

The Role of Spontaneous Play with Mother Participation in Reducing Autism Spectrum Disorder Severity: A Case Study of Two Children (a Boy and a Girl, Aged 3 Years) within the Framework of Psycho-speech therapy Care

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Receipt date : 20/07/2024 ; Acceptance Date: 17/08/2024

Abstract: This study aims to identify the role of spontaneous play with mother participation in reducing the severity of autism spectrum disorder symptoms in two cases (a 3-year-old boy and a girl) within a psycho-speech therapy care setting at a private clinic. The intervention program includes a series of 20 sessions of spontaneous play, where specialists use imitation-based strategies to improve play situations and spontaneous interaction with the child. Furthermore, counseling sessions are offered to educate the mother about the benefits of spontaneous play, comprehending its challenges, and how to approach and engage to enrich the experience for the autistic child. Results demonstrated significant differences in the severity of autism spectrum symptoms in both cases, as measured by the Childhood Autism Rating Scale (CARS-2-ST), before and after the application of the spontaneous play program with mother participation.

Keywords: Severity of Autism Spectrum Symptoms; Spontaneous play; Imitation strategies; Mother participation; Counseling.

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1. Introduction

Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder that impacts children before the age of three. It is characterized by persistent communication and social interaction deficits, repetitive behavior patterns, and limited interests. These features manifest in play activities through isolation, lack of attention, and repetitive movements, which are not typically engaging for parents to participate in, leading to missed opportunities for spontaneous communication. Therefore, research focuses on play as a suitable intervention for children with autism due to its developmental benefits in building social relationships and communication. Most therapeutic programs, such as ABA, TEACCH, and DENVER, utilize play as a natural method to stimulate interaction, using strategies like imitation and verbal and non-verbal activation to encourage communication. This study examines the role of spontaneous play with maternal participation in reducing the severity of autism spectrum disorder symptoms in two cases (a boy and a girl aged three) through the intervention employing imitation strategies to improve spontaneous play and spontaneous communication.

2. Basic Concepts and Operational Definitions of the Study

2.1 Autism Spectrum Disorder (ASD):

Autism Spectrum Disorder refers to a set of neurodevelopmental disorders characterized by dyadic traits; deficits in communication and social relationships, along with repetitive behaviors and limited interests, according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5). (HAS, February 2018, p. 7)

2.2 Severity of Autism Spectrum Disorder Symptoms:

The severity of ASD symptoms is determined by the level of behavioral disturbances based on medical diagnosis through information and observations from specialists and parents regarding various levels of growth and behavior in the individual. It is measured utilizing scientific and standardized scales, including the Autism Diagnostic Interview-Revised (ADI-R), the Autism Diagnostic Observation Schedule (ADOS), and the Childhood Autism Rating Scale (CARS) (HAS, February 2018, p. 31). In this study, the second edition of the Childhood Autism Rating Scale (CARS-2-ST) was employed to measure the severity of ASD symptoms before and after applying the spontaneous play program with maternal participation.

2.3 Spontaneous Play:

Spontaneous play is a free activity not subjected to the conditions and rules of another party. It encompasses various behaviors and interests of children with ASD in spontaneous situations with self-chosen toys(Perrin 2001)defines it as a spontaneous and fundamental activity for children, representing their first interaction with the physical and social environment. Early deficiencies in this interaction serve as the initial signs of a disorder in the child (Perrin, 2011, p. 14).

2.4 Strategies to Improve Spontaneous Play:

These strategies consist of movements and aids recommended by researchers for adults (specialists and parents) to capture the child's interest and facilitate interaction during play.(Michelon, 2011, p. 39).To promote spontaneous play, the specialist employs imitation as a fundamental strategy to demonstrate interest and acceptance of the autistic child and engage positively with their interests. According to(Nadel, 2019), imitation serves as both a learning strategy through observation and a means to facilitate social interactions involving people, objects, and events. The individual perceives imitation as a form of attention and appreciation, which encourages him to interact with the person imitating him(Bendiouis, 2015, p. 27).

3. Study Importance

- **Theoretical Perspective:** Recognizing the developmental and therapeutic benefits of spontaneous play and the significance of counseling mothers to understand its challenges and features in children with ASD and informing them about improvement strategies.
- **Applied Perspective:** Using spontaneous play as an effective and practical therapeutic approach accessible to speech and psychological specialists, educators, and parents, seeking to reduce symptom severity and encourage spontaneous communication and interaction.

4. Study Objectives

- Identifying the role of spontaneous play in reducing the severity of autism spectrum disorder.
- Introducing a natural and practical method based on imitation and interest, helping adults participate and interact spontaneously in play with children with autism.
- Giving priority to spontaneous play in the care of children with autism spectrum disorder as a natural and practical therapeutic tool accessible to specialists and parents.

5. Problem statement

Play is regarded as a natural activity that emerges spontaneously in typically developing children, aiding in the development of communication skills, interaction with others, stimulation of imitation and imagination, and acquisition of social behaviors and experiences. Conversely, children with Autism Spectrum Disorder (ASD) often struggle to exhibit signs of interaction and interest, frequently engaging in solitary play with stereotypical behaviors such as rocking, spinning, or repeating movements or words, which can signal ASD to parents and specialists (Huss, 2017, p. 15).

In such cases, adults (parents and caregivers) find it challenging to communicate and participate in play with the child, an essential daily activity, prompting them to question: **How do we play with them? How should we respond to their repetitive behaviors and rituals during play?**

Many researchers, such as (Wallon 1970), have addressed this issue, emphasizing the need for parents to learn how to play with their children and understand their behavioral and expressive challenges. This understanding serves as a bridge for specialists and parents to enhance interaction and communication. Similarly, (Winnicott 1971) underscored the importance of creating a positive environment where adults do not hinder the child's play process. He viewed play as a crucial creative experience in time and space, a spontaneous activity that does not imply submission to adult commands (Winnicott, 1971, p. 3).

Several studies on the play, such as those by (Shuler, Prizant, and Wetherby 1997), (Wolfberg 2003), and (Kasari 2002), agree on its significance in developing social behavior and communication in children with ASD. Most therapeutic programs and interventions, like Applied Behavior Analysis (ABA), TEACCH (Treatment and Education of Autistic and Communication Handicapped Children), the DENVER model for children under five, Relationship Development Intervention (RDI), and the Floor Time approach, employ play as a mediation tool between the child and specialist. These programs relied on the principle that emotional interaction stimulates cognitive and relational growth, making it a comprehensive method for specialists and parents.

To this end, the mentioned programs provide training sessions for parents to offer counseling and techniques to fulfill educational and therapeutic goals. For instance, the Early Start Denver Model (ESDM) encompasses monthly sessions to guide

parents for two years, sharing techniques to help autistic children reach school readiness.

Dawson and (Galpert 1990) directed parents to teach traditional play to their children over 15 days, significantly enhancing the duration of eye contact with adults. (Mantoulan et al. 2006) focused on functional play (utilizing toys according to their function) acquisition and generalization in their study, emphasizing the active participation of parents and the child's developmental level. They employed strategies like imitation, joint attention, verbal description, and natural reinforcement to develop the child's play behaviors (Bghdadli, 2007, p. 53).

Given these theoretical and field insights, we raise the following question:

- Are there differences in the severity of ASD symptoms in cases before and after applying the spontaneous play program with mother participation?

6. Research Hypothesis

- There are differences in the severity of ASD symptoms in cases before and after applying the spontaneous play program with mother participation.

7. Research Methodology

We adopted the descriptive method and the case study approach to describe and interpret the effect of spontaneous play with maternal participation on the development of communication and interaction behaviors in children with ASD. This scientific method is employed when the researcher seeks to comprehend and explain a particular phenomenon through data sources to systematically investigate the case or research topic (Abou Allam, 2006, p. 295).

8. Case Selection Criteria

Two cases, a boy and a girl, were chosen based on the following criteria:

- Choosing children with clear disturbances in the two main diagnostic criteria of DSM-5, namely: communication and social interaction disorder, and behavior and interest disorder. These children were diagnosed by a child psychiatry specialist.
- Lack of accompanying disabilities such as motor and intellectual disabilities, deafness, and syndromes.
- Selecting the early age group between 3 and 4 years because this is the stage where spontaneous play is most active.

- Ensuring that children are not following other educational or therapeutic programs to avoid their effect on the development of the cases and the overlap of results, except for attending kindergarten.

9. Tools Used

To fulfill the research objectives, the following scientific tools were employed:

9.1 Interview

In this study, we used semi-structured interviews, which are flexible, with the parents to collect information about the child, address their questions, and offer clarifications regarding the child's condition. The interview was conducted for two main purposes:

- **Orthophonic Assessment:** Carried out with the parents to gather data about the child's history, the appearance of disorders, and the child's development in different fields, encompassing motor, linguistic, and emotional development, utilizing a case study form for autistic children from the Autism Center in Saudi Arabia (fmz7000@GMAIL.COM).
- **Counseling:** The specialist schedules bi-monthly counseling sessions in the clinic with the mother, without the presence of the child, to offer the following services:
 - Helping the mother comprehend the neurological and behavioral facts specific to ASD by interpreting the child's difficulties and play patterns to understand his emotions and accept his interests.
 - Correcting the mother's negative attitudes during play with the child that causes resistance and conflict, such as violent interventions, interrupting the child's play, or imposing interest in a specific toy.
 - Explaining the intervention method and clarify imitation and attention strategies. This will place the mother in a positive position concerning the child's play patterns and facilitate closeness and participation.

9.2 Clinical Observation

Direct observation was employed in the clinic in natural situations inspired by orthophonic therapeutic activities for children with autism, such as playing, imitating movements, words, and sounds, pointing to body parts, visual and auditory responses, and following simple commands during play. The aim was to collect

information about the behavioral features of the children in the research sample and to identify the development of each case under the same conditions.

9.3 Childhood Autism Rating Scale (CARS-2-ST)

The CARS-2-ST scale was utilized before and after applying the spontaneous play program with maternal participation to evaluate the severity of ASD symptoms in the two cases. This scale assesses the child's behaviors across 15 domains: relationship with others, imitation, emotional response, body use, use of objects, adaptation, visual response, auditory response, response to smell, taste, and touch, fears and nervousness, verbal communication, non-verbal communication, activity level, level of intellectual response, and general impression of the condition.

Table 1: Classification of Autism Spectrum Disorder Severity According to the (CARS-2-ST) Scale

Classification of the severity of autism spectrum symptoms according to the standard score	
$71 \geq$	The extreme degree of autism spectrum symptoms
60-70	A very high degree of autism spectrum symptoms
55-59	High degree of autism spectrum symptoms
45-54	Moderate degree of autism spectrum symptoms
40-44	Low degree of autism spectrum symptoms
25-39	Very low degree of autism spectrum symptoms
$24 \leq$	The lowest degree of autism spectrum symptoms

9.4 Spontaneous Play Program with Maternal Participation

The spontaneous play program with maternal participation includes 20 sessions, each lasting 45 minutes, carried out twice a week. The mother is present to observe and participate. The researcher has employed this program for over 10 years in the care of children with ASD at the Clinic of Psychology and Orthophonics. It has fulfilled satisfactory results in behavior and interaction, encouraging its organization and use as a natural therapeutic tool to stimulate communication and alleviate autism symptoms in the early age group (3 to 4 years).

The specialist uses an interactive approach with the child, relied on imitating the child's play behaviors in an atmosphere of spontaneous exchange and a sense of interest and acceptance. Natural reinforcements such as verbal encouragement and language activation around what the child is doing in play help the child acquire

semantic relationships between objects, actions, and words. The following table demonstrates practical examples to illustrate different play situations with the child.

Table 2: Strategies for Improving Spontaneous Play in Children with Autism through Imitation

Imitation Strategies	Method and Techniques	Procedural Example	Targeted Social and Communicative Behaviors
Exact imitation	The adult completely imitates the child's behavior exactly as it appears during play.	The child spins a cylinder and the adult spins another cylinder in front of them in turns.	Sharing attention, imitation, eye contact, and emotional exchange
Deviant imitation	Adult imitation of child behavior with a slight difference.	The child arranges the animals, the adult arranges the blocks.	Attention, movement enrichment, and object use
Remote imitation	Respecting distance when imitating the child, avoiding touching during play, and sharing toys.	The child does not tolerate proximity and physical contact, the adult leaves a distance and uses another toy.	Tolerance for others, interaction, adaptation, communication, and emotional exchange.
Language-activated imitation	Verbal and nonverbal activation of child behavior using words, gestures, and facial expressions.	The child plays with the bear and the adult adds words, for example, "the bear is walking," "the bear is eating honey."	Verbal and nonverbal communication, auditory and visual responses, emotional responsiveness, and speech.
Imitation by exploiting the child's interests	An adult imitating a child's repetitive behaviors and interests to share and appreciate the child's knowledge in play.	The child enjoys building with Lego, and the adult creates works of art with them, such as a house and a robot.	Expanding attention, changing, and transforming stereotypical behavior into a sensory and interactive experience.

Imitation using play-based mediation	Providing toys in pairs for imitation and direct interaction with the child.	An adult uses a doll similar to the child's doll to model social behavior: feeding it, putting it to sleep.	Attention, interaction, spontaneous imitation, and diversification in the use and deployment of the same toys.
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9.5. Tools and Toys Employed

- **Sensory-Motor Toys:** These satisfy the autistic child's desire for sensory play and the use of senses, responding to sensory stimuli including a slide, worm tunnel, colored spinning wheels, windmill, and musical toys.
- **Functional Toys:** These stimulate the representation of functional features and encourage the child to speak, imitate, and express while utilizing them, such as household and kitchen tools, bathroom items, dolls, teddy bears, and figures representing family members.
- **Construction and Assembly Toys:** Easy-to-assemble Lego-type toys that stimulate the use of the body and objects, creativity, and variation to reduce stereotypical behaviors and rituals, such as building houses, towers, vehicles, and characters.

10. Study Delimitations

The study was conducted in 2023 at the Clinic of Psychology and Orthophonics, owned by the researcher, as part of psycho-orthopedic care for children with Autism Spectrum Disorder.

11. Presentation and Analysis of Study Results

11.1 Presentation and Analysis of Case 1 Results

Case Introduction:

Riyad, a 3-year-old boy, attends kindergarten. He is the son of two doctors and has a younger brother. The data demonstrate normal conditions during pregnancy and birth. Signs of autism spectrum disorder emerged at 18 months, encompassing severe impairment in visual communication and auditory response, the appearance of stereotypical behaviors such as hand movements, language development difficulties (limited to a few words like "papa," "mama," "give me"), and challenges in acquiring self-care skills like cleanliness and eating. Medical examinations (PEA) (EEG) were normal, but the severity of ASD symptoms was extreme according to the Childhood Autism Rating Scale (CARS-2-ST).

Case 1 Results in the Spontaneous Play Program with Mother Participation:

The following table summarizes the vital behavioral observations of the case during the spontaneous play program with mother participation.

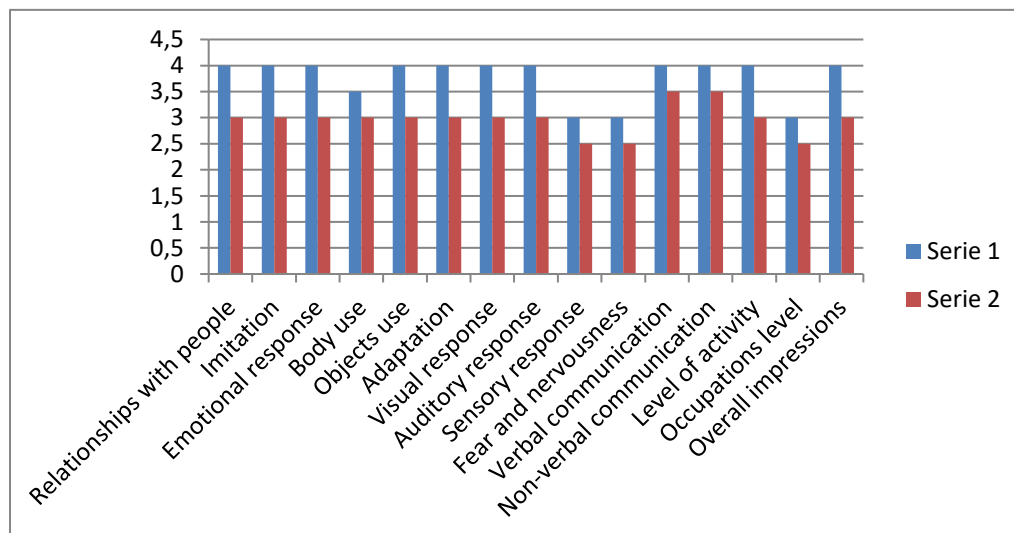
Table 3: Illustrates Behavioral Observations for Case Number 1 during the Spontaneous Play Program with Parental Involvement

Case N ^o 1	Objectives	Behavioral observations
Session N^o1 and 2 (introductory) utilizing sensory-motor games.	Introductory to overcoming fears and adapting, exploring the play space and its tools, demonstrating interest and initiative in spontaneous play, and forming initial interactions with the specialist through sensory and emotional responses.	Lack of interest in games and avoidance of the specialist, self-engagement in stereotypical movements, rotating objects and arranging toys one on top of another then destroying them, repeating the same action, absence of visual and auditory responsiveness.
From session N^o3 to session N^o8 (6 sessions) employing sensory-motor games	Activating the body and employing the senses, sharing sensory experiences to reduce stereotypical behavior, and encouraging the child to engage, imitate, and communicate verbally and non-verbally.	Slight improvement in adaptation and attention to the play space and specialist, while continuing patterned sensory play such as rotating objects, hand flapping, and staring at toys, construction, and demolition.
From session N^o9 to session N^o14 (6 sessions) utilizing functional games	Language activation by utilizing the functional characteristics of games to give meaning and sequence to movements and actions, encouraging imitation, speech, and naming, and associating words and signs with objects, actions, and qualities.	Enhancement in activity and movement, employing senses to manipulate toys, with enhanced auditory and visual responsiveness upon calling, smiling, visual communication, and verbal response in repeating sounds and phrases

From session N°15 to session N°20 (6 sessions) using construction and assembly games.	Free use of construction and assembly games to encourage imagination, creativity, adaptability, attention, imitation, and verbal and emotional expression.	Improved attention, adaptability, visual communication, imitation of movements and sounds, diversification of play, spontaneous verbalization of words during play, and improvement in emotional exchange and response.
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- Comparison of Case N°1's Pre- and Post-Measurement Results Using (CARS-2-ST)

Figure 1: Case 1 Results in Pre- (Blue) and Post- (Red) Assessment Using CARS-2-ST



In the pre-assessment, the child scored (4) in most items, demonstrating severe deficits in social behaviors and communication, raising the standard score to $71 \leq$, showing extreme severity of Autism Spectrum Disorder (ASD) symptoms. In the post-assessment, the child indicated moderate deficits in most social and communicative behaviors, both verbal and non-verbal, especially in sensory, visual, and auditory responses. The overall standard score decreased from $71 \leq$ to 58, demonstrating a reduced severity of ASD symptoms from extreme to high.

11.2 Presentation and Analysis of Case 2 Results

Case Introduction

Maya, a 3-year-old girl, attends kindergarten. She is the daughter of two employees and has an older sister. The data demonstrate normal conditions during pregnancy,

birth, and motor development, but autism symptoms emerged before the age of two, encompassing avoidance, isolation, aversion to touch and change. Her linguistic development stalled at a few words and cartoon tunes without interruption. She lacks visual communication and social behavior and struggles with acquiring self-care skills. Medical examinations (PEA) (EEG) were normal, but the severity of ASD symptoms was extreme according to the Childhood Autism Rating Scale (CARS-2-ST).

Case 2 Results in the Spontaneous Play Program with Maternal Participation

The following table summarizes the key behavioral observations of the case during the spontaneous play program with maternal participation.

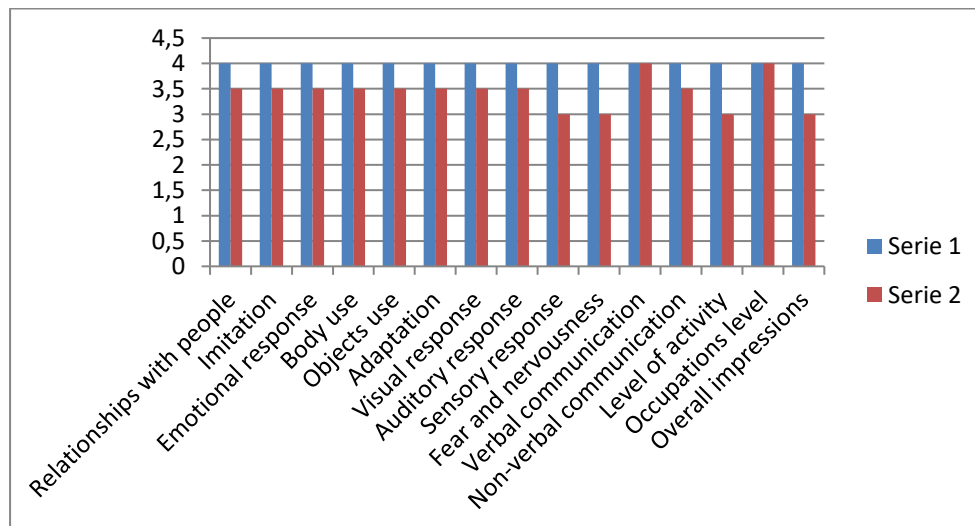
Table 4: Behavioral Observations for Case 2 During the Spontaneous Play Program with Mother's Participation

Case N° 2	Objectives	Behavioral observations
Session N°1 and 2 (introductory) employing sensory-motor games.	Introductory to overcoming fears, adaptation, exploring the play space and its tools, indicating interest and initiative in spontaneous play, and establishing initial interactions with the specialist through sensory and emotional responsiveness.	Limited interest in toys, playing alone under the table, avoiding the specialist, focusing on repetitive movements like spinning toys and filling/emptying containers, and lacking visual, auditory, and emotional responsiveness.
From session N°3 to session N°8 (6 sessions) utilizing sensory-motor games	Activating the body, utilizing the senses, and engaging in sensory experiences to reduce repetitive behavior, while encouraging the child to focus, imitate, and engage in verbal and non-verbal communication.	Slight improvement in paying attention to others and sensory-motor coordination in participating in rhythmic play movements, navigating play spaces, and showing interest in imitating the specialist.
From session N°9 to session N°14 (6 sessions) using functional games	Language activation through utilizing the functional characteristics of games to provide meaning and sequence to	Improved activity and use of senses in manipulating toys, enhanced tactile interaction and visual communication, identifying

	movements and actions, encouraging imitation, speech, and labeling, and placing words and signs on objects, actions, and attributes.	objects through sight and paying attention to facial and emotional expressions, and sitting beside the specialist.
From session N^o15 to session N^o20 (6 sessions) using construction and assembly games.	Free use of construction and assembly games to encourage imagination, creativity, adaptability, attention, imitation, and verbal and emotional expression.	Improved non-verbal communication in attention, sensory and emotional responsiveness, imitation of movements, responding to requests and offers, interacting with others, and uttering simple syllables and words during play.

- Comparison of Case 2 Results in Pre and Post-Measurement Using (CARS-2-ST).

Figure 2: Case 2 Results in Pre- (Blue) and Post- (Red) Assessment Using CARS-2-ST



In the pre-assessment, the child scored (4) in all domains, demonstrating severe deficits in verbal and non-verbal social and communicative behaviors, increasing the standard score to $71 \geq$, which is the maximum score for Autism Spectrum Disorder (ASD) symptoms. In the post-assessment, scores enhanced by half a point in social relationships, imitation, adaptation, emotional response, auditory and visual responses, and non-verbal communication. There was no change in the scores for

verbal communication, but the overall score decreased from $71 \leq$ to 67, thus reducing the severity of ASD symptoms from extreme to very high.

12. Discussion of Study Results

To verify the study hypothesis, which posits differences in the severity of Autism Spectrum Disorder symptoms before and after applying the spontaneous play program with mother participation, the Childhood Autism Rating Scale (CARS-2-ST) was employed to measure the severity of ASD symptoms in the pre- and post-assessments.

Table 5: Differences in Standard Scores and Severity of Autism Spectrum Disorder Symptoms in Pre- and Post-Assessment Utilizing CARS-2-ST

Scale CARS-2-ST	Pre-measurement		Post-measurement	
Cases	Standard score	Severity of symptoms spectrum Autism	Standard score	Severity of autism spectrum symptoms
Case N°1	$71 \geq$	Severe	58	High
Case N°2	$71 \geq$	Severe	67	Very high

From the table and considering the standard scores, we note the following:

- For Case 1: The value decreased from (≥ 71) in the Pre-measurement to (58) in the post-measurement, demonstrating an enhancement in the severity of autism spectrum disorder symptoms from extreme to high.
- For Case 2: The value decreased from (≥ 71) in the Pre-measurement to (67) in the post-measurement, showing an improvement in the severity of autism spectrum disorder symptoms from extreme to very high.

Thus, we can conclude that there are differences in the severity of autism spectrum disorder symptoms before and after the application of the spontaneous play program with the mother participation. The observed result, upon reviewing the table, supports the hypothesis.

13. Summary of Study Results

The study results indicate a positive impact of the spontaneous play program with mother participation in reducing the severity of disorders. Thus, the study hypothesis, which posits differences in the severity of Autism Spectrum Disorder

symptoms after applying the spontaneous play program with mother participation, is confirmed. This enhancement can be attributed to the intervention of specialists and mothers in the spontaneous play setting, which improves spontaneous interaction and social experiences, as emphasized in studies by (Nadel 2006), (Perrin 2011), and (Baghdadli 2011). This approach places autistic children in a positive position towards their behaviors and play patterns, promoting engagement, encouraging interaction with others, and improving the standard diagnostic process in diagnosing and classifying Autism Spectrum Disorder according to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5).

Concerning the first diagnostic criterion associated with communication and social interaction, the study results align with (Nasr 2001) study on the effectiveness of play therapy programs in developing linguistic communication among 10 autistic children employing parental and educational guidance, confirming differences in language communication within the sample. Similarly, the results which are consistent with (Machhour, 2016) study on the effectiveness of group play activities in improving social skills among autistic children, indicating improvements in non-verbal communication and emotional expression, such as smiling, expressive looks, acceptance of touch, and hugs.

Regarding the second diagnostic criterion related to behavior and attention, the study results are consistent with (Fadel, 2014) research on the effectiveness of training programs utilizing play to improve linguistic communication among 12 autistic children. Their ability to initiate interaction and communication enhanced, reflecting increased interest in observation, attention, and visual communication.

14. Conclusion

This study highlights the role of spontaneous play with mother participation in reducing the severity of Autism Spectrum Disorder symptoms in two cases (a 3-year-old boy and a girl). Involving the specialist and the mother in the child's play and sharing their styles and preferences in a fun and interactive setting improved communication dynamics with the child. These results are consistent with research and studies that emphasize the pivotal role of play in promoting communication and social behavior among autistic children, particularly with parental counseling from studies such as (MacMahon, 1992; Prud'Homme & Goupil, 2001; Rogé, 2003; Jodra, 2020; Oznoff et Cathcar, 1998; Al-Sayed Abdel Rahman & Khalifa, 2004). Their findings indicated improvements in children's abilities when supported and

guided by parents, thereby offering professionals and caregivers of children with Autism Spectrum Disorder with an avenue to employ spontaneous play as a natural therapeutic approach. This approach alleviates symptom severity and improves their capacity for effective social interaction.

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