





## The Effectiveness of Schema-Based Parenting Training on Frustration Tolerance and Dysfunctional Attitudes in Mothers of Children with Autism Spectrum Disorder

Sahar. Amini<sup>1</sup>, Maryam. Asaseh<sup>2\*</sup>, Nazanin. Honarparvaran<sup>3</sup>, Leila. Kashani Vahid<sup>2</sup>

<sup>1</sup> Ph.D. student, Department of Psychology and Education of Exceptional Children, SR.C., Islamic Azad University, Tehran, Iran

<sup>2</sup> Department of Psychology and Education of Exceptional Children, SR.C., Islamic Azad University, Tehran, Iran

<sup>3</sup> Department of Counseling, Marv.C., Islamic Azad University, Marvdasht, Iran

\* Corresponding author email address: M.asaseh@iau.ac.ir

### Article Info

### ABSTRACT

#### Article type:

Original Research

#### How to cite this article:

Amini, S., Asaseh, M., Honarparvaran, N., & Kashani Vahid, L. (2026). The Effectiveness of Schema-Based Parenting Training on Frustration Tolerance and Dysfunctional Attitudes in Mothers of Children with Autism Spectrum Disorder. *Iranian Journal of Neurodevelopmental Disorders*, 5(5), 1-10.

<https://doi.org/10.61838/kman.jndd.849>



© 2026 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.

**Purpose:** The present study aimed to investigate the effectiveness of schema-based parenting training on frustration tolerance and dysfunctional attitudes among mothers of children with Autism Spectrum Disorder (ASD).

**Methods and Materials:** This study employed a quasi-experimental design with a pretest–posttest control group. The statistical population consisted of mothers of children with Autism Spectrum Disorder in Shiraz. Participants were selected through convenience sampling from two schools and were randomly assigned to either the experimental group or the control group. The experimental group received schema-based parenting training, while the control group received no intervention. The research instruments included the Frustration Discomfort Scale developed by Harrington (2005) and the Dysfunctional Attitude Scale developed by Weissman and Beck (1978). Data were analyzed using multivariate and univariate analyses of covariance (MANCOVA and ANCOVA).

**Findings:** The results indicated that schema-based parenting training had a significant effect on improving frustration tolerance and reducing dysfunctional attitudes among mothers. The effect sizes demonstrated a strong impact of the intervention on the components of frustration tolerance and dysfunctional attitudes.

**Conclusion:** Schema-based parenting training can be used as an effective intervention for promoting the mental health of mothers of children with Autism Spectrum Disorder.

**Keywords:** *Schema-based parenting, frustration tolerance, dysfunctional attitudes, Autism Spectrum Disorder, mothers*

### 1. Introduction

Autism Spectrum Disorder (ASD) is one of the most complex neurodevelopmental disorders characterized by persistent deficits in social communication, restricted

interests, repetitive behaviors, and impairments in adaptive functioning (Hallahan et al., 2014; Jiang et al., 2022). The prevalence of ASD has increased considerably over recent decades, making it a major public health and educational



concern worldwide. Children with ASD often experience significant difficulties in emotional regulation, interpersonal communication, and behavioral adjustment, which in turn create substantial psychological and caregiving burdens for family members, especially parents (Fu et al., 2024; Roghani Araghi, 2024). Among caregivers, mothers frequently assume the primary caregiving role and therefore experience elevated levels of emotional distress, chronic stress, psychological exhaustion, and maladaptive cognitive responses compared with parents of typically developing children (Gallo et al., 2019; Jose et al., 2017).

The long-term caregiving demands associated with ASD can negatively affect family functioning, parental mental health, and parent-child relationships. Mothers of children with ASD are consistently reported to experience higher rates of anxiety, depression, emotional fatigue, hopelessness, and dysfunctional cognitions than mothers of neurotypical children (Jose et al., 2017; Keyvanlou et al., 2021). Research has demonstrated that parental stress and maladaptive parenting patterns may intensify emotional and behavioral difficulties in children with developmental disorders, thereby creating a reciprocal cycle of distress between parent and child (Fu et al., 2024; Leung & Man, 2023). Consequently, psychological interventions targeting parents have increasingly gained attention as an important component of comprehensive treatment approaches for ASD.

One of the most important psychological variables associated with parental adaptation is frustration tolerance. Frustration tolerance refers to an individual's ability to endure discomfort, obstacles, emotional distress, and unmet expectations without experiencing severe psychological disruption or maladaptive reactions (Chand, 2015; Knaus, 2014). Individuals with low frustration tolerance tend to perceive difficulties as unbearable and often respond with emotional dysregulation, anger, helplessness, or avoidance behaviors. Mothers of children with ASD frequently encounter unpredictable caregiving challenges, social pressures, educational concerns, and emotional burdens that may weaken their capacity for frustration tolerance over time (Gallo et al., 2019; Michel et al., 2016). Reduced frustration tolerance may impair effective parenting, emotional responsiveness, and adaptive coping strategies, thereby negatively affecting both maternal well-being and child development.

Distress tolerance and frustration tolerance are closely linked constructs that play critical roles in psychological resilience and emotional regulation. Previous studies have

shown that low frustration tolerance is associated with anxiety disorders, depressive symptoms, emotional instability, and maladaptive coping patterns (Michel et al., 2016; Shakerami et al., 2019). Research conducted by Fereydooni and Sheykhani demonstrated that schema therapy significantly improved distress tolerance among depressed adolescents, suggesting that schema-oriented interventions may effectively modify maladaptive emotional responses (Fereydooni & Sheykhani, 2024). Similarly, Shakerami et al. reported that schema therapy improved frustration tolerance and reduced depressive symptoms among women with chronic physical illnesses (Shakerami et al., 2019). These findings suggest that schema-focused interventions may provide an effective framework for enhancing emotional resilience in vulnerable populations.

Another important psychological construct relevant to mothers of children with ASD is dysfunctional attitudes. Dysfunctional attitudes refer to rigid, maladaptive, and negative cognitive beliefs about oneself, others, and life events that contribute to emotional disorders and maladaptive coping strategies (Imani et al., 2019; Keng et al., 2016). According to cognitive theories, dysfunctional attitudes often include perfectionistic standards, excessive need for approval, fear of rejection, and self-critical beliefs. Parents of children with developmental disorders may become particularly vulnerable to such attitudes because of persistent caregiving stress, social stigma, unrealistic expectations, and feelings of inadequacy (Gallo et al., 2019; Jose et al., 2017). Dysfunctional attitudes can negatively influence parenting behaviors, emotional interactions, and family cohesion, ultimately affecting both parental adjustment and child outcomes.

Previous research has consistently demonstrated associations between dysfunctional attitudes and emotional disturbances. Imani et al. found that dysfunctional attitudes were significantly associated with social anxiety in adolescents and that emotion regulation mediated this relationship (Imani et al., 2019). Beyrami et al. also reported that mindfulness-based cognitive therapy significantly reduced dysfunctional attitudes and social anxiety symptoms among adolescents (Beyrami et al., 2015). Furthermore, Keng et al. demonstrated that mindfulness-based acceptance interventions could decrease implicit dysfunctional attitudes and improve cognitive-emotional consistency (Keng et al., 2016). These findings indicate that interventions focusing on cognitive restructuring and emotional awareness may effectively reduce maladaptive attitudes and improve psychological functioning.



In recent years, schema theory has emerged as one of the influential therapeutic frameworks for understanding deep-rooted maladaptive cognitive and emotional patterns. Early maladaptive schemas are pervasive cognitive-emotional structures formed during childhood as a result of unmet emotional needs and dysfunctional interpersonal experiences (Nematzadeh et al., 2026; Thimm & Chang, 2022). These schemas shape individuals' perceptions, emotional responses, coping mechanisms, and interpersonal behaviors throughout life. Schema therapy aims to identify and modify these maladaptive schemas while promoting healthier emotional and behavioral patterns. According to Thimm and Chang, early maladaptive schemas are significantly associated with a wide range of mental disorders and emotional dysfunctions in adulthood (Thimm & Chang, 2022). Moreover, Nematzadeh et al. highlighted the role of parental schemas and adverse childhood experiences in shaping maladaptive parenting patterns and emotional responses (Nematzadeh et al., 2026).

The application of schema-based approaches in parenting interventions has received increasing attention in recent years. Schema-based parenting focuses on helping parents recognize their own maladaptive schemas, understand how these schemas influence parenting behaviors, and develop healthier parent-child interactions (Jokar et al., 2025; Mehrabinia et al., 2022). This approach emphasizes emotional awareness, empathy, healthy boundaries, emotional validation, and the fulfillment of children's core emotional needs. By targeting parents' cognitive-emotional patterns, schema-based parenting interventions aim to improve parenting competence, emotional regulation, and family relationships.

Several studies have demonstrated the effectiveness of schema-oriented interventions for parents and caregivers. Hasanvand et al. found that schema therapy significantly reduced early maladaptive schemas among mothers of children with intellectual disabilities (Hasanvand et al., 2023). Similarly, Seifi et al. reported that parent-focused schema coaching improved psychological functioning and emotional empowerment among caregivers of adolescents with eating disorders (Seifi et al., 2025). Jokar et al. also demonstrated that schema-based parenting integrated with transactional analysis significantly improved social competence and assertiveness in preschool children through changes in parental practices (Jokar et al., 2026; Jokar et al., 2025). These findings suggest that schema-based parenting interventions can positively influence both parental well-being and child adjustment.

Mindfulness-based parenting interventions have likewise shown promising outcomes in improving parental mental health and parenting quality. Bogels et al. reported that mindful parenting interventions reduced parental stress, improved co-parenting relationships, and enhanced child psychopathology outcomes (Bogels & Restifo, 2014). Bogels and Restifo emphasized that mindful parenting promotes emotional awareness, nonjudgmental acceptance, and compassionate parent-child interactions (Bogels et al., 2014). Lunsy et al. further found that mindfulness-based stress coping programs improved emotional functioning and coping strategies among parents of adolescents with developmental disabilities (Lunsy et al., 2015). Additionally, Asaseh et al. demonstrated that mindfulness training improved family cohesion and general health among parents of children with learning disabilities (Asaseh et al., 2023). These studies collectively highlight the value of parent-focused psychological interventions for improving caregiver functioning and reducing emotional distress.

Positive parenting styles and parenting efficacy have also been associated with resilience and adaptive functioning among parents of children with disabilities. Fu et al. found that resilience mediated the relationship between positive parenting styles and parenting efficacy among parents of children with disabilities in China (Fu et al., 2024). Leung and Man similarly emphasized that parenting styles significantly influence child well-being, emotional development, and family adjustment (Leung & Man, 2023). These findings support the importance of developing interventions that enhance adaptive parenting behaviors and emotional resilience in caregivers.

In Iran, several studies have investigated interventions designed to improve psychological functioning among parents of children with developmental disorders. Bahrani and Qureshi Kermani demonstrated that resilience training significantly reduced dysfunctional attitudes among mothers of children with autism (Bahrani & Qureshi Kermani, 2022). Keyvanlou et al. reported that emotional schema therapy reduced emotional numbness and emotional oversimplification in mothers of children with intellectual disabilities (Keyvanlou et al., 2021). Mehrabinia et al. also developed a competent parenting educational package based on schema therapy principles and emphasized its potential role in improving parenting quality and emotional responsiveness (Mehrabinia et al., 2022). Moreover, Doostdar Toosi et al. found that mindfulness-based and positive self-talk interventions improved psychological well-being among children with chronic illnesses (Doostdar

Toosi et al., 2024). These findings collectively indicate the growing importance of cognitive-emotional interventions for improving family functioning in populations experiencing caregiving stress.

Despite the growing body of literature on schema therapy, mindfulness, and parenting interventions, limited research has specifically examined the effectiveness of schema-based parenting training on frustration tolerance and dysfunctional attitudes among mothers of children with Autism Spectrum Disorder. Given the chronic psychological burden associated with caring for children with ASD and the significant role of parental cognitions in family functioning, investigating interventions that target maladaptive schemas and cognitive-emotional patterns appears particularly important. Improving frustration tolerance and reducing dysfunctional attitudes may contribute not only to maternal mental health but also to healthier parenting practices and improved developmental outcomes for children with ASD.

Therefore, the present study aimed to investigate the effectiveness of schema-based parenting training on frustration tolerance and dysfunctional attitudes among mothers of children with Autism Spectrum Disorder.

## 2. Methods and Materials

### 2.1. Study Design and Participants

The present study employed a quasi-experimental design using a pretest–posttest format with a control group. The statistical population consisted of all mothers of elementary school children with Autism Spectrum Disorder (ASD) who were studying in autism treatment and educational centers in Shiraz during the 2024–2025 academic year. Participants were selected through convenience sampling from two autism treatment centers, namely Eksir and Kara centers, and were randomly assigned into experimental and control groups, with 15 participants in each group. Inclusion criteria included being the mother of a child aged 7 to 12 years diagnosed with Autism Spectrum Disorder by a psychiatrist and clinical psychologist, not receiving any schema-based parenting intervention at the time of the study, having at least a high school diploma, being between 25 and 50 years of age, being married, and not having severe physical or psychological disorders. Exclusion criteria included unwillingness to continue participation in the study, simultaneous participation in other psychotherapy programs, and absence from more than three intervention sessions. After obtaining an official introduction letter from Islamic Azad University, Science and Research Branch, Tehran, and

coordinating with the administrators of the autism centers, eligible participants were informed about the objectives and significance of the study and written informed consent was obtained. Pretests were administered to both groups prior to the intervention, and posttests were conducted after the completion of the intervention sessions.

### 2.2. Measures

The Frustration Discomfort Scale (FDS) developed by Harrington (2005) was used to assess participants' frustration tolerance. This instrument was designed to evaluate individuals' ability to tolerate frustration and discomfort in achieving personal goals. The questionnaire consists of 35 items measuring four dimensions, including emotional intolerance, discomfort intolerance, achievement, and entitlement. Items are rated on a 5-point Likert scale ranging from strongly disagree to strongly agree. Lower total scores indicate higher frustration tolerance, whereas higher scores reflect lower levels of frustration tolerance. The Persian version of the scale was translated and psychometrically evaluated by Babareisi et al. (2014). The reported Cronbach's alpha coefficients for the Iranian sample were 0.84 for the total scale, 0.50 for emotional intolerance, 0.61 for discomfort intolerance, 0.52 for achievement, and 0.71 for entitlement. Harrington (2005) reported higher reliability coefficients in the original version, ranging from 0.87 for discomfort intolerance to 0.94 for the total scale, indicating satisfactory psychometric properties.

Dysfunctional attitudes were assessed using the Dysfunctional Attitude Scale (DAS) developed by Weissman and Beck (1978) based on Beck's cognitive theory of depression. The scale evaluates maladaptive beliefs and cognitive distortions associated with vulnerability to psychological disorders. The DAS includes four subscales: achievement-perfectionism, need for approval from others, need to please others, and vulnerability-performance evaluation. Respondents indicate their level of agreement with each statement on a 7-point Likert scale. Previous studies have confirmed the validity and reliability of the instrument in Iranian populations. Ebrahimi and Mousavi (2012) reported an internal consistency coefficient of 0.92 for the 26-item Persian version of the DAS, which demonstrated stronger reliability compared to the original 40-item version. Furthermore, this coefficient was higher than those reported in previous studies, including Chioqueta and Stiles (2004), who reported

a Cronbach's alpha of 0.85, and Weich et al. (2003), who reported a coefficient of 0.86. Kaviani et al. (2005) also reported acceptable reliability for the Persian version of the scale with a Cronbach's alpha of 0.75.

### 2.3. Intervention

The experimental group participated in a schema-based parenting training program derived from the intervention package developed by Amini et al. The intervention consisted of twelve 90-minute sessions conducted weekly. The sessions focused on introducing parenting styles, emotional needs of children, schema domains, attachment principles, emotional regulation strategies, and maladaptive parenting patterns. Mothers were trained to identify unmet emotional needs and maladaptive schemas in themselves and their children and to replace dysfunctional interaction patterns with adaptive parenting responses. The program also addressed healthy autonomy, realistic expectations, emotional validation, empathy, self-discipline, healthy boundaries, and supportive parent-child communication. In addition, strategies related to emotional acceptance, self-compassion, positive schema development, and age-appropriate empowerment were taught throughout the intervention. Homework assignments and group discussions

were incorporated into each session to facilitate the practical application of learned skills. The control group did not receive any psychological intervention during the study period.

### 2.4. Data Analysis

The collected data were entered into SPSS software version 25 for statistical analysis. Descriptive statistics, including means and standard deviations, were calculated for all study variables. Inferential analyses were conducted using univariate and multivariate analyses of covariance (ANCOVA and MANCOVA) to examine the effectiveness of schema-based parenting training on frustration tolerance and dysfunctional attitudes while controlling for pretest scores. The significance level for all statistical analyses was set at  $p < .05$ .

## 3. Findings and Results

Table 1 presents the means and standard deviations of frustration tolerance and dysfunctional attitudes in the experimental and control groups at the pretest and posttest stages. The descriptive findings provide an initial overview of the changes in study variables following the implementation of schema-based parenting training.

**Table 1**

*Means and Standard Deviations of Frustration Tolerance and Dysfunctional Attitudes in the Pretest and Posttest Stages*

Variables	Experimental Group Pretest M (SD)	Experimental Group Posttest M (SD)	Control Group Pretest M (SD)	Control Group Posttest M (SD)
Emotional Intolerance	23.33 (6.13)	14.93 (3.68)	26.53 (4.13)	29.47 (3.23)
Discomfort Intolerance	22.53 (5.33)	16.80 (3.89)	25.00 (3.10)	28.40 (3.20)
Achievement Intolerance	22.27 (3.61)	15.93 (3.19)	25.87 (3.67)	26.40 (3.75)
Injustice Intolerance	48.07 (6.90)	35.00 (4.51)	55.00 (4.53)	55.53 (4.42)
Total Frustration Tolerance	116.20 (17.71)	82.67 (9.69)	128.40 (13.04)	129.80 (12.53)
Need for Approval	14.67 (7.02)	10.27 (5.18)	18.07 (4.63)	19.47 (3.44)
Achievement-Perfectionism	48.80 (16.39)	34.00 (12.67)	42.47 (13.60)	41.73 (12.42)
Need to Please Others	22.73 (6.13)	15.73 (5.76)	24.73 (4.43)	25.20 (3.62)
Vulnerability	18.80 (3.67)	13.33 (2.82)	20.13 (3.42)	20.07 (2.87)
Total Dysfunctional Attitudes	105.00 (30.25)	73.33 (22.19)	107.40 (24.02)	106.47 (22.43)

As shown in Table 1, the posttest mean scores of the experimental group decreased across all components of frustration tolerance and dysfunctional attitudes compared to the pretest stage, indicating improvement following the intervention. In contrast, the control group demonstrated either minimal changes or slight increases in scores at the posttest stage. The reduction in total scores of frustration

intolerance and dysfunctional attitudes in the experimental group suggests that schema-based parenting training was associated with enhanced frustration tolerance and reduced maladaptive cognitive attitudes among mothers of children with Autism Spectrum Disorder.

Before conducting the inferential analyses, the assumptions underlying multivariate analysis of covariance

were examined. The results of Mauchly's Test of Sphericity for frustration tolerance and dysfunctional attitudes were non-significant, indicating that the assumption of sphericity was satisfied. In addition, the results of Box's M test revealed that the significance level was greater than .05, confirming the homogeneity of variance-covariance matrices across groups. The normality of data distribution was assessed using the Shapiro-Wilk test, and all obtained significance values were above .05, indicating normal data distribution. Furthermore, Levene's test showed non-significant results for all variables ( $p > .05$ ), supporting the assumption of homogeneity of error variances.

The results of multivariate analysis of covariance demonstrated that schema-based parenting training had a

statistically significant effect on the combined dependent variables of frustration tolerance and dysfunctional attitudes. For frustration tolerance variables, Pillai's Trace = .73, Wilks' Lambda = .27, Hotelling's Trace = 5.80, and Roy's Largest Root = 5.80 were all statistically significant,  $F = 32.46$ ,  $p < .001$ , indicating that the experimental and control groups differed significantly on at least one of the frustration tolerance components after controlling for pretest scores. Similarly, for dysfunctional attitudes variables, Pillai's Trace = .64, Wilks' Lambda = .36, Hotelling's Trace = 3.34, and Roy's Largest Root = 3.34 were statistically significant,  $F = 18.04$ ,  $p < .001$ , demonstrating significant group differences in at least one of the dysfunctional attitude components.

**Table 2**

*Results of Univariate Analysis of Covariance for Posttest Scores of Frustration Tolerance and Dysfunctional Attitudes*

Variables	Sum of Squares	df	Mean Square	F	p	$\eta^2$
Emotional Intolerance	376.33	1	376.33	49.86	.001	.71
Discomfort Intolerance	270.75	1	270.75	34.85	.001	.59
Achievement Intolerance	245.73	1	245.73	33.88	.001	.58
Injustice Intolerance	123.89	1	123.89	44.87	.001	.67
Need for Approval	147.59	1	147.59	34.37	.001	.45
Achievement-Perfectionism	1183.73	1	1183.73	48.79	.001	.57
Need to Please Others	317.06	1	317.06	60.50	.001	.61
Vulnerability	183.44	1	183.44	38.49	.001	.47

The results presented in Table 2 indicate that, after controlling for pretest scores, significant differences were observed between the experimental and control groups across all components of frustration tolerance and dysfunctional attitudes ( $p < .001$ ). Schema-based parenting training significantly reduced emotional intolerance, discomfort intolerance, achievement intolerance, and injustice intolerance among mothers of children with Autism Spectrum Disorder. Moreover, the intervention significantly decreased dysfunctional attitudes, including need for approval, achievement-perfectionism, need to please others, and vulnerability. The obtained effect sizes demonstrated moderate to large intervention effects, suggesting that schema-based parenting training was highly effective in improving frustration tolerance and reducing dysfunctional attitudes in the experimental group compared to the control group.

#### 4. Discussion and Conclusion

The present study aimed to investigate the effectiveness of schema-based parenting training on frustration tolerance and dysfunctional attitudes among mothers of children with

Autism Spectrum Disorder (ASD). The findings demonstrated that schema-based parenting training significantly improved frustration tolerance and reduced dysfunctional attitudes in the experimental group compared to the control group. Specifically, significant reductions were observed in emotional intolerance, discomfort intolerance, achievement intolerance, injustice intolerance, need for approval, achievement-perfectionism, need to please others, and vulnerability. These findings indicate that schema-based parenting training can effectively modify maladaptive cognitive-emotional patterns and enhance psychological adjustment among mothers of children with ASD.

One of the major findings of the study was the improvement in frustration tolerance following schema-based parenting training. Mothers of children with ASD often face chronic caregiving stress, emotional exhaustion, uncertainty regarding the child's future, and social pressures that can weaken emotional resilience and reduce tolerance toward distressing situations (Gallo et al., 2019; Jose et al., 2017). Schema-based parenting training appears to improve frustration tolerance by helping mothers identify

maladaptive schemas and dysfunctional coping responses that intensify emotional reactions to parenting challenges. Through increased awareness of emotional needs, cognitive distortions, and maladaptive behavioral patterns, participants may have developed more adaptive coping strategies and emotional regulation skills.

The findings of the present study are consistent with previous research emphasizing the role of schema-oriented interventions in improving distress tolerance and emotional functioning. Fereydooni and Sheykhani reported that schema therapy significantly increased distress tolerance among depressed adolescents, suggesting that schema-focused interventions facilitate healthier emotional processing and resilience (Fereydooni & Sheykhani, 2024). Similarly, Shakerami et al. found that schema therapy improved frustration tolerance and reduced hopelessness and depression among women with physical illnesses (Shakerami et al., 2019). The current findings also align with the work of Michel et al., who highlighted the central role of distress tolerance in emotional adjustment and anxiety-related disorders (Michel et al., 2016). Since mothers of children with ASD are repeatedly exposed to emotionally demanding situations, strengthening frustration tolerance may reduce emotional exhaustion and improve parenting effectiveness.

A possible explanation for the effectiveness of schema-based parenting training on frustration tolerance lies in the theoretical assumptions of schema therapy. According to schema theory, individuals who possess early maladaptive schemas tend to perceive stressful experiences through rigid and negative cognitive frameworks, resulting in heightened emotional reactivity and low tolerance for distress (Nematzadeh et al., 2026; Thimm & Chang, 2022). Mothers of children with ASD may activate schemas related to inadequacy, failure, emotional deprivation, or vulnerability when confronted with caregiving challenges. Schema-based parenting training helps individuals recognize these maladaptive patterns and replace them with more adaptive interpretations and coping responses. Consequently, participants may become more capable of tolerating emotional discomfort and managing parenting-related stressors without excessive psychological distress.

Another important finding of the study was the significant reduction in dysfunctional attitudes among mothers who participated in the schema-based parenting program. Dysfunctional attitudes, such as perfectionism, excessive need for approval, fear of criticism, and vulnerability beliefs, are often associated with anxiety, depression, and emotional

maladjustment (Imani et al., 2019; Keng et al., 2016). Mothers of children with ASD may experience heightened self-criticism, guilt, or unrealistic expectations regarding parenting performance because of social stigma and continuous caregiving demands. Schema-based parenting training may reduce dysfunctional attitudes by helping mothers challenge irrational beliefs, increase emotional awareness, and develop more balanced cognitive appraisals.

The findings regarding dysfunctional attitudes are in line with previous studies demonstrating the effectiveness of cognitive and schema-based interventions in reducing maladaptive beliefs. Bahrani and Qureshi Kermani showed that resilience training significantly reduced dysfunctional attitudes among mothers of children with autism (Bahrani & Qureshi Kermani, 2022). Beyrami et al. also found that mindfulness-based cognitive therapy reduced dysfunctional attitudes and social anxiety among adolescents (Beyrami et al., 2015). Furthermore, Keng et al. demonstrated that mindful acceptance interventions could modify implicit dysfunctional attitudes and improve emotional-cognitive congruence (Keng et al., 2016). The consistency between these findings and the results of the present study suggests that interventions focusing on cognitive-emotional restructuring can effectively improve maladaptive attitudes in psychologically vulnerable populations.

The reduction in dysfunctional attitudes observed in the present study may also be explained by the emphasis of schema-based parenting on emotional validation, empathy, and realistic expectations. Many mothers of children with ASD may internalize rigid parenting standards or believe that they must constantly meet unrealistic caregiving expectations. Such beliefs can lead to perfectionism, chronic guilt, and emotional exhaustion. Through schema-based parenting training, mothers may learn to accept imperfections, recognize emotional needs, and replace self-critical thinking patterns with compassionate and flexible attitudes. This process likely contributed to the observed reductions in need for approval, perfectionism, and vulnerability.

The present findings are also consistent with studies highlighting the importance of parenting interventions in improving parental mental health and family functioning. Bogels et al. demonstrated that mindful parenting interventions reduced parental stress and improved family functioning and co-parenting relationships (Bogels & Restifo, 2014). Bogels and Restifo further emphasized that parent-focused interventions can enhance emotional awareness and adaptive parent-child interactions (Bogels et

al., 2014). Similarly, Lunskey et al. found that mindfulness-based coping interventions improved stress management among parents of individuals with developmental disabilities (Lunskey et al., 2015). Although the current study focused specifically on schema-based parenting, its findings support the broader literature emphasizing the effectiveness of parent-centered interventions for improving caregiver psychological functioning.

Another explanation for the effectiveness of schema-based parenting training may involve the role of emotional schemas and unmet emotional needs in parenting behavior. Keyvanlou et al. demonstrated that emotional schema therapy reduced emotional numbness and emotional oversimplification among mothers of children with intellectual disabilities (Keyvanlou et al., 2021). Similarly, Hasanvand et al. reported that schema therapy reduced early maladaptive schemas in mothers of children with intellectual disabilities (Hasanvand et al., 2023). The current study extends these findings by demonstrating that schema-based parenting interventions not only reduce maladaptive schemas but also improve frustration tolerance and dysfunctional attitudes among mothers of children with ASD.

The findings can also be interpreted in light of resilience and adaptive parenting theories. Positive parenting styles and parental resilience have been associated with greater parenting efficacy and improved psychological adjustment among parents of children with disabilities (Fu et al., 2024; Leung & Man, 2023). Schema-based parenting training encourages parents to develop healthier communication styles, emotional responsiveness, and supportive interactions with their children. Such changes may enhance parents' sense of competence and reduce maladaptive emotional reactions. Fu et al. suggested that resilience mediates the relationship between parenting styles and parental efficacy among parents of children with disabilities (Fu et al., 2024). Therefore, it is possible that improvements in frustration tolerance and dysfunctional attitudes observed in the current study were partially mediated by increased resilience and emotional self-efficacy.

The present findings are also supported by studies emphasizing the role of psychological interventions in improving family cohesion and parental well-being. Asaseh et al. found that mindfulness training improved family cohesion and public health among parents of children with learning disabilities (Asaseh et al., 2023). Likewise, Doostdar Toosi et al. reported that mindfulness-based interventions improved psychological well-being among

children with chronic illnesses (Doostdar Toosi et al., 2024). Although these studies focused on different intervention approaches, they collectively support the notion that cognitive-emotional interventions can significantly improve psychological functioning within families facing chronic caregiving stress.

In addition, the findings may be interpreted from a developmental and neuropsychological perspective. Children with ASD often exhibit communication difficulties, emotional dysregulation, sensory sensitivities, and repetitive behaviors that increase caregiving complexity (Hallahan et al., 2014; Jiang et al., 2022). Repeated exposure to these stressors may activate maladaptive cognitive schemas and reduce emotional tolerance in parents. Schema-based parenting training provides a structured framework for helping parents reinterpret stressful situations, regulate emotions, and respond more adaptively to child behaviors. Such changes may contribute to improved parent-child interactions and reduced psychological burden.

The findings of the present study are also compatible with recent developments in schema-based parenting research. Mehrabinia et al. emphasized the importance of developing competent parenting programs based on schema therapy principles (Mehrabinia et al., 2022). Moreover, Jokar et al. demonstrated that schema-based parenting integrated with transactional analysis improved social competence and assertiveness in preschool children (Jokar et al., 2026; Jokar et al., 2025). These studies suggest that schema-based parenting interventions can positively influence both parental functioning and child developmental outcomes. The current study contributes to this growing body of literature by demonstrating the effectiveness of schema-based parenting training in reducing maladaptive cognitive-emotional patterns among mothers of children with ASD.

The current findings also support the broader theoretical perspective that parental psychological functioning significantly influences child adjustment and family well-being. Parenting stress, dysfunctional attitudes, and low frustration tolerance can negatively affect parent-child relationships and reduce effective caregiving behaviors (Gallo et al., 2019; Jose et al., 2017). By improving emotional regulation and cognitive flexibility in mothers, schema-based parenting training may indirectly enhance the emotional climate of the family and promote healthier developmental conditions for children with ASD.

One limitation of the present study was the relatively small sample size and the use of convenience sampling, which may reduce the generalizability of the findings to

broader populations of mothers of children with Autism Spectrum Disorder. Another limitation was the absence of a long-term follow-up period to determine the stability of treatment effects over time. In addition, all measures were based on self-report questionnaires, which may have been influenced by social desirability bias or subjective response tendencies. Furthermore, the study focused exclusively on mothers, and therefore the findings cannot necessarily be generalized to fathers or other caregivers of children with ASD.

Future studies are recommended to examine the long-term effectiveness of schema-based parenting training through follow-up assessments across several months after intervention completion. Researchers are also encouraged to compare schema-based parenting interventions with other therapeutic approaches such as mindfulness-based parenting, acceptance and commitment therapy, and cognitive-behavioral parenting programs. Conducting studies with larger and more diverse samples across different cultural and socioeconomic contexts may also improve the external validity of findings. Additionally, future research should investigate potential mediating variables such as resilience, emotional regulation, parenting self-efficacy, and family cohesion in order to better understand the mechanisms underlying the effectiveness of schema-based parenting interventions.

The findings of the present study suggest that schema-based parenting training can be used as an effective psychological intervention in autism treatment and counseling centers to improve the mental health of mothers of children with ASD. Mental health professionals, psychologists, and counselors working with families of children with developmental disorders may benefit from incorporating schema-based parenting techniques into parent training programs. Educational workshops focused on emotional awareness, maladaptive schemas, cognitive restructuring, and healthy parenting practices may help parents better manage caregiving stress and improve parent-child interactions. Moreover, integrating parent-focused psychological interventions into comprehensive autism support services may contribute to healthier family functioning and better developmental outcomes for children with ASD.

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

#### References

- Asaseh, M., Karimgholipour, N., & Vakili, S. (2023). The Effectiveness of Mindfulness Training on Family Cohesion and Public Health of Parents of Children with Special Learning Disabilities. *Transactions on Data Analysis in Social Science*, 5(1), 1-10. <https://doi.org/10.47176/TDASS/2023.1>
- Bahrani, M., & Qureshi Kermani, A. (2022). The Effectiveness of Resilience Training Program on Dysfunctional Attitudes and Their Components in Mothers with Children with Autism in Bandar Abbas. Sixth National Conference on Psychology: Science of Life, Shiraz.
- Beyrami, M., Movahedi, Y., & Alizadeh Goradel, J. (2015). The Effectiveness of Mindfulness-Based Cognitive Therapy in Reducing Social Anxiety and Dysfunctional Attitudes in Adolescents. *Social Cognition*, 4(7), 41-52.
- Bogels, S., Helleman, J., Deursen, S., Romer, M., & Meulen, R. (2014). Mindful Parenting in Mental Health Care: Effects on Parental and Child Psychopathology, Parental Stress, Parenting, Co-parenting, and Marital Functioning. *Mindfulness*, 5, 536-551. <https://doi.org/10.1007/s12671-013-0209-7>
- Bogels, S., & Restifo, K. (2014). *Mindful parenting: A guide for mental health practitioners*. <https://doi.org/10.1007/978-1-4614-7406-7>
- Chand, L. (2015). A study of frustration tolerance in relation to achievement motivation and sports achievements. *International Journal of Applied Research*, 1(6), 92-94.



- Doostdar Toosi, M. S., Mirzaei, S. H., & Iranmanesh, A. (2024). A Comparative Study on the Effectiveness of Storytelling-Based Positive Self-Talk Training and Child-Centered Mindfulness on the Psychological Well-Being of Children with Cancer. *Transactions on Data Analysis in Social Science*, 6(1), 59-67. <https://doi.org/10.47176/TDASS.2024.59>
- Fereydooni, F., & Sheykhan, R. (2024). The Effectiveness of Schema Therapy on Depression, Self-Esteem, and Distress Tolerance in Fatherless Depressed Adolescents. *Journal of Adolescent and Youth Psychological Studies*, 5(8), 87-96. <https://doi.org/10.61838/kman.jayps.5.8.10>
- Fu, W., Pan, Q., Zhao, M., Ji, C., & Peng, P. (2024). Understanding positive parenting style and parenting efficacy in parents having children with disabilities in China: The mediating role resilience. *Current Psychology*, 43(3), 2731-2744. <https://doi.org/10.1007/s12144-023-04438-y>
- Gallo, A., Wertz, C., Kairis, S., & Blavier, A. (2019). Exploration of relationship between parental distress, family functioning and post-traumatic symptoms in children. *European Journal of Trauma & Dissociation*, 3(2), 125-133. <https://doi.org/10.1016/j.ejtd.2018.06.001>
- Hallahan, D. P., Kauffman, J. M., & Pullen, P. C. (2014). *Exceptional learners: Introduction to special education* (15th ed.). Allyn & Bacon.
- Hasanvand, M. B., Shabanzadeh, A., & Shahbazi, L. (2023). The Effectiveness of Schema Therapy on Early Maladaptive Schemas in Mothers with Children with Intellectual Disability. *Empowering Exceptional Children*, 14(4), 24-37. <https://doi.org/10.22034/ceciranj.2024.424376.1815>
- Imani, S., Al-Khalil, Y., & Shokri, O. (2019). The Relationship between Dysfunctional Attitudes and Social Anxiety in Adolescent Students: The Mediating Role of Emotion Regulation. *Educational Psychology Studies*, 16(33), 1-28.
- Jiang, C., Lin, L. M. L., Long, S., Ke, X. Y., Fukunaga, K., Lu, Y. M., & Han, F. (2022). Signalling pathways in autism spectrum disorder: Mechanisms and therapeutic implications. *Signal Transduction and Targeted Therapy*, 7(1), 229. <https://doi.org/10.1038/s41392-022-01081-0>
- Jokar, L., Khayatan, F., & Golparvar, M. (2026). Comparing the effectiveness of the schema based parenting training program integrated with transactional analysis (ST TA) with parenting based on acceptance and commitment therapy (ACT) on preschool children's behavioral problems and assertiveness.
- Jokar, L., Khayyatan, F., & Golparvar, M. (2025). Comparison of the effectiveness of a schema-based parenting package based on transactional analysis with acceptance-based parenting for mothers on the social competence of preschool children. *Health and Education in Early Childhood*, 6(2), 1-10. <https://jeche.ir/article-1-294-fa.html>
- Jose, A., Gupta, S., Gulati, S., & Sapra, S. (2017). Prevalence of depression in mothers of children having ASD. *Current Medicine Research and Practice*, 7(1), 11-15. <https://doi.org/10.1016/j.cmrp.2016.12.003>
- Keng, S. L., Seah, S. T., Tong, E. M., & Smoski, M. (2016). Effects of brief mindful acceptance induction on implicit dysfunctional attitudes and concordance between implicit and explicit dysfunctional attitudes. *Behaviour Research and Therapy*, 83, 1-10. <https://doi.org/10.1016/j.brat.2016.05.004>
- Keyvanlou, S., Malehmir, B., Ezzati Babi, M., & Narimani, M. (2021). The Effectiveness of Emotional Schema Therapy-Based Group Therapy on Emotional Numbness and Emotional Oversimplification in Mothers of Children with Intellectual Disability. *Rooyesh-e-Ravanshenasi*, 10(4), 55-64.
- Knaus, W. J. (2014). *Frustration Tolerance*. Nazari Publications.
- Leung, C., & Man, S. T. K. (2023). Parenting Style. In F. Muggino (Ed.), *Encyclopedia of quality of life and well-being research*. Springer. [https://doi.org/10.1007/978-3-031-17299-1\\_2071](https://doi.org/10.1007/978-3-031-17299-1_2071)
- Lunsky, Y., Robinson, S., Reid, M., & Palucka, A. (2015). Development of a mindfulness-based coping with stress group for parents of adolescents and adults with developmental disabilities. *Mindfulness*, 6(6), 1335-1344. <https://doi.org/10.1007/s12671-015-0404-9>
- Mehrabinia, M., Talebzadeh Shoushtari, L., & Khorshidzadeh, M. (2022). Development of a Competent Parenting Educational Package Based on the Schema Therapy Approach. *Qualitative Research in Behavioral Sciences*, 1(1), 1-18.
- Michel, N. M., Rowa, K., Young, L., & McCabe, R. E. (2016). Emotional distress tolerance across anxiety disorders. *Journal of anxiety disorders*, 40, 94-103. <https://doi.org/10.1016/j.janxdis.2016.04.009>
- Nematzadeh, S., Fatemi, A., Gheysvandi, E., & Nargesi, F. (2026). Which parent, which schema mode? Examining the role of parental gender in adverse childhood experiences. *BMC psychology*, 14(1), 144. <https://doi.org/10.1186/s40359-025-03825-3>
- Roghani Araghi, G. (2024). Comprehensive Approaches to Enhancing Educational Outcomes in Children with Autism: A Literature Review. *Transactions on Data Analysis in Social Science*, 6(4), 211-221. <https://doi.org/10.47176/TDASS.2024.211>
- Seifi, F., Mollazadeh, J., Aflakseir, A., Rahimi, C., & Simpson, S. (2025). Parent-Focused Group Schema Coaching; CAREFREE (Carers Programme for Fluency in Resonance and Empowerment in Eating Disorders) Intervention for Parents of Adolescents With Anorexia Nervosa: A Multiple Baseline Design. *Clinical Psychology & Psychotherapy*, 32(5). <https://doi.org/10.1002/cpp.70157>
- Shakerami, F., Mirzamani, M., & Azad-Yekta, M. (2019). The Effectiveness of Schema Therapy on Hopelessness, Frustration Tolerance, and Depression in Women with Physical Diseases. National Conference on Family, Autism Disorder, and Related Challenges,
- Thimm, J. C., & Chang, M. (2022). Early maladaptive schemas and mental disorders in adulthood: A systematic review and meta-analysis. *International Journal of Cognitive Therapy*, 15(4), 371-413. <https://doi.org/10.1007/s41811-022-00149-7>