

Comparing the Effectiveness of the Incredible Years Program and the Hanen Parent Training Program on Internalized Stigma Among Mothers of Children with Autism Spectrum Disorder

Niloufar Sadat. Bashiri¹, Seyyedeh Olia. Emadian^{2*}, Seyyedeh Hamideh. Salim Bahrami²

¹ Ph.D. student in Educational Psychology, Sar.C., Islamic Azad University, Sari, Iran

² Assistant Professor, Department of Psychology, Sar.C., Islamic Azad University, Sari, Iran

* Corresponding author email address: emadian@iausari.ac.ir

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ABSTRACT

Purpose: The present study aimed to compare the effectiveness of the Incredible Years Program and the Hanen Parent Training Program in reducing internalized stigma among mothers of children with autism spectrum disorder (ASD).

Methods and Materials: This quasi-experimental study employed a pretest-posttest design with a control group and follow-up assessment. The statistical population consisted of all mothers of children diagnosed with ASD who attended an autism center in Gorgan, Iran. Using G*Power software, the required sample size was estimated based on a statistical power of 0.80, an effect size of 0.50, and a significance level of 0.05. Accordingly, 45 eligible mothers were selected through purposive sampling and assigned non-randomly to three groups of 15 participants: the Incredible Years intervention group, the Hanen Parent Training intervention group, and the control group. Internalized stigma was assessed using the Internalized Stigma Questionnaire developed by Ritsher et al. Data collected across the pretest, posttest, and follow-up stages were analyzed using SPSS version 24. A two-way repeated-measures analysis of variance was employed to examine changes over time, between-group differences, and the interaction between time and intervention condition.

Findings: The inferential analyses indicated a statistically significant effect of time and a significant time-by-group interaction on internalized stigma ($p < 0.05$), demonstrating that changes in stigma differed significantly across the three study groups. Both the Incredible Years Program and the Hanen Parent Training Program produced significant reductions in internalized stigma from pretest to posttest, and these improvements were maintained at follow-up. Comparative analyses further indicated significant differences between the intervention groups and the control group, confirming the effectiveness of both parent-focused interventions in reducing internalized stigma among mothers of children with ASD.

Conclusion: The findings suggest that both the Incredible Years Program and the Hanen Parent Training Program can effectively reduce internalized stigma among mothers of children with ASD. By strengthening parenting competencies, enhancing understanding of the child's developmental characteristics, and improving parents' coping and interactional skills, these interventions may help mothers develop more adaptive perceptions of themselves and their parenting experiences. Accordingly, these structured parent-training programs may be incorporated into psychological and family-centered services provided to families of children with ASD.

Keywords: Incredible Years Program; Hanen Parent Training Program; Internalized Stigma; Mothers; Autism Spectrum Disorder

1. Introduction

Autism spectrum disorder (ASD) is a neurodevelopmental condition characterized by persistent differences and difficulties in social communication and social interaction, together with restricted, repetitive, or inflexible patterns of behavior and interests. Beyond the developmental and behavioral manifestations experienced by children, ASD substantially affects the broader family system, particularly parents who are responsible for managing communication difficulties, behavioral challenges, educational needs, therapeutic appointments, and uncertainties regarding their child's future. Mothers frequently assume a large proportion of day-to-day caregiving responsibilities and may therefore experience sustained psychological, social, and practical demands. Studies have consistently indicated that parents of children with ASD report elevated levels of stress, anxiety, depressive symptoms, and diminished quality of life compared with parents of typically developing children or children with other developmental conditions (Bitsika & Sharpley, 2004; Hayes & Watson, 2013). Parenting stress in ASD is multidimensional and may arise not only from the severity of the child's symptoms but also from difficulties obtaining appropriate services, disruptions to family routines, financial pressures, social misunderstanding, and concerns about long-term independence. At the same time, resilience and access to personal and social resources can protect parental well-being and moderate the relationship between caregiving stress and quality of life (Bekhet et al., 2012; Zaidman-Zait et al., 2017). Recent research continues to emphasize that maternal stress can follow persistent trajectories when caregiving demands are chronic and support systems are insufficient, highlighting the need for family-centered interventions that address parental functioning as well as child outcomes (Zeng et al., 2025).

The psychological burden experienced by mothers of children with ASD cannot be understood solely in terms of caregiving stress, because families also encounter powerful social meanings attached to disability and developmental difference. Autism may be poorly understood in some communities, and behaviors associated with ASD can be interpreted as evidence of inadequate parenting, intentional disobedience, social incompetence, or family dysfunction. Such interpretations can expose mothers to judgment, avoidance, exclusion, embarrassment, and negative social reactions. Early qualitative research showed that parents of children with autism may experience both felt stigma and

enacted stigma, particularly in public situations where children's behaviors attract attention or are misunderstood (Gray, 2002). Subsequent work has shown that stigma can become deeply embedded in family life, affecting social relationships, disclosure decisions, help-seeking, community participation, and parents' perceptions of themselves and their children (Kinnear et al., 2016). In this context, stigma is not merely an external social response; it may also become internalized. Caregivers can gradually absorb socially devaluing attitudes and apply them to their own identity, leading to shame, self-blame, lowered self-worth, withdrawal, and expectations of rejection or discrimination. The concept of affiliate stigma specifically describes the process through which relatives and caregivers of stigmatized individuals internalize public prejudice and experience corresponding cognitive, emotional, and behavioral consequences (Mak & Cheung, 2008). Research on parents of children with ASD has further demonstrated that such internalization can be substantial and is linked to social and psychological difficulties (Mak & Kwok, 2010).

Internalized stigma is especially important because it may influence how mothers interpret their parental role, their child's condition, and their ability to participate confidently in family and social life. Stigma-related beliefs may include the perception that one's family is socially devalued, that others will inevitably judge or reject them, or that the mother is somehow responsible for the child's developmental condition. Over time, these beliefs can undermine self-efficacy and reduce the willingness to seek social support or engage in community activities. The broader self-stigma literature suggests that internalized negative stereotypes may generate a "why try" response, whereby individuals disengage from valued goals because they anticipate failure, rejection, or diminished social worth (Corrigan et al., 2014). For mothers raising children with ASD, such a process may contribute to reduced confidence in parenting, avoidance of public or family interactions, emotional isolation, and reluctance to advocate for services. Maternal parenting cognitions are therefore a central component of adjustment. Mothers with stronger parenting self-efficacy tend to perceive themselves as more capable of responding to their children's needs, whereas lower self-efficacy may coexist with maladaptive interpretations of parenting experiences (Kuhn & Carter, 2006). Beliefs concerning fairness and justice may also shape how parents interpret adversity and chronic caregiving challenges. Just-world beliefs influence how individuals make sense of difficult events, expectations, and social treatment and may therefore contribute to

adaptation or distress when families experience repeated social inequity or stigmatization (Dalbert, 2009).

Contemporary research increasingly recognizes that improving outcomes in ASD requires interventions that treat parents not simply as passive recipients of professional advice but as active agents in the child's developmental environment. Parent-mediated and parent-training interventions are based on the premise that parents can learn specific interactional, communication, behavioral, and emotional-regulation strategies and apply them within natural daily routines. Such approaches are particularly relevant in early childhood, when parents spend substantial amounts of time with their children and opportunities for intervention are distributed across ordinary family activities. Systematic reviews have shown that parent-implemented early interventions can improve aspects of parent-child interaction and child functioning, while also increasing parental competence and involvement in treatment (McConachie & Diggle, 2007; Oono et al., 2013). Evidence from randomized and controlled studies has further indicated that parent-mediated interventions can enhance social communication, reciprocal interaction, and developmental outcomes in young children with ASD (Green et al., 2010; Roberts et al., 2011). Long-term follow-up research also suggests that changes achieved through early intervention can persist beyond the immediate treatment period, underscoring the potential developmental importance of intervention during the preschool years (Estes et al., 2014). More recent systematic reviews similarly support the clinical value of parent-mediated interventions while emphasizing variability across intervention models, target outcomes, family characteristics, and implementation settings (McConachie, Parr, & Team, 2021).

Parent-focused approaches may be particularly relevant to internalized stigma because they can influence several psychological mechanisms through which stigma is maintained. Structured training provides parents with accurate information about ASD, helps them understand the developmental basis of their child's behavior, and replaces moralized or self-blaming interpretations with more realistic explanations. It can also strengthen parenting competence, increase perceived control, and create opportunities for successful interaction with the child. As mothers become more skilled in responding to communication and behavioral difficulties, they may experience fewer public crises, less helplessness, and greater confidence in their ability to manage challenging situations. Evidence indicates that parental stress is strongly connected with the demands of

raising a child with ASD, suggesting that interventions capable of improving perceived competence and reducing behavioral disruption may indirectly support broader psychological adjustment (Hayes & Watson, 2013). Recent intervention research has also expanded beyond traditional behavioral programs to directly address the emotional health of mothers. For example, interventions targeting anxiety, depression, distress tolerance, and parental emotional functioning have shown increasing relevance in mothers of children with ASD (Xiang et al., 2025; Yan & Abdullah, 2025). Comparative evidence has also suggested that mindfulness-based parenting and transdiagnostic approaches may reduce social stigma and improve distress tolerance, supporting the proposition that parental psychological processes are modifiable through structured intervention (Koohzad et al., 2025).

Among established parenting approaches, the Incredible Years Program represents a well-developed intervention framework designed to strengthen positive parenting practices, improve parent-child relationships, promote effective discipline, reduce coercive interaction patterns, and enhance parental problem-solving and emotional regulation. The program was originally developed within a broader series of parent, teacher, and child interventions and incorporates modeling, rehearsal, discussion, problem-solving, home practice, and reinforcement of developmentally appropriate parenting strategies (Webster-Stratton, 2011). Its theoretical and practical foundations emphasize positive attention, child-directed play, praise, incentives, clear limit-setting, nonviolent discipline, emotional coaching, and collaborative problem-solving (Webster-Stratton & Reid, 2010). Evidence accumulated across populations with behavioral and developmental difficulties has demonstrated that improvements can be sustained beyond active treatment, particularly when parents continue to apply learned skills and receive appropriate reinforcement or booster support (Reid et al., 2003). Meta-analytic work on parenting programs has further demonstrated that well-established intervention components can retain effectiveness when implemented across settings, although outcomes may be influenced by cultural adaptation, delivery context, and population characteristics (Leijten et al., 2018). These findings make the Incredible Years framework relevant to families of children with ASD, who often require both behavioral management skills and support for parental confidence.

Specific applications of the Incredible Years Program to ASD have provided promising evidence. Adaptations for

parents of children with autism have been associated with improvements in parenting practices, reductions in child behavior difficulties, and beneficial changes in parental adjustment (Hutchings et al., 2017). A pilot investigation of the Incredible Years Parent Training Program in children with ASD also supported its feasibility and potential effectiveness in reducing behavioral problems and strengthening parenting-related outcomes (Postorino et al., 2020). More broadly, systematic review and meta-analytic evidence indicates that parent training can reduce disruptive behavior in children with ASD and improve family management of challenging behaviors (Postorino et al., 2017). Randomized evidence in other populations has also shown that the Incredible Years Program can reduce parental stress and child behavior problems, strengthening the rationale for examining outcomes that extend beyond child symptoms to parents' psychological functioning (Leung et al., 2023). Since internalized stigma may be exacerbated by repeated experiences of difficult behavior, perceived parenting failure, and critical social responses, an intervention that increases parental competence and improves behavioral management may plausibly reduce mothers' stigmatizing self-perceptions as well.

A second prominent approach is the Hanen parent-training model, particularly programs such as More Than Words, which were developed to help parents of young children with ASD facilitate communication and social engagement during everyday interactions. Hanen-based interventions emphasize following the child's lead, observing and interpreting communicative cues, waiting for the child's response, creating opportunities for communication, adjusting language to the child's developmental level, using visual and contextual supports, and embedding communication strategies within play and daily routines. Early evidence has shown that Hanen parent programs can alter the quality of parent-child interaction among toddlers with developmental delays by helping caregivers become more responsive and better able to support communicative participation (Girolametto et al., 2007). A randomized controlled trial of Hanen's More Than Words intervention for parents of toddlers with ASD further demonstrated the feasibility of parent-mediated communication training and identified meaningful effects for particular child and family subgroups (Carter et al., 2011). Parent-mediated communication interventions more generally have been associated with improved synchronous parent-child communication, parental responsiveness, and aspects of child social communication (Green et al., 2010).

These mechanisms may be especially important for mothers whose internalized stigma is reinforced by feelings of disconnection from their children or beliefs that they are ineffective in facilitating communication.

The potential psychosocial effects of communication-focused parent training extend beyond the child's language development. When mothers become more capable of recognizing subtle communicative attempts, responding contingently, and creating successful reciprocal interactions, their interpretation of the child may change from one centered on deficit and unpredictability to one emphasizing capacity, connection, and developmental opportunity. Parent coaching approaches such as the Early Start Denver Model have demonstrated that strengthening parent-child communication can improve interactional processes and enhance parental implementation of developmental strategies (Rogers et al., 2019). Broader evidence from parent-mediated intervention research likewise suggests that the quality of parent involvement is central to intervention effects and may produce outcomes that persist over time (McConachie, Parr, Livingstone, et al., 2021). Contemporary research on parent-child play also highlights that relational quality is not reducible to the use of therapeutic materials; naturalistic interaction without toys can sometimes produce more positive engagement between autistic preschool children and their parents than toy-based play, emphasizing the importance of relational attunement and responsiveness (Oppenheim et al., 2025). Such findings strengthen the rationale for examining interventions like Hanen that prioritize sensitive communication, shared attention, and parental responsiveness rather than focusing exclusively on managing problematic behavior.

The relevance of parent training is further supported by a broad range of parenting interventions developed for families of children with ASD. Programs such as Stepping Stones Triple P have demonstrated that structured parenting support can improve family functioning and reduce child behavior difficulties (Whittingham et al., 2009). Brief parenting programs adapted for ASD have similarly produced improvements in child behavior and parental outcomes, demonstrating that changes can occur even when intervention intensity is relatively limited (Tellegen & Sanders, 2013). Reviews of parent-child interaction therapy have also indicated that interaction-based behavioral approaches can be adapted effectively for children with ASD and may improve both child behavior and parenting practices (Werner et al., 2020). Evidence from low- and middle-income countries is especially important because

specialized autism services are often scarce, costly, or geographically inaccessible. Parent-training interventions have been found to be feasible and potentially effective in such contexts because they build intervention capacity within the family and reduce exclusive dependence on specialist-delivered treatment (Divan et al., 2019). These findings are relevant to settings where family-centered, relatively scalable programs may provide a practical means of improving both child-related and parental psychological outcomes.

However, parenting interventions cannot be assumed to affect all outcomes in the same way. Programs differ in theoretical orientation, targets, methods of delivery, emphasis on behavioral management versus communication, and the extent to which they directly address parental cognitions and emotions. The Incredible Years Program primarily strengthens positive parenting, behavioral management, emotional regulation, and family interaction, whereas the Hanen approach places greater emphasis on understanding the child's communication style, following the child's lead, reciprocal interaction, and facilitation of communication in natural contexts. These different mechanisms may lead to different effects on mothers' internalized stigma. A mother who learns to manage challenging behavior more effectively may feel more competent and less judged, whereas a mother who develops a deeper understanding of her child's communication and sensory characteristics may become less likely to interpret the child's behavior through stigmatizing or deficit-based assumptions. Existing research has established the effectiveness of parenting interventions on child behavior, parental stress, communication, and family interaction, but comparative evidence regarding their impact on internalized stigma remains limited. Moreover, qualitative accounts of motherhood in autism continue to reveal complex experiences of identity, emotional responsibility, adaptation, and protection, indicating that maternal well-being cannot be inferred solely from changes in the child's symptoms (Ramos-Serrano, 2025). Parents may simultaneously experience love, competence, exhaustion, social judgment, advocacy demands, and pressure to protect the child from misunderstanding, making stigma a particularly meaningful intervention target.

Another consideration is that parents' responses to interventions may depend on the interaction between personal resources, social context, and the specific caregiving challenges they encounter. Parents of children with special developmental or behavioral characteristics

often report unique parenting demands that cannot be fully addressed by generic behavioral advice (Morawska & Sanders, 2009). Effective programs therefore need to be responsive to family circumstances while retaining structured evidence-based components. The growing literature on autism parent interventions suggests that therapeutic benefits may arise when programs both increase concrete parenting skills and alter parents' interpretations of difficult interactions. Such cognitive and relational changes may reduce perceptions of helplessness and restore a sense of agency. The importance of parental agency is particularly salient in the context of stigma, because internalized stigma can narrow social participation and reinforce a negative parental identity. Conversely, understanding ASD more accurately, experiencing successful communication with the child, and developing effective responses to behavior may help mothers reinterpret their parenting experiences in less self-critical ways. This perspective is consistent with evidence linking resilience, social support, and parenting resources to better psychological adaptation among parents of children with ASD (Bekhet et al., 2012; Zaidman-Zait et al., 2017).

Despite extensive research on parent-mediated interventions, several gaps remain. Much of the intervention literature has focused primarily on child social communication, disruptive behavior, or general parenting stress, while internalized stigma has received comparatively less attention as a direct outcome. Yet stigma may affect whether mothers seek help, participate socially, advocate for their children, adhere to intervention recommendations, and maintain confidence in their parental role. Comparative studies are also needed because demonstrating that an intervention is effective relative to a control group does not establish whether one active parent-training approach is more beneficial than another for a specific psychosocial outcome. Evidence from prior studies supports the effectiveness of behavioral parenting interventions, communication-focused parent programs, and broader parent-mediated approaches, but their comparative influence on maternal stigma remains uncertain (Carter et al., 2011; Hutchings et al., 2017; Postorino et al., 2020). Given the psychosocial burden associated with affiliate and internalized stigma, identifying a parent-training program that is particularly effective in reducing such experiences may have practical implications for autism services, family counseling, and psychosocial rehabilitation. It may also contribute to a more comprehensive family-centered model in which parental well-being is regarded as an important

intervention outcome rather than merely a secondary pathway to child improvement.

Accordingly, the present study aimed to compare the effectiveness of the Incredible Years Program and the Hanen Parent Training Program in reducing internalized stigma 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 with pretest, posttest, control-group, and follow-up assessments to compare the effectiveness of two parent-focused intervention programs, namely the Incredible Years Program and the Hanen Parent Training Program, in reducing internalized stigma among mothers of children with autism spectrum disorder (ASD). This design was selected because of the intervention-based nature of the research and the need to compare changes in the dependent variable across two intervention conditions and a no-treatment control condition over time. The statistical population consisted of all mothers of children with ASD who attended autism services and centers in Gorgan, Iran. The required sample size was estimated using G*Power software, assuming a statistical power of 0.80, an effect size of 0.50, and a significance level of 0.05. On this basis, 15 participants were considered necessary for each study group, resulting in a total sample of 45 mothers. Participants were initially recruited using purposive sampling based on the eligibility criteria and were subsequently allocated non-randomly to the Incredible Years intervention group, the Hanen Parent Training intervention group, or the control group, with 15 participants in each group. Inclusion criteria were having at least a high-school diploma, being the mother of a child aged 2–6 years with a previously established diagnosis of ASD ranging from mild to severe, not simultaneously participating in another psychotherapy or psychological intervention during the study period, and providing informed and voluntary consent to participate. Exclusion criteria included absence from more than two intervention sessions, failure to respond to more than 20% of the questionnaire items, and simultaneous participation in another psychotherapeutic intervention. At the beginning of the study, the clinical records of children who had previously been assessed and diagnosed with ASD by a psychiatrist and psychologist were reviewed through the autism centers in Gorgan. Mothers meeting the inclusion criteria were then enrolled and assigned to the study groups. Before the

interventions, all participants completed the study questionnaire as the pretest so that baseline levels of internalized stigma could be established. The two experimental groups subsequently received their respective intervention programs, while the control group received no intervention during the main study period. The interventions were administered face-to-face by the researcher with the assistance of a co-therapist under the supervision and guidance of academic supervisors. Homework assignments consistent with the content of each intervention were provided after each session, and participants received constructive feedback on their assignments at the beginning of the subsequent session. Following completion of the interventions, participants again completed the questionnaire as the posttest, and a follow-up assessment was conducted to examine the maintenance of intervention effects. Participants were also considered with respect to age and educational level to reduce the potential influence of major demographic differences between the groups. Before participation, written informed consent was obtained from all mothers, and they were informed that participation would not expose them or their children to intentional physical or psychological harm. Confidentiality of personal information was emphasized, and participants were informed of their right to withdraw from the study at any stage without penalty or the need to provide a reason. After completion of the study, the control group was offered an educational program comparable to those delivered to the intervention groups so that its members could also benefit from the potentially useful training.

2.2. Measures

Internalized stigma was assessed using the Internalized Stigma of Mental Illness questionnaire developed by Ritsher and colleagues in 2003. In the present study, the instrument was used to evaluate the extent to which mothers had internalized stigmatizing beliefs and experiences associated with having a child with ASD. The version used in the study consisted of 17 items covering four dimensions, including alienation or feelings of loneliness and estrangement, endorsement of stereotypical beliefs, experiences of social discrimination, and social withdrawal. Responses are rated on a Likert-type scale, with higher scores representing greater levels of internalized stigma. The instrument was administered at the pretest, posttest, and follow-up stages to assess changes in internalized stigma over the course of the study and to compare the patterns of change among the two

intervention groups and the control group. The original psychometric evaluation of the questionnaire reported acceptable internal consistency, with Cronbach's alpha coefficients exceeding 0.70, indicating satisfactory reliability for the measurement of internalized stigma. In the present research, the instrument was selected because it provides a multidimensional assessment of internalized stigma and addresses cognitive, emotional, and behavioral manifestations of stigma that may be relevant to mothers raising children with developmental conditions such as ASD.

2.3. Interventions

The Incredible Years intervention was delivered to the first experimental group in 12 face-to-face sessions, with each session lasting approximately 60–90 minutes. The intervention was structured to strengthen parental knowledge, parenting competence, behavioral management skills, emotional self-regulation, and family communication. The first session introduced the Incredible Years Program, clarified its purposes, established expectations regarding participation, and explained the tasks and responsibilities associated with the intervention. The second session focused on understanding children's developmental characteristics, recognizing the differences between parental needs and the needs of children with developmental difficulties, and adjusting parental expectations to the child's abilities and developmental level. The third session introduced major parenting styles and emphasized the distinction between authoritarian behavior and appropriate parental assertiveness. The fourth session focused on parent–child play, including ways of engaging the child in shared activities, assigning developmentally appropriate responsibilities, and using play as a context for strengthening interaction. The fifth session addressed the appropriate use of praise and parental feedback, with particular attention to avoiding ineffective or excessive forms of praise and learning more suitable ways of reinforcing desirable behaviors. The sixth session focused on the appropriate and timely use of rewards and behavioral reinforcers. The seventh session addressed the establishment and implementation of household rules, emphasizing the need to formulate rules clearly, communicate them in language understandable to the child, and apply them consistently. The eighth session focused on discipline and appropriate methods of responding to undesirable behavior, including discussion of the purposes and limitations of punishment and

the use of more constructive disciplinary strategies. The ninth session emphasized improving the child's adjustment by communicating rules clearly and maintaining consistency in their implementation. The tenth session addressed the development of problem-solving behaviors in children through parental modeling, identification and clarification of problems, generation of possible solutions, and evaluation of alternatives. The eleventh session focused on parental self-control and emotion regulation, including identifying distressing thoughts, recognizing common emotional reactions in parents, managing emotional responses, and using strategies to disengage from escalating tension. The twelfth and final session focused on strengthening communication skills through active listening, appropriate expression of feelings, constructive interaction with family members and other significant people, and effective management of interpersonal problems, particularly difficulties arising between spouses. Throughout the intervention, mothers received session-specific homework assignments and were encouraged to apply the strategies in their daily interactions with their children, with homework reviewed and feedback provided during the following session.

The Hanen Parent Training Program was administered to the second experimental group in nine face-to-face sessions of approximately 60–90 minutes each. The intervention emphasized responsive parent–child communication, understanding the communication profile of children with ASD, following the child's lead, facilitating language comprehension, supporting play, and promoting social participation. The first session focused on the characteristics of children with ASD, including sensory features, individual differences in learning styles, possible reasons for restricted and repetitive behaviors, and the importance of identifying and responding to the child's interests and preferences. The second session addressed the child's communication abilities and developmental stages of communication, the characteristics associated with different communication levels, the establishment of realistic communication goals, and attention to both verbal and nonverbal signals. The third session concentrated on following the child's lead and joining the child's activities, using observation-based strategies such as attending, interpreting, imitating, waiting, and listening, as well as adopting ways of speaking that matched the child's communication level and interests. The fourth session focused on doing activities together and establishing reciprocal interaction. Mothers were trained in conversational rules, the use of different forms of prompts

and guidance, including direct, naturalistic, physical, verbal, visual, and gestural prompts, appropriate ways of giving instructions, asking questions effectively, and promoting turn-taking. The fifth session addressed play with the child, including selecting toys and activities that were appropriate for the child's communication characteristics, using different types of play from social games to more rule-governed activities, and applying strategies such as repetition, providing opportunities, prompting, and maintaining interaction. Parents were also trained in how to initiate, continue, and appropriately end play activities. The sixth session focused on helping children understand spoken language and everyday activities through strategies such as talking less, emphasizing key information, slowing the pace of speech, and showing or demonstrating meanings. Parents practiced selecting words and sentence structures appropriate to the child's communication stage, using objects and other supportive materials, breaking down and combining words and sentences, and facilitating the child's understanding of their own emotions and the emotions of others. The seventh session introduced visual supports, including the construction and use of choice boards, visual schedules for routine daily activities, specific symbols and signs, visual aids for understanding past and future events, personalized stories, and individualized videos. The eighth session focused on shared book reading, including the use of wordless picture books, selection of books appropriate to the child's communication level, development of interactive books, modification of written text in accordance with the child's learning characteristics, use of short and simple storytelling, preparation of personalized books, and application of suitable labels and visual cues. The ninth session addressed friendship development and social participation, including selecting appropriate peers, determining suitable times and settings for play, balancing structured and unstructured activities, using toys to facilitate interactions with other children, teaching peers to understand the child's characteristics, and coaching the child in how to initiate, maintain, and terminate conversations and remain engaged in joint play rather than withdrawing prematurely. Similar to the Incredible Years intervention, participants received homework activities designed to facilitate the application of session content in natural family contexts, and assignments were reviewed at the beginning of subsequent sessions with constructive feedback.

2.4. Data Analysis

The data obtained from the pretest, posttest, and follow-up assessments were analyzed using IBM SPSS Statistics version 24. Descriptive statistics were initially used to summarize the distribution of scores and characterize participants across the three study groups. Because the study examined changes in internalized stigma across multiple measurement occasions and compared these changes between two intervention groups and one control group, inferential analysis was conducted using two-way repeated-measures analysis of variance. In this analytical framework, measurement time represented the within-subject factor and group membership represented the between-subject factor. The analysis was used to evaluate the main effect of time, indicating whether internalized stigma changed across the pretest, posttest, and follow-up stages; the main effect of group, indicating whether overall levels of internalized stigma differed among the Incredible Years, Hanen, and control groups; and the time-by-group interaction, which determined whether the pattern of change over time differed significantly according to intervention condition. Where significant omnibus effects were observed, appropriate follow-up comparisons were considered to determine the location and direction of between-group and within-group differences. Statistical significance was evaluated at the conventional alpha level of 0.05, and the inferential results were interpreted in relation to the comparative effectiveness and maintenance of the effects of the two parent-training programs on internalized stigma.

3. Findings and Results

The study included 45 mothers of children with autism spectrum disorder, with 15 participants (33.33%) assigned to the control group, 15 participants (33.33%) to the Incredible Years Program group, and 15 participants (33.33%) to the Hanen Parent Training Program group. Regarding age distribution, 12 participants (26.70%) were younger than 30 years, 18 participants (40.00%) were between 30 and 40 years of age, and 15 participants (33.30%) were older than 40 years. Thus, the largest proportion of participants belonged to the 30–40-year age group. Equal group sizes were maintained across the three study conditions.

Table 1

Descriptive Statistics for Internalized Stigma and Its Components Across the Three Measurement Stages

Variable	Group	Pretest M	Pretest SD	Posttest M	Posttest SD	Follow-up M	Follow-up SD
Internalized stigma	Control	71.53	6.54	71.06	5.94	72.00	5.45
	Incredible Years	71.80	5.94	61.20	5.57	66.46	5.51
	Hanen Parent Training	71.53	5.82	54.33	5.40	63.93	5.65
Stereotype endorsement	Control	15.80	1.47	16.00	1.36	15.53	1.30
	Incredible Years	16.00	1.30	13.73	1.27	14.86	1.24
	Hanen Parent Training	15.86	1.35	12.66	1.39	13.86	1.35
Internal devaluation	Control	10.73	1.75	10.60	1.59	11.00	1.41
	Incredible Years	10.93	1.75	9.06	1.70	10.06	1.73
	Hanen Parent Training	10.60	1.63	7.53	1.30	9.26	1.57
Expected discrimination	Control	14.60	1.35	14.40	1.12	14.73	1.16
	Incredible Years	14.40	1.24	12.26	1.03	13.20	1.08
	Hanen Parent Training	14.73	1.16	10.86	1.06	13.20	1.37
Reduced self-confidence	Control	13.06	1.57	12.93	1.54	13.26	1.59
	Incredible Years	12.93	1.38	10.86	1.55	12.00	1.41
	Hanen Parent Training	13.26	1.38	9.46	1.35	11.80	1.20
Self-alienation	Control	17.33	1.39	17.13	1.45	17.46	1.24
	Incredible Years	17.53	1.30	15.26	1.16	16.33	1.11
	Hanen Parent Training	17.06	1.33	13.80	1.32	15.80	1.26

As shown in Table 1, baseline scores for internalized stigma and its components were relatively similar across the three groups. The mean total internalized stigma score remained almost unchanged in the control group, increasing slightly from 71.53 at pretest to 72.00 at follow-up. In contrast, the Incredible Years group showed a marked reduction from 71.80 at pretest to 61.20 at posttest, followed by a partial increase to 66.46 at follow-up. An even greater reduction was observed in the Hanen Parent Training group, in which the mean internalized stigma score decreased from 71.53 at pretest to 54.33 at posttest and then increased to 63.93 at follow-up. A similar pattern was observed across stereotype endorsement, internal devaluation, expected discrimination, reduced self-confidence, and self-alienation. Although some increase in scores occurred between posttest and follow-up in both intervention groups, follow-up scores generally remained lower than baseline values. Descriptively, the Hanen Parent Training group

demonstrated greater reductions in internalized stigma and its components than the Incredible Years group.

Before conducting repeated-measures analysis of variance, the relevant statistical assumptions were examined. The distribution of the dependent variables across the study groups and measurement occasions was considered sufficiently consistent with normality, and no substantial violations were identified. Homogeneity of variance across the three groups was also considered acceptable. In addition, the assumptions required for repeated-measures analysis, including the appropriateness of the covariance structure and sphericity of the repeated observations, were examined and found to be satisfactory for conducting the planned analyses. Accordingly, the data were analyzed using two-way repeated-measures analysis of variance with time as the within-subject factor and study group as the between-subject factor.

Table 2

Repeated-Measures Analysis of Variance for Internalized Stigma and Its Components

Variable	Source	SS	df	MS	F	p	Partial η^2
Internalized stigma	Time	2006.770	2	1003.385	872.308	<.001	.954
	Group	1562.504	2	781.252	18.002	<.001	.466
	Time $\times$ Group	1071.274	4	267.819	232.832	<.001	.917
Stereotype endorsement	Time	71.304	2	35.652	223.119	<.001	.842
	Group	61.081	2	30.541	5.989	<.001	.222
	Time $\times$ Group	47.274	4	11.819	73.964	<.001	.779
Internal devaluation	Time	65.378	2	32.689	223.040	<.001	.842

	Group	60.978	2	30.489	4.937	<.001	.158
	Time × Group	32.978	4	8.244	56.253	<.001	.728
Expected discrimination	Time	96.933	2	48.467	295.490	<.001	.876
	Group	67.378	2	33.689	8.715	<.001	.293
	Time × Group	51.956	4	12.989	79.190	<.001	.790
Reduced self-confidence	Time	92.133	2	46.067	317.759	<.001	.883
	Group	60.044	2	30.022	4.957	<.001	.191
	Time × Group	51.022	4	12.756	87.985	<.001	.807
Self-alienation	Time	83.126	2	41.563	181.838	<.001	.812
	Group	69.437	2	34.719	7.621	<.001	.266
	Time × Group	37.674	4	9.419	41.206	<.001	.662

The repeated-measures analysis of variance presented in Table 2 demonstrated statistically significant main effects of time and group, as well as significant time × group interaction effects, for total internalized stigma and all five of its components. For internalized stigma, the main effect of time was significant, $F = 872.308$, $p < .001$, partial $\eta^2 = .954$, indicating substantial changes in internalized stigma scores across the pretest, posttest, and follow-up assessments. The main effect of group was also significant, $F = 18.002$, $p < .001$, partial $\eta^2 = .466$, demonstrating differences in overall internalized stigma among the control, Incredible Years, and Hanen Parent Training groups. More

importantly, the time × group interaction was significant, $F = 232.832$, $p < .001$, partial $\eta^2 = .917$, showing that changes in internalized stigma over time differed according to intervention condition. Significant time, group, and interaction effects were similarly found for stereotype endorsement, internal devaluation, expected discrimination, reduced self-confidence, and self-alienation, with all reported p values below .001. The large interaction effect sizes indicate that the changes observed across the three assessments were strongly associated with group membership and therefore with exposure to the intervention programs.

Table 3

Bonferroni Post-Hoc Comparisons of Internalized Stigma and Its Components Between Study Groups

Variable	Group I	Group II	Mean Difference	p
Internalized stigma	Control	Incredible Years	11.477	<.001
	Control	Hanen Parent Training	17.390	<.001
	Incredible Years	Hanen Parent Training	5.913	<.001
Stereotype endorsement	Control	Incredible Years	2.270	<.001
	Control	Hanen Parent Training	3.313	<.001
	Incredible Years	Hanen Parent Training	1.043	.017
Internal devaluation	Control	Incredible Years	1.515	.013
	Control	Hanen Parent Training	3.010	<.001
	Incredible Years	Hanen Parent Training	1.495	.015
Expected discrimination	Control	Incredible Years	2.075	.009
	Control	Hanen Parent Training	3.473	<.001
	Incredible Years	Hanen Parent Training	1.398	.016
Reduced self-confidence	Control	Incredible Years	2.052	.008
	Control	Hanen Parent Training	3.505	<.001
	Incredible Years	Hanen Parent Training	1.453	.011
Self-alienation	Control	Incredible Years	1.873	.010
	Control	Hanen Parent Training	3.282	<.001
	Incredible Years	Hanen Parent Training	1.409	.012

The Bonferroni post-hoc comparisons presented in Table 3 clarified the significant between-group effects observed in the repeated-measures analysis. For total internalized stigma, the control group had significantly higher scores than the Incredible Years group, with a mean difference of

11.477 ($p < .001$), and significantly higher scores than the Hanen Parent Training group, with a mean difference of 17.390 ($p < .001$). Furthermore, the difference between the two intervention groups was statistically significant, with the Incredible Years group scoring 5.913 points higher than the

Hanen Parent Training group ($p < .001$), indicating a greater reduction in internalized stigma following the Hanen intervention. Significant differences were also observed between the control group and both intervention groups for all components of internalized stigma. Moreover, the Hanen Parent Training group demonstrated significantly lower scores than the Incredible Years group for stereotype endorsement (mean difference = 1.043, $p = .017$), internal devaluation (mean difference = 1.495, $p = .015$), expected discrimination (mean difference = 1.398, $p = .016$), reduced self-confidence (mean difference = 1.453, $p = .011$), and self-alienation (mean difference = 1.409, $p = .012$). Overall, both interventions significantly reduced internalized stigma and its components compared with the control condition; however, the Hanen Parent Training Program produced consistently greater reductions than the Incredible Years Program.

4. Discussion and Conclusion

The present study was conducted to compare the effectiveness of the Incredible Years Program and the Hanen Parent Training Program in reducing internalized stigma among mothers of children with autism spectrum disorder (ASD). The findings demonstrated that both intervention programs significantly reduced mothers' internalized stigma compared with the control group. The repeated-measures analyses revealed significant main effects of time, group, and time $\times$ group interaction, indicating that participants' internalized stigma scores changed significantly across the pretest, posttest, and follow-up stages and that these changes differed according to intervention condition. Both intervention groups showed substantial reductions in total internalized stigma and its components, including stereotype endorsement, internal devaluation, expected discrimination, reduced self-confidence, and self-alienation. However, comparative analyses indicated that the Hanen Parent Training Program produced greater reductions in internalized stigma than the Incredible Years Program. Although some increase in stigma scores was observed at follow-up compared with posttest, scores in both intervention groups remained significantly lower than baseline levels, suggesting that the beneficial effects of both interventions were maintained over time.

The effectiveness of the Incredible Years Program in reducing internalized stigma can be understood through its emphasis on strengthening parental competence, improving parent-child relationships, increasing effective behavior

management skills, and reducing feelings of helplessness associated with challenging child behaviors. Mothers of children with ASD frequently experience social judgment and self-blame when they encounter difficulties in managing behavioral problems or communicating with their children. Such experiences may contribute to the development of negative self-perceptions and internalized stigma. By teaching parents strategies for positive interaction, consistent discipline, emotional regulation, and problem-solving, the Incredible Years Program may help mothers reinterpret parenting challenges as manageable developmental issues rather than personal failures. Previous research has shown that parenting interventions based on structured skill development can reduce parental stress and improve confidence in managing child behavior, which are important factors associated with parental psychological adjustment ([Webster-Stratton, 2011](#)). Similarly, studies examining the application of the Incredible Years approach among families of children with ASD have demonstrated improvements in parenting practices and reductions in child behavior difficulties, suggesting that increased parental competence may contribute to broader improvements in family functioning ([Hutchings et al., 2017](#); [Postorino et al., 2020](#)). The present findings extend this evidence by demonstrating that such improvements may also influence mothers' internalized perceptions of stigma.

The observed reduction in internalized stigma following the Incredible Years intervention is also consistent with previous findings regarding the relationship between parenting efficacy and psychological adjustment among mothers of children with ASD. Mothers who perceive themselves as more capable of responding effectively to their children's needs are less likely to interpret caregiving experiences through feelings of inadequacy or failure. Parenting self-efficacy has been identified as an important cognitive resource that shapes parental adaptation and influences parenting-related beliefs and behaviors ([Kuhn & Carter, 2006](#)). Furthermore, parenting stress is considerably higher among parents of children with ASD than among parents of children without ASD, and interventions that improve parenting skills may reduce the emotional burden associated with caregiving ([Hayes & Watson, 2013](#)). Since internalized stigma often develops through repeated experiences of stress, social evaluation, and perceived inadequacy, reducing parenting-related distress may indirectly weaken stigmatizing self-beliefs. The current findings therefore support the idea that interventions targeting parenting competence can have effects beyond

observable child outcomes and may improve mothers' broader psychological experiences.

The Hanen Parent Training Program demonstrated an even stronger effect on reducing internalized stigma compared with the Incredible Years Program. This finding may be explained by the specific focus of Hanen-based interventions on communication, reciprocal interaction, and understanding the child's unique developmental profile. Many mothers of children with ASD experience stigma partly because children's communication difficulties and atypical behaviors are misunderstood by others and may be interpreted as evidence of poor parenting. By teaching mothers to recognize their children's communication signals, follow their children's interests, create opportunities for interaction, and respond appropriately to developmental differences, Hanen training may promote a more positive and accepting understanding of the child. This change in parental interpretation may reduce feelings of shame, self-blame, and social inadequacy, thereby decreasing internalized stigma. Previous studies have demonstrated that Hanen parent programs improve parent-child interaction quality and increase parental responsiveness among children with developmental delays (Girolametto et al., 2007). Similarly, a randomized controlled trial of Hanen's More Than Words intervention for parents of toddlers with ASD indicated beneficial effects on parent-mediated communication processes and family interaction patterns (Carter et al., 2011).

The superiority of the Hanen intervention in the current study may also be related to its relational and interaction-based mechanism of action. Internalized stigma is not only a consequence of external social reactions but also reflects how parents construct meaning regarding their relationship with their child. When mothers experience repeated successful communication exchanges and observe their children's abilities rather than only their limitations, they may develop a more positive parental identity. Research on parent-mediated interventions has highlighted that improving reciprocal communication between parents and children can enhance parental confidence and strengthen emotional bonds (McConachie & Diggle, 2007; Oono et al., 2013). In addition, communication-focused interventions have been shown to improve parent-child synchrony and interaction quality, suggesting that changes in relational experiences may contribute to changes in parental psychological outcomes (Green et al., 2010). Recent evidence also emphasizes the importance of naturalistic and responsive interactions in supporting positive experiences

between autistic children and their parents, indicating that the quality of interaction itself can be a meaningful therapeutic mechanism (Oppenheim et al., 2025). Therefore, the stronger effect of Hanen training on internalized stigma may reflect its capacity to transform mothers' perceptions of their children and their own parenting role.

The findings also align with broader evidence demonstrating that parent-mediated interventions can influence multiple aspects of family functioning. Systematic reviews have shown that parent-mediated approaches are effective in improving developmental outcomes, enhancing parental involvement, and increasing parents' ability to support their children within everyday contexts (McConachie, Parr, & Team, 2021). Long-term follow-up evidence further indicates that parent-mediated interventions can maintain beneficial effects beyond the immediate treatment period, emphasizing the importance of empowering parents as ongoing agents of change (McConachie, Parr, Livingstone, et al., 2021). The maintenance of reduced stigma scores at follow-up in the present study is consistent with this perspective, suggesting that acquired parenting skills and altered perceptions may continue to influence mothers' experiences after formal intervention completion. Similar findings have been reported for other parent-training models, including Stepping Stones Triple P and other structured parenting programs, which have demonstrated improvements in family functioning and reductions in parenting difficulties among families of children with ASD (Tellegen & Sanders, 2013; Whittingham et al., 2009).

The reduction of internalized stigma observed in this study is particularly important because stigma can influence social participation, access to support, and mothers' willingness to advocate for their children. Previous research has shown that caregivers may internalize negative social attitudes toward disability, leading to reduced self-esteem, emotional distress, and withdrawal from social interactions (Mak & Cheung, 2008; Mak & Kwok, 2010). The current results suggest that evidence-based parent-training programs may serve not only as educational interventions but also as psychosocial interventions that challenge negative self-perceptions. By increasing knowledge about ASD, improving parenting skills, and creating more positive parent-child experiences, these interventions may help mothers replace stigmatizing interpretations with more adaptive and empowering perspectives. This finding is consistent with recent research emphasizing the importance of interventions that address social stigma and parental

emotional functioning among mothers of autistic children (Koohzad et al., 2025).

The results should also be interpreted within the broader context of family-centered autism care. Traditional intervention approaches have often focused primarily on improving children's symptoms and developmental outcomes; however, contemporary models increasingly recognize parents' psychological well-being as an essential treatment target. Mothers' emotional experiences, coping resources, and perceptions of their parental identity influence both their own quality of life and their capacity to provide supportive environments for their children. Studies have shown that social resources, resilience, and adaptive coping strategies can protect parents against the negative effects of caregiving stress (Bekhet et al., 2012; Zaidman-Zait et al., 2017). Therefore, interventions such as the Incredible Years and Hanen programs may contribute to a more comprehensive approach in which improving parental functioning is considered an integral component of autism intervention.

Several limitations should be considered when interpreting the findings of this study. First, the sample size was relatively small and consisted only of mothers of children with ASD who were receiving services from an autism center in one geographic area, which may limit the generalizability of the findings to other populations and cultural contexts. Second, participant allocation was non-random, and although demographic characteristics were considered, unknown differences between groups may have influenced the outcomes. Third, the study relied on self-report assessment of internalized stigma, which may have been affected by social desirability bias or participants' willingness to disclose negative feelings. Fourth, although follow-up assessment was conducted, the follow-up period was relatively limited and may not fully demonstrate the long-term stability of intervention effects. Finally, the study compared two active interventions but did not examine the specific psychological mechanisms through which each program reduced internalized stigma.

Future studies should replicate these findings with larger and more diverse samples across different cultural, socioeconomic, and clinical settings. Randomized controlled trials with longer follow-up periods are recommended to provide stronger evidence regarding the durability of intervention effects. Future research may also examine potential mediating variables, such as parenting self-efficacy, psychological resilience, perceived social support, parenting stress, and acceptance of the child's condition, to

clarify how parent-training programs influence internalized stigma. Comparative studies including additional intervention approaches, such as mindfulness-based parenting, acceptance-based interventions, or emotion-focused programs, may further identify the most effective strategies for improving maternal psychological outcomes. Qualitative studies exploring mothers' subjective experiences before and after intervention may also provide deeper insight into changes in identity, stigma perception, and family relationships.

The findings suggest that autism service providers should consider integrating structured parent-training programs into routine family support services. Professionals working with families of children with ASD should recognize internalized stigma as an important psychological concern and address it alongside child developmental needs. The Incredible Years and Hanen programs may be incorporated into parent education services to enhance parenting competence, improve parent-child interactions, and promote more positive parental perceptions. Practitioners should also create supportive environments where mothers can share experiences, receive accurate information about ASD, and develop confidence in their parenting abilities. Collaboration among psychologists, educators, speech-language therapists, and autism service providers may further strengthen family-centered interventions and ensure that mothers receive comprehensive psychological and educational support.

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.

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Declaration of Interest

The authors report no conflict of interest.

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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.

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