psychologists, sociologists, and doctors take preventive measures against such disorders. Additionally, given the impact of maladaptive schemas on psychological disorders, it is suggested that schema therapy workshops be held for all patients suffering from depression and anxiety.

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Declaration

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

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethics Considerations

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

Transparency of Data

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

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Authors' Contributions

All authors contributed equally.

References

Alacreu-Crespo, A., Hidalgo, V., Girod, C., Olié, E., & Courtet, P. (2022). The impulsiveness level influences the salivary cortisol response and social stress sensitivity in suicidal

- patients. *Journal of psychiatric research*, 156, 159-167. <https://doi.org/10.1016/j.jpsychires.2022.10.008>
- American Psychiatric Association, A. (2022). *Diagnostic and statistical manual of mental disorders: DSM-5-TR*. Washington, DC: American psychiatric association. <https://doi.org/10.1176/appi.books.9780890425787>
- Ashori, S., Zade-Mohammadi, A., Ramezani, M. A., Vafaei, A., & Karimi, R. (2022). The Mediating Role of Spiritual Tendencies in the Relationship between Cognitive Emotion Regulation and Marital Adjustment. *Journal of Pizhūhish dar dān va Salāmat (i.e., Research on Religion & Health)*, 8(2), 89-102. <https://doi.org/10.22037/jrrh.v8i2.33590>
- Byers, E. S., Olthuis, J. V., O'Sullivan, L. F., & Connell, E. M. (2023). Anxiety Sensitivity in the Sexual Context: Links between Sexual Anxiety Sensitivity and Sexual Well-Being. *Journal of sex & marital therapy*, 49(5), 550-562. <https://doi.org/10.1080/0092623X.2022.2156955>
- Cha, E. J., Hong, S., Park, D.-H., Ryu, S.-H., Ha, J. H., & Jeon, H. J. (2022). A network analysis of panic symptoms in relation to depression and anxiety sensitivity in patients with panic disorder. *Journal of affective disorders*, 308, 134-140. <https://pubmed.ncbi.nlm.nih.gov/35429524/>
- D'Rozario, A. B., & Pilkington, P. D. (2022). Parental separation or divorce and adulthood attachment: The mediating role of the Abandonment schema. *Clinical Psychology & Psychotherapy*, 29(2), 664-675. <https://doi.org/10.1002/cpp.2659>
- Dizaj Khalili, M., Makvand Hosseini, S., & Sabahi, P. (2023). Effects of Mindfulness-Based Cognitive Therapy on Anxiety Sensitivity in Patients with Multiple Sclerosis [Research Article]. *Jundishapur J Chronic Dis Care*, 12(1), e132672. <https://doi.org/10.5812/jjcdc-132672>
- Ghadampour, E., Hosseini Ramaghani, N., & Moradiani Gizeh Rod, S. (2018). Effectiveness of Emotional Schema Therapy on Anxiety Sensitivity and Emotion Regulation Strategies in Socially Anxious Students [Research]. *Armaghane Danesh*, 23(5), 591-607. <http://armaghanej.yums.ac.ir/article-1-1626-en.html>
- Hasanpour, A., Aslani, F., & Godarzi, Z. (2015). Effectiveness of Emotional Skills Training of Mothers on Reducing Insecure Attachment and Behavioral Issues among Elementary Students in Isfahan, Iran. *mui-jbs*, 13(4), 625-630. <http://rbs.mui.ac.ir/article-1-440-en.html>
- Lee, H., Kim, S., & Chang, M. C. (2023). Associations Between Headache (Migraine and Tension-Type Headache) and Psychological Symptoms (Depression and Anxiety) in Pediatrics: A Systematic Review and Meta-analysis. *Pain Physician*, 26(6), E617-e626. <https://pubmed.ncbi.nlm.nih.gov/37847915/>
- Mehrmanesh, E., Hafezi, F., Ehteshamzadeh, P., & Bakhtiarpour, S. (2023). Comparing the effectiveness of cognitive behavioral therapy, biofeedback and EMDR on anxiety sensitivity in women with migraine. *Journal of Personality and Psychosomatic Research (JPPR)*, 1(1), 10-14. <https://doi.org/10.61838/kman.jprr.1.1.3>
- Mikaeili, N., Narimani, M., & Marhamati, F. (2024). The Mediating Role of Cognitive Emotion Regulation in the Relationship between Experiential Avoidance and Social Anxiety Symptoms in College Students: A Descriptive Study. *RUMS JOURNAL*, 22(10), 1037-1052. <https://doi.org/10.61186/jrums.22.10.1037>
- Naderi, Y., Moradi, A., Ramezanzade, F., & Vaghefinezhad, M. (2016). Emotional Schemas (ESs), Depression and Anxiety in Posttraumatic Stress Disorder (PTSD) Patient: As a Risk Factor in PTSD. *Clinical Psychology Studies*, 6(22), 1-22. <https://doi.org/10.22054/jcps.2016.3888>
- Preece, D. A., Hasking, P., Boyes, M., Clarke, P., Kiekens, G., Myin-Germeyns, I., Notebaert, L., & Gross, J. J. (2022). Corrigendum to "Emotion Generation and Emotion Regulation: The Role of Emotion Beliefs". [Journal of Affective Disorders Reports 9C (2022) 100351]. *Journal of Affective Disorders Reports*, 10, 100393. <https://www.sciencedirect.com/science/article/pii/S2666915322000853>
- Rajabi, S. (2018). Anxiety Sensitivity, Perfectionism, Loneliness and Self-esteem of elderly with Obsessive-Compulsive Disorder and Major Depression. *Aging Psychology*, 4(2), 119-129. https://jap.razi.ac.ir/article_959.html
- Ranney, R. M., Berenz, E., Rappaport, L. M., Amstadter, A., Dick, D., & Group, S. f. S. W. (2022). Anxiety sensitivity and distress tolerance predict changes in internalizing symptoms in individuals exposed to interpersonal trauma. *Cognitive therapy and research*, 46(1), 217-231. <https://doi.org/10.10608-021-10234-4>
- Rezaei, M., Gholamrezayi, s., Sepahvandi, M. A., Ghazanfari, F., & Darikvand, F. (2013). The potency of early maladaptive schemas and personality dimensions in prediction of depression. *Thoughts and Behavior in Clinical Psychology*, 8(29), 77-86. https://jtbcp.roudehen.iau.ir/article_25.html
https://jtbcp.roudehen.iau.ir/article_25_0fc6dee9e7378134bf9b82ed600f075c.pdf
- Riskind, J. H., & Kleiman, E. M. (2012). Looming Cognitive Style, Emotion Schemas, and Fears of Loss of Emotional Control: Two Studies. *International Journal of Cognitive Therapy*, 5(4), 392-405. <https://doi.org/10.1521/ijct.2012.5.4.392>
- Sepas, L., Dioulag, A. S., & Khademi, A. (2022). Comparison of the Effectiveness of Acceptance-Based Therapy and Reality Therapy on Reducing Anxiety Sensitivity in Women with MS in Urmia. *Journal of Culture of Counseling and Psychotherapy*, 13(51). https://journals.atu.ac.ir/article_14119_65248d055c6127560a12a7638a7c2417.pdf
- Shahamat, F., Sabeti, A., & Rezvani, S. (2010). Investigating the relationship between parenting and early maladaptive schemas. *Educational and Psychological Studies*, 11, 239-254. https://www.researchgate.net/publication/288555089_Investigate_the_Relationships_Between_parenting_styles_and_early_maladaptive_schemas
- Stern, J. A., Fraley, R. C., Jones, J. D., Gross, J. T., Shaver, P. R., & Cassidy, J. (2018). Developmental processes across the first two years of parenthood: Stability and change in adult attachment style. *Developmental Psychology*, 54(5), 975-988. <https://doi.org/10.1037/dev0000481>
- Taylor, S., Jang, K. L., Stewart, S. H., & Stein, M. B. (2008). Etiology of the dimensions of anxiety sensitivity: A behavioral-genetic analysis. *Journal of anxiety disorders*, 22(5), 899-914. <https://www.sciencedirect.com/science/article/pii/S0887618507001752>
- Tran, G. Q., & Smith, J. P. (2004). Behavioral assessment in the measurement of treatment outcome. In *Comprehensive handbook of psychological assessment, Vol. 3: Behavioral assessment*. (pp. 269-290). John Wiley & Sons, Inc.
- Tremblay, P. F., & Dozois, D. J. A. (2009). Another perspective on trait aggressiveness: Overlap with early maladaptive schemas. *Personality and individual differences*, 46(5), 569-574. <https://doi.org/10.1016/j.paid.2008.12.009>
- Umaphathi, K. K., Sparks, K., Dhanpalreddy, H., Thavamani, A., Murphy, J., & Awad, S. (2021). BURDEN OF MENTAL HEALTH DISORDERS AMONG OLDER CHILDREN AND TEENAGERS WITH CONGENITAL HEART DISEASE: A

- POPULATION-BASED ANALYSIS. *Journal of the American College of Cardiology*, 77(18, Supplement 1), 501.
<https://www.sciencedirect.com/science/article/pii/S073510972101860X>
- Venta, A., Sharp, C., & Hart, J. (2012). The relation between anxiety disorder and experiential avoidance in inpatient adolescents. *Psychological assessment*, 24(1), 240-248.
<https://doi.org/10.1037/a0025362>
- Wang, L., Xian, Y., Dill, S.-E., Fang, Z., Emmers, D., Zhang, S., & Rozelle, S. (2022). Parenting style and the cognitive development of preschool-aged children: Evidence from rural China. *Journal of Experimental Child Psychology*, 223, 105490.
<https://www.sciencedirect.com/science/article/pii/S0022096522001199>
- Wang, Z.-J., Liu, C.-Y., Wang, Y.-M., & Wang, Y. (2024). Childhood psychological maltreatment and adolescent depressive symptoms: Exploring the role of social anxiety and maladaptive emotion regulation strategies. *Journal of affective disorders*, 344, 365-372.
<https://doi.org/10.1016/j.jad.2023.10.046>
- Wheaton, M. G., Mahaffey, B., Timpano, K. R., Berman, N. C., & Abramowitz, J. S. (2012). The relationship between anxiety sensitivity and obsessive-compulsive symptom dimensions. *Journal of Behavior Therapy and Experimental Psychiatry*, 43(3), 891-896.
<https://www.sciencedirect.com/science/article/pii/S0005791612000109>
- Younesi, S., Hatami, M., & Salahyan, A. (2021). Effectiveness schema therapy based on parenting styles on educational stress perception of female students. *Journal-of-Psychological-Science*, 20(100), 521-532.
<http://psychologicalscience.ir/article-1-875-en.html>
- Young, J. E., Klosko, J. S., & Weishaar, M. E. (2006). *Schema therapy: A practitioner's guide*. Guilford Press.
[https://books.google.com/books?hl=en&lr=&id=1x7TDwAAQBAJ&oi=fnd&pg=PP1&dq=41.+Young,+J.+E.,+Klosko,+J.+S.,+%26+Weishaar,+M.+E.+\(2003\).+Schema+therapy:+A+practitioner%27s+guide.+Guilford+Press.%E2%80%8F&ots=P0qSfQBMFR&sig=3yDLJRPaL8D4snKEw2M-obnndtE](https://books.google.com/books?hl=en&lr=&id=1x7TDwAAQBAJ&oi=fnd&pg=PP1&dq=41.+Young,+J.+E.,+Klosko,+J.+S.,+%26+Weishaar,+M.+E.+(2003).+Schema+therapy:+A+practitioner%27s+guide.+Guilford+Press.%E2%80%8F&ots=P0qSfQBMFR&sig=3yDLJRPaL8D4snKEw2M-obnndtE)
- Zabeti, A., & Jafari, S. (2018). Structural model of parenting styles, early maladaptive schemas and narcissistic personality traits in adolescents. *Applied Psychology*, 12(2), 285-302.
https://apsy.sbu.ac.ir/article_97082_4a279980877034d721c3b049db13f261.pdf