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# Mitigating Social Stigma and Enhancing Distress Tolerance: A Comparative Analysis of Mindfulness-Based Parenting Training and Transdiagnostic Interventions in Mothers of Autistic Children

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**Abstract**

**Background:** Mothers of children with Autism Spectrum Disorder (ASD) often experience significant social stigma and challenges with distress tolerance, impacting their well-being and parenting effectiveness.

**Objectives:** This study aimed to evaluate the effectiveness of mindfulness-based parenting training and transdiagnostic therapy in reducing social stigma and improving distress tolerance among these mothers.

**Methods:** This study utilized a quasi-experimental, pretest-posttest control group design with three-month follow-up assessments. The target population comprised mothers of children aged 5 to 12 years, diagnosed with ASD, who were attending autism centers in Mashhad during 2024. A convenience sample of 45 mothers was recruited and subsequently randomly allocated to two experimental groups and a single waitlist control group. Data collection instruments included the Social Stigma Scale and the Distress Tolerance Scale. Statistical analyses were conducted using repeated measures analysis of variance (ANOVA), with Bonferroni post-hoc tests employed for pairwise comparisons.

**Results:** Findings demonstrated that both the mindfulness-based parenting intervention and transdiagnostic therapy yielded statistically significant reductions in perceived social stigma and increases in distress tolerance at both the post-test and follow-up assessments when compared to the control group ($P<0.001$). Additionally, no statistically significant difference was observed in the effectiveness between the two intervention modalities, indicating that they were statistically equivalent in their impact on social stigma and distress tolerance.

**Conclusion:** This research demonstrated that both mindfulness-based parenting and transdiagnostic therapy effectively reduced social stigma and improved distress tolerance in mothers of children with ASD, with sustained benefits observed during follow-up. Clinicians can consider either, or a combined approach, as both yielded equivalent improvements. This allows tailored interventions based on individual needs and preferences.

**Keywords:** Mindfulness, Social Stigma, Distress, Autism

## 1. Background

Autism Spectrum Disorder (ASD) is a neurodevelopmental condition marked by deficits in social communication and restricted, repetitive behaviors, presenting unique caregiving challenges due to its social and behavioral demands.[1] In Iran, the prevalence of ASD is approximately 1% among children,[2] reflecting a global increase that amplifies the need to understand its impact on caregivers. The caregiving experience for individuals with ASD is notably taxing, often resulting in significant psychological, emotional, and familial strain for parents.[3,4] This study focuses specifically on mothers, given their predominant role in child-rearing and family management, which is particularly pronounced in the Iranian cultural context where societal norms and expectations often position mothers as primary caregivers. These social and cultural dynamics amplify their exposure to the developmental and behavioral challenges of ASD, rendering them especially susceptible to elevated stress and distress.[5] Empirical research corroborates this focus, revealing that mothers of children with ASD experience markedly higher levels of stress and anxiety compared to mothers of typically developing children,[6] justifying the emphasis on maternal mental health in this investigation. In this study, distress tolerance refers to the mothers' perceived ability to withstand negative emotional states or situations related to their caregiving experience without resorting to maladaptive coping strategies. It encompasses their capacity to manage emotional discomfort and persist in goal-directed behavior despite stressors associated with

their child's ASD.

Beyond the well-documented stress and distress, parents of children with ASD also contend with the significant burden of stigma arising from their child's diagnosis. This necessitates not only the management of their children's challenging behaviors but also the negotiation of stigma directed towards both the child and the parental figure.[7] Stigma, in this context, is conceptualized as a complex interplay of prejudiced attitudes, stereotypes, discriminatory practices, and biased social structures, which are widely endorsed within various social groups. It is a pervasive phenomenon in the social interactions of individuals with disabilities, including those with ASD.[8] Parental perceived stigma specifically refers to parents' perceptions of negative societal attitudes concerning their child's capabilities and the etiology of their disorder, as well as their beliefs regarding public judgments of their parental competence.[9] These negative and biased societal responses to parents of children with ASD can generate substantial daily challenges, impose undue pressure, and contribute to significant psychological morbidity.[10]

The escalating prevalence of ASD in Iran, coupled with the multifaceted challenges experienced by parents, particularly mothers, underscores the imperative for targeted psychological interventions aimed at enhancing their mental well-being and quality of life.[11] Among the salient difficulties encountered by mothers are those pertaining to effective parenting, for which mindfulness-based parenting training presents a promising intervention strategy. This approach centers on cultivating a parent's conscious, present-moment awareness, characterized by non-judgmental attention directed towards the family and children, thereby fostering parenting styles that facilitate a deeper understanding of both the children and the self.[12] This sustained, non-judgmental awareness can significantly enhance parental interactions, improve verbal and non-verbal communication, and bolster emotional availability.[13] Moreover, mindfulness training can equip parents with the tools to navigate parenting-related stress through enhanced awareness, acceptance, and stress regulation.[14] Consequently, parents are less prone to stress-induced impulsive reactions towards their children, exhibit more deliberate decision-making, demonstrate increased engagement, and cultivate a more profound self-understanding during challenging moments.[15] A meta-analytic review investigating the efficacy of mindfulness interventions on parental stress and its associated outcomes revealed that these interventions effectively reduce parental stress and enhance parent-child interactions.[16] Furthermore, mindfulness-based parenting programs have been shown to augment self-compassion, mitigate hyper-reactivity, and alleviate symptoms of anxiety and depression among mothers of young children.[16]

The diagnosis of ASD in a child often precipitates substantial stress and pressure. Given the chronic nature of ASD and the attendant parenting challenges faced by mothers, a focused examination of maternal emotional regulation is warranted.[17] Consequently, a research gap was identified concerning the comparative efficacy of an emotion-focused therapy relative to mindfulness-based parenting training. To address this, the present study employed transdiagnostic therapy as a comparative intervention alongside mindfulness-based parenting training. Transdiagnostic therapy was chosen due to its broad applicability to various forms of emotional distress, which is particularly relevant given the complex and multifaceted stressors experienced by mothers of children with ASD. Rather than focusing on specific diagnoses, it addresses underlying emotional dysregulation, a core issue in many psychological disorders and a significant factor in the distress experienced by this population. Transdiagnostic therapy specifically targets emotional dysregulation, aiming to integrate common and transdiagnostic factors contributing to psychological and emotional distress.[18] It utilizes a range of cognitive and behavioral techniques to regulate emotions, including psychoeducation about emotions, cognitive restructuring to challenge maladaptive thought patterns, and behavioral experiments to facilitate exposure to avoided emotional experiences. Techniques such as interoceptive exposure are used to reduce fear responses to bodily sensations. Additionally, skill trainings in emotion regulation, such as acceptance and mindfulness, are implemented to enhance the ability to tolerate and manage difficult emotions. Its primary objective is to equip individuals with skills for effective management of negative emotions.[19] Specifically, by emphasizing emotional awareness, reducing maladaptive emotion regulation strategies (e.g., avoidance, suppression), and promoting adaptive emotional confrontation, this therapy aims to facilitate a more constructive perspective on parenting challenges associated with ASD, thereby empowering mothers to effectively address their own emotional needs.[20,21]

## 2. Objectives

Given the substantial stressors and challenges experienced by parents of children with ASD, coupled with the limited comparative research on parenting training modalities and novel therapeutic interventions, the present study was formulated to provide support to mothers of children with ASD and to mitigate their associated difficulties and pressures. Thus, this study aimed to evaluate and compare the efficacy of mindfulness-based parenting training and transdiagnostic therapy in addressing social stigma and enhancing distress tolerance among mothers of children with ASD.

## 3. Methods

A quasi-experimental design, incorporating a pretest-

posttest paradigm with a three-month follow-up assessment and a control group, was utilized in this study. The study population consisted of mothers of children aged 5 to 12 years, diagnosed with ASD, who were attending autism centers in Mashhad during 2024. Participants were recruited via convenience sampling, and 45 mothers of children with ASD, meeting the specified inclusion criteria, were randomly allocated to three groups of 15: two experimental groups and a waitlist control group. Inclusion criteria mandated the absence of maternal physical or psychological disabilities, a minimum high school educational attainment, a child age range of 5 to 12 years, a maternal age range of 24 to 53 years, marital status, and provision of informed consent. Exclusion criteria encompassed severe intellectual disability or severe physical-motor impairment in the child, attendance of fewer than two intervention sessions, and concurrent participation in other psychotherapeutic interventions. Following participant recruitment and group assignment, mothers completed the Social Stigma Index and the Distress Tolerance Scale. Subsequently, experimental group one received mindfulness-based parenting intervention, experimental group two received transdiagnostic therapy, and the control group remained on a waitlist, receiving no intervention during the study period. Interventions were administered at the autism center by the primary investigator, who holds a PhD in clinical psychology and has extensive experience in delivering both mindfulness-based and transdiagnostic interventions, ensuring intervention fidelity. The sample size of 45 was determined using G*Power software, with a significance level of $\alpha = 0.05$ and a power of 0.90, to ensure adequate statistical power to detect significant effects. Ethical considerations included the procurement of written informed consent and the maintenance of participant confidentiality and data privacy.

### *3.1. Measurement Tool*

**The Social Stigma Scale (SSS)** was developed by Rezaei Dehnavi and Hemati Alamdarloo[22] to measure internalized stigma among mothers of children with ASD. The scale comprises three subscales: Others' Beliefs, Mother's Self-Beliefs, and Avoidance Behaviors. Consisting of 49 items, responses are scored on a five-point Likert scale, ranging from 1 (never) to 5 (always), yielding a total score range of 49 to 245. Content validity was established through expert review by five specialists in social psychology and exceptional children, each of whom rated the scale's validity as good to excellent. Reliability was assessed using Cronbach's alpha, which yielded the following coefficients: Others' Beliefs (0.96), Mother's Self-Beliefs (0.87), Avoidance Behaviors (0.93), and Total Score (0.97), indicating high internal consistency.[22] For the present study, the Cronbach's alpha coefficient for the SSS was determined to be 0.88.

**The Distress Tolerance Scale (DTS)**, developed by Simons and Gaher in 2005,[23] is a 15-item self-report instrument designed to assess emotional distress tolerance. It comprises four subscales: Tolerance, Absorption, Appraisal, and Regulation. Responses are recorded on a five-point Likert scale, ranging from 1 (Strongly Agree) to 5 (Strongly Disagree), with item 6 reverse-scored. The total score ranges from 15 to 75, with higher scores reflecting greater distress tolerance. In Iran, Azizi[24] established the questionnaire's acceptable internal consistency, reporting reliability coefficients for the DTS subscales ranging from 0.74 to 0.85. In the current study, the DTS demonstrated a Cronbach's alpha coefficient of 0.89.

### *3.2. Interventions*

#### *3.2.1. The Mindfulness-Based Parenting Intervention*

The Mindfulness-Based Parenting Intervention was implemented according to the protocol developed by Bögels and Restifo,[25] comprising eight group sessions, each lasting for 90 minutes. The session content was structured as follows: Session 1: Exploration of automatic parenting, non-reactive parenting, and the distinction between ‘doing’ and ‘being’ modes. Session 2: Cultivating a beginner's mind in parenting, observing the child with a beginner's mind, and fostering an attitude of kindness. Session 3: Reconnecting with bodily sensations as a parent, developing awareness of pleasant experiences, and observing somatic responses to parenting stress. Session 4: Differentiating between responding and reacting to stress, with a focus on parenting-related stress. Session 5: Examination of parenting patterns and schemas, and developing awareness of angry and vulnerable child states, as well as punitive and rigid parental states. Session 6: Addressing conflict in parenting, practicing perspective-taking, fostering joint attention, and understanding rupture and repair processes. Session 7: Integrating love and limits, cultivating compassion and kindness, and fostering self-friendship and connection with the inner child. Session 8: Facilitating a mindful transition in parenting, engaging in a symbolic review of personal growth through a future-oriented narrative, discussing self-care and child-care strategies, and reflecting on experiences, obstacles, and future intentions.

#### *3.2.2. The Transdiagnostic Therapy Intervention*

The Transdiagnostic Therapy Intervention was administered according to Barlow's[26] protocol, which comprises seven group sessions, each lasting for 90 minutes. The session content was structured as follows: Session 1: Facilitating introductions among group members and establishing a therapeutic alliance, providing an overview of the treatment and session structure, enhancing maternal readiness and motivation for behavioral change, and delivering psychoeducation on the nature of emotions and their core components. Session 2: Instruction on the

cultivation of emotional awareness and the identification of personal emotions. Session 3: Education on the role of maladaptive automatic appraisals in the generation of emotional experiences, instruction on the identification of cognitive patterns, techniques for the modification of maladaptive thinking, and the promotion of maternal flexibility in situational appraisals. Session 4: Instruction on the identification of emotion avoidance patterns and maladaptive emotion-driven behaviors, and the modification of current emotional response patterns. Session 5: Augmentation of maternal awareness regarding the influence of somatic sensations on emotional experiences. Session 6: Development of an emotional avoidance hierarchy and the implementation of exposure exercises focused on experiential processing of emotions. Session 7: Instruction on vulnerability reduction techniques, development of relapse prevention strategies, emphasis on the application of acquired skills, and a comprehensive evaluation.

### *3.3. Statistical Analysis*

To ascertain the normality of the data, the Shapiro-Wilk test was applied. Statistical analyses were then performed using repeated measures analysis of variance (ANOVA), complemented by Bonferroni post-hoc tests for pairwise comparisons.

## 4. Results

The participants consisted of 45 mothers of children aged 5 to 12 years, diagnosed with ASD, with 15 mothers allocated to each of the two experimental groups and the control group. All participants were married, with a mean age of 33.84 ± 5.38 years. Educational attainment was distributed as follows: 68.9% held a high school diploma, 25.2% a bachelor's degree, and 5.9% a master's degree. Regarding employment status, 66.7% were homemakers, 4.4% were employed, and 28.9% were students. Descriptive statistics pertaining to social stigma and distress tolerance among the mothers have been presented in Table 1.

**Table 1.** Mean and Standard Deviation of Research Variables across Time Points by Group

| Variables | Phases | Mindfulness-based parenting group | | Transdiagnostic interventions group | | Control group | |
|---|---|---|---|---|---|---|---|
| | | Mean | SD | Mean | SD | Mean | SD |
| Social stigma | Pre-test | 175.60 | 33.71 | 173.80 | 26.03 | 180.26 | 29.43 |
| | Post-test | 86.93 | 16.76 | 82.53 | 17.71 | 175.20 | 33.43 |
| | Follow-up | 88.00 | 16.95 | 83.66 | 18.51 | 175.86 | 34.15 |
| Distress tolerance | Pre-test | 25.13 | 4.50 | 25.94 | 4.46 | 25.93 | 4.81 |
| | Post-test | 38.46 | 6.63 | 36.60 | 5.65 | 26.13 | 4.71 |
| | Follow-up | 36.66 | 5.12 | 38.46 | 6.58 | 25.20 | 3.87 |

As depicted in Table 1, the intervention groups demonstrated more pronounced changes in both social stigma and distress tolerance variables across the assessment time points when compared to the control group. Notably, a decreasing trend was observed for social stigma scores within the intervention groups, while an increasing trend was evident for distress tolerance scores. The Shapiro-Wilk test revealed that the data for social stigma and distress tolerance variables in the control, mindfulness, and transdiagnostic groups were normally distributed across the pretest, posttest, and follow-up assessments ($P$>0.05). Box's M test was employed to verify the assumption of homogeneity of covariances. As the covariances between groups were found to be homogeneous ($P$>0.05), the use of Wilks' Lambda was deemed appropriate. Furthermore, Levene's test was conducted to assess the homogeneity of error variances for the dependent variables across all groups. The results of Levene's test confirmed that the variances of the research variables were homogeneous across the control, mindfulness, and transdiagnostic groups at all assessment time points ($P$>0.05). To ascertain the statistical significance of these score changes, repeated measures ANOVA was used (Table 2).

**Table 2.** Summary of Repeated Measures ANOVA Results for Resilience and its Components

| Variables | Source | SS | df | MS | F | P | $\eta^2$ |
|---|---|---|---|---|---|---|---|
| Social stigma | Time | 112342.94 | 2 | 56171.47 | 105.06 | 0.001 | 0.71 |
| | Group | 115680.05 | 2 | 57840.03 | 58.19 | 0.001 | 0.73 |
| | Time × group | 47842.34 | 4 | 11960.58 | 22.37 | 0.001 | 0.51 |
| Distress tolerance | Time | 1884.72 | 2 | 942.36 | 37.43 | 0.001 | 0.47 |
| | Group | 1821.34 | 2 | 941.67 | 28.68 | 0.001 | 0.57 |
| | Time × group | 1064.43 | 4 | 266.10 | 10.57 | 0.001 | 0.33 |

Table 2 displays the results of the repeated measures analysis of variance, revealing a statistically significant main effect of time on social stigma levels among mothers of children with ASD (F = 105.06, $P$<0.001, $\eta^2$ = 0.71). A statistically significant main effect of group on social stigma levels was also evident (F = 58.19, $P$<0.001, $\eta^2$ = 0.73). Moreover, a statistically significant interaction effect between group and time was observed for social stigma levels (F = 22.37, $P$<0.001, $\eta^2$ = 0.51). This interaction effect indicates that the change in social stigma levels over time was not uniform across the different groups. In practical terms, it means that the

intervention groups (mindfulness-based parenting and transdiagnostic therapy) showed different patterns of change in social stigma compared to the control group over the course of the study. Likewise, a statistically significant main effect of time was identified for distress tolerance levels among mothers of children with ASD ($F = 37.43$, $P<0.001$, $\eta^2 = 0.47$). A statistically significant main effect of group was also found for distress tolerance levels ($F = 28.68$, $P<0.001$, $\eta^2 = 0.57$). Finally, a statistically significant interaction effect between group and time was observed for distress tolerance levels ($F = 10.57$, $P<0.001$, $\eta^2 = 0.33$). Similarly, this interaction effect signifies that the improvement in distress tolerance over time varied depending on the group. The intervention groups demonstrated distinct patterns of increase in distress tolerance compared to the control group from pre-test to follow-up.

The Bonferroni post-hoc analyses, as detailed in Table 3, demonstrated a statistically significant difference in the mean scores of social stigma and distress tolerance between the posttest and follow-up assessments, when compared to the pretest assessment, among mothers of children with ASD ($P<0.001$). Specifically, the temporal effect from pretest to posttest and follow-up yielded a significant reduction in social stigma scores and a significant elevation in distress tolerance scores. Conversely, no statistically significant difference was found in the mean scores of social stigma and distress tolerance between the posttest and follow-up assessments among mothers of children with ASD. Thus, the temporal effect between posttest and follow-up did not produce a significant change in social stigma or distress tolerance scores.

**Table 3.** Results of Bonferroni Post-hoc Tests for Multiple Comparisons in Research Variables

| Variables | Source of Change | Group/Stages | Mean Difference | *P* | Confidence Intervals |
|---|---|---|---|---|---|
| Social stigma | Stages | Post-test - Pre-test | -61.67 | 0.001 | (-83.46, -49.76) |
| | | Follow-up - Pre-test | -60.71 | 0.001 | (-82.45, -59.75) |
| | | Post-test - Follow-up | -0.96 | 0.217 | (-3.30, 2.24) |
| | Group | Mindfulness - Control | -88.27 | 0.001 | (-110.02, -66.50) |
| | | Transdiagnostic - Control | -92.67 | 0.001 | (-114.42, -70.90) |
| | | Mindfulness - Transdiagnostic | 4.40 | 0.999 | (-15.26, 17.35) |
| Distress tolerance | Stages | Post-test - Pre-test | 8.07 | 0.001 | (5.75, 10.38) |
| | | Follow-up - Pre-test | 7.78 | 0.001 | (5.17, 10.38) |
| | | Post-test - Follow-up | 0.29 | 0.999 | (-2.24, 3.24) |
| | Group | Mindfulness - Control | 12.33 | 0.001 | (7.12, 17.54) |
| | | Transdiagnostic - Control | 10.47 | 0.001 | (5.25, 15.67) |
| | | Mindfulness - Transdiagnostic | 1.87 | 0.999 | (-7.07, 3.34) |

Bonferroni post-hoc comparisons revealed that both the mindfulness-based parenting and transdiagnostic therapy groups showed significant improvements in social stigma and distress tolerance compared to the control group at both post-test and follow-up ($P<0.001$). Specifically, both intervention groups demonstrated reduced social stigma and increased distress tolerance. Importantly, there was no significant difference in social stigma or distress tolerance between the two intervention groups at post-test and follow-up. Furthermore, the lack of significant difference between post-test and follow-up scores within each intervention group indicates that the improvements achieved were sustained over the three-month follow-up period, demonstrating the lasting effects of both interventions.

## 5. Discussion

This research sought to assess and contrast the effectiveness of mindfulness-based parenting interventions and transdiagnostic therapy in mitigating social stigma and improving distress tolerance in mothers of children diagnosed with ASD. Findings from the present study demonstrated the efficacy of both mindfulness-based parenting therapy and transdiagnostic therapy in diminishing social stigma and enhancing distress tolerance among mothers of children with ASD, with effects observed in both the short-term and long-term. To the best of the researcher's knowledge, no prior research has directly compared the effects of transdiagnostic therapy and mindfulness-based parenting therapy on psychological and personality constructs. Nevertheless, the independent effects of both transdiagnostic therapy and mindfulness-based parenting therapy on a range of psychological and personality variables have been substantiated in numerous empirical investigations, including those conducted by Burgdorf et al.,[12] Wang et al.,[15] and Mohseni-Ezhiyeh et al.[27]

The findings of the present study can be interpreted within the framework of the significant psychological and emotional challenges encountered by mothers of children with ASD, which often culminate in elevated stress levels and diminished distress tolerance. Mindfulness-based parenting has emerged as an innovative and efficacious intervention for mitigating stress and fostering self-compassion in this population. By emphasizing present-moment awareness and non-judgmental acceptance, this approach has the potential to yield salutary effects on maternal mental health. Empirical evidence supports the notion that mindfulness-based parenting can contribute to stress reduction and enhanced maternal tolerance. For

instance, Bögels et al.[25] demonstrated that mothers participating in mindfulness training programs reported a substantial decrease in perceived stress, a reduction attributed to the cultivation of heightened awareness and non-judgmental acceptance of everyday experiences.[15] Furthermore, mindfulness-based parenting facilitates self-kindness and diminishes self-criticism among mothers. Neff posits that mindfulness enables individuals to adopt a more accepting and compassionate stance towards themselves.[28] This parenting approach empowers parents to regulate their emotional responses more effectively. Mothers of children with ASD are susceptible to experiencing heightened emotional reactivity, including anger and anxiety. Mindfulness-based parenting assists mothers in recognizing these emotions and preventing maladaptive reactions.[15]

Moreover, transdiagnostic therapy represents a therapeutic paradigm that shifts the focus from disorder-specific interventions to the treatment of shared, underlying etiological factors across a spectrum of disorders. This approach is structured to cultivate enhanced emotion regulation skills, promote cognitive flexibility, and mitigate negative emotional reactivity. Transdiagnostic therapy facilitates the development of improved emotion regulation skills in mothers. Through the implementation of cognitive-behavioral techniques and mindfulness-based practices, mothers are empowered to better modulate their emotional responses and attenuate daily stressors.[29] A core objective of transdiagnostic therapy is the augmen tation of cognitive flexibility. This enables mothers to adopt a more optimistic perspective towards parenting challenges by modifying their cognitive schemas and thought patterns, thereby reducing social stigma associated with negative cognitions.[30] This therapeutic approach equips mothers with more effective coping strategies for managing both daily stressors and their children's challenging behaviors. By reinforcing these coping mechanisms, mothers are better positioned to address difficulties with increased composure and self-assurance, thus alleviating stress stemming from perceived situational management deficits. By diminishing stress and enhancing both emotion regulation and coping proficiencies, mothers can experience improvements in their quality of life and psychological well-being. This not only yields benefits for the mothers themselves but also has the potential to positively impact the quality of life of children with ASD.[27]

Mindfulness-based parenting training has been established as an efficacious intervention for mitigating social stigma and augmenting distress tolerance among mothers of children with ASD. This modality, through the cultivation of heightened awareness, refinement of emotion regulation, and fortification of positive communicative interactions, has the potential to enhance the overall quality of life for both mothers and their children. Specifically, mindfulness practices may reduce rumination on stigmatizing experiences, allowing mothers to disengage from negative thought patterns and decrease perceived social stigma. Improved emotion regulation skills may also enhance distress tolerance by providing mothers with tools to manage difficult emotions without resorting to maladaptive coping mechanisms. These skills can empower mothers to face caregiving challenges with greater resilience. Similarly, transdiagnostic therapy has been recognized as a valuable approach for attenuating stress and promoting mental well-being among mothers of children with ASD. By emphasizing the refinement of emotion regulation proficiencies, the enhancement of cognitive flexibility, and the fortification of coping strategies, this methodology can contribute to the amelioration of life quality for both mothers and their children. Trans diagnostic therapy, by addressing core emotional dysregulation, may improve distress tolerance through techniques that increase emotional acceptance and reduce avoidance. Moreover, by challenging maladaptive cognitive patterns, such as catastrophic thinking related to social stigma, this therapy can enhance self-efficacy, enabling mothers to feel more capable of managing their caregiving responsibilities and social interactions. This improved self-efficacy can, in turn, reduce perceived social stigma.

Several limitations should be considered when interpreting the findings of this study. Firstly, the use of convenience sampling restricts the generalizability of the results, as the participant pool may not be representative of the broader population of mothers of children with ASD. Secondly, the quasi-experimental design, while practical, lacks the rigorous control of a true experimental design, potentially introducing confounding variables that could influence the observed outcomes. Finally, the exclusion criteria, particularly the exclusion of mothers with pre-existing physical or psychological disabilities, may limit the applicability of the findings to a more diverse population of mothers facing the challenges of raising a child with ASD.

However, this study also possesses notable strengths. The use of a three-month follow-up allowed us to assess the sustained intervention effects. Additionally, the inclusion of two distinct intervention modalities, mindfulness-based parenting and transdiagnostic therapy, provided a valuable comparative analysis. Furthermore, it is important to consider the cultural context of this study, conducted in Iran. Cultural norms and expectations regarding caregiving, particularly maternal roles, may have influenced the participants' experiences of social stigma and distress tolerance. For example, the strong emphasis on familial support and interdependence in Iranian culture could have both positive and negative impacts on mothers raising children with ASD.

## 6. Conclusion

This study highlights the potential of both mindfulness-based parenting intervention and transdiagnostic therapy to significantly improve the well-being of mothers of children with ASD. Future research should explore the long-term impacts of these interventions beyond the three-month follow-up, and investigate the mechanisms through which they produce change. Additionally, studies examining the combined effects of mindfulness-based and transdiagnostic approaches could offer valuable insights for developing more comprehensive interventions. Clinicians can consider these findings when tailoring treatments to individual needs, potentially integrating elements from both modalities to maximize therapeutic outcomes.

### Research Highlights

**What Is Already Known?**

Mothers of children with autism experience significant social stigma and challenges with distress tolerance, negatively impacting their well-being and parenting.

**What Does This Study Add?**

Both mindfulness-based parenting training and transdiagnostic therapy effectively reduce social stigma and improve distress tolerance in ASD mothers, with no significant difference in effectiveness between the two interventions.

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### Author Contributions

NK: Study concept and design, acquisition of data, analysis and interpretation of data, and statistical analysis. PA and AH: Administrative, technical, and material support, study supervision. SE and RJF: Critical revision of the manuscript for important intellectual content.

### Conflict of Interest Disclosures

All authors declared that they have no conflict of interest.

### Ethical Approval

This study was conducted in accordance with the ethical guidelines set forth by the Ethical Committee of Islamic Azad University, Ahvaz Branch, and received formal approval under the reference code IR.IAU.AHVAZ.REC. 1403.066.

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