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Comparison of the Effectiveness of Acceptance and Commitment Therapy and Cognitive-Behavioral Therapy on Stigma in Mothers of Children with Autism Spectrum Disorder

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ABSTRACT

Autism spectrum disorder can be considered a neurodevelopmental disorder characterized by communicative deviation or delay, persistent deficits in reciprocal social interactions, restricted patterns of communication, and repetitive behaviors. The present study aimed to compare the effectiveness of acceptance and commitment therapy and cognitive-behavioral therapy on stigma in mothers of children with autism spectrum disorder. This study was a quasi-experimental research with a pretest-posttest design and a control group. Forty-five mothers of children with autism spectrum disorder were selected through convenience sampling and randomly assigned equally to two experimental groups and one control group (15 participants in each group). One experimental group participated in an acceptance and commitment therapy program consisting of eight 90-minute sessions, and the other experimental group participated in a cognitive-behavioral therapy program consisting of eight 90-minute sessions, while members of the control group did not participate in these programs. Participants were assessed using the Internalized Stigma of Parents of Disabled Children Questionnaire (2009). Data were analyzed using univariate and multivariate covariance analysis. The results indicated that acceptance and commitment therapy and cognitive-behavioral therapy had a positive and significant effect on stigma in mothers of children with autism spectrum disorder ($P < .01$). Furthermore, the findings showed no significant difference between the effectiveness of acceptance and commitment therapy and cognitive-behavioral therapy regarding stigma and its subscales ($P < .05$). The findings of this study suggest that acceptance and commitment therapy and cognitive-behavioral therapy programs can play an important role in reducing stigma in mothers of children with autism spectrum disorder.

Keywords: Autism spectrum disorder, stigma, cognitive-behavioral therapy, acceptance and commitment therapy

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Introduction

Autism spectrum disorder (ASD) is a complex neurodevelopmental condition characterized by persistent deficits in social communication and interaction, alongside restricted and repetitive patterns of behavior, interests, or activities (1). The disorder encompasses a wide range of symptoms and severity levels, affecting not only the individual but also their families, particularly parents who often assume the primary caregiving role (2, 3). The global prevalence of ASD has increased over recent decades, raising urgent concerns about diagnosis, intervention, and support services (4, 5). Mothers, as the main caregivers in many cultural contexts, are frequently exposed to emotional, social, and psychological challenges when raising a child with ASD (6, 7).

A particularly significant psychosocial challenge among mothers of children with ASD is the experience of stigma, which can be conceptualized as a devaluation or negative stereotyping based on an attribute perceived as socially undesirable (8, 9). Stigma in this context is multidimensional, encompassing public stigma, affiliate stigma (experienced indirectly through association with a stigmatized individual), and self-stigma (internalization of negative stereotypes) (10, 11). Research indicates that affiliate stigma can reduce parents' subjective well-being, social participation, and mental health (10, 12). In addition, cultural beliefs and societal attitudes may exacerbate the impact of stigma on mothers, influencing their coping mechanisms and psychological resilience (7, 13).

Studies have consistently demonstrated that mothers of children with ASD often experience higher levels of parenting stress, social isolation, and diminished quality of life compared to parents of neurotypical children (3, 14). The caregiving burden can be amplified by limited access to resources, lack of societal awareness, and inadequate professional support (15, 16). Moreover, the unpredictability and severity of ASD symptoms can contribute to emotional exhaustion, depression, and anxiety in caregivers (17, 18).

Stigma does not solely result from public attitudes; it can also emerge from within the family system. Self-stigma, or the internalization of societal prejudices, can erode parental self-esteem and impair their perceived parenting competence (7, 11). The theoretical model proposed by Mak and Kwok (11) highlights the pathways through which internalized stigma influences psychological distress and overall well-being in parents of children with ASD. In Iranian cultural contexts, as in many collectivist societies, family reputation and social acceptance are highly valued, making the experience of stigma particularly distressing for mothers (19, 20).

To address these challenges, psychological interventions such as Cognitive-Behavioral Therapy (CBT) and Acceptance and Commitment Therapy (ACT) have gained prominence (16, 20). CBT is grounded in the premise that cognitive processes influence emotions and behaviors, and that maladaptive thought patterns can be modified to improve functioning (21, 22). In the context of parental stigma, CBT aims to challenge and reframe negative beliefs, enhance problem-solving skills, and develop adaptive coping strategies (5, 6). Evidence supports the effectiveness of CBT in reducing anxiety, depression, and stress among parents of children with ASD, thereby improving overall quality of life (6, 23).

ACT, a third-wave behavioral therapy, offers an alternative and complementary approach. Rooted in functional contextualism and relational frame theory, ACT promotes psychological flexibility through six core processes: acceptance, cognitive defusion, being present, self-as-context, values clarification, and

committed action (24, 25). Unlike CBT, which primarily focuses on modifying the content of thoughts, ACT emphasizes altering the individual's relationship with thoughts and feelings, encouraging acceptance of internal experiences while pursuing value-consistent behaviors (26, 27). In parents of children with ASD, ACT has been shown to reduce experiential avoidance, mitigate distress, and enhance adaptive functioning (28, 29).

Several studies comparing ACT and CBT suggest that while both interventions are effective, they may work through distinct mechanisms. CBT's cognitive restructuring can be especially effective for parents with prominent maladaptive beliefs, whereas ACT's emphasis on acceptance and values may resonate with those struggling with emotional avoidance (16, 30). Moreover, ACT's mindfulness-based components may help parents remain engaged with their caregiving roles despite ongoing challenges, aligning with evidence that mindfulness training fosters emotional regulation and resilience (27, 31).

In the Iranian context, where cultural norms may intensify stigma, interventions that target both cognitive restructuring and acceptance-based processes could offer comprehensive benefits (12, 20). For instance, ACT can help mothers acknowledge and accept societal prejudice without internalizing it, while CBT can equip them with strategies to challenge irrational guilt or shame (10, 11).

Despite these promising findings, research directly comparing ACT and CBT in reducing stigma among mothers of children with ASD remains limited. Existing literature often focuses on related outcomes such as stress, anxiety, depression, or quality of life, with stigma addressed as a secondary variable (13, 15). Additionally, while affiliate stigma has been examined in various cultural settings (8, 32), there is a need for culturally sensitive interventions that account for the specific social and familial dynamics influencing Iranian mothers' experiences (17, 19).

The theoretical underpinnings of both ACT and CBT provide a rationale for their potential effectiveness in reducing stigma. CBT operates through mechanisms such as identifying cognitive distortions, testing evidence for beliefs, and developing alternative, more adaptive cognitions (21, 22). ACT, on the other hand, fosters a willingness to experience difficult thoughts and emotions while committing to actions aligned with personal values (24, 26). The shared focus on behavior change and skill acquisition suggests that both modalities could yield meaningful improvements in mothers' perceptions and experiences of stigma (27, 28).

Furthermore, prior intervention studies have highlighted the need to consider caregiver-specific outcomes beyond symptom reduction in the child (23, 33). Parental stigma not only affects mental health but can also influence the parent-child relationship, adherence to treatment recommendations, and engagement with educational and social services (3, 7). Addressing stigma, therefore, has broader implications for family functioning and the child's developmental trajectory (14, 18).

In sum, mothers of children with ASD face multifaceted challenges, with stigma emerging as a pervasive and detrimental factor affecting their mental health and social functioning (9, 13). Both CBT and ACT offer evidence-based approaches to addressing these challenges, though their comparative effectiveness in this specific population and cultural context remains underexplored (20, 34). By systematically comparing these two interventions, the present study aims to fill this gap, providing insights into how different therapeutic mechanisms may alleviate stigma and promote psychological well-being in mothers of children with ASD in Iran.

Methods and Materials

Study Design and Participants

The present study employed a quasi-experimental research design with a pretest-posttest and control group. The statistical population included all mothers of children with autism spectrum disorder in Tehran in 2022. To conduct the study and select the sample, the Autism Association in Tehran was approached, and after the necessary coordination and considering the inclusion and exclusion criteria, 45 mothers of children with autism spectrum disorder were selected using a convenience sampling method and were randomly and equally assigned to two experimental groups and one control group, with 15 participants in each group. It should be noted that the inclusion criteria, which were controlled for each participant, included willingness to participate in the study, having a child aged 3 to 18 years who, based on the opinion of a psychiatrist and a clinical psychologist, had been diagnosed with autism spectrum disorder, being at least 25 years old, and having literacy skills (reading and writing) for the mothers. The exclusion criteria included unwillingness to continue attending the sessions and having more than one absence during the intervention. Subsequently, the Internalized Stigma of Parents of Disabled Children Questionnaire was administered as a pretest to all three groups. In the next stage, the acceptance and commitment therapy program and the cognitive-behavioral therapy program were implemented for the two experimental groups, while the control group did not participate in these programs. After the implementation of the intervention programs, the aforementioned questionnaire was again administered as a posttest to participants in the experimental and control groups.

Data Collection

Internalized Stigma of Parents of Disabled Children Questionnaire: This instrument was used to assess the feeling of stigma among participants. The questionnaire was developed by Rezaei Dehnavi, Nouri, Jafari, and Faramarzi (2009) based on existing theories in the field of stigma, interviews with experts and parents of this group of children, and with reference to the Internalized Stigma Scale for parents of children with autism developed by Mak and Kwok. This questionnaire contains 49 items, and responses are given on a 5-point Likert scale (1 = never to 5 = always). The minimum possible score is 49, and the maximum possible score is 245. The questionnaire measures two attitudinal dimensions and one behavioral dimension, which include: (1) the mother's beliefs about the stereotypical perceptions that other people hold regarding individuals with autism; (2) the mother's beliefs about the stereotypical perceptions that she personally holds; and (3) various behaviors based on discrimination and social exclusion. These three dimensions run parallel to each other and cover areas such as concerns about the future, independence and employment, social relationships, health, and education. To assess the reliability of the questionnaire, Cronbach's alpha coefficient was calculated and reported as 0.87 for the first subscale, 0.96 for the second subscale, 0.93 for the third subscale, and 0.97 for the entire questionnaire. In the present study, Cronbach's alpha coefficient was reported as 0.88.

Interventions

The ACT intervention in this study was implemented over eight 90-minute group sessions, grounded in the principle that psychological distress is an inherent part of the human experience, and that accepting rather than avoiding such experiences facilitates more adaptive responses. Session one introduced group members, established rules (e.g., punctuality, confidentiality, mutual respect), explored participants' motivations and expectations, and provided an overview of ACT principles. Session two addressed the need for psychological interventions, introduced the concept of acceptance, and encouraged viewing thoughts, feelings, and memories as transient experiences, with homework focused on self-acceptance regarding the child's disability. Session three reviewed homework, guided nonjudgmental acceptance of internal experiences, and differentiated emotions from thoughts, with an assignment to assess openness toward one's own and others' emotions. Session four introduced mindfulness techniques, including breathing and thought-stopping exercises, emphasized reappraising experiences, and assigned reframing life events. Session five distinguished between acceptance and resignation, discouraged emotional self-judgment, and reinforced mindful, nonjudgmental awareness of emotions through homework. Session six collected feedback, introduced commitment as essential to therapy, taught selective attention for managing intrusive negative thoughts, and included mindfulness with body scanning. Session seven identified behavioral patterns related to accepted situations, strengthened commitment to value-based actions, and promoted deliberate rather than automatic behavioral choices. Session eight reviewed assignments, consolidated learning, obtained post-program commitments, and provided closure with group feedback and appreciation.

The CBT intervention was also delivered over eight 90-minute group sessions, based on the premise that individuals' thought patterns significantly influence their emotions and behaviors, and that maladaptive cognitions contribute to distress such as anxiety and depression. Session one introduced participants and group rules, discussed therapy expectations, and taught the relationship between thoughts, feelings, and behaviors, including problem identification and thought analysis. Session two focused on the characteristics of automatic thoughts, techniques for identifying them, and methods to distinguish and modify them. Session three trained participants to recognize emotions, differentiate thoughts from feelings, name and categorize emotions, and rate emotional intensity. Session four introduced cognitive distortions, taught recognition strategies, and assigned worksheets to practice identifying them. Session five covered techniques for challenging distortions, including reattribution, circular questioning, and decatastrophizing. Session six taught distancing strategies, such as the "time machine," "balcony view," cost-benefit analysis, and evidence testing. Session seven focused on evaluating worries, identifying types of worries, understanding their functions, and differentiating between useful and unhelpful worries, with instruction on converting worries into predictions. Session eight taught worry-reduction strategies and problem-solving skills, concluded with a review of content, and gathered feedback from participants.

Data Analysis

To examine the overall effects of the dependent variables, univariate covariance analysis was used. Additionally, for the subscales of each variable, multivariate covariance analysis was applied. Data were analyzed using SPSS software, version 24.

Findings and Results

In this section, descriptive information on the stigma scale, separated by pretest and posttest for the experimental and control groups, is presented in Table 1.

Table 1. Descriptive findings of stigma separated by the two experimental groups and the control group

Scale	Stage	Acceptance and Commitment Group		Cognitive-Behavioral Group		Control Group	
		Mean	SD	Mean	SD	Mean	SD
Total Stigma Score	Pretest	120.73	43.56	136.73	31.18	130.53	40.17
	Posttest	105.53	26.34	104.40	28.56	127.60	33.60
Others' Beliefs	Pretest	55.80	20.17	60.20	13.01	59.93	18.25
	Posttest	49.86	13.75	48.93	12.72	56.60	15.02
Mother's Beliefs	Pretest	30.66	13.24	35.73	11.57	34.73	12.69
	Posttest	25.73	7.33	24.86	7.44	34.46	12.05
Separation-Based Behaviors	Pretest	34.26	14.68	40.80	13.12	35.86	14.53
	Posttest	29.93	8.03	30.60	10.84	36.53	12.28

According to Table 1, the pretest mean of the total stigma score for the acceptance and commitment therapy experimental group was 120.73, and the posttest mean was 105.53. The pretest mean of the total stigma score for the cognitive-behavioral therapy experimental group was 136.73, and the posttest mean was 104.40. Finally, the pretest mean for the control group was 130.53, and the posttest mean was 127.60. As is evident, the posttest mean scores of the experimental groups decreased compared to the pretest stage.

Next, to perform covariance analysis, the normality of data distribution was assessed using the Shapiro–Wilk test, the homogeneity of variances was examined using Levene's test, and the homogeneity of regression slopes was evaluated, all of which were confirmed ($p > .05$). The results of the covariance analysis are presented in Table 2.

Table 2. Covariance analysis of stigma scores of mothers of children with autism spectrum disorder

Source	SS	df	MS	F	Sig.	Eta²	Power
Stigma – Group	20999.96	2	10499.98	53.96	.001	.56	1.00
Error	5460.07	41	133.03	–	–	–	–

According to Table 2 and the F-values for the group source, which are significant at $p < .01$, it can be stated that at least one of the interventions—acceptance and commitment therapy or cognitive-behavioral therapy—was effective on the stigma of mothers of children with autism spectrum disorder. These approaches explained 25% of the variance in stigma among these mothers. To examine the difference in effectiveness between acceptance and commitment therapy and cognitive-behavioral therapy on stigma, the Bonferroni post hoc test was used, with results shown in Table 5.

Table 3. Bonferroni post hoc test for comparing group means

Scale	Group A	Group B	Mean Difference (A-B)	SE	Sig.
Stigma	ACT	CBT	-10.38	7.31	.48
	ACT	Control	-16.39	7.24	.04
	CBT	Control	-26.78	7.22	.01

According to Table 3, acceptance and commitment therapy significantly reduced stigma among mothers of children with autism spectrum disorder ($p < .05$). Cognitive-behavioral therapy also had a significant effect on stigma at $p < .01$. However, given the significance levels between acceptance and commitment therapy and cognitive-behavioral therapy, there was no statistically significant difference in effectiveness between the two interventions ($p > .05$).

Next, to examine the effectiveness of acceptance and commitment therapy and cognitive-behavioral therapy on the subscales of stigma among mothers of children with autism spectrum disorder, multivariate covariance analysis (MANCOVA) and Bonferroni post hoc tests were applied. Before the analysis, the normality of data distribution was assessed using the Shapiro–Wilk test, the homogeneity of variance-covariance matrices was tested with Box's M test, correlations between dependent variables were examined with Bartlett's test of sphericity, and the homogeneity of variances was checked using Levene's test—all assumptions were confirmed ($p > .05$). The overall results of the MANCOVA for the stigma subscale scores are presented in Table 4.

Table 4. Separate results of multivariate covariance analysis

Subscale	Source	SS	df	MS	F	Sig.	Eta²	Power
Others' Beliefs	Group	3399.45	2	1699.73	58.00	.001	.59	1.00
	Error	515.97	39	13.23	–	–	–	–
Mother's Beliefs	Group	154.20	2	77.10	3.81	.05	.09	.48
	Error	776.43	39	19.91	–	–	–	–
Separation-Based Behaviors	Group	1815.90	2	907.95	35.75	.001	.47	1.00
	Error	580.74	39	14.89	–	–	–	–

According to Table 4 and the F-values for the group source, which are significant at $p < .01$, it can be concluded that at least one of the interventions—acceptance and commitment therapy or cognitive-behavioral therapy—was effective on the subscales of stigma in mothers of children with autism spectrum disorder. These approaches explained 18%, 33%, and 22% of the variance in others' beliefs, mother's beliefs, and separation-based behaviors, respectively. To compare the effectiveness of acceptance and commitment therapy and cognitive-behavioral therapy on these subscales, the Bonferroni post hoc test was used, with results presented in Table 5.

Table 5. Bonferroni post hoc test for comparing means

Subscale	Group A	Group B	Mean Difference (A-B)	SE	Sig.
Others' Beliefs	ACT	CBT	-3.29	2.85	.76
	ACT	Control	-5.04	2.82	.24
	CBT	Control	-8.34	2.83	.02
Mother's Beliefs	ACT	CBT	-3.37	2.37	.49
	ACT	Control	-6.74	2.34	.02
	CBT	Control	-10.11	2.35	.01
Separation-Based Behaviors	ACT	CBT	-2.35	2.66	1.00
	ACT	Control	-6.25	2.63	.05
	CBT	Control	-8.61	2.64	.01

According to Table 5, the acceptance and commitment therapy approach was effective on the mother's beliefs and separation-based behaviors subscales ($p < .05$), but not on the others' beliefs subscale ($p > .05$). Cognitive-behavioral therapy was effective on all three subscales—others' beliefs, mother's beliefs, and separation-based behaviors ($p < .05$). Finally, based on the significance levels between acceptance and

commitment therapy and cognitive-behavioral therapy, there was no statistically significant difference between these two therapeutic interventions on the stigma subscales of mothers ($p > .05$).

Discussion and Conclusion

The results of this study demonstrated that both Acceptance and Commitment Therapy (ACT) and Cognitive-Behavioral Therapy (CBT) significantly reduced stigma among mothers of children with autism spectrum disorder (ASD) compared to the control group. Statistical analysis revealed meaningful decreases in total stigma scores for both intervention groups from pretest to posttest, with no significant difference between ACT and CBT in their overall effectiveness. Furthermore, analysis of stigma subscales indicated that ACT significantly improved the "mother's beliefs" and "separation-based behaviors" dimensions, while CBT produced significant improvements in all three dimensions, including "others' beliefs." These findings confirm that both interventions are capable of addressing the cognitive, emotional, and behavioral components of stigma, although CBT may exert a broader influence across all domains of stigma-related perceptions.

The observed reduction in stigma following ACT is consistent with prior research emphasizing ACT's efficacy in fostering psychological flexibility and reducing internalized stigma among parents of children with developmental disabilities (28, 29). ACT encourages individuals to accept their internal experiences and reorient their actions toward personally meaningful values (24, 25), which can be particularly effective for mothers who might otherwise struggle with shame, guilt, or self-blame related to their child's condition (11, 15). By reducing experiential avoidance and promoting value-driven behavior, ACT helps participants disengage from maladaptive patterns of thought and behavior that reinforce stigma (26, 27). This mechanism may explain the intervention's particular impact on internalized beliefs and separation-based behaviors, as these domains are heavily influenced by personal acceptance and self-compassion.

Similarly, the reduction in stigma achieved by CBT aligns with the well-established role of cognitive restructuring and behavioral modification in challenging maladaptive beliefs and promoting adaptive coping (21, 22). CBT's structured approach to identifying cognitive distortions and replacing them with more realistic and adaptive thoughts has been shown to alleviate emotional distress and reduce the intensity of negative self-perceptions (5, 6). The ability of CBT to improve "others' beliefs" in this study could be attributed to its emphasis on reality testing and perspective-taking, which may help mothers reinterpret and reframe perceived societal judgments (7, 23). This finding is consistent with research demonstrating that CBT can lead to more balanced interpretations of social interactions and diminish the impact of external stigma cues (16, 34).

The lack of a significant difference between ACT and CBT in overall stigma reduction suggests that both interventions may be equally viable options for supporting mothers of children with ASD. This convergence in efficacy has been observed in other comparative studies, where ACT and CBT demonstrated similar outcomes for reducing distress and improving well-being in parents of children with developmental disorders (16, 20). Both interventions share core elements, such as psychoeducation, skill-building, and behavior change strategies, which may contribute to their comparable results (24, 27). The shared capacity to enhance self-regulation and coping may explain why both treatments were effective in reducing stigma, even though their theoretical frameworks differ.

These results also resonate with findings from stigma research in other caregiving contexts. For instance, studies involving parents of children with Down syndrome or other neurodevelopmental conditions have highlighted the benefits of both acceptance-based and cognitive restructuring approaches in mitigating the negative effects of stigma (10, 19). Furthermore, affiliate stigma research indicates that interventions targeting both personal acceptance and cognitive reinterpretation can provide complementary benefits (11, 13). This dual benefit may explain the observed broad effectiveness of both ACT and CBT in the present study.

It is also noteworthy that while ACT did not significantly improve the "others' beliefs" subscale, CBT did. This difference may reflect the interventions' primary targets: ACT focuses more on changing the individual's relationship with their thoughts rather than directly altering the content of those thoughts (25, 26), whereas CBT explicitly addresses the accuracy and validity of beliefs (21, 22). For mothers whose stigma is strongly reinforced by perceptions of external judgment, direct cognitive restructuring may be more immediately effective in shifting those perceptions. However, ACT's focus on acceptance may still indirectly reduce the emotional impact of such beliefs, even if the beliefs themselves remain unchanged (28, 29).

The present findings also reinforce the critical role of culturally sensitive interventions. In collectivist societies such as Iran, the stigma surrounding ASD can be intensified by cultural expectations around child-rearing, family honor, and social conformity (12, 20). Both ACT and CBT, when adapted to the cultural context, can help mothers navigate these pressures more effectively. ACT's values clarification exercises may be particularly helpful in aligning mothers' caregiving roles with culturally relevant values, while CBT's problem-solving strategies can empower them to manage practical challenges within their sociocultural environment (15, 16).

The reduction in separation-based behaviors following both interventions is an especially promising outcome. These behaviors—manifested as withdrawal from social activities or avoidance of interactions—are a common consequence of affiliate stigma (9, 11). By addressing underlying beliefs and emotional responses, both ACT and CBT appear to support greater social engagement, which may in turn foster more positive community perceptions and reduce stigma at the societal level (10, 13).

Overall, the results of this study add to the growing body of evidence that both ACT and CBT are effective for reducing stigma among mothers of children with ASD. These findings underscore the importance of offering flexible, evidence-based interventions that can be tailored to individual needs and preferences. Given the multifaceted nature of stigma, interventions that integrate elements of both ACT and CBT may hold particular promise (21, 27). Such integrative approaches could harness the strengths of both modalities—combining the acceptance and mindfulness strategies of ACT with the cognitive restructuring and problem-solving techniques of CBT—to maximize benefits for mothers in diverse cultural contexts (16, 34).

This study has several limitations that should be considered when interpreting the findings. First, the relatively small sample size limits the generalizability of the results to the broader population of mothers of children with ASD. Larger, more diverse samples would be needed to confirm the observed effects across different socioeconomic, educational, and cultural backgrounds. Second, the study relied on self-report measures, which may be subject to social desirability bias, especially given the sensitive nature of stigma-related questions. Third, the interventions were delivered in a relatively short time frame, and no long-term

follow-up was conducted to assess the durability of the treatment effects. Finally, the absence of a hybrid intervention group combining ACT and CBT elements prevents conclusions about the potential added value of integrative approaches.

Future studies should aim to replicate these findings with larger and more demographically diverse samples, ideally using randomized controlled trial designs to enhance methodological rigor. Including fathers and other family members in interventions could provide a more comprehensive understanding of how stigma operates within the family system and how it can be mitigated. Longitudinal research is needed to examine the persistence of treatment effects over time and to identify factors that predict sustained improvement. Additionally, qualitative studies could provide deeper insights into the lived experiences of mothers, enriching the interpretation of quantitative findings. Comparing ACT and CBT with other third-wave therapies, such as mindfulness-based cognitive therapy, or with culturally adapted psychoeducational interventions, could also help determine the most effective strategies for stigma reduction in this population.

In clinical practice, mental health professionals working with mothers of children with ASD should consider offering both ACT and CBT as viable intervention options for stigma reduction. The choice of intervention can be guided by the mother's presenting concerns, preferences, and readiness for change. ACT may be particularly beneficial for mothers struggling with emotional avoidance and self-compassion, while CBT may be more effective for those with entrenched negative beliefs about societal perceptions. Group-based formats for both interventions could provide additional benefits through peer support and shared experiences. Training practitioners in culturally sensitive adaptations of both therapies will be essential to maximize their relevance and impact in diverse communities.

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Authors' Contributions

All authors equally contributed to this study.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethical Considerations

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

Transparency of Data

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

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