

Development of a Skills Training Educational Package for Children with Autism Spectrum Disorder Based on Theory of Mind and Iranian Cultural Characteristics

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ABSTRACT

This study aimed to develop a culturally adapted skills-training educational package for children with autism spectrum disorder (ASD) based on Theory of Mind (ToM) components and Iranian cultural characteristics. This qualitative exploratory study employed systematic literature review, document analysis, field investigation, and semi-structured interviews with autism specialists selected through purposive and snowball sampling until theoretical saturation was achieved. The participants included clinical psychologists, child psychiatrists, occupational therapists, speech therapists, and educational instructors with relevant professional experience. Interview data were transcribed and analyzed in MAXQDA using qualitative content analysis and a three-stage grounded-theory coding procedure comprising open, axial, and selective coding. The resulting categories were integrated into a paradigmatic model encompassing causal conditions, the central phenomenon, contextual and intervening conditions, strategies, and consequences. Content and face validity of the proposed package were evaluated by experts. The final intervention was organized as a structured 40-session program progressing from concrete to increasingly abstract ToM skills. The analysis indicated that deficits in understanding nonliteral language, intentions, deception, perspectives, and pragmatic communication constituted major causal mechanisms underlying impaired social skills and stereotyped behaviors. Child-related cognitive and behavioral characteristics, family support, parental cooperation, and environmental stability emerged as important contextual conditions, whereas sensory difficulties, behavioral problems, resistance to routine changes, limited generalization, and inadequate school-family coordination acted as intervening barriers. The principal educational strategies comprised training in basic emotions, joint attention, desires, first- and second-order false beliefs, behavioral prediction, empathy, humor, and irony. Experts further emphasized visual and concrete materials, role-play, video modeling, personalization, parental participation, school coordination, and practice across natural settings. The model indicated that these strategies could improve social interaction, empathy, communication, and ToM-related functioning while reducing stereotyped behaviors through greater environmental predictability and behavioral flexibility. The developed 40-session ToM-based package provides a culturally responsive and developmentally sequenced framework for strengthening socio-cognitive and interpersonal skills in children with ASD and may enhance the ecological applicability of autism interventions within Iranian family, educational, and clinical contexts.

Keywords: Autism Spectrum Disorder; Theory of Mind; Skills Training; Educational Package; Social Skills; Iranian Culture

1. Introduction

Autism spectrum disorder (ASD) is a neurodevelopmental condition characterized by persistent difficulties in social communication and social interaction, together with restricted and repetitive patterns of behavior, interests, or activities. These characteristics emerge during the developmental period and may vary substantially in severity, functional impact, and the degree of support required by the individual ([American Psychiatric, 2013](#)). The heterogeneity of ASD is reflected not only in symptom severity but also in considerable variability in language, cognition, adaptive functioning, sensory processing, emotional regulation, and social motivation. Some children develop relatively fluent verbal abilities and average or above-average cognitive skills while continuing to experience marked difficulty in understanding the intentions, emotions, beliefs, and perspectives of other people. Others require substantial support in communication and daily functioning. International epidemiological and public-health reports have also emphasized that autism represents a major developmental and service-related concern worldwide, making the availability of effective, developmentally appropriate, and accessible interventions increasingly important ([World Health, 2023](#)). Public-health surveillance similarly indicates that ASD is identified in a substantial proportion of children and that early recognition and appropriate educational and rehabilitative services are central components of long-term support ([Centers for Disease & Prevention, 2023](#)). Within this context, the objective of intervention is not merely the reduction of isolated symptoms, but the enhancement of the child's capacity to communicate, participate in relationships, function adaptively, and respond flexibly to the social demands of everyday life.

The development of social competence is particularly important because children with ASD frequently encounter difficulties in interpreting interpersonal cues, sustaining reciprocal communication, coordinating attention with others, participating in imaginative and cooperative play, and adapting their responses to changing social situations. These limitations may remain evident even among children whose structural language or general intellectual abilities are relatively preserved. Life-skills and adaptive-skills interventions are therefore increasingly considered essential because they support greater independence and facilitate participation across home, school, and community environments. Research on daily living and functional skill

development has shown that intervention environments designed around meaningful, structured, and interactive activities can support the acquisition of practical abilities among children with autism ([Li et al., 2025](#)). Similarly, life-skills training has been emphasized as an important means of strengthening autonomy, communication, and participation among children with ASD ([Rathi et al., 2021](#)). Recent Iranian work has also highlighted the value of resilience-oriented skill development for improving social interaction, suggesting that interventions aimed at strengthening adaptive capacities can contribute to more effective engagement with others ([Jouy, 2025](#)). These findings collectively suggest that the development of functional competence in ASD depends on more than the repetitive teaching of observable behaviors. Effective intervention must also address the cognitive and emotional processes that allow a child to understand why other people behave in particular ways, anticipate likely reactions, and select socially appropriate responses.

One of the most influential frameworks for understanding such socio-cognitive difficulties is Theory of Mind (ToM), broadly defined as the capacity to attribute mental states such as beliefs, intentions, desires, emotions, and knowledge to oneself and others and to understand that these mental states may differ across individuals. Theory of Mind enables a person to predict and interpret behavior by considering what another person knows, believes, wants, or feels rather than relying exclusively on immediately observable events. Difficulties in this domain have long been associated with autism and have been used to explain important aspects of impaired reciprocal interaction, reduced perspective-taking, misunderstanding of intentions, and atypical responses to emotionally or socially complex situations. Comparative research has shown that children with ASD display substantial challenges in Theory of Mind relative to typically developing children and, in some domains, relative to children with other developmental conditions ([Pourhossein Mojarshin, 2023](#)). More specifically, children with autism have been found to perform more poorly than typically developing children and children with developmental language disorder on tasks requiring the understanding of mental states, although language difficulties may also influence ToM performance in non-autistic developmental populations ([Schwartz Offek & Segal, 2022](#)). Such findings reinforce the view that Theory of Mind is a multidimensional ability that depends on interactions among social experience, language, executive functioning, and broader developmental capacities.

The association between Theory of Mind and language is especially important in the design of educational interventions. Mental-state understanding is supported by the ability to process complex linguistic structures, interpret embedded propositions, and recognize that a statement can represent a belief rather than an objective fact. Research examining the developmental relationship between syntax and Theory of Mind suggests that linguistic competence contributes to the emerging ability to represent mental states, including before children reach the age at which classical false-belief tasks are typically mastered (Kaltfleiter et al., 2021). In verbal adolescents with ASD, verbal mediation has also been shown to play an important role in Theory of Mind performance, indicating that language may provide a cognitive scaffold through which mental states are represented and interpreted (Eigsti & Irvine, 2021). The relevance of this relationship is further supported by intervention research demonstrating that targeted syntactic training can improve not only language-related performance but also Theory of Mind abilities in children with ASD, with benefits particularly evident when linguistic structures directly support the representation of beliefs and perspectives (Durrleman et al., 2023). Second-order false-belief understanding, which requires comprehension of what one person thinks about another person's belief, places even greater demands on linguistic recursion and socio-cognitive representation; evidence indicates that these processes are closely interconnected in ASD (Polyanskaya et al., 2021). Therefore, an effective Theory of Mind intervention should not be limited to isolated false-belief exercises, but should incorporate progressively more complex language, perspective-taking, and mental-state reasoning tasks.

Theory of Mind also intersects with executive functioning and broader cognitive control. Successful interpretation of another person's perspective may require inhibition of one's own knowledge, flexible switching between competing viewpoints, working-memory maintenance of multiple representations, and behavioral prediction based on information that differs from one's immediate experience. Deficits in executive functioning have long been recognized as a prominent feature associated with autism, particularly in domains such as cognitive flexibility, planning, inhibition, and the regulation of goal-directed behavior (Ozonoff & South, 2001). More recent comparative evidence has demonstrated meaningful associations between executive-function components and Theory of Mind in children with ASD, although the pattern of relationships may differ according to age and developmental stage (Toker & Acarlar,

2025). These findings suggest that Theory of Mind difficulties should be viewed within a broader cognitive system rather than as an isolated deficit. A child may understand a social rule in one structured context but fail to apply it in a novel setting because flexible shifting, inhibition of habitual responses, or integration of multiple social cues is insufficient. Consequently, intervention programs must provide repeated practice across varied contexts and should progress gradually from concrete and highly supported tasks toward more abstract and cognitively demanding forms of perspective-taking and social interpretation.

The relationship between social cognition, emotional regulation, and repetitive behavior provides an additional rationale for integrated intervention. Restricted and repetitive behaviors in ASD may serve several functions, including self-regulation in response to sensory overload, emotional distress, uncertainty, or difficulty predicting what will happen in the environment. Research has identified meaningful relationships among emotion regulation, social communication, and repetitive behaviors, indicating that these domains may be functionally interconnected rather than independent symptom clusters (Martínez-González et al., 2022). When a child cannot interpret another person's intentions, predict a social response, or understand why an unexpected interpersonal event has occurred, the environment may become more ambiguous and less controllable. Repetitive actions, insistence on sameness, or stereotyped verbal patterns may therefore provide a degree of predictability under conditions of social uncertainty. From this perspective, improving Theory of Mind and social understanding may indirectly contribute to behavioral flexibility by making interpersonal events more comprehensible. This theoretical link is particularly important for the development of an educational package because it suggests that cognitive-social instruction may influence both communication outcomes and patterns of repetitive or rigid behavior.

Evidence from intervention studies further indicates that Theory of Mind and related social skills are modifiable. Child-centered play therapy has been associated with improvements in Theory of Mind among children with autism, supporting the use of interactive, developmentally appropriate, and experience-based learning formats (Salehi Kamroudi et al., 2022). Structured social-skills programs have likewise demonstrated benefits for adolescents and young adults with level 1 autism, particularly when interventions explicitly target reciprocal interaction, social understanding, and real-world participation (Zoccante et al.,

2025). More technologically mediated approaches have also yielded promising findings. A randomized controlled trial involving interaction with a humanoid robot showed that structured practice involving perspective-taking, joint attention, intention recognition, and socially meaningful scenarios could improve social-cognitive functioning in children with autism (Ghiglini et al., 2025). Such findings are important because they show that effective Theory of Mind training does not necessarily depend on one instructional format. Rather, improvement may be facilitated when learning environments are predictable, engaging, visually supported, repetitive without being monotonous, and sufficiently structured to reduce ambiguity while still requiring active social inference.

Despite these advances, generalization remains one of the most persistent challenges in autism intervention. A child may learn to label an emotion from a training card but fail to recognize that emotion in a parent's face, or may correctly answer a false-belief question in a structured session but fail to use the same reasoning during a disagreement with a peer. For this reason, intervention effectiveness cannot be judged solely by performance on trained tasks. Skills must be transferred across people, settings, materials, and everyday situations. The use of realistic scenarios, naturalistic practice, parent participation, teacher involvement, and repeated exposure to multiple exemplars is therefore essential. This requirement is especially relevant to Theory of Mind because social meaning is strongly shaped by contextual information, language use, family interaction patterns, and culturally specific expectations regarding emotion, politeness, interpersonal distance, humor, and independence. An intervention that is theoretically sound but culturally unfamiliar may be less readily generalized because the child is being trained with situations that differ from those encountered in daily life.

The cultural dimension is particularly significant in the Iranian context. Social expectations are embedded in culturally specific patterns of family interaction, respect, emotional expression, hospitality, interpersonal closeness, humor, indirect communication, and role-based behavior. Educational materials developed in other cultural contexts may include unfamiliar names, visual environments, conversational conventions, family structures, or social scenarios, reducing the immediate relevance of training for Iranian children and families. Furthermore, direct translation of existing materials does not necessarily constitute cultural adaptation. Effective localization requires modification of examples, stories, visual stimuli, social situations, forms of

address, routines, and interactional expectations so that the trained skills correspond to the child's real environment. Iranian research emphasizing social interaction, life skills, and Theory of Mind provides preliminary evidence for the usefulness of intervention in these domains (Jouy, 2025; Pourhossein Mojarshin, 2023; Rathi et al., 2021; Salehi Kamroudi et al., 2022), yet there remains a need for an integrated package that simultaneously addresses the developmental hierarchy of Theory of Mind components and the cultural characteristics of the target population.

Another important issue is the sequencing of instructional content. Theory of Mind is not a single skill acquired all at once; rather, it develops through progressively more complex competencies. Early abilities such as joint attention, emotion recognition, and understanding of desires provide foundations for later understanding of beliefs, intentions, deception, second-order mental states, humor, irony, and nonliteral language. Accordingly, intervention content should proceed from observable and concrete cues toward increasingly abstract representations. This developmental progression is consistent with findings showing relationships among language, executive functions, false-belief understanding, and advanced social cognition (Kaltfleiter et al., 2021; Polyanskaya et al., 2021; Toker & Acarlar, 2025). It is also compatible with evidence that structured and scaffolded training can improve Theory of Mind when cognitive and linguistic demands are carefully controlled (Durrleman et al., 2023; Ghiglini et al., 2025). Such sequencing is especially relevant for children with ASD because abrupt movement to highly abstract social concepts may increase frustration or lead to rote responding without genuine understanding. A comprehensive package should therefore begin with foundational competencies, provide repeated practice using concrete and visual materials, incorporate play and role-taking, and gradually introduce more complex mental-state reasoning.

In addition, family and educational-system participation should be treated as central components rather than optional adjuncts. Social cognition is practiced continuously in everyday interactions, and improvement is unlikely to generalize if parents, teachers, and other significant adults are unaware of the intervention goals or do not create opportunities for practice. Consistency between clinical training and natural environments can increase predictability, reinforce newly acquired skills, and help identify whether apparent learning reflects genuine functional change. This principle aligns with broader work emphasizing the importance of daily living skills, real-world

social participation, and structured social training in autism (Li et al., 2025; Zoccante et al., 2025). It also addresses the practical reality that children with ASD differ markedly in their interests, sensory profiles, behavioral regulation, language levels, and responsiveness to reinforcement. Therefore, personalization, flexibility, and environmental coordination are necessary for an intervention to remain both developmentally appropriate and clinically usable.

Taken together, the literature indicates that Theory of Mind difficulties constitute a central component of the social-cognitive challenges experienced by many children with ASD and are closely related to language, executive functioning, emotional regulation, social communication, adaptive behavior, and the interpretation of interpersonal events. Existing findings support the effectiveness of interventions involving play, structured social-skills training, syntactic instruction, naturalistic activities, technological environments, and explicit Theory of Mind practice (Durrleman et al., 2023; Ghiglino et al., 2025; Salehi Kamroudi et al., 2022; Zoccante et al., 2025). However, the available evidence also indicates that effective intervention must be developmentally sequenced, sufficiently concrete at early stages, progressively more complex, individualized, culturally meaningful, and designed to facilitate generalization across family, educational, and community contexts. The absence of a comprehensive, culturally adapted Iranian package integrating foundational and advanced Theory of Mind components with practical social-skills training therefore represents an important applied and research gap.

Accordingly, the present study aimed to develop a culturally adapted skills-training educational package for children with autism spectrum disorder based on Theory of Mind components and Iranian cultural characteristics.

2. Methods and Materials

2.1. Study Design and Participants

The present study employed a qualitative, exploratory design with the primary purpose of developing the conceptual framework and preliminary content of a culturally adapted skills-training educational package for children with autism spectrum disorder based on Theory of Mind components. The research process began with a systematic theoretical and library-based review of the literature related to Theory of Mind, social skills, communication difficulties, stereotyped behaviors, and educational interventions for children with autism. To obtain

a comprehensive understanding of the phenomenon and identify practically relevant components, data were gathered through expert interviews, documentary review, and field-based investigation. The qualitative phase relied primarily on semi-structured interviews with professionals working in autism-related fields. The study population consisted of specialists with at least five years of relevant professional experience, including clinical psychologists, child psychiatrists, occupational therapists, speech therapists, and educational instructors. Participants were selected using purposive sampling and subsequently through the snowball technique in order to identify additional experts with substantial clinical and educational experience in autism. Sampling continued until theoretical saturation was reached and no substantially new concepts emerged from additional interviews. The manuscript reports that 20 experts ultimately participated in the validation phase. The interviews were conducted after the objectives of the study and the interview procedures had been explained to participants. With their permission, the interviews were audio-recorded and subsequently transcribed for detailed analysis. The study particularly focused on extracting culturally relevant indicators, barriers, facilitators, instructional priorities, and practical recommendations for designing a Theory of Mind-based package appropriate for Iranian children with autism. Before data collection began, the research protocol, assessment procedures, and study instruments were submitted to the relevant university research ethics committee and received ethical approval under the code IR.IAU.BA.REC.1405.138.

2.2. Measures

The main data collection instrument was a semi-structured expert interview developed in accordance with the objectives of the study and the theoretical foundations of Theory of Mind and autism-related social functioning. The interview process was organized around four major stages, including planning the interview, explaining the research objectives to the participants, asking core questions aligned with the study aims, and documenting and preparing the resulting data for analysis. The questions explored experts' experiences regarding manifestations of Theory of Mind deficits in everyday situations, social and communicative difficulties, stereotyped behaviors, developmental and environmental conditions influencing intervention outcomes, appropriate instructional strategies, barriers to implementation, and methods for promoting the

generalization of learned skills. Documentary and library-based sources were also reviewed to support the identification of theoretical and empirical components and to ensure that the proposed educational content reflected existing evidence in addition to expert experience. The collected information was used to develop the educational framework and determine the sequence of intervention content from relatively concrete and developmentally basic skills to more abstract Theory of Mind abilities. The content ultimately addressed areas such as recognition of basic emotions, joint attention, understanding desires and preferences, first-order and second-order false beliefs, prediction of behavior, empathy, and comprehension of humor and irony. To evaluate the scientific adequacy of the proposed package and related instruments, face and content validity were examined by the supervisors, advisors, and a group of experts in educational psychology and cognitive sciences. This expert-review process was intended to determine whether the proposed components accurately represented the target constructs and whether the content was appropriate for the developmental and cultural characteristics of the target population. The study also reported the use of Cronbach's alpha to assess internal consistency reliability of questionnaire-based instruments used during the validation process.

2.3. Data Analysis

Qualitative data were analyzed through qualitative content analysis using a data-driven coding strategy in MAXQDA. The analytical process followed three consecutive stages of open, axial, and selective coding consistent with a grounded-theory approach. During open coding, the transcribed interviews and relevant textual materials were read repeatedly to identify meaningful units, initial concepts, recurring experiences, and clinically relevant indicators. Concepts were labeled according to their properties and dimensions, and similar codes were progressively grouped into broader categories. During axial coding, relationships among the categories were examined in greater depth, with particular attention to the central phenomenon and the factors influencing its emergence or modification. The resulting categories were organized within a paradigmatic framework consisting of causal conditions, the central phenomenon, contextual conditions, intervening conditions, strategies, and consequences. In this model, difficulties in social functioning and stereotyped behaviors were examined in relation to deficits in Theory of

Mind and associated communicative and cognitive limitations, while child-related, family-related, educational, and environmental factors were considered as contextual or intervening influences. During selective coding, the identified categories and their relationships were integrated and refined to produce a coherent conceptual framework for the educational package. Expert opinions concerning content validation were likewise coded and classified according to their frequency, importance, and conceptual relevance. The final model therefore reflected both the theoretical literature and the professional experiences of specialists working with children with autism. Based on this integrated analysis, the educational package was organized into 40 structured sessions progressing from concrete skills, such as emotion recognition and joint attention, toward more advanced abilities, including false-belief understanding, empathy, humor, and nonliteral language, while also incorporating culturally adapted examples, family participation, school coordination, and strategies to facilitate generalization across everyday settings.

3. Findings and Results

The qualitative findings were obtained through systematic analysis of the expert interviews and the classification of the extracted concepts through open, axial, and selective coding. The participant group consisted of specialists working directly in the field of autism and related psychological, rehabilitation, and educational services. According to the methodological information reported in the study, 20 experts participated in the validation phase, and all participants had at least five years of specialized professional experience. The professional composition of the expert panel included clinical psychologists, child psychiatrists, occupational therapists, speech therapists, and educational instructors, thereby providing a multidisciplinary perspective on the cognitive, communicative, behavioral, sensory, and educational needs of children with autism spectrum disorder. Participants were recruited through purposive and snowball sampling, and data collection continued until theoretical saturation was achieved. The multidisciplinary composition of the sample was particularly important because the proposed educational package was intended not merely to train isolated cognitive abilities, but to address the interaction between Theory of Mind deficits, social communication, emotional understanding, stereotyped behaviors, environmental demands, family participation, and school functioning. Analysis of the

interviews initially revealed that Theory of Mind deficits were manifested in three broad areas of everyday functioning: language and communication, empathy and emotional understanding, and social interaction. These

manifestations formed the empirical foundation for the subsequent grounded-theory model and for determining the content and sequence of the educational package.

Table 1

Manifestations of Theory of Mind Deficits in Everyday Situations and Social Interactions

Main Category	Subcategory	Concrete Examples Extracted from Interviews
Language and communication comprehension difficulties	Literal interpretation of language	Interpreting irony as a genuine compliment (M1); becoming frightened by a teacher's joking threat (M5); failure to understand idiomatic expressions (M21)
Language and communication comprehension difficulties	Monologue and insufficient attention to the listener	Talking extensively about a preferred interest without recognizing the listener's fatigue (M4); omitting necessary background information during communication (M4)
Language and communication comprehension difficulties	Difficulty understanding humor and deception	Inability to participate effectively in games involving concealment or deception, such as hide-and-seek (M1); readily believing another person's false statement (M6)
Deficits in empathy and emotional understanding	Failure to recognize others' emotions	Ignoring the mother's distress (M2); responding inappropriately when another person cries (M12)
Deficits in empathy and emotional understanding	Failure to understand others' intentions	Responding aggressively to a peer's playful behavior (M13); inability to identify the intention underlying another person's behavior (M17)
Difficulties in social interaction	Failure to respect interpersonal distance	Standing unnecessarily close to another person and failing to recognize personal-space boundaries (M3)
Difficulties in social interaction	Difficulty with turn-taking	Keeping the ball instead of taking turns during play (M10); taking all Lego pieces without sharing or waiting for a turn (M18)
Difficulties in social interaction	Difficulty with imaginative and role play	Repeatedly leaving the assigned role during pretend play, such as failing to maintain the role of a physician (M8)
Difficulties in social interaction	Failure to predict others' reactions	Making a hurtful or sarcastic remark without anticipating its emotional or interpersonal consequences for another person (M22)

As shown in Table 1, the manifestations of impaired Theory of Mind extended considerably beyond performance on formal false-belief tasks and were reflected in multiple aspects of everyday functioning. Language-related problems included literal interpretation of figurative expressions, inability to recognize humor and deception, prolonged monologues, and insufficient consideration of what information a listener required in order to understand a conversation. A second cluster involved emotional and empathic functioning, particularly difficulty recognizing another person's emotional state and inferring the intention behind observable behavior. These limitations occasionally resulted in apparently inappropriate behavioral responses, such as aggression toward a peer whose behavior had been intended as playful rather than hostile. The third major domain concerned direct social interaction, including

violations of interpersonal distance, impaired turn-taking, difficulty sustaining an assigned role in imaginative play, and failure to anticipate the effects of one's words or behavior on another person. Taken together, these findings indicated that deficits in mental-state attribution affected the child's capacity to interpret social information, adjust behavior to the needs of other people, and predict the consequences of interpersonal actions. The expert accounts therefore suggested that observable social and behavioral difficulties should not be considered independent problems; rather, many appeared to arise from an underlying difficulty in representing other people's perspectives, emotions, intentions, desires, and beliefs. This pattern provided the rationale for designing an intervention that directly targeted the socio-cognitive foundations of social behavior instead of focusing exclusively on overt behavioral modification.

Table 2
Causal Conditions and Central Phenomenon Extracted Through Grounded-Theory Analysis

Paradigmatic Dimension	Component	Indicators/Open Concepts	Interview Sources
Causal conditions	Deficit in understanding nonliteral language	Literal interpretation of humor and irony	M1, M4, M5, M9, M21
Causal conditions	Deficit in understanding nonliteral language	Failure to understand proverbs and idiomatic expressions	M4, M9, M21
Causal conditions	Deficit in understanding nonliteral language	Fear in response to joking threats	M5, M15
Causal conditions	Deficit in empathy	Failure to attend to another person's distress	M2, M8, M12
Causal conditions	Deficit in empathy	Stereotyped or formulaic reactions instead of genuine empathic responses	M12
Causal conditions	Inability to deceive and understand deception	Revealing information unintentionally in games requiring concealment	M1, M6, M11
Causal conditions	Inability to deceive and understand deception	Naive acceptance of other people's statements	M6, M17
Causal conditions	Failure to understand others' perspectives	Continuing to speak without recognizing listener fatigue	M4, M10
Causal conditions	Failure to understand others' perspectives	Inability to conceal information, such as keeping a gift secret	M7
Causal conditions	Failure to understand others' perspectives	Failure to understand personal space	M3, M15
Causal conditions	Difficulty understanding others' intentions	Aggressive response to playful behavior	M13, M15
Causal conditions	Difficulty understanding others' intentions	Failure to predict another person's reaction	M1, M22
Causal conditions	Pragmatic-language deficits	Monologue during conversation	M4
Causal conditions	Pragmatic-language deficits	Omission of information necessary for understanding a story	M4, M19
Causal conditions	Pragmatic-language deficits	Insufficient descriptive information during telephone conversation	M14
Causal conditions	Limited story comprehension	Attention to observable events while overlooking motives and intentions	M9
Causal conditions	Inability to engage effectively in imaginative play	Repeatedly leaving the assigned role during pretend play	M8
Central phenomenon	Weak social skills	Difficulty initiating and maintaining conversation	M2
Central phenomenon	Weak social skills	Inability to solve social problems	M3
Central phenomenon	Weak social skills	Lack of cooperation during play	M8
Central phenomenon	Emergence of stereotyped behaviors	Repetitive behaviors such as spinning and hand movements	M1, M4, M5, M11, M14
Central phenomenon	Emergence of stereotyped behaviors	Verbal stereotypies and repetitive speech	M14

Table 2 demonstrates that the grounded-theory analysis placed impaired social skills and stereotyped behaviors at the center of the emerging conceptual model, while multiple Theory of Mind-related limitations were identified as causal conditions contributing to these problems. The causal structure was multidimensional. Difficulties with nonliteral language prevented children from distinguishing literal from intended meanings in humor, irony, idioms, and joking threats. Deficits in empathy limited appropriate responses to another person's emotional state, while difficulties with deception and concealment indicated problems representing what another person knows or does not know. Perspective-taking difficulties were evident in disregard for listener

fatigue, inability to maintain secrecy, and failure to understand interpersonal boundaries. Problems inferring intention were behaviorally important because benign or playful actions could be interpreted as hostile, potentially provoking aggressive responses. Pragmatic-language problems further complicated social communication through monologues, omission of contextual information, and inadequate description. Story comprehension was similarly restricted when children focused on external events but failed to infer motives, and difficulties in imaginative play reflected limitations in maintaining representations that differed from immediate reality. These interconnected causal conditions converged on the central phenomenon of

deficient social functioning, expressed through problems initiating and sustaining conversations, solving interpersonal problems, and cooperating during play. Repetitive motor and verbal behaviors formed the second component of the central phenomenon. Thus, the qualitative model suggested that

social-skill deficits and stereotyped behaviors were functionally connected to underlying difficulties in interpreting and predicting mental states, supporting an intervention model in which cognitive-social understanding was treated as a central therapeutic target.

Table 3

Contextual and Intervening Conditions Affecting Implementation of the Theory of Mind-Based Educational Package

Paradigmatic Dimension	Component	Indicator/Concept	Interview Sources
Contextual conditions	Child cognitive characteristics	Mental age of at least 4 years	M1
Contextual conditions	Child cognitive characteristics	Adequate receptive and expressive language level	M1, M4, M14
Contextual conditions	Child cognitive characteristics	Presence of joint attention	M3
Contextual conditions	Child cognitive characteristics	Ability to imitate	M3
Contextual conditions	Child cognitive characteristics	Ability to maintain attention for at least 10 minutes	M8
Contextual conditions	Child cognitive characteristics	Presence of symbolic play	M9
Contextual conditions	Child behavioral characteristics	Mild-to-moderate symptom severity	M2
Contextual conditions	Child behavioral characteristics	Social motivation	M5, M22
Contextual conditions	Child behavioral characteristics	Emotional stability	M12
Contextual conditions	Child behavioral characteristics	Relative behavioral and cognitive flexibility	M13
Contextual conditions	Environmental characteristics	Parental cooperation	M10
Contextual conditions	Environmental characteristics	Family support and environmental stability	M20
Intervening conditions: facilitators	Family involvement	Parental attendance during sessions	M1, M7
Intervening conditions: facilitators	Educational coordination	Coordination with the child's school	M1, M4, M7, M17
Intervening conditions: facilitators	Instructional adaptation	Use of visual and concrete instructional materials	M1, M3, M13
Intervening conditions: facilitators	Individualization	Personalization of educational content	M6
Intervening conditions: barriers	Child-related factor	Fatigue and loss of interest	M1, M11
Intervening conditions: barriers	Child-related factor	Severe behavioral difficulties, including aggression	M2, M4
Intervening conditions: barriers	Child-related factor	Resistance to changes in routine	M6
Intervening conditions: barriers	Child-related factor	Sensory difficulties	M8, M13
Intervening conditions: barriers	Family-related factor	Lack of parental cooperation	M1, M10
Intervening conditions: barriers	Family-related factor	Unrealistic parental expectations	M10, M22
Intervening conditions: barriers	Generalization factor	Limited transfer of acquired skills to new situations	M3
Intervening conditions: barriers	Educational factor	Lack of coordination with school	M5, M13
Intervening conditions: barriers	Cultural/resource factor	Shortage of culturally appropriate indigenous resources	M7
Intervening conditions: barriers	Implementation factor	Limited session time	M10, M17
Intervening conditions: barriers	Content-related factor	Abstract nature of concepts, particularly second-order false belief	M2, M9

The findings presented in Table 3 indicate that the effectiveness and feasibility of the proposed educational package were dependent not only on its instructional content but also on the child's developmental readiness and the surrounding family and educational environment. At the child level, experts regarded a mental age of at least four years, adequate receptive and expressive language, the presence of joint attention and imitation, the ability to sustain attention for approximately 10 minutes, and some capacity

for symbolic play as important contextual prerequisites for participation in the intervention. Behavioral characteristics were also relevant, particularly mild-to-moderate symptom severity, social motivation, emotional stability, and relative flexibility. At the environmental level, parental cooperation and a stable and supportive family context were considered important conditions for successful implementation. The intervening conditions showed that the same intervention could be facilitated or constrained by characteristics of its

delivery environment. Parental participation, coordination with school personnel, visual and concrete instructional materials, and individualized content were consistently identified as facilitators. In contrast, child fatigue, aggression, sensory difficulties, and resistance to routine change could disrupt learning. Family-related barriers included poor parental cooperation and expectations that exceeded the child's realistic developmental progress. Experts also emphasized the persistent problem of limited generalization, meaning that a skill demonstrated successfully in the clinical or teaching context might not automatically transfer to the home, school, playground, or other natural environments. Insufficient coordination

between therapists and school personnel could further restrict this transfer. The scarcity of culturally appropriate materials was particularly relevant to the purpose of the present study, because unfamiliar names, social situations, images, and interactional conventions could reduce the ecological validity of otherwise well-designed training tasks. Finally, the abstract cognitive demands of advanced Theory of Mind concepts, especially second-order false belief, were considered an important content-related challenge. These findings supported the need for a flexible, individualized, visually supported, culturally adapted, and environmentally coordinated intervention rather than a rigid standardized sequence delivered identically to all children.

Table 4

Educational Strategies and Expected Outcomes of the Theory of Mind-Based Skills-Training Package

Paradigmatic Dimension	Component	Indicator/Strategy or Expected Outcome	Interview Sources
Strategies	Priority educational components	Training basic emotions, including happiness, sadness, anger, and fear	M1, M5, M11, M13, M20, M22
Strategies	Priority educational components	Training joint attention	M2, M16, M20
Strategies	Priority educational components	Understanding desires and preferences	M3, M9, M16, M20
Strategies	Priority educational components	First-order false-belief training	M1, M4, M6, M10, M11, M12, M16, M19, M20, M21
Strategies	Priority educational components	Prediction of behavior	M5, M7, M12, M22
Strategies	Priority educational components	Second-order false-belief training	M6, M16, M19, M20, M21
Strategies	Priority educational components	Affective and cognitive empathy training	M1, M8
Strategies	Priority educational components	Understanding humor and irony	M1, M6, M11, M16
Strategies	Instructional methods	Sequential picture stories	M1, M2, M4, M6, M19, M20
Strategies	Instructional methods	Role-play using dolls and masks	M1, M3, M8, M12
Strategies	Instructional methods	Video modeling using real-life videos	M2, M9
Strategies	Instructional methods	Concrete object-based activities involving hiding and displacement	M2, M11, M14
Strategies	Instructional methods	Group games requiring interaction, prediction, and turn-taking	M5, M15
Strategies	Instructional methods	Use of mirrors and photographs	M3, M8, M18
Strategies	Instructional methods	Puppet theater	M22
Strategies	Structural characteristics of the package	Fixed and predictable session routine	M1, M6, M9
Strategies	Structural characteristics of the package	Use of photographs and real-life videos rather than exclusively cartoon material	M1, M3, M13
Strategies	Structural characteristics of the package	Calm sensory environment with low noise and mild lighting	M3, M20
Strategies	Structural characteristics of the package	Personalization according to the child's interests	M6
Strategies	Structural characteristics of the package	Repetition of concepts through varied examples	M11
Strategies	Structural characteristics of the package	Use of tactile materials such as puzzles and fabric cards	M18
Strategies	Structural characteristics of the package	Immediate feedback and visual rewards	M10
Strategies	Generalization strategies	Parental participation and parent training	M1, M7, M17

Strategies	Generalization strategies	Reproduction of similar learning situations at home	M1
Strategies	Generalization strategies	Home–clinic communication notebook	M7, M9
Strategies	Generalization strategies	Coordination with school and teacher training	M1, M4, M7, M17
Strategies	Generalization strategies	Training and involvement of classmates	M10, M15
Strategies	Generalization strategies	Practice across home, school, and park environments	M3, M8
Strategies	Generalization strategies	Reminder cards for the child	M18
Expected outcomes	Increased social skills	Increased eye contact	M1, M4
Expected outcomes	Increased social skills	Initiation of interaction with peers	M1, M15
Expected outcomes	Increased social skills	Improved conversational turn-taking	M3, M10
Expected outcomes	Increased social skills	Asking questions about or directed toward others	M3, M14
Expected outcomes	Increased social skills	Spontaneously complimenting others	M9
Expected outcomes	Increased social skills	Apologizing appropriately	M17
Expected outcomes	Increased social skills	Offering help without being explicitly asked	M16
Expected outcomes	Increased social skills	Greater participation in group games	M5, M13
Expected outcomes	Improved empathy	Appropriate response to another person’s distress	M2, M8
Expected outcomes	Improved empathy	Verbal expression of empathy, such as saying “I’m sorry”	M12
Expected outcomes	Improved empathy	Adjustment of tone of voice according to the social situation	M18
Expected outcomes	Improved Theory of Mind	Increased use of mental-state terms such as “I think” and “I know”	M4
Expected outcomes	Improved Theory of Mind	Understanding humor and laughing appropriately	M6, M19
Expected outcomes	Improved Theory of Mind	Correct responses to Theory of Mind questions in everyday situations	M7
Expected outcomes	Reduced stereotyped behavior	Reduction in the frequency of stereotyped behaviors, for example from 10 to 3 occurrences	M1, M4, M11
Expected outcomes	Reduced stereotyped behavior	Reduction of stereotyped behavior in novel or unfamiliar situations	M11
Expected outcomes	Reduced stereotyped behavior	Reduction in verbal stereotypies and repetitive utterances	M14

As presented in Table 4, the strategies derived from the expert interviews formed an integrated intervention framework extending from basic socio-cognitive training to environmental generalization. The educational content was developmentally sequenced, beginning with comparatively concrete competencies such as recognizing basic emotions, establishing joint attention, and understanding differences in desires and preferences, before progressing toward first-order false beliefs, behavioral prediction, second-order false beliefs, empathy, humor, and irony. First-order false-belief training was supported by a particularly broad range of interviewees, indicating its central position within the proposed Theory of Mind curriculum. Experts emphasized that these concepts should not be taught exclusively through verbal explanation; instead, instruction should involve sequential visual stories, role-play, dolls and masks, real-life video modeling, manipulation of concrete objects, interactive group games, photographs, mirrors, and puppet theater. The structural characteristics of the package were equally important. A predictable routine was recommended to reduce uncertainty, while the sensory environment was to be kept calm and manageable. Real photographs and videos were preferred where possible to facilitate correspondence with everyday experience, and activities were to be

individualized according to the child’s interests and level of functioning. Repeated presentation of the same concept using multiple examples was considered necessary for consolidation without creating excessive rigidity. Immediate feedback, visual reinforcement, and tactile materials were incorporated to sustain attention and motivation. Importantly, generalization was treated as a core intervention strategy rather than an outcome expected to emerge automatically. Parents were therefore expected to participate in training, recreate relevant situations at home, and communicate with therapists, while teachers and classmates were to be involved where appropriate so that skills could be practiced across home, school, clinical, and community settings. The expected outcomes reflected this broad intervention logic. Experts anticipated improvements in social initiation, eye contact, conversational reciprocity, spontaneous prosocial behavior, group participation, empathy, appropriate emotional responding, and the use of mental-state language. Improvements in Theory of Mind were expected to become visible in the child’s ability to understand humor, infer beliefs and intentions, and respond accurately to mental-state situations encountered in daily life. In addition, a reduction in both motor and verbal stereotyped behaviors was expected, particularly as

increased social understanding and greater predictability of the surrounding environment reduced uncertainty and facilitated more adaptive behavioral responses.

Overall, selective integration of the qualitative categories produced a coherent model in which Theory of Mind difficulties were conceptualized as an important cognitive-social foundation of impaired interpersonal functioning in children with autism. Deficits in understanding nonliteral language, emotions, intentions, perspectives, deception, beliefs, and pragmatic communication contributed to the central problems of weak social skills and stereotyped behavior; however, the expression of these difficulties and responsiveness to intervention were conditioned by developmental characteristics of the child and by family and environmental circumstances. On this basis, the final educational package was designed as a 40-session intervention progressing from concrete to abstract Theory of Mind competencies. The intervention begins with emotional foundations and joint attention, proceeds through desires, preferences, and false-belief understanding, and subsequently addresses increasingly complex skills involving behavioral prediction, second-order beliefs, empathy, humor, and nonliteral meanings. The findings further demonstrated that cultural adaptation was not merely a superficial modification of the intervention materials. Rather, the use of Iranian names, family situations, customs, recognizable daily experiences, and culturally familiar social scenarios was incorporated as a structural principle intended to improve ecological validity and facilitate transfer of the acquired skills to the child's actual social environment. Consequently, the final model combined cognitive-developmental sequencing, visual and experiential teaching methods, individualized implementation, family involvement, school coordination, and culturally appropriate content within a single educational framework designed for children with autism spectrum disorder.

4. Discussion

The present study was conducted to develop a culturally adapted skills-training educational package for children with autism spectrum disorder based on Theory of Mind components and Iranian cultural characteristics. The qualitative findings showed that Theory of Mind deficits were reflected in a broad range of everyday difficulties involving language and communication, emotional understanding, empathy, interpretation of intentions, social reciprocity, imaginative play, turn-taking, interpersonal

distance, and anticipation of other people's reactions. The grounded-theory analysis further indicated that deficits in understanding nonliteral language, deception, other people's perspectives, intentions, and pragmatic aspects of communication functioned as major causal conditions underlying the central phenomenon of impaired social skills and stereotyped behaviors. At the same time, children's cognitive and behavioral characteristics, parental cooperation, family support, school coordination, sensory conditions, and the degree of personalization of educational content were identified as important contextual and intervening factors. On this basis, the final educational model emphasized a gradual progression from relatively concrete socio-cognitive skills, including recognition of basic emotions, joint attention, and understanding of desires, toward more complex abilities such as first- and second-order false beliefs, prediction of behavior, empathy, humor, irony, and nonliteral language. The results therefore support a view of Theory of Mind as a central organizing construct through which multiple dimensions of social functioning in autism can be understood and addressed.

One of the most important findings was that the social difficulties identified by experts were not limited to conventional measures of Theory of Mind, such as performance on false-belief tasks, but were evident in functional, real-life situations. Children were described as interpreting language literally, misunderstanding humor and sarcasm, failing to recognize when another person was tired or distressed, responding inappropriately to playful intentions, and having difficulty adjusting their behavior to the expectations of an interaction. This pattern is consistent with studies indicating that Theory of Mind difficulties in autism involve broader challenges in representing and interpreting mental states and are not restricted to isolated experimental tasks. Comparative evidence has shown that children with autism perform more poorly on Theory of Mind measures than typically developing children and children with some other developmental conditions, indicating that difficulties in mental-state understanding constitute a significant component of autistic social cognition ([Pourhossein Mojarshin, 2023](#); [Schwartz Offek & Segal, 2022](#)). The present findings extend this interpretation by demonstrating that failures of perspective-taking and mental-state inference may manifest in concrete behaviors such as monologue, inappropriate proximity, poor turn-taking, failure to understand deception, and socially unexpected responses.

The prominence of language-related problems in the findings is also theoretically meaningful. Experts repeatedly referred to literal interpretation, inability to understand idioms and irony, difficulty identifying hidden intentions, and omission of contextual information during conversation. These results are supported by evidence demonstrating a close relationship between language and Theory of Mind development. Linguistic structures, particularly those allowing individuals to represent embedded propositions and distinguish between reality and another person's belief, appear to contribute importantly to mental-state reasoning (Kaltefleiter et al., 2021). Verbal mediation has also been shown to facilitate Theory of Mind performance among individuals with autism, suggesting that language can act as an internal representational tool through which social situations are interpreted (Eigsti & Irvine, 2021). Furthermore, intervention research has demonstrated that syntax training can improve Theory of Mind abilities in children with ASD, supporting the assumption that cognitive and linguistic components of social understanding are interdependent (Durrleman et al., 2023). The present findings therefore justify the inclusion of language-sensitive activities, storytelling, verbal explanation of mental states, and gradual instruction in nonliteral communication within the educational package.

Another central finding concerned the importance of false-belief understanding, particularly first-order and second-order beliefs. First-order false-belief training was among the most strongly supported educational components in the expert interviews, while second-order false-belief understanding was classified as both an advanced training target and a source of instructional difficulty because of its abstract nature. This is consistent with evidence indicating that second-order mental-state reasoning is especially demanding for individuals with autism and depends partly on complex linguistic and recursive representational abilities (Polyanskaya et al., 2021). Understanding that one person can hold a belief about another person's belief requires the simultaneous representation of multiple perspectives, and this places considerable demands on cognitive flexibility, working memory, and language. The present study therefore supports a developmental sequence in which concrete emotional and perceptual understanding precedes more complex belief reasoning. Such sequencing is also compatible with evidence linking executive functioning and Theory of Mind in children with ASD (Toker & Acarlar, 2025). These relationships suggest that advanced ToM instruction should be introduced only after foundational

cognitive and social skills have been sufficiently consolidated.

The findings also showed that Theory of Mind difficulties were related to problems in empathy and emotional responsiveness. Experts described children who did not recognize distress, showed formulaic rather than contextually appropriate responses, or responded incorrectly to another person's emotional behavior because they failed to infer its meaning. These findings correspond with the broader conceptualization of ASD as involving persistent deficits in social-emotional reciprocity and social communication (American Psychiatric, 2013). They also support the inclusion of emotion recognition, affective empathy, and cognitive empathy as distinct but interconnected components of intervention. A child may be able to identify a facial expression without understanding why another person feels that way, and may understand the cause of an emotion without knowing how to respond appropriately. Accordingly, the package developed in this study integrates both recognition and response-oriented training, beginning with basic emotions and progressing toward more complex empathic behavior. This approach is supported by social-skills intervention research demonstrating that structured training can improve reciprocal and interpersonal functioning among individuals with level 1 autism (Zocante et al., 2025).

A further important result was the identification of stereotyped and repetitive behaviors as part of the central phenomenon linked to social-cognitive limitations. Experts reported repetitive motor behavior, verbal stereotypies, and increased rigidity, especially in contexts characterized by uncertainty or difficulty understanding other people. This finding is consistent with research demonstrating significant relationships among emotion regulation, social communication, and repetitive behaviors in autism (Martínez-González et al., 2022). From this perspective, stereotyped behavior may serve partly as a regulatory response when the social environment is unpredictable, emotionally demanding, or difficult to interpret. Improving Theory of Mind may therefore have indirect behavioral effects by increasing the comprehensibility and predictability of social events. The package developed in this study was designed accordingly: instead of targeting repetitive behaviors solely through direct behavioral suppression, it attempts to improve the child's understanding of social situations, intentions, emotions, and expectations. This interpretation is also compatible with the broader view

that interventions should promote adaptive functioning rather than focus exclusively on symptom reduction.

The role of contextual conditions was another major contribution of the present findings. Experts identified mental age, receptive and expressive language ability, joint attention, imitation, symbolic play, social motivation, emotional stability, and flexibility as important prerequisites or modifiers of intervention response. These findings indicate that a single standardized package cannot be delivered identically to all children with autism. ASD is characterized by substantial heterogeneity in developmental level, communication ability, and functional needs, and intervention must therefore be individualized (American Psychiatric, 2013). This principle is also supported by research emphasizing the importance of adaptive and daily living skills in autism and the need to match learning environments to the child's developmental profile (Li et al., 2025). The present study extends these observations by specifying concrete characteristics that may influence readiness for Theory of Mind training and by integrating personalization into the structure of the educational package.

Parental participation and school coordination also emerged as central facilitators of successful implementation. Experts emphasized that learned skills should be practiced in the home, school, clinic, and community and that parents and teachers should receive guidance regarding the child's current learning objectives. This finding is especially important because generalization is a persistent challenge in autism intervention. Improvement demonstrated in a structured treatment setting does not necessarily transfer automatically to everyday life. Therefore, the intervention model developed in this study includes home-based practice, school involvement, communication between caregivers and therapists, and repeated application of the same underlying skill across different contexts. This orientation is consistent with research showing that practical and daily-living interventions are most useful when they are connected to realistic environments and meaningful activities (Li et al., 2025). It is also compatible with Iranian research emphasizing life-skills development and social-interaction improvement among children with autism (Jouy, 2025; Rathi et al., 2021).

The instructional strategies identified by the experts were similarly consistent with contemporary intervention approaches. Sequential picture stories, role-play, real-life video modeling, object-based tasks, group games, mirrors, photographs, and puppet-based activities were all recommended. These methods reduce the abstractness of

Theory of Mind concepts and provide the child with concrete representations of otherwise invisible mental states. The effectiveness of interactive and structured approaches is supported by evidence showing that child-centered play therapy can improve Theory of Mind in children with ASD (Salehi Kamroudi et al., 2022). Likewise, technology-assisted interventions indicate that predictable and engaging interactive environments can facilitate perspective-taking, joint attention, and intention recognition (Ghiglinio et al., 2025). The value of structured social-skills programs also supports the present study's emphasis on repeated, guided, and progressively challenging social practice (Zoccante et al., 2025). Accordingly, the educational package integrates multiple instructional modalities rather than relying on a single method.

Cultural adaptation constituted another central finding and represents an important distinction between the present package and translated or imported intervention materials. The experts emphasized that examples, names, family situations, interpersonal scenarios, stories, and visual content should correspond to Iranian cultural experience. This is particularly relevant because social cognition is expressed within culturally organized systems of communication, politeness, family relationships, emotional expression, humor, and interpersonal expectations. A child may learn a skill more effectively when the training context resembles situations encountered in daily life. The need for culturally meaningful intervention is further underscored by Iranian studies showing the applicability of social, resilience, life-skills, and Theory of Mind interventions within the local context (Jouy, 2025; Pourhossein Mojarshin, 2023; Rathi et al., 2021; Salehi Kamroudi et al., 2022). The current study therefore moves beyond simple translation by embedding culturally familiar interaction patterns into the instructional framework itself.

5. Conclusion

Overall, the findings support the development of a multidimensional and developmentally sequenced Theory of Mind-based intervention for children with ASD. The package combines emotion recognition, joint attention, understanding of desires, false-belief reasoning, prediction of behavior, empathy, humor, and nonliteral language with visually supported, experiential, and play-based teaching methods. It also incorporates environmental predictability, individualization, parental involvement, school coordination, and practice across multiple settings. These

characteristics are consistent with the broader evidence that Theory of Mind can be improved through structured intervention and that social-cognitive abilities interact with language, executive functioning, social communication, emotional regulation, and adaptive functioning (Durrleman et al., 2023; Eigsti & Irvine, 2021; Ghiglino et al., 2025; Toker & Acarlar, 2025). They are also consistent with international recognition of the importance of effective developmental and supportive services for children with autism (Centers for Disease & Prevention, 2023; World Health, 2023). Taken together, the results suggest that culturally adapted Theory of Mind training may provide a theoretically coherent and practically relevant framework for strengthening social understanding and functional interaction among Iranian children with autism.

The present study has several limitations that should be considered when interpreting its findings. First, the study was primarily qualitative and developmental in nature, and the proposed package was constructed on the basis of expert interviews, document analysis, and theoretical integration rather than being evaluated through a controlled intervention trial. Consequently, conclusions concerning actual treatment effectiveness, magnitude of change, maintenance of outcomes, or causal effects cannot yet be established. Second, although multidisciplinary specialists were included, the expert sample was relatively limited and may not represent the full range of clinical, educational, rehabilitation, and cultural perspectives across different regions of Iran. Third, the findings largely reflect professional judgments rather than direct accounts from children with autism, parents, or classroom teachers. The inclusion of these groups could have generated additional insights regarding acceptability, feasibility, culturally specific barriers, and everyday manifestations of Theory of Mind difficulties. In addition, individual differences in autism severity, language ability, intellectual functioning, sensory profile, and co-occurring conditions were not empirically compared in the present phase. Finally, the manuscript contains some inconsistency regarding the reported number of participating experts, which should be resolved in subsequent reporting and documentation.

Future research should proceed to systematic empirical evaluation of the developed package. Randomized controlled or well-designed quasi-experimental studies are needed to compare the intervention with treatment-as-usual, alternative social-skills programs, or other Theory of Mind-based interventions. Researchers should examine pretest, posttest, and follow-up outcomes in Theory of Mind, social

communication, empathy, adaptive functioning, stereotyped behavior, and generalization across natural settings. Longitudinal follow-up would be particularly valuable for determining whether acquired skills are maintained and whether children continue to use them spontaneously outside therapy. Future studies should also examine potential moderators of response, including age, verbal ability, autism severity, executive functioning, social motivation, parental involvement, and sensory characteristics. Multisite studies across different Iranian provinces could clarify the extent to which cultural adaptation is effective across diverse linguistic and social contexts. Future investigations should additionally incorporate parent, teacher, and child perspectives and should assess treatment fidelity, acceptability, adherence, feasibility, and cost. Component analyses may further identify which elements of the 40-session package contribute most strongly to outcomes and whether a shorter or more individualized version can achieve comparable effects.

From a practical perspective, the educational package should be implemented flexibly rather than as a rigid sequence that must progress at an identical pace for every child. Clinicians and educators should assess the child's receptive and expressive language, attention, symbolic play, joint attention, social motivation, sensory needs, and tolerance for change before determining the appropriate starting point. Concrete and visual materials should be emphasized when introducing new concepts, while abstract tasks should be delayed until prerequisite skills are sufficiently established. Parents should be actively involved in training and should receive simple, specific activities for practicing the same skills in naturally occurring family situations. Teachers should also be informed about intervention targets so that opportunities for turn-taking, perspective-taking, emotional recognition, and peer interaction can be deliberately created in the classroom and playground. Materials should remain culturally familiar and should use recognizable Iranian names, family situations, routines, and social scenarios. Progress should be monitored behaviorally and functionally, with emphasis not only on correct responses during training sessions but also on whether the child spontaneously applies the skills in real-life interactions.

Authors' Contributions

Authors equally contributed to this article.

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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Ethics Considerations

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

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