

Designing and Validating an Educational Package Based on the Lived Experiences of Mothers of Children with High-Functioning Autism Spectrum Disorder and Its Effectiveness on Parental Self-Efficacy

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ABSTRACT

Purpose: The present study aimed to design and validate an educational package based on the lived experiences of mothers of children with high-functioning autism spectrum disorder and to examine its effectiveness on parental self-efficacy.

Methods and Materials: This applied study used an exploratory sequential mixed-methods design. In the qualitative phase, a qualitative research method based on grounded theory was used to explore the deep lived experiences of mothers of children with high-functioning autism spectrum disorder. In the quantitative phase, a quasi-experimental pretest–posttest design with a control group and a three-month follow-up was employed. The statistical population in both qualitative and quantitative phases consisted of all mothers of children with high-functioning autism spectrum disorder who had referred to autism centers in Tehran during the second half of 2024. In the qualitative phase, 15 mothers were selected through purposive sampling. In the quantitative phase, according to the inclusion criteria, 30 mothers were selected through purposive sampling and then randomly assigned to an experimental group and a control group, with 15 participants in each group. Data were collected using library and field methods. The quantitative data were gathered using the Domka Parental Self-Efficacy Scale (1996). The researcher-made parent–child challenge-based parenting educational package was implemented for the experimental group in twelve 90-minute sessions. Qualitative data were analyzed through open, axial, and selective coding, and quantitative data were analyzed using repeated-measures analysis of variance in SPSS version 26.

Findings: The qualitative findings showed that seven factors played a role in developing the effectiveness of the parenting educational program: family factors, economic factors, environmental factors, social factors, educational approach, psychological approach, and psychological consequences. Based on the extracted components from mothers' lived experiences, the educational package was developed in 12 sessions, and the findings indicated satisfactory validity. In the quantitative phase, the results showed that the parent–child challenge-based educational package had a significant effect on parental self-efficacy, explaining 51% of its variance ($p < .01$).

Conclusion: It can be concluded that an educational intervention based on mothers' lived experiences can enhance parental self-efficacy, and its positive effects may remain observable and stable in the medium term.

Keywords: autism spectrum disorder; high-functioning autism; parental self-efficacy.

1. Introduction

Autism spectrum disorder (ASD) is a complex neurodevelopmental condition characterized by persistent difficulties in social communication and social interaction, together with restricted, repetitive, or inflexible patterns of behavior, interests, and activities. The manifestations of ASD vary considerably across individuals in terms of symptom severity, intellectual functioning, language ability, adaptive behavior, and support needs. This heterogeneity has led to the conceptualization of autism as a spectrum rather than a single, uniform clinical condition. Contemporary clinical approaches emphasize that ASD should be identified and managed through comprehensive developmental assessment, multidisciplinary evaluation, early intervention, and continued support for both the individual and the family. Although the diagnostic features of ASD are primarily expressed through the child's communication, social, sensory, and behavioral functioning, their effects extend to the entire family system and influence parents' psychological well-being, caregiving roles, relationships, and everyday routines (Hyman et al., 2020, 2024).

The increasing recognition of ASD as a major public health, developmental, and educational concern has intensified the need for effective family-centered interventions. Global evidence indicates that autism is identified across all geographical, cultural, ethnic, and socioeconomic groups, although prevalence estimates differ according to diagnostic criteria, screening procedures, access to services, study methodology, and public awareness. Updated international evidence suggests that approximately one in every 100 individuals may be affected by ASD, demonstrating that autism is not a rare condition and that a substantial number of families worldwide require specialized educational, psychological, rehabilitative, and social support. The increasing number of identified cases may be partly related to improvements in screening, diagnostic awareness, professional training, and recognition of less overt presentations of autism. Nevertheless, the global prevalence of ASD represents a considerable challenge for healthcare and educational systems, particularly where specialized services and parent-support programs remain limited (Vermeirsch et al., 2024; Zeidan et al., 2025).

National and regional studies have similarly demonstrated the significance of autism and its associated conditions. Evidence from Iran has indicated that ASD

frequently co-occurs with psychological, behavioral, developmental, and medical difficulties, while the child's symptoms may be closely associated with maternal psychological distress. Such findings are especially important because mothers commonly assume the primary caregiving role and are often responsible for coordinating assessments, rehabilitation, education, behavioral management, and daily care. The demands placed on mothers may become more intense when the child experiences comorbid attention problems, emotional dysregulation, anxiety, sleep disturbances, or challenging behaviors. Consequently, autism should not be understood exclusively as an individual childhood condition; it is also a family-related phenomenon that can affect parental mental health, family organization, social participation, financial security, and quality of life (Mohammadi et al., 2019; World Health, 2024).

Within the autism spectrum, individuals commonly described as having high-functioning autism generally possess average or above-average intellectual ability and may demonstrate relatively developed structural language skills. However, adequate cognitive or verbal performance does not eliminate their difficulties in reciprocal communication, social understanding, behavioral flexibility, emotional regulation, or independent functioning. These individuals may struggle to interpret implicit social rules, recognize others' intentions, understand figurative language, adapt to unexpected changes, organize daily activities, and establish or maintain peer relationships. Their difficulties may be less immediately visible than those of individuals with more extensive developmental impairments, which can cause their support needs to be misunderstood or minimized. Accounts of individuals with high-functioning autism indicate that navigating educational and social environments can involve misunderstanding, exclusion, masking, identity conflict, and a persistent sense of being socially misplaced despite apparent intellectual competence (Hill, 2024; Ingibergsdóttir, 2024).

The discrepancy between relatively strong cognitive ability and substantial social-adaptive limitations creates distinctive challenges for parents. Because a child with high-functioning autism may speak fluently, perform well in selected academic tasks, or display advanced knowledge in preferred subjects, relatives, teachers, and community members may expect age-appropriate emotional and social behavior. When the child fails to meet these expectations, repetitive behaviors, emotional outbursts, sensory reactions, rigid routines, or social misunderstandings may be

interpreted as intentional misconduct, inadequate discipline, or ineffective parenting. Mothers may consequently face criticism while simultaneously attempting to explain that their child's behavior arises from neurodevelopmental differences rather than deliberate noncompliance. The need to repeatedly advocate for the child, negotiate with schools and treatment providers, and respond to public misunderstanding can increase mothers' feelings of vulnerability, social isolation, and psychological insecurity (Kalaivnai & Kalimo, 2018; Yu, 2018).

Parenting a child with ASD is therefore associated with a set of chronic and interacting stressors. Mothers may be required to supervise the child closely, manage repetitive or disruptive behaviors, maintain predictable routines, coordinate multiple professional services, and respond to difficulties in communication and social adaptation. These responsibilities may limit opportunities for employment, leisure, social relationships, rest, and personal development. Financial demands associated with speech therapy, occupational therapy, behavioral intervention, psychiatric consultation, special education, transportation, and assistive services can further increase family strain. Research concerning mothers of autistic children has shown that care burden is associated with coping patterns and the degree of involvement in caregiving, particularly when families face additional environmental pressures and reduced access to formal services. Under such circumstances, caregiving may become an exhausting and continuous responsibility rather than a time-limited developmental task (Mohammad et al., 2025; Ramezanloo et al., 2021).

The psychological consequences of these caregiving demands are substantial. Parents of autistic children frequently report elevated stress, depressive symptoms, loneliness, anxiety, emotional exhaustion, and reduced family quality of life. Loneliness is particularly important because it may intensify the relationship between perceived stress and depression, suggesting that the psychological burden of parenting is shaped not only by the child's symptoms but also by the extent to which parents feel socially understood and supported. Families may gradually withdraw from social activities because of fear of judgment, difficulty managing the child's behavior in public settings, or the absence of autism-sensitive environments. Moreover, strained family-school relationships can reduce parents' access to collaborative support and further increase their sense of responsibility. Evidence indicates that parental stress, family quality of life, and family-teacher partnerships

are interconnected dimensions of family functioning in autism (Hsiao et al., 2017; Sipowicz et al., 2025).

The burden experienced by families of individuals with developmental disabilities is also closely related to parents' perceptions of competence and control. When parents believe that they lack the necessary knowledge or skills to understand their child, manage difficult behaviors, or promote development, daily parenting demands may be experienced as unpredictable and overwhelming. Conversely, parents who perceive themselves as capable of responding effectively to challenges may be more persistent, emotionally regulated, and willing to employ constructive parenting strategies. Studies of families of persons with intellectual and developmental disabilities have demonstrated that increased parental stress is associated with lower family quality of life, while access to resources, support, and effective coping mechanisms may protect family functioning. These findings underscore the need to move beyond interventions directed solely at the child and to address the psychological and educational needs of parents as central agents in the child's development (Jenaro et al., 2020; Kestler-Peleg et al., 2023).

One of the most important psychological resources in this context is parental self-efficacy. Parental self-efficacy refers to parents' beliefs concerning their ability to organize and perform the behaviors required to successfully manage parenting responsibilities and positively influence their child's development. It reflects the parent's perceived competence in understanding the child's needs, managing behavioral difficulties, resolving parent-child conflicts, maintaining emotional responsiveness, establishing appropriate expectations, and persisting when parenting efforts do not produce immediate results. Self-efficacy does not simply indicate whether a parent possesses specific skills; rather, it concerns whether the parent believes that those skills can be used effectively under challenging conditions. This belief can influence motivation, perseverance, emotional reactions, and the selection of parenting strategies. Parents with stronger efficacy beliefs are generally more likely to interpret difficulties as manageable challenges, whereas parents with lower self-efficacy may experience repeated parenting problems as evidence of personal inadequacy (Hohlfeld et al., 2018; Józsa et al., 2019).

Parental self-efficacy is particularly relevant in ASD because progress is often gradual, uneven, and context-dependent. A strategy that works in one situation may be ineffective in another, and gains achieved in a therapeutic

setting may not automatically generalize to the home, school, or community. Mothers must therefore continually observe their child, interpret the function of behaviors, adapt communication methods, modify environmental demands, and coordinate responses across settings. When mothers are provided with appropriate knowledge and practical experience, they may become more confident in their ability to manage these responsibilities. In contrast, fragmented information, conflicting professional advice, unrealistic expectations, and repeated social criticism may weaken confidence and increase frustration. Accordingly, strengthening parental self-efficacy should be regarded as a major objective of family-centered autism interventions rather than as a secondary outcome of child-focused treatment (Hohlfeld et al., 2018; Kalalo et al., 2021).

Parent-mediated and parent-implemented interventions offer an important mechanism for improving parental competence. These approaches train parents to use structured communication, behavioral, developmental, or interactional strategies within everyday activities. Because parents spend more time with the child than most professionals, they are uniquely positioned to provide repeated learning opportunities and to generalize skills across daily contexts. Research on parent-implemented developmental interventions has shown that parents can successfully learn strategies for promoting social communication, imitation, joint engagement, and adaptive behavior in young children with ASD. Similarly, psychoeducational interventions focused on parenting skills may reduce parental stress and improve parents' ability to respond consistently to the child's behavioral and emotional needs. These findings support the inclusion of practical training, modeling, behavioral analysis, positive reinforcement, structured routines, and guided parent-child interaction in interventions designed for families of autistic children (Kalalo et al., 2021; Zhou et al., 2018).

However, the effectiveness of parent training depends on more than the transmission of standardized techniques. Parents differ in their cultural values, family structures, financial resources, social support, educational opportunities, previous experiences, and interpretations of autism. An intervention that is theoretically sound may have limited relevance when it does not reflect the realities of the families expected to implement it. For example, recommendations requiring expensive materials, extensive professional supervision, or substantial free time may be impractical for families experiencing economic pressure. Likewise, strategies that overlook stigma, family conflict,

maternal exhaustion, or unsupportive school environments may place additional responsibility on mothers without addressing the conditions that restrict their capacity to act. Therefore, parent education should be responsive to the social and cultural context in which caregiving occurs and should recognize mothers as knowledgeable participants rather than passive recipients of professional instruction (Mohammad et al., 2025; Ramezanloo et al., 2021).

The lived experiences of mothers can provide an essential foundation for developing such context-sensitive interventions. Lived experience encompasses the meanings individuals attribute to events, relationships, difficulties, coping efforts, and changes within their everyday world. Through mothers' narratives, researchers can identify challenges that may not be visible in standardized assessments, including feelings of guilt, uncertainty following diagnosis, public judgment, disrupted family relationships, difficulties accessing services, fear concerning the child's future, and the continuous need to balance protection with autonomy. Mothers' accounts can also reveal practical forms of knowledge developed through repeated interaction with the child, such as methods for preventing emotional crises, adapting the sensory environment, introducing changes gradually, maintaining routines, and communicating with schools. Incorporating this experiential knowledge into intervention design may increase the relevance, acceptability, and feasibility of educational programs (Hill, 2024; Ramezanloo et al., 2021).

An experience-based educational package may also help reduce the distance between professional knowledge and everyday parenting practice. Clinical and educational recommendations are often presented using specialized terminology and may be difficult to translate into specific actions within the home. Mothers may understand that positive reinforcement, emotional regulation, structured education, or social-skills training is important without knowing how to apply these principles during actual conflicts or emotionally demanding situations. Educational content derived from lived experiences can convert abstract recommendations into recognizable scenarios, practical exercises, and realistic problem-solving strategies. It can also validate mothers' experiences by demonstrating that their struggles are shared by others and are not simply evidence of individual failure. This validating and collaborative approach may strengthen psychological security, engagement, motivation, and confidence in the parental role (Perlman et al., 2025; Yu, 2018).

The social context of autism further supports the need for interventions that address both practical parenting skills and psychological empowerment. Stigma surrounding developmental and mental health conditions can discourage families from seeking help, disclosing difficulties, or participating in social and educational settings. Although stigma may manifest differently across populations, it commonly involves stereotyping, blame, social distance, and assumptions regarding personal responsibility. Mothers of children with high-functioning autism may be particularly vulnerable because the child's disability is not always visible, increasing the likelihood that unusual behavior will be attributed to poor parenting. Educational programs can help mothers develop advocacy skills, communicate more effectively with family members and professionals, recognize inaccurate social judgments, and maintain confidence when confronted with misunderstanding. Addressing stigma-related experiences may therefore contribute indirectly to parental self-efficacy by reducing shame and strengthening mothers' sense of legitimacy and agency (Perlman et al., 2025; Sipowicz et al., 2025).

Family-centered interventions should also recognize the importance of coordination among parents, teachers, therapists, and other caregivers. Children with high-functioning autism often require consistent expectations and predictable responses across settings. When parents and professionals use incompatible strategies, children may experience confusion and parents may question their own competence. In contrast, effective family-teacher partnerships can facilitate information sharing, consistency, early recognition of difficulties, and the generalization of acquired skills. Furthermore, assistive and technology-based supports may provide additional opportunities for autistic individuals who experience difficulties in written expression, communication, or organization. Nevertheless, such tools are most useful when they are integrated into an individualized educational framework and introduced in collaboration with families rather than imposed as isolated technical solutions (Hsiao et al., 2017; Ingibergsdóttir, 2024).

Despite the growing evidence supporting parent-mediated interventions, several gaps remain. Many existing programs are developed from predetermined theoretical models and subsequently delivered to parents with limited examination of whether the content corresponds to their actual priorities and daily experiences. Other interventions focus narrowly on reducing a specific child behavior while neglecting maternal stress, family conflict, economic

barriers, environmental adaptation, social support, and the emotional quality of the parent-child relationship. Systematic evidence concerning parenting interventions for parents of children with disabilities suggests that such programs can improve parental outcomes, but the diversity of program content and methodology indicates a need for carefully designed, validated, and contextually appropriate packages. An integrated intervention should combine autism-related knowledge with stress management, behavioral skills, social and emotional communication, environmental organization, positive reinforcement, purposeful play, parental coordination, and planning for the maintenance of acquired skills (Hohlfeld et al., 2018; Jenaro et al., 2020).

The need for culturally responsive intervention development is especially relevant in Iran, where mothers may encounter limited specialized services, financial pressure, social misconceptions, and unequal access to autism-informed educational resources. National evidence concerning autism and maternal psychopathology indicates that the psychological condition of mothers should be considered in assessment and intervention planning. Qualitative evidence also suggests that Iranian mothers' experiences include emotional distress, uncertainty, social restriction, caregiving exhaustion, concern about the future, and efforts to obtain effective treatment and education. Nevertheless, few educational packages have been systematically developed by first identifying the experiences and needs of mothers of children with high-functioning autism, transforming the resulting categories into structured training content, validating that content through expert evaluation, and subsequently testing its effects through a controlled quantitative design (Mohammadi et al., 2019; Ramezanloo et al., 2021).

An exploratory sequential mixed-methods approach is well suited to addressing this gap because it allows qualitative findings to guide the construction of a subsequent intervention. In the qualitative phase, systematic analysis of mothers' narratives can identify the family, economic, social, environmental, psychological, and educational factors that shape parenting challenges. These findings can then be transformed into session objectives, practical exercises, and intervention strategies. In the quantitative phase, the effectiveness of the resulting package can be evaluated through comparison of an intervention group and a control group across pretest, posttest, and follow-up assessments. This design not only examines whether the intervention produces change but also establishes a clear

connection between the content of the program and the expressed needs of its intended recipients. Such an approach is consistent with contemporary calls for individualized, family-centered, evidence-based autism services that extend beyond diagnosis to ongoing support and empowerment (Hyman et al., 2024; Vermeirsch et al., 2024).

The present study aimed to design and validate an educational package based on the lived experiences of mothers of children with high-functioning autism spectrum disorder and to examine its effectiveness in enhancing parental self-efficacy.

2. Methods and Materials

2.1. Research Method in the Qualitative Phase

In the present study, an interview method with an emphasis on a qualitative phenomenological approach was used to design an educational package based on lived experience. This approach was selected because of the deep, complex, and multilayered nature of the experiences of mothers of children with high-functioning autism spectrum disorder. A phenomenological approach makes it possible to understand the subjective meanings, personal perceptions, and internal interpretations of individuals regarding the phenomenon under study.

The statistical population in the qualitative phase included all mothers of children with high-functioning autism spectrum disorder who had referred to autism centers in Tehran during the second half of 2024. These individuals were considered potential participants because they had direct and lived experience of parenting a child with this disorder and had encountered the related educational, emotional, and interactional challenges. The selection of this population was consistent with the aim of the study, namely to extract the components of an educational package based on mothers' lived experiences. Therefore, the focus was on mothers who had continuous practical experience in real-life contexts of interacting with a child with high-functioning autism spectrum disorder and who had referred to counseling and psychological centers due to the need for specialized services. This characteristic made it possible to access participants whose experiences were rich, tangible, and directly related to the research problem.

In the qualitative phase, purposive sampling was used through a homogeneous sampling strategy. In homogeneous sampling, individuals are selected because they share common characteristics and relatively similar experiences of the phenomenon under investigation. This type of sampling

is appropriate when the researcher seeks to deeply examine the experience of a specific group with defined characteristics and to gain a comprehensive understanding of different dimensions of that experience. In the present study, the focus was on the lived experiences of mothers of children with high-functioning autism spectrum disorder; therefore, selecting participants who were homogeneous in terms of characteristics related to the research phenomenon was considered necessary.

In purposive sampling, the researcher deliberately selects individuals who are able to provide rich, deep, and relevant information in relation to the research questions. The main principle in this type of sampling is the selection of individuals who have direct and tangible experience of the phenomenon under study and are able to describe and explain its various dimensions. In this study, the main criterion for selecting participants was having a child diagnosed with high-functioning autism spectrum disorder and having active parenting experience in this context. In addition, willingness to participate in the study, ability to express experiences, and readiness to participate in an in-depth interview were considered among the inclusion criteria.

To enrich the data and achieve a comprehensive understanding of the mothers' experiences, specific criteria were considered for purposive and homogeneous sampling, including having a child within a specified age range, receiving a specialized diagnosis, and having continuous lived experience of educational, social, and emotional challenges related to high-functioning autism spectrum disorder. This homogeneity allowed the collected narratives, despite individual differences, to be formed within a shared experiential context and made it possible to extract common structures and components.

The sampling process continued until data saturation was reached. This means that interviews were conducted until no new information was added to the extracted concepts, categories, and structures, and the conceptual patterns reached relative stability. Saturation was achieved when repetition of themes was observed in the data and the analyses reached conceptual coherence. Finally, 15 mothers were selected as the research sample. The main purpose of sampling in this phase was to conduct in-depth interviews in order to identify the criteria, characteristics, structures, components, and dimensions related to the lived experiences of mothers of children with high-functioning autism spectrum disorder. Based on their narratives, the conceptual framework required for designing the educational package

was extracted. Thus, sampling in this phase was not merely intended to describe experiences, but also to produce applied knowledge and extract the components of the educational intervention.

In the next stage, semi-structured exploratory interviews were used to collect data, as this is one of the most common methods in qualitative research (Salsali et al., 2017). The purpose of this type of interview was to explore the feelings, experiences, and thoughts of mothers regarding the lived experience of parenting a child with high-functioning autism spectrum disorder. This method is largely flexible and allows the researcher to begin with general questions and create a context in which the participant can comfortably express her experiences and perspectives. In semi-structured interviews, the researcher prepared a list of main topics and guiding questions and, depending on the mothers' responses, asked follow-up questions or explored the responses in greater depth (Hariri, 2016). The flexibility of this method provided access to aspects of mothers' experiences that might have remained hidden from the researcher but were of particular importance to the mothers themselves.

The duration of each interview was between 40 and 60 minutes, depending on the individual conditions, tolerance, and interest of the participants. All interviews were audio-recorded using an MP3 device after obtaining informed consent from the participants and were then carefully transcribed verbatim for further analysis.

To ensure the content validity of the interview questions, the general framework of the interview was designed in consultation with the supervisor, advisor, and experts familiar with the subject. Then, using the results of preliminary studies and a review of the theoretical foundations and literature related to parenting educational package development, the final interview questions were prepared. This process ensured that the interviews could provide deep, relevant, and applicable information for extracting the components and structure of the educational package based on mothers' lived experiences.

For the analysis of qualitative data, a grounded theory approach with emphasis on the systematic model was used. Data analysis was conducted through the three-stage coding process, including open coding, axial coding, and selective coding.

2.2. Quantitative Phase

The quantitative phase of the present study used a quasi-experimental method with a pretest-posttest design, a

control group, and a three-month follow-up stage. The statistical population in this phase included all mothers of children with high-functioning autism spectrum disorder who had referred to autism centers in Tehran during the second half of 2024.

In the quantitative phase, 30 mothers of children with high-functioning autism spectrum disorder who had referred to counseling and psychological service centers in District 5 of Tehran during the second half of 2024 were selected based on Cohen's sample size estimation, considering test power and a medium effect size. Sampling at this stage was purposive and based on the inclusion and exclusion criteria of the study to ensure that the participants met the necessary conditions for participation.

After selecting 30 eligible mothers, the participants were randomly assigned to the experimental and control groups, with 15 participants in each group. Random assignment was used to increase initial equivalence, reduce the effects of confounding variables, and strengthen the internal validity of the study.

The experimental group received the educational intervention based on the lived experiences of mothers of children with high-functioning autism spectrum disorder, while the control group did not receive any organized training during the intervention period. Both groups were assessed at the pretest, posttest, and three-month follow-up stages in order to examine the effectiveness and stability of the intervention outcomes.

In this study, descriptive statistics, including mean and standard deviation, were used to organize, summarize, and describe participants' characteristics and research variables. In the inferential statistics section, multivariate analysis of covariance was used. To examine the assumptions of multivariate analysis of variance and covariance, the Kolmogorov-Smirnov test, Box's M test, Mauchly's test of sphericity, and the test of homogeneity of regression slopes were used. In addition, the Bonferroni post hoc test was calculated for pairwise comparisons between the groups. Data were analyzed using SPSS version 26. To confirm the stability of the obtained results, a three-month follow-up stage was conducted, and the results were examined using post hoc tests.

2.2.1. Instrument

Domka Parental Self-Efficacy Scale (1996). This scale was developed by Domka et al. (1996) to assess general levels of parental self-efficacy. The instrument evaluates

parents' efficacy and frustration when facing child-related situations, their ability to resolve parent-child conflicts, and their effort and persistence in parenting. The questionnaire consists of 10 items, and responses are scored on a seven-point Likert scale ranging from 1 to 7. The items can be used for both fathers and mothers, and the purpose of the questionnaire is to assess the level of parental self-efficacy in parents. Items 1, 3, 5, 6, and 8 are reverse scored.

Domka et al. (1996) reported a Cronbach's alpha coefficient of .70 for this questionnaire and an internal consistency coefficient of .70 among English-speaking mothers with a moderate socioeconomic level. In the study by Talei et al. (2010), after the content validity of the scale was confirmed by three professors, the correlation coefficient was reported as .83, and Cronbach's alpha was reported as .70. In the present study, the reliability of the questionnaire was calculated using Cronbach's alpha and was found to be .84.

3. Findings and Results

In the qualitative phase of this study, which was conducted using a grounded theory approach, Strauss and Corbin's version was employed for the interview process. In this approach, data analysis is carried out through three stages of coding: open coding, axial coding, and selective coding (Strauss & Corbin, 1998). In the present study, 15 mothers of children with high-functioning autism spectrum disorder were interviewed. After each interview, the audio file was transcribed verbatim, and coding of the concepts was conducted simultaneously.

In the open coding stage, the main objective was to generate categories from the raw data obtained from interviews with mothers of children with high-functioning autism spectrum disorder. At this stage, the data were analyzed through breaking down, examining, constant comparison, conceptualization, and categorization. Meaningful phrases and sentences were extracted and divided into smaller meaning units. Initial concepts were then formed and classified into homogeneous categories based on similarities and differences. Finally, subcategories and main categories emerged through this inductive process.

Overall, 83 key concepts were extracted from the interviews and organized into 16 subcategories and 7 main themes. The main themes and related subcategories concerning children with high-functioning autism spectrum disorder included psychological-behavioral consequences, psychological approaches, educational approaches, family factors, economic factors, social factors, and environmental factors. The theme of psychological-behavioral consequences included stereotyped and repetitive behaviors, difficulty in social interaction, sensory sensitivities, and emotional regulation problems. The psychological approach included increasing acceptance of the child, strengthening social skills, purposeful games, and enhancing the emotional parent-child relationship. The educational approach included referral to specialized autism centers, training in communication and social skills, and structured educational programs. Family factors included parenting styles, parents' awareness of the disorder, and family conflicts. Economic factors included treatment and rehabilitation costs and access to specialized services. Social factors included society's attitude toward autism and the level of social and institutional support. Environmental factors included adaptation of the home and school environment and environmental pressures and parental stress.

Among the key concepts extracted from the interviews, "difficulty in social interaction" had the highest frequency, with a frequency of 15. Other frequent concepts included "need for specialized education," "sensory sensitivity," "lack of social support," "structured educational program," "strengthening communication skills," and "emotional crises." The lowest frequencies were related to concepts such as "severe social stigma" and "marital conflict caused by the child's diagnosis." The findings of open coding indicated that the lived experiences of mothers of children with high-functioning autism spectrum disorder involve a multidimensional network of psychological, educational, family, and social challenges, while also including adaptive strategies and efforts to empower the child. These categories formed the basis for designing the educational package of the present study.

Table 1

Key Concepts, Subcategories, and Main Categories Extracted from the Interviews

Main Category	Subcategory	Initial Concepts	Frequency
Family factors	Developmental and biological background	History of developmental problems in the family	4
		History of neurodevelopmental problems	3

	Intra-family challenges	Marital conflicts after diagnosis	3
		Reduced family interactions	4
		Maternal sensitivity and mental preoccupation	5
Economic factors	Economic status	Treatment and rehabilitation costs	6
Social factors	Lack of social support	Lack of specialized autism support resources	12
Environmental factors	Living conditions	Inappropriateness of the home environment for sensory needs	11
		Parental problems	4
Educational approach	Referral to specialized treatment centers	Receiving speech therapy and occupational therapy services	13
		Structured education	12
Psychological approach	Strengthening social skills	Participation in guided group activities	11
		Teaching responsibility appropriate to the child's abilities	8
		Positive reinforcement	12
	Positive reinforcement	Reinforcing desirable social behaviors	12
		Avoiding direct confrontational responses	11
		Play therapy and purposeful activity	9
		Structured games	9
		Cognitive and mental exercises	7
		Emotional relationship	6
Psychological consequences	Stereotyped behaviors	Establishing a warm and secure relationship	6
		Repetitive movements and stereotyped behaviors	14
		Difficulty in emotional regulation	12
		Emotional outbursts	12
		Strong reaction to changes in routine	11
		Attention and concentration problems	13
		Limited selective attention	13
		Lack of interest in some educational tasks	12
		Behavioral inflexibility	10
		Resistance to changing activities	10

In the second stage of data analysis, axial coding was conducted based on the grounded theory approach. The aim of this stage was to establish logical and conceptual relationships among the main categories extracted during open coding and to organize them within a paradigmatic model. At this stage, the categories were classified as causal conditions, contextual conditions, intervening conditions, strategies, and consequences in order to form a coherent explanatory model of caregiver–child relationship challenges among mothers of children with high-functioning autism spectrum disorder.

In this model, the “educational approach” was selected as the core category because, in the lived experiences of mothers, the method of education, structuring, receiving specialized services, and designing goal-oriented programs for the child formed the central focus of coping with challenges. In other words, mothers’ actions and reactions in interaction with the child were organized around structured education, referral to specialized centers, and skill-based interventions.

Family factors were considered causal conditions because the child’s developmental and biological background, parents’ awareness, family conflicts, and the quality of intra-family interactions provide the initial basis for the formation and intensification of caregiver–child challenges. These factors play a primary role in the emergence of the problem and influence mothers’ orientation toward diagnosis, acceptance, and the type of educational intervention.

Economic and social factors were selected as contextual conditions because the family’s economic status, treatment and rehabilitation costs, access to specialized support resources, and society’s attitude toward autism shape the context in which strategies are implemented. These conditions do not directly cause the problem, but they affect the quality, continuity, and scope of educational interventions.

Environmental factors were considered intervening or mediating conditions. Living conditions, adaptation of the home environment to the child’s sensory needs, and the level of parental stress and burnout can either facilitate or weaken the implementation of educational and psychological strategies. In other words, even when an appropriate educational program exists, environmental and psychological pressures may reduce its effectiveness; conversely, a structured environment may strengthen the implementation of strategies.

Psychological approaches were defined as strategies. These strategies included strengthening social skills, using positive reinforcement, structured games, establishing a secure emotional relationship, and teaching responsibility appropriate to the child’s abilities. Mothers used these strategies in response to the child’s communicative and behavioral challenges in order to manage situations, reduce tension, and improve adaptive skills.

Finally, psychological–behavioral consequences were considered the outcomes of the paradigmatic model. These consequences included stereotyped behaviors, difficulty in

emotional regulation, emotional outbursts, attention and concentration problems, behavioral inflexibility, and resistance to change. These outcomes result from the complex interaction among causal, contextual, and intervening conditions and the strategies adopted by mothers.

Overall, the paradigmatic model showed that the educational approach, within the context of family, economic, and social factors and under the influence of environmental conditions, leads to behavioral and emotional outcomes in the child through psychological strategies. Accordingly, it provides a coherent conceptual framework for designing an educational package based on mothers' lived experiences.

The final stage of data analysis in the grounded theory approach is selective coding. At this stage, based on the data and analyses conducted in the two previous stages, namely open coding and axial coding, the researcher developed a final paradigmatic model. The main purpose of selective coding was to create a coherent and organized conceptual

structure that shows the logical relationships among categories and identifies mechanisms through which the effectiveness of the parenting program can be enhanced.

At this stage, the core category, causal factors, contextual factors, intervening factors, strategies, and consequences were integrated into a unified explanatory framework. This process made it possible not only to clarify the relationships among categories but also to explain the mechanisms influencing mothers' responses to caregiver-child challenges. In other words, selective coding was the stage in which the researcher integrated and enriched the categories to present a final paradigmatic model that could serve as both a theoretical and practical guide for designing educational and psychological interventions for parents of children with high-functioning autism spectrum disorder.

As shown in the final paradigmatic model, seven factors played a role in developing the effectiveness of the parenting educational program: family factors, economic factors, environmental factors, social factors, educational approach, psychological approach, and psychological consequences.

Table 2

Researcher-Made 12-Session Parenting Educational Package Based on Parent-Child Challenges

Session	Objectives	Content
1	Familiarization with the program and analysis of mother-child challenges	Introducing group members, goals, and session rules; reviewing mothers' experiences of caregiving and behavioral challenges in children with high-functioning autism; teaching behavior observation and daily recording to analyze the child's behavior and identify behavioral patterns.
2	Identifying and analyzing family and causal factors	Teaching causal and contextual factors, including family problems, maternal sensitivity, genetic and medical history; practicing family system mapping to identify interactions and parental roles; group discussion to exchange experiences and provide strategies for reducing family tensions.
3	Managing parental stress and optimizing the living environment	Teaching parental self-care and emotional regulation skills; techniques for reducing environmental stimuli and preparing the home environment to reduce impulsive and stereotyped behaviors; practicing mindful parenting and deep breathing to manage anxiety.
4	Structured educational approach and planning	Teaching structured education and the use of visual and scheduled tools; designing daily and weekly programs; setting short-term and long-term educational goals for the child; practicing task analysis by breaking complex skills into smaller steps.
5	Strengthening social and behavioral skills	Teaching social skills, peer interaction, turn-taking, and social rules; teaching responsibility and self-control using social stories and role play; practicing real-life situations and analyzing responses to modify behavior.
6	Using positive reinforcement and behavioral feedback	Teaching positive reinforcement techniques, including immediate and appropriate rewards for desirable behaviors; identifying undesirable behaviors and using planned ignoring; completing a positive reinforcement table by mothers and practicing its implementation at home.
7	Purposeful play and physical activity	Teaching purposeful play therapy to increase social interaction and cognitive skills; practicing physical and sensory activities to reduce impulsivity and increase attention; practicing cognitive challenge games to enhance problem-solving and flexibility.
8	Establishing a secure emotional relationship and emotional responsiveness	Teaching techniques for emotional relationships based on secure attachment and establishing a warm relationship with the child; practicing active listening and reflecting the child's feelings; presenting interaction scenarios for managing emotional crises and creating psychological security.
9	Managing sudden and impulsive behaviors	Teaching preventive intervention techniques to prevent impulsive and aggressive behaviors; teaching effective communication to replace undesirable behaviors with appropriate behaviors; practicing relaxation strategies and providing logical consequences.
10	Improving attention, concentration, and flexibility	Teaching activities that strengthen executive functioning to increase attention, concentration, and planning; practicing gradual changes in routines to increase flexibility and reduce resistance; analyzing real-life situations and providing practical strategies by mothers.
11	Parental coordination and continuity of strategies	Teaching agreement and coordination between parents in implementing educational and psychological programs; practicing joint planning and regulation between parents to ensure integrated implementation of strategies; reviewing successes and correcting weaknesses in strategy implementation.
12	Summarizing, stabilizing skills, and developing a future action plan	Reviewing all sessions and consolidating learned skills; practicing purposeful dialogue and interaction with the child and strengthening positive emotional relationships; developing a weekly action plan to continue education and monitor the child's progress.

To assess the validity of the study, after analyzing each interview, the participants were asked to comment on the accuracy of the extracted information and concepts. Finally, the obtained results were provided to them so that the information could be confirmed by the interviewees. In this process, questions such as whether the parenting educational program extracted from their statements about their lived experiences was accurate were asked. The kappa coefficient

for all researcher-made therapeutic sessions was calculated to be higher than .59. Therefore, the content validity index, based on the opinions of 10 experts, confirmed the researcher-made educational and therapeutic packages.

Descriptive indices, including mean and standard deviation, of parental self-efficacy scores in the educational package group and the control group at the pretest, posttest, and follow-up stages are presented below.

Table 3

Mean and Standard Deviation of Parental Self-Efficacy Scores by Assessment Stage and Group

Group	Variable	Index	Pretest	Posttest	Follow-up
Educational package	Parental self-efficacy	Mean	52.87	67.13	66.67
		Standard deviation	5.90	5.21	5.68
Control	Parental self-efficacy	Mean	51.60	49.40	51.13
		Standard deviation	14.24	16.97	16.32

As shown in Table 3, the mean parental self-efficacy score in the group receiving the parent-child challenge-based educational package increased from pretest to posttest. Based on the results, it can be concluded that the implementation of this educational package improved the parental self-efficacy of mothers of children with high-functioning autism spectrum disorder.

In this study, the Shapiro-Wilk test was used to examine the normality of parental self-efficacy scores at the pretest stage. The findings showed that the significance levels obtained for the research variable were greater than .05.

Therefore, the null hypothesis was confirmed, and the data for parental self-efficacy in both groups were normally distributed, allowing the use of parametric tests. The results of Mauchly's test indicated that, given the significance level obtained for parental self-efficacy, the assumption of homogeneity of error covariance was confirmed. To test the research objective, repeated-measures analysis of variance was used. Table 4 presents the between-subjects effect, the within-subjects effect, and the interaction effect of time and group.

Table 4

Results of Repeated-Measures ANOVA for Examining the Effectiveness of the Intervention on Parental Self-Efficacy

Variable	Source of Effect	Sum of Squares	df	Mean Square	F	p	Partial Eta Squared
Parental self-efficacy	Group	337.88	1	337.88	9.74	.004	.265
	Time	372.16	2	186.08	10.21	< .001	.267
	Time × Group	200.56	2	100.28	5.50	.007	.164

The results in Table 4 showed that the effect of time and the interaction effect of time and group were significant for parental self-efficacy ($p < .05$). Since the interaction effect of time and group was significant as the most important source of effect, the effectiveness of the educational package intervention on parental self-efficacy was statistically confirmed. The effect size was examined using partial eta squared, which was .164, indicating a considerable and strong effect.

Pairwise comparisons were then examined. Table 5 presents the Bonferroni post hoc test, comparing the mean parental self-efficacy scores at posttest and follow-up between the two groups while controlling for pretest scores. Levene's test indicated that the significance level for the variable was greater than .05; therefore, the assumption of homogeneity of variance was confirmed. Box's M test also showed that the significance level for all main variables was greater than .001, confirming the assumption of homogeneity of variance-covariance matrices.

Table 5*Bonferroni Post Hoc Test for Comparing the Effectiveness of the Intervention on Parental Self-Efficacy at Posttest and Follow-up*

Variable	Time	Group	Standard Error	Mean Difference	p
Parental self-efficacy	Posttest	Educational package	1.52	6.72	.004
		Control	1.52		
	Follow-up	Educational package	1.78	6.67	.013
		Control	1.78		

The results of the Bonferroni post hoc test in Table 5 showed a significant difference between the experimental and control groups at the posttest stage ($p < .05$). The posttest mean score of the educational package group was 6.72 points higher than that of the control group. Accordingly, the effectiveness of the educational package intervention on parental self-efficacy was confirmed, indicating that the

intervention increased parental self-efficacy among participants. At the follow-up stage, the mean score of the experimental group was also 6.67 points higher than that of the control group, indicating the maintenance of the intervention effect ($p < .05$). Table 6 presents the post hoc test results for pairwise comparisons of means within each group across time.

Table 6*Post Hoc Test for Pairwise Comparisons of Parental Self-Efficacy Across Time*

Variable	Group	Reference Time	Comparison Time	Mean Difference	p
Parental self-efficacy	Educational package	Pretest	Posttest	-7.80	.005
		Pretest	Follow-up	-7.07	.013
		Posttest	Follow-up	0.73	.299
	Control	Pretest	Posttest	-1.47	.054
		Pretest	Follow-up	-0.73	.505
		Posttest	Follow-up	0.73	.448

The post hoc results in Table 6 showed that, in the experimental group, there was a significant change in the mean parental self-efficacy scores at posttest and follow-up compared with pretest. This indicated that the mean score of the experimental group increased significantly from pretest to both posttest and follow-up ($p < .05$). Examination of the maintenance effect through comparison of the follow-up mean with the pretest mean showed that the follow-up mean was significantly higher than the pretest mean, confirming the persistence of the intervention effect on parental self-efficacy ($p < .05$). In the control group, no significant differences were observed across assessment times ($p > .05$).

4. Discussion and Conclusion

The present study was conducted to design and validate an educational package based on the lived experiences of mothers of children with high-functioning autism spectrum disorder and to examine its effectiveness in improving parental self-efficacy. The qualitative findings showed that mothers' experiences were organized into seven main

categories: family factors, economic factors, environmental factors, social factors, educational approaches, psychological approaches, and psychological-behavioral consequences. These categories reflected a multidimensional network of challenges extending beyond the child's core symptoms and affecting the mother's emotional state, family relationships, access to services, financial situation, social participation, and perceived competence in the parental role. Based on these findings, a 12-session educational package was developed and validated. The quantitative findings indicated that the intervention significantly increased parental self-efficacy in the experimental group compared with the control group. The significant interaction between time and group demonstrated that changes in parental self-efficacy differed across the two groups, while the significant posttest and follow-up differences confirmed both the immediate effectiveness and the relative stability of the intervention. These findings support the importance of developing family-centered interventions that integrate parents' real experiences with practical educational and psychological strategies (Hohlfeld et al., 2018; Hyman et al., 2024).

The first major qualitative finding concerned the psychological and behavioral difficulties experienced by children with high-functioning autism, particularly difficulties in social interaction, stereotyped behaviors, sensory sensitivities, emotional outbursts, limited attention, behavioral inflexibility, and resistance to changes in routine. Although children with high-functioning autism may possess average or above-average intelligence and relatively developed language, these strengths do not necessarily translate into effective social functioning or emotional adaptation. The mothers' accounts showed that the discrepancy between the child's cognitive abilities and social-behavioral limitations created significant confusion and stress. Because these children may appear capable in some areas, family members, teachers, and other people may underestimate their need for support or interpret their problematic behavior as deliberate disobedience. This finding is consistent with evidence indicating that individuals with high-functioning autism often experience serious difficulties in understanding social expectations, adapting to educational environments, and communicating their needs despite apparently adequate intellectual abilities (Hill, 2024; Ingibergsdóttir, 2024).

The prominence of difficulty in social interaction in the mothers' narratives can also be explained by the central role of social communication deficits in autism spectrum disorder. Problems in reciprocal interaction, understanding nonverbal communication, interpreting social cues, and establishing relationships are among the defining characteristics of ASD and may influence nearly all areas of the child's life. For mothers, these difficulties create repeated caregiving challenges in settings such as school, family gatherings, public environments, and therapeutic centers. Mothers may need to continuously mediate between the child and the social environment, explain the child's behavior, prevent conflict, and advocate for appropriate treatment. The results therefore align with clinical models emphasizing that the social-communication difficulties associated with ASD require long-term, individualized, and coordinated management rather than short-term symptom-focused intervention (Hyman et al., 2020, 2024).

The second important finding was the role of family factors, including parental awareness, parenting styles, maternal sensitivity, reduced family interaction, and conflict following the child's diagnosis. The diagnosis of autism can reorganize family roles and expectations, especially when mothers assume primary responsibility for treatment, education, and behavior management. The emotional

demands of caregiving may reduce time available for marital relationships, other children, employment, and self-care. Mothers may also experience guilt, uncertainty, and concern about whether they are responding appropriately to the child's needs. These pressures can weaken family cohesion and increase parental stress. The findings are consistent with research showing that the stress experienced by families of children with ASD is closely related to family quality of life and the quality of partnerships established between parents, teachers, and professionals (Hsiao et al., 2017). They also correspond with phenomenological evidence indicating that mothers of children with autism experience a continuous struggle between emotional exhaustion, social limitation, and persistent efforts to support their children (Ramezanloo et al., 2021).

The findings also showed that economic and social factors formed an important context for the mothers' experiences. The cost of speech therapy, occupational therapy, psychological services, educational interventions, transportation, and specialized care can impose a heavy financial burden on families. At the same time, limited access to specialized centers and insufficient institutional support may prevent mothers from receiving consistent services. These conditions may be particularly stressful when the mother must reduce working hours or leave employment to care for the child. Previous research has similarly shown that the burden of caring for autistic children is influenced by the intensity of caregiving involvement, available resources, and coping strategies. When formal support is limited, mothers must assume multiple roles, including caregiver, educator, behavioral manager, and treatment coordinator, which may increase exhaustion and perceived burden (Mohammad et al., 2025). Studies of families of individuals with developmental disabilities have also shown that greater parental stress is associated with lower family quality of life, especially when families face limited economic and social resources (Jenaro et al., 2020).

Social attitudes toward autism constituted another major dimension of the mothers' lived experiences. The mothers reported limited social support and negative or inaccurate public interpretations of their children's behavior. In high-functioning autism, the child's disability may not be immediately visible; therefore, emotional outbursts, repetitive behaviors, social withdrawal, or resistance to change may be interpreted as poor discipline. This situation can expose mothers to criticism and reinforce feelings of isolation. The relationship between perceived stress,

depression, and loneliness reported among parents of autistic children provides support for this finding. Loneliness may intensify psychological distress by depriving parents of emotional validation and practical assistance (Sipowicz et al., 2025). Stigmatizing beliefs may also reduce willingness to seek support and may undermine parents' confidence in discussing their difficulties. Although stigma has been studied in different mental health contexts, its effects on self-determination, help-seeking, and psychological functioning suggest that reducing stigma is essential for empowering families of children with ASD (Perlman et al., 2025).

Environmental factors, particularly the suitability of the home environment and the presence of maternal stress and burnout, were identified as intervening conditions affecting the implementation of parenting strategies. Children with ASD may be highly sensitive to noise, light, crowded spaces, unexpected changes, or excessive sensory stimulation. An unstructured environment may increase emotional outbursts, repetitive behaviors, and behavioral resistance. Mothers who lack knowledge about sensory regulation may interpret these reactions as intentional behavior and may respond inconsistently. The educational package therefore included environmental adaptation, predictable routines, mindful parenting, and stress-management techniques. This emphasis is consistent with the broader understanding that psychological security is a foundation of well-being and that a predictable, supportive environment can reduce anxiety and facilitate adaptive functioning (Yu, 2018). It also reflects clinical recommendations emphasizing individualized environmental and behavioral support for children with ASD and their families (Hyman et al., 2024).

Another major result was the importance mothers placed on structured educational approaches and access to specialized treatment centers. The educational approach emerged as the core category in the paradigmatic model because mothers viewed clear planning, specialized instruction, communication training, and goal-oriented activities as central to managing the child's difficulties. This finding suggests that uncertainty and lack of structure may weaken mothers' confidence, whereas specific and observable strategies can make parenting challenges more manageable. The educational package therefore included visual schedules, task analysis, short- and long-term goal setting, social stories, role-playing, and planned behavioral exercises. The effectiveness of parent-implemented interventions supports this result. Parent-mediated developmental programs have shown that parents can be trained to promote social communication, imitation,

engagement, and adaptive behavior in children with autism through repeated practice in natural settings (Zhou et al., 2018). Similarly, psychoeducational interventions that teach practical parenting skills have been associated with reduced parental stress and improved management of autism-related behaviors (Kalalo et al., 2021).

The psychological strategies identified by mothers included positive reinforcement, purposeful play, strengthening social skills, establishing a secure emotional relationship, and teaching responsibility according to the child's abilities. These strategies were incorporated into the educational package because they directly addressed the problems reported by participants. Positive reinforcement can increase desirable behaviors and reduce reliance on confrontation or punishment, while purposeful play creates opportunities for communication, cognitive flexibility, and shared attention. Emotional responsiveness and active listening may also strengthen the parent-child relationship and reduce the intensity of emotional crises. These findings are consistent with systematic evidence showing that parenting interventions can improve parental competence and self-efficacy when they provide concrete strategies, guided practice, and opportunities to apply skills in everyday situations (Hohlfeld et al., 2018). They also correspond with research indicating that parenting practices and supportive parent-child relationships contribute to motivation, persistence, and developmental achievement (Józsa et al., 2019).

The significant increase in parental self-efficacy after the intervention represents the principal quantitative finding of the study. Mothers in the experimental group reported greater confidence in managing parenting tasks, resolving parent-child challenges, and continuing their efforts despite difficulties. This improvement can be explained by the practical and experience-based nature of the intervention. Rather than presenting mothers with only theoretical information about autism, the package addressed recognizable problems extracted from their own lived experiences. The sessions enabled participants to identify behavioral patterns, understand contextual influences, practice structured responses, and evaluate the effects of their strategies. These experiences likely provided mothers with repeated mastery experiences, which are central to the development of self-efficacy. Systematic reviews of interventions for parents of children with disabilities have similarly concluded that training can improve parental self-efficacy when it combines knowledge, behavioral practice, feedback, and emotional support (Hohlfeld et al., 2018).

Evidence from skills-based psychoeducation also shows that increasing parents' knowledge and practical abilities may reduce stress and improve the management of children with ASD (Kalalo et al., 2021).

The improvement in parental self-efficacy may also have resulted from the group-based and validating nature of the program. Mothers of autistic children often feel that others do not understand their experiences. Participating in a structured intervention with mothers facing similar challenges can reduce perceived isolation and normalize difficult emotions. Sharing successful strategies may provide social modeling, while observing other mothers' progress can strengthen expectations of personal competence. This explanation is consistent with findings showing that loneliness contributes to the relationship between parental stress and depression among parents of autistic children (Sipowicz et al., 2025). By creating a supportive setting in which mothers' experiences were recognized and translated into educational content, the intervention may have reduced emotional isolation and increased confidence in the parental role.

The educational package may also have increased self-efficacy by improving mothers' understanding of autism and reducing self-blame. When parents lack accurate knowledge about the neurological and developmental nature of ASD, they may interpret their child's difficulties as the result of ineffective parenting or personal failure. Providing information about social communication deficits, sensory sensitivities, behavioral rigidity, and emotional dysregulation can help mothers reinterpret difficult behaviors as manifestations of the disorder rather than intentional opposition. This shift in interpretation can reduce guilt and support more consistent and compassionate responses. Research concerning the prevalence and comorbidities of autism in Iran has shown an important relationship between the child's condition and maternal psychopathology, indicating that parental psychological needs should be addressed alongside the child's clinical needs (Mohammadi et al., 2019). Clinical guidelines likewise emphasize that effective ASD management requires education and support for families as part of comprehensive care (Hyman et al., 2020).

The significant difference between the experimental and control groups at follow-up indicates that the effects of the intervention were maintained over the three-month period. The absence of a significant decline from posttest to follow-up suggests that mothers continued to use the acquired strategies after the formal sessions ended. This stability may

be attributed to the practical structure of the program, which included daily behavioral observation, visual planning, reinforcement schedules, stress-management exercises, and a future action plan. Because these techniques were integrated into routine family activities, they may have been easier to maintain than strategies requiring continuous professional supervision. The maintenance of intervention effects is especially important in ASD because parenting challenges are chronic and may change as the child develops. Interventions that increase parental competence and provide adaptable problem-solving skills may therefore have greater long-term value than programs limited to short-term symptom reduction (Hohlfeld et al., 2018; Zhou et al., 2018).

The qualitative and quantitative findings together indicate that parental self-efficacy is influenced by the interaction of personal, relational, social, and structural factors. Mothers' beliefs about their parenting competence cannot be separated from access to services, social support, economic resources, environmental conditions, and the severity of the child's behavioral difficulties. Thus, interventions aimed at increasing parental self-efficacy should not focus exclusively on changing mothers' thoughts or attitudes. They should also provide concrete behavioral strategies, opportunities for social support, methods for environmental adaptation, and guidance for coordinating with family members and professionals. This integrated interpretation is consistent with evidence showing that family quality of life and parental stress are affected by multiple contextual variables (Hsiao et al., 2017; Jenaro et al., 2020). It also supports family-centered models in which parents are active collaborators in assessment, intervention planning, and ongoing management (Hyman et al., 2024).

Overall, the present findings demonstrate that an educational package derived from mothers' lived experiences can transform experiential knowledge into a structured and effective intervention. The package addressed the actual challenges faced by mothers and combined psychological support with educational, behavioral, and relational strategies. Its effectiveness suggests that lived experience is not merely a source of descriptive information but can serve as a foundation for designing culturally relevant and practically applicable interventions. The findings support the broader movement toward individualized and participatory approaches in autism services, in which families' voices are incorporated into program development. Such approaches may improve intervention acceptability, strengthen parental agency, and reduce the gap between professional recommendations and

everyday caregiving realities (Hill, 2024; Ramezanloo et al., 2021).

The present study had several limitations. The participants were mothers of children with high-functioning autism who had referred to autism and psychological service centers in Tehran, and this geographically and clinically specific sample may limit the generalizability of the findings to fathers, families in rural areas, parents who do not have access to specialized centers, or families of children with different levels of autism-related support needs. The relatively small sample size in the quantitative phase may also have reduced the statistical power for detecting more subtle effects. In addition, parental self-efficacy was measured through a self-report instrument, and the findings may therefore have been influenced by social desirability, recall errors, or participants' expectations regarding the intervention. The three-month follow-up period was also relatively short and did not make it possible to determine whether the effects remained stable over longer developmental periods.

Future research should replicate the study with larger and more diverse samples drawn from different cultural, socioeconomic, and geographical settings. It would be valuable to evaluate the package among fathers, couples, and other primary caregivers and to compare its effects across different levels of autism severity and child age groups. Future studies should also use longer follow-up periods and include observational measures of parent-child interaction, reports from teachers or therapists, and objective indicators of the child's behavioral and social functioning. Comparative studies could examine whether the lived-experience-based package is more effective than standard psychoeducation, behavioral parent training, or child-centered interventions. Researchers may also investigate whether reductions in parental stress, loneliness, or caregiver burden mediate the effect of the intervention on parental self-efficacy.

In practice, autism centers, counseling clinics, schools, and rehabilitation services should incorporate structured parent education into routine services for families of children with high-functioning autism. Practitioners should assess mothers' actual daily challenges before determining intervention content and should adapt educational strategies to the family's economic resources, cultural values, and access to services. Training should include behavioral observation, positive reinforcement, emotional regulation, structured routines, purposeful play, social-skills support, and methods for strengthening the parent-child relationship.

Professionals should also facilitate peer-support groups for mothers, encourage coordination between parents and teachers, and provide follow-up sessions to support the continued application of learned skills. Such measures can strengthen parental competence, reduce isolation, and promote more consistent and supportive care for children with high-functioning autism.

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

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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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