

## ***Modeling the structural relationship between early maternal maladaptive schemas and children's temperamental problems: The mediating role of child adjustment***

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### **Abstract**

***Background:*** The characteristics of maternal schemas play an important role in children's psychological health. Identifying the mechanism of the relationship between maternal schema and temperament problems can be the focus of therapeutic interventions.

***Objectives:*** The aim of the present study was to investigate the ways to predict the relationship between early maladaptive schemas of mothers and children's temperament problems with child adjustment as the mediator.

***Methods:*** This is a descriptive-analytic study based on correlation and path analyses. The sample consisted of 447 Zanjan preschool students who were selected through multistage cluster sampling method. The data were collected using a questionnaire, and the parents of preschool children answered early maladaptive schemas Yang, adolescent child adjustment, and the Malahotra temperamental questionnaires. Pearson's correlation coefficient and path analysis were used to analyze the data.

***Results:*** The results related to the preschool children and their mothers showed that the direct estimation coefficients of temperament problems based on components of maladaptive schemas were between -09 % to -20%. Besides, the direct coefficients of temperamental problems based on child adjustment were 46%. Overall, maternal maladaptive schemas accounted for 08% of the variance of adjustment and .33% of the variance in temperamental problems ( $P = 0.01$ ).

***Conclusion:*** According to the results, it seems that measuring and detecting maladaptive schema of mothers and identifying the type of maladaptive schema and curing them can lead to children adjustment and alleviate their temperamental problems.

***Keywords:*** adaptation; adjustment; temperament

### **Introduction**

Children are born with an inherited temperament that in itself is never good or bad [1]. Temperament is defined as the behavioural style of a person, distinguishing the aspect from the person's abilities and motivation. It is regarded as a set of inherited personality traits that appear early in life. Another approach to temperament views it as individual differences in the primary

emotions (those of joy, sadness, interest, anger, fear, etc.). These traits determine how the child interacts with the world around himself/herself [2]. Also, temperament has been defined as relatively stable individual and inherent differences in the intensity and quality of emotional, psychomotor, attentional, and self-regulation reactions that result from the interaction of biological and environmental

elements [3]. Among environmental factors, family, after a hereditary context, has the most significant influence on children's temperament, and the root of most of the child's emotional, social, and psychological disorders, especially mood disorders, must be investigated within families [4].

The concept of adjustment refers to structures that facilitate the survival of all species and include not only humans but also animals and plants [3]. In psychology, adjustment is a process more or less consciously assumed to fit the social, natural, or cultural environment. This adjustment requires individual and environmental changes [5]. A home is the primary living environment of any individual, and the impact of family and early social experiences on family environment are of great importance when establishing the foundations of a compromise model [2]. Therefore, the quality of the child's life in the family and the way he/she interacts with parents can affect his/her adaptation [4].

The child's temperament and adjustment are influenced by many environmental factors. One of these influences is mother and her negative early experiences, which are called early maladaptive schemas (EMSs) [6]. Yang defines schemas, memories, emotions, bodily sensations, and cognitions as tied to the destructive aspects of one's childhood experiences which are repeated in an organized way throughout life [7]. A person's maladaptive behaviors arise in response to a schema [1].

Thus, one's inappropriate behaviors with others stem from schemas [7]. In Yang's schema pattern, eighteen schematics are divided into five unfulfilled emotional needs that are called "schema domains" [8]. The first area of disconnection and rejection includes the schemes of abandonment/instability, mistrust/abuse, emotional deprivation, defectiveness/shame, and social isolation/alienation. The second domain of impaired autonomy and performance includes the schemes of dependency/inadequacy, vulnerability to harm or illness, and maladaptive enmeshment/undeveloped self. The third area is impaired limits and includes entitlement/grandiosity and insufficient self-control/self-discipline. The fourth area is another/directedness including subjugation, self-sacrifice and approval-seeking/recognition-

seeking. Finally, the fifth area is over-vigilance and inhibition that incorporates negativity, emotional inhibition, and unrelenting standards/hyper-critics positiveness [9].

A number of studies have shown a relationship between temperament and child adjustment [10]. Those children who had a good quality relationship with their parents were better adapted and had a more natural temperament [11]. of course, several studies showed that the relationship between adjustment and temperament is reciprocal. More specifically, if a child has a difficult temperament or hereditary or environmental reasons, his or her difficult temper will impede favorable relationship with others, especially parents, and as a result, the ability of adjustment to surroundings and living conditions will be diminished [5,12]. It can be concluded that a mismatch between environmental conditions and the needs of the child reduces his/her adjustment and causes temperamental problems [2]. Recent research on the relationship between temperament and adjustment has suggested a pattern of vulnerability, in which temperament is considered as the context of vulnerability and points to its causal role in the development of psychopathology [13].

On the other hand, Young believes early maladaptive schemas play important roles in psychological problems, especially chronic and refractory problems [14]. Calvete found that maladaptive schemas predict temperamental problems [15]. Studies have shown that maladaptive schema is significantly associated with depression [16] and anxiety [17]. In fact, when mothers develop early maladaptive schemas, the schemas, as the highest level of cognition, have a profound and powerful impact on their cognition and emotion and drive them through parenting and emotional and behavioral transmissions. Transfer to your child [1]. These findings support the hypothesis of Young's schema theory that when parents become unstable, rejected, and frustrated, children's needs for safety, stability, empathy, communication, and acceptance are not predictably presented. This Makes the situation difficult for the child and disrupts the his/her emotions and temperaments [7].

Based on this theoretical and research background, it is observed that some studies have

examined the relationship between parental maladaptive schemas and child temperament, and yet the independent role of mothers' maladaptive schema has not been investigated. In addition, the variable role of child's adaptation ability as a mediator between parenting and temperament schemas has not been examined. The ability of a child to adapt to high or low levels can change the severity of temperamental disorders as a mediating variable. Therefore, in the present study, we attempted to investigate the role of early maternal maladaptive schemas in mediating children's adjustment in temperamental problems.

## Methods

### A) Research Plan and Participants

This study adhered to a descriptive-analytical design. The statistical population of the present study included all students of 209 preschool centers in districts one and two of education in Zanjan and 4889 students (2201 girls and 2688 boys) in the academic years of 2017-2018. According to Klein, in explaining the structural equation tests and path analysis to measure each component, 20 subjects had the desired volume [18]. Accordingly, since the questionnaires in measured 23 different components, 460 subjects from the statistical population were selected as the statistical sample size of the present study.

Through a cluster sampling in 209 preschool centers, 18 centers were selected to extract 460 statistical samples. Finally, based on a multi-stage cluster sampling method from each of the 18 preschool centers, a class was selected, and all children's knowledge of that class was investigated. Inclusion criteria included mothers of preschool children, children of 6 to 7 years, educational level (pre-school), and willingness to cooperate and complete the questionnaires. Exclusion criteria included an unwillingness to return questionnaires for personal reasons and not completing all questionnaire items. Then, the early maladaptive schema questionnaires (1998) and the Malhotra temperament questionnaire (1998) were completed by the mothers of preschool children separately for each child. Also, Dojanchi Adjustment Questionnaire was completed by preschool teachers for each child. Finally, 13 incomplete questionnaires were excluded. The data obtained from 447 subjects were analyzed using SPSS22 and Lisrel8.88

software.

### B) Instruments

1) Primary Maladaptive Schema Questionnaire (SQ-SF): The short form of the Schema Questionnaire was used to measure the early maladaptive schemas. This 5-item questionnaire was developed by Yang on a 205-item original form to assess four primary maladaptive schemas. Each question is scored on a 6-point scale (1 for completely false, 6 for completely correct). In this questionnaire, every 5 questions measure a schema, and if the mean of each sub-scale is above 25, that schema is inefficient. [19] In the present study, the alpha coefficient of the sub-scales ranged from (0.81) to (0.93).

2) The Malhotra temperament scale: The Malhotra scale was used to measure mood problems. This scale has 45 questions and assesses 5 components of humanity, excitement, power, attentiveness, and orderliness. The mood scale is scored on a 5-point Likert scale. In the scoring system, the cutting point is 3. Grades less than 3 are evaluated negatively, and scores above 3 are evaluated positively. Thus, a low score in each activity and component show negative and problematic temperament, and a high score means positive and healthy temperament. This scale can be applied to all groups of normal and abnormal children within the age range of 4-14 years for both genders and socioeconomic classes. [20]. In the present study, reliability for the sub-scales of (0.78) Excitement (0.83), Force (0.75), and Attention (0.84) was calculated.

3) Child Adjustment Questionnaire: To assess the children's adjustment, a questionnaire was developed by Dojanchi with 37 Likert choice questions. Their child chooses the most relevant one, and the scores between 0 to 3 can be assigned to each question. The minimum and maximum scores are 0 and 111, respectively. Higher scores show higher adjustment levels [21]. The reliability of this test was reported to be (0.79), and its reliability equal to (0.81) in the Dekanchi's study. In the present study, the reliability of this tool was (0.86).

### C) Statistical Analysis

Based on the nature and method of the work and in terms of the relationships between the independent and dependent variables, our study is a kind of correlational research and a detailed path

analysis. maladaptive schemas are considered as exogenous and predictor variables, respectively, children's' adjustment acted as a mediating variable, and temperamental problems were endogenous variable and a criterion variable. Pearson's correlation coefficient analysis was run in order to define the relationships between early maternal maladaptive schemas, temperament, and adjustment. The path analysis method was later used to investigate the mediating role of adjustment in the relationship between maladaptive schemas and temperamental problems.

## Results

Demographic data of the whole sample showed that out of the 447 subjects in the study, 191 were girls, and 256 were boys. In terms of age, 119 were 7 years old, and 328 were 6 years old. Descriptive characteristics of the research variables revealed that the mean scores of mothers of early maladaptive schemas, child adjustment and child temperamental problems were 6.20(2.75), 75.94(15.65), and 140.35(31.99), respectively. The results also show that the Maximum scores of mothers of early maladaptive schemas, child adjustment, and child temperamental problems were 25, 111, and 235, respectively, and the Minimum scores were 0, 33, and 67, respectively (Table1).

**Table 1: Descriptive findings of research variables**

Variables	Mean	Standard Deviation	Maximum	Minimum	Tilt
<b>Early maladaptive schemas</b>	6.20	2.75	25	0	-0.75
<b>Child adjustment</b>	75.94	15.65	111	33	-0./09
<b>Temperamental problems</b>	14.35	31.99	235	67	-0.75

The results of the analysis of variables indicate that the assumptions of multiple linearity indices are met (Table 2). The results of the relevant Table show that there is no linear relationship between the predicted variables of the present study. The value of the tolerance index is high (the closer the value of this index is to 1, the lower the correlation coefficient between the

predictor variables would be). The VIF value is also desirable and indicates no linear relationship between the predictor variables (Number 2 is smaller. The line is low and acceptable). Therefore, the correlation between predictor variables confirms the use of regression models such as path analysis

**Table 2: Multiple Linearity Indicators**

Predictive Variables	Tolerance	Tolerance Inflation Factor
<b>Emotional Deprivation</b>	0.87	1.15
<b>Social Isolation</b>	0.80	1.25
<b>Abandonment/Instability</b>	0.91	1.09
<b>Failure</b>	0.87	1.15
<b>Dependence/Incompetence</b>	0.92	1.08
<b>Defectiveness/Shame</b>	0.93	1.07
<b>Subjugation</b>	0.89	1.14
<b>Vulnerability to Harm or Illness</b>	0.87	1.15
<b>Enmeshment/Undeveloped Self</b>	0.80	1.25
<b>Self-Sacrifice</b>	0.93	1.07
<b>Mistrust/Abuse</b>	0.87	1.15
<b>Unrelenting Standards</b>	0.80	1.25
<b>Emotional Inhibition</b>	0.91	1.09
<b>Entitlement</b>	0.88	1.15
<b>Insufficient Self-Control</b>	0.93	1.07

The Watson Index was used to evaluate the independence of observations. The value of this index was 1.87 when the criterion variable was adjusted and equal to 2.04, and the criterion variable's temperamental problems were set. Hence, the default is the observational independence. The relationship between temperament problems and maladaptive schema variations in the components of social isolation, self-sacrifice, and emotional inhibition was negative and significant. The relationship between temperamental problems and components of maladaptive schemas of emotional deprivation, abandonment, failure, dependency/inadequacy, defect/shame, obedience, vulnerability to harm, untrained self-esteem, distrust/maltreatment,

criteria strictly enough, and insufficient self-control was not meaningful (Table 3). Also, the relationship between adjustment with components of maladaptive schemas, abandonment, obedience, and vulnerability to loss was not significant. The relationship between adjustment with temperamental problems in preschool children was also significant.

In the present study, prior to data analysis, one-variable normal assumptions, multivariate norms, and outlier values were tested and confirmed. Following the path analysis test, we removed several paths from the model due to the lack of significance during the model correction process.

**Table 3: Pearson correlation coefficients between the main variables of the study**

Predictive Variables	Adjustment	Temperamental Problems
<b>Emotional Deprivation</b>	-0.33 **	-0.06
<b>Social Isolation</b>	-0.34 **	**-.017
<b>Abandonment/Instability</b>	0.05	0.02
<b>Failure</b>	-0.17 **	0.05
<b>Dependence/Incompetence</b>	-0.32 **	0.02
<b>Defectiveness/Shame</b>	-0.45 **	0.01
<b>Subjugation</b>	-0.02	0.05
<b>Vulnerability to Harm or Illness</b>	-0.03	-0.01
<b>Enmeshment/Undeveloped Self</b>	-0.39 **	-0.03
<b>Self-Sacrifice</b>	-0.45 **	*-0.10
<b>Mistrust/Abuse</b>	-0.44 **	0.08
<b>Unrelenting Standards</b>	-0.39 **	0.03
<b>Emotional Inhibition</b>	-0.33 **	*-0.10
<b>Entitlement</b>	-0.47 **	0.06
<b>Insufficient Self-Control</b>	-0.34 **	-0.02
<b>Adjustment</b>	-	**0.34

Reports on the relationships for the residuals in the model of the relationship evaluation are indices between variables, with the reported t-values being greater than 1.96, all of which are significant at the level of less than 0.01 (Table 3). The analysis revealed that among the different dimensions of parental maladaptive schemas, the components of emotional deprivation, social

isolation, Mistrust, failure, dependency/inadequacy, Vulnerability to Harm, Entanglement, Self-Control, Self-Sufficiency, eligibility, and stringent criteria, and the direct negative predictors were consistent. Also, adjustment variable was a direct positive predictor of children's temperamental problems (Table 4).

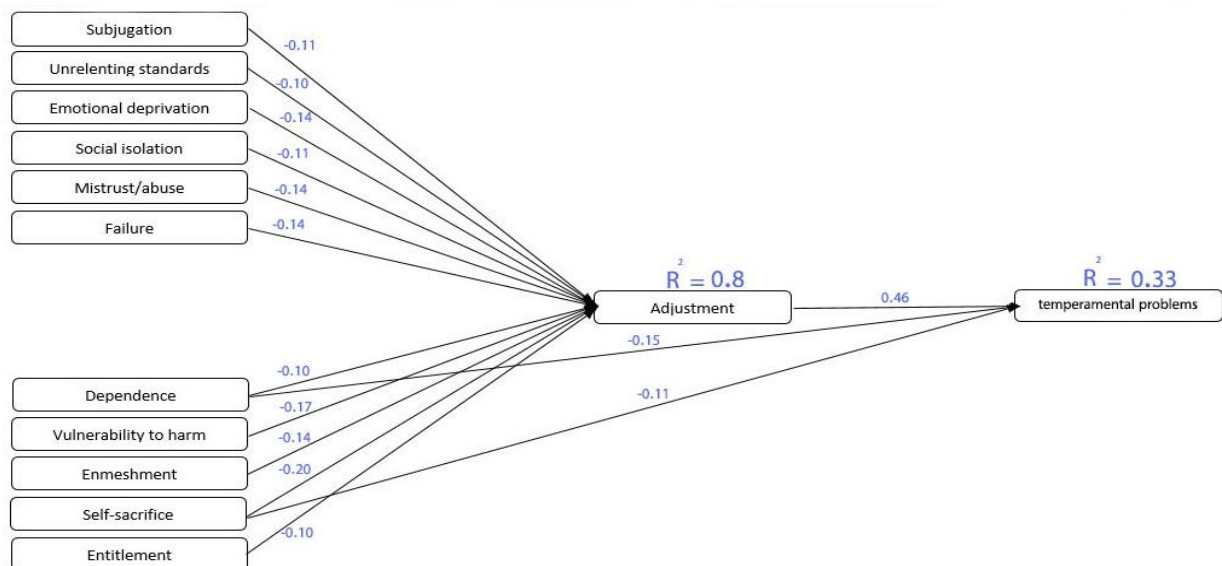
*Table 4: Indicators of the relationships between variables*

Dependent Variable	Independent Variable	Direct Impact		Indirect Effect		Total Effect	
		Amount	Impact	Amount	Impact	Amount	Impact
adjustment (R2=0/08)	Emotional Deprivation	**-.014	3.64	-	-	-	-
	Social Isolation	**-.011	2.56	-	-	-	-
	Mistrust/Abuse	**-.014	3.19	-	-	-	-
	Failure	**-.014	3.53	-	-	-	-
	Dependence/Incompetence	**-.010	2.63	-	-	-	-
	Vulnerability to Harm	**-.017	4.23	-	-	-	-
	Enmeshment/Undeveloped Self	**-.014	3.34	-	-	-	-
	Self-Sacrifice	**-.020	4.96	-	-	-	-
	Entitlement/Grandiosity	**-.011	2.84	-	-	-	-
	Unrelenting Standards	**-.010	2.62	-	-	-	-
Temperamental Problems (R2=-0/33)	Subjugation	**-.011	2.79	-	-	-	-
	Adjustment	**0.46	3.06	-	-	-	-
	Dependence/Incompetence	**-.015	2.15	0.42	2.34	0.53	3.53
	Self-Sacrifice	**-.011	3.24	0.24	3.12	0.35	2.90

To evaluate the appropriacy of the model from the indices of Griffin et al., the values of x-indices of the degree of freedom ( $X^2/df$ ), which were less than 3, were considered to be acceptable. The square root of the mean square error of approximation (RMSEA) values greater than 0.6 indicated a good fit to the model. Comparative fit index (CFI) values greater than 0.9 indicates a good fit to the model. Modified goodness of fit index (AGFI) values greater than 0.8 and PNFI goodness index values greater than 0.6 indicated an appropriate model fit [22]. In this study, the reported indices were all in good condition, and an overall fit of the structural model can be deduced.

In short, compatibility between maternal maladaptive schemas in the components of emotional deprivation, social isolation, distrust, failure, stress vulnerability, embarrassment, entitlement, overwhelming criteria, and obedience to child's mood problems play a full mediator role and plays only an incomplete mediator in the two components of dependency/inadequacy and self-sacrifice (Figure 1).

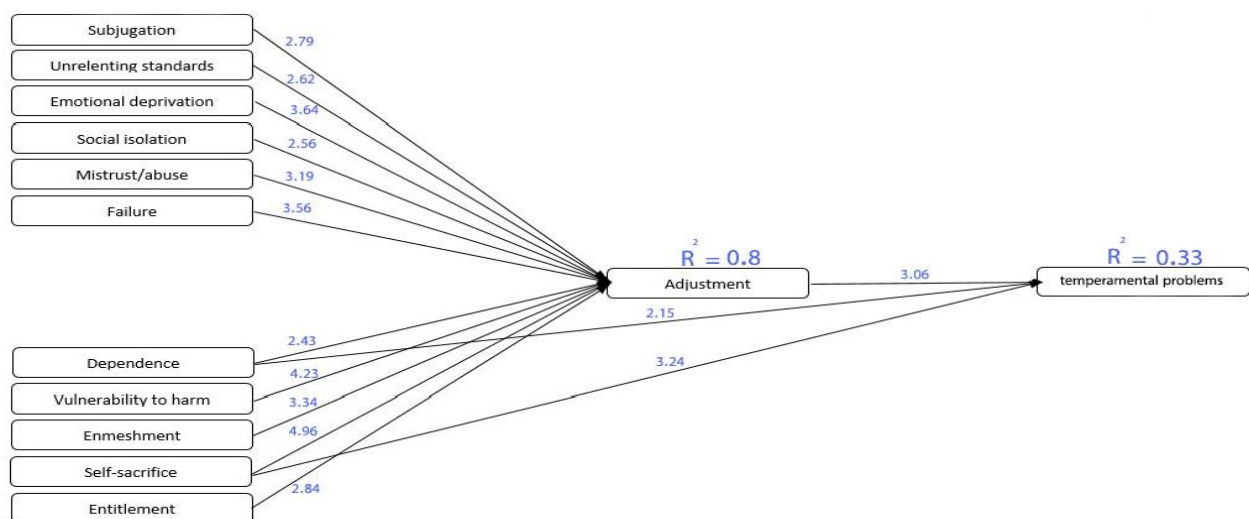
**Structural Model Investigation:** In the structural model, path coefficients are used to determine the share of each predictor variable in explaining the variance of the criterion variable. Figure 1 shows the estimation coefficients of the structural research model (standard estimation). As can be seen, the direct estimation coefficients of temperamental problems based on the components of maladaptive schemas are between -0.09 to -0.20. Besides, direct estimation coefficients of temperamental problems based on child adjustment were 0.46. Overall, the present model explains 8% of the variance of adaptation and 33% of the variety of the problems of temperamental.



Figur1: Estimation coefficent of structural research model

The coefficients of t-value in the structural model show their significance. As can be seen, all the direct estimation coefficients are greater than the critical

value of 1.96. Therefore, the effect of early maladaptive schemas of mothers along with mediating child adaptation on children's behavioral problems is significant (Figure 2)



Figur2: Estimation t-value coefficients of the structural research model

## Discussion

The purpose of the present study was to model and predict temperamental problems in preschool children in Zanjan based on early maladaptive schemas of mothers and mediating children's adjustment abilities. The results showed that among the different domains of maladaptive parenting schemas, the components of emotional deprivation, social isolation, distrust, failure, dependence, vulnerability to harm, affliction, self-sacrifice, entitlement, strict criteria, and obedience were direct predictors of adjustment. The results also showed that among the components of parental maladaptive schemas, dependency schemas, and self-sacrifice were indirect predictors of child temperament problems. According to the path analysis, adjustment between maternal maladaptive schemas in the components of emotional deprivation, social isolation, distrust, failure, stress vulnerability, embarrassment, entitlement, overwhelming criteria, and obedience to child moral problems played a full mediator role, and only in the two components of dependency/ inadequacy and self-sacrifice, they showed an incomplete mediator. Unfortunately, no independent research has investigated child adjustment as a mediating variable in relation to maternal maladaptive schemas and mood problems. However, in Yang's theory, it is noted that Maladaptive schemas that have underlying emotional themes have a negative impact on the process of identifying, understanding, and regulating emotions, which leads individuals to experience lower social competence and face psychological distress [7]. In addition, the combination of these factors leads to lower psychological incompatibility and quality of life [23,24]. Previous research shows that the parents whose schemas fall into the area of cuts and rejections (emotional deprivation, social isolation, mistrust, defect /shame) often suffer the most. According to Yang, parents whose schemas fall into the domain of slashing and exclusion (emotional deprivation, social isolation, distrust / abuse, defect / shame) often observe the most harmful and negatively affecting children's anxiety [19]. In the present study, the negative effect of these maladaptive schemas on the adjustment and temperament were confirmed. In explaining this finding, it can be said that many of

these parents have had a shocking childhood, and in adulthood, tended to jump from one self-harming relationship to another or avoid close interpersonal relationships. Such parents believe that their need for stability, security, affection, and belonging has not been met, and they cannot establish safe and satisfying attachments with others, even their own children, which can threaten their children's well-being [25].

In other words, when the parent's early schemas are incompatible, they autocratically use defective styles of parenting. This corroborates Shorey et al.'s findings [9]. Tyrannical parenting styles in the form of negative behaviors can be effective in the early development of patterns of maladaptive schemas in children. A research by Madden et al. confirms that authoritarian parenting styles lead to early patterns of maladaptive schemas in children [8]. The results of this research and the present study support the hypothesis of Young's schema that when parents become unstable, rejected, and frustrated, children's needs for safety, stability, empathy, communication, and acceptance are not met in a predictable way [7]. Based on this theoretical explanation by Yang, the results of the present study indicate that maladaptation may disrupt the child's basic needs, affections, and moods and cause temperamental problems. The findings of Zubizarreta et al. and Laursen et al. are consistent with this finding [26,27].

In sum, the results of this study showed that the components of maternal maladaptive schemas can affect children's temperamental problems. Moreover, adjustment between maternal maladaptive schemas in the components of emotional deprivation, social isolation, distrust, failure, injury Stressfulness, embarrassment, entitlement, overwhelming standards, and obedience to child's temperamental problems play a full mediator role in the two components of dependency/ inadequacy and self-sacrifice. Therefore, treating maternal maladaptive schemas and enhancing children's adjustment can reduce their temperamental problems. The use of restrictive tools instead of actual behavior and non-segregation of subjects and the exclusion of the role of the father were the main limitations of this study. Future researchers are suggested to separate the genders and consider the role of fathers in comparison with mothers in terms of the



variables. Further research may also consider the role of maternal age and maternal variables. Finally, the roles of maternal age, maternal education, maternal occupation, and maternal economic status in adjustment ability and child temperamental problems can be studied in future research.

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### Conflicts of Interest

This study had no conflict of interest.

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