Communication Skills in Children with Autism Spectrum Disorder from the Perspective of Their Educators

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Abstract: This study investigated the communicative skills of 50 children with Autism Spectrum Disorder (ASD), aged 6 to 10, attending the Psycho-Pedagogical Center for Children with Intellectual Disabilities in Mazagran, Mostaganem Province, Algeria. Using a descriptive research design and the Communication Skills Scale for Autistic Children (Abdelghani Amin, 2013), the research assessed caregivers' perceptions of the children's abilities and examined gender-based differences.

The results revealed that, overall, children with ASD demonstrated a moderate level of communicative skills. Notably, there was considerable variation in specific sub-skills among individuals. Nonverbal communication skills emerged as a relative strength, surpassing both verbal and social communication abilities. The analysis also identified statistically significant gender differences: females generally outperformed males in several areas of communication.

These findings emphasize the importance of designing targeted training programs that address the diverse needs of children with ASD, especially by focusing on both individual and gender-specific differences. Furthermore, the study highlights the crucial role of families and caregivers in intervention efforts, recommending their active involvement to maximize the effectiveness of skill development and support the children's successful social integration.

Keywords: communicative skills; verbal communication; non-verbal communication; social communication; Autism Spectrum Disorder.

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1- Introduction

Autism Spectrum Disorder (ASD) is a complex neurodevelopmental disorder that affects multiple aspects of development, particularly in the domains of communication and social behavior. One of its most prominent features is impairment in both verbal and non-verbal communication skills, as well as social interaction, with the severity and manifestation of these characteristics varying from one child to another (American Psychiatric Association, 2013). Communication skills are fundamental to a child's psychological and social development, enabling them to express their needs and emotions, build relationships with those around them, and develop their cognitive and psychological abilities. The ability to communicate effectively is considered an essential life skill, as difficulties in this area are associated with a range of negative outcomes, including poor academic achievement, behavioral problems, and reduced quality of life (Brignell et al., 2018, p. 01). Children with ASD often exhibit significant deficits in these skills, facing core challenges in both verbal and non-verbal communication deficits that are central diagnostic criteria for the disorder (Ibrahimagic et al., 2021, p. 250).

Studies indicate that children with Autism Spectrum Disorder experience marked delays in language development, comprehension, and speech production, in addition to difficulties in using gestures, facial expressions, and tone of voice to convey meaning (Kasari et al., 2013, p. 479). Many also face challenges in social communication, such as maintaining eye contact, understanding social context, and turn-taking in conversation. Recent research confirms that these difficulties extend beyond verbal communication to include non-verbal aspects, impacting the quality of social interaction and family life (Griffin et al., 2015, p. 20). Despite scientific advances in diagnosing autism and providing rehabilitation services, significant knowledge and practical gaps remain regarding the understanding of communicative skill levels in children with ASD. These deficits manifest in various forms, including difficulties in verbal communication (such as language delay, limited vocabulary, and echolalia) and non-verbal communication (such as poor eye contact, difficulty interpreting social cues, and limited use of gestures) (Ibrahimagic et al., 2021, p. 250).

Moreover, the communication patterns of children with autism may differ between the psycho-pedagogical center, home, or school, due to changes in social context, the variety of support strategies provided, and the degree of interaction with caregivers and peers (Krupa et al., 2018, p. 35). Studying the level of communication skills in this population is crucial not only for understanding the nature of their challenges but also for guiding specialists in developing effective intervention programs that foster communication skills, thereby improving quality of life and promoting social and educational integration.

Examining communication skills in children with Autism Spectrum Disorder is central to understanding the disorder and informing appropriate therapeutic and educational interventions. Recent international literature highlights the importance of early intervention, diverse strategies, and the integration of technology and family involvement in training programs. It also calls for further international research to explore the factors influencing the development of communication skills.

Assessing communication skills requires precise and comprehensive measurement tools that consider individual and cultural differences and provide both quantitative and qualitative data for tailored intervention planning. Investigating the communication abilities of children with autism at the psycho-pedagogical center thus serves as a critical entry point for understanding the challenges they face and developing effective, comprehensive intervention strategies.

Despite growing global attention to children with special needs, knowledge and practical gaps persist in understanding the communication skills of children with autism within the Arab context. This raises the central research question:

What is the level of communication skills (verbal, non-verbal, and social) among children with Autism Spectrum Disorder at the Psycho-Pedagogical Center for Children with Special Needs from the perspective of their caregivers?

1.1- Hypotheses:

-The level of communication skills (verbal, non-verbal, and social) among children with ASD is low.

-There are statistically significant differences in communication skills among children with ASD based on gender (male–female).

1.2. Study Objectives:

- assess the level of communicative skills (verbal, non-verbal, and social) among children with ASD from the perspective of their caregivers at the psycho-pedagogical Center.
- identify gender-based differences in communication skills among children with ASD at the Center.

1.3. Importance of the Study:

Investigating the level of communication skills in children with Autism Spectrum Disorder at the Psycho-Pedagogical Center is significant because it helps identify the manifestations of communicative deficits (verbal, non-verbal, and social), thereby aiding in diagnosis and the identification of each child's individual needs. The study's findings provide a database for specialists at the center to develop individualized therapeutic and training plans tailored to each child's strengths and weaknesses, enhancing their communicative abilities. Furthermore, the study contributes to evaluating and improving the effectiveness of current intervention programs based on scientific research. The literature emphasizes that understanding the dimensions of communication in children with Autism Spectrum Disorder within the local psychological context is a fundamental step toward building comprehensive and effective interventions, improving the quality of life for the child and their family, and supporting early diagnosis and rehabilitation efforts.

1.4. Study Concepts

1.4.1. Autism Spectrum Disorder (ASD):

Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder that affects brain development and typically appears during the early years of a child's life. It is characterized by difficulties in social interaction and communication (both verbal and non-verbal), as well as restricted and repetitive patterns of behavior and interests. The term "spectrum" reflects the wide variation in symptoms and severity among individuals with the condition (DSM-5).

It is marked by a set of symptoms, including:

Table (1) Symptoms of Autism Spectrum Disorder

Categories of Symptoms	Description
Difficulties in Social Interaction and Communication	Impaired eye contact, difficulty understanding social cues, delays or abnormalities in spoken language.
Restricted and Repetitive Behavioral Patterns	Repetitive movements, strict adherence to routines, intense interest in specific topics.
Additional Symptoms	Differences in sensory responsiveness, difficulties adapting to change, delays in developmental skills.

(Hodges et al., 2020, p.57)

1.4.2. Communication Skills in Children with ASD

Recent scientific literature indicates that the communicative skills of children diagnosed with Autism Spectrum Disorder (ASD) are distributed across three main dimensions, each representing a pivotal aspect of the child's ability to interact with their environment and understand the world around them.

Dimensions of Communicative Skills

Below is a selection of recent academic references addressing the three dimensions of communicative skills in children with ASD: verbal communication, nonverbal communication, and social communication.

• *Verbal Communication*

Research suggests that children with autism often experience delays in language acquisition, limited vocabulary, or the use of atypical language patterns such as echolalia (Maemonah et al., 2021, p.4). Some children possess very limited verbal abilities or may be entirely nonverbal, necessitating the use of alternative communication methods.

• *Nonverbal Communication*

Nonverbal communication encompasses body gestures, facial expressions, eye contact, tone of voice, and body movements (Krupa et al., 2018, p. 36). Studies have found that many autistic children encounter difficulties in interpreting or utilizing these cues, which can lead to misunderstandings during social interactions (Chiang et al., 2008; Logrieco et al., 2024).

• *Social Communication*

Social communication is manifested in initiating conversations, turn-taking, understanding implicit social rules, and the ability to interact with others in various contexts. Research has shown that deficits in these skills are associated with lower quality social relationships and challenges in integrating into group activities (Fuller et al., 2020, p.1685). Studies emphasize that these three dimensions are interrelated, and deficits in one area can impact the others, necessitating comprehensive interventions that address each dimension individually while focusing on the holistic development of the child's skills.

1.4.3. The Psycho-Pedagogical Center

The psycho-pedagogical center is an educational institution where individuals with disabilities receive care and instruction according to an educational plan supervised by a special education team. These centers were established by Decree No. 80-59, dated 21 Rabi' al-Thani 1400 AH (March 8, 1980) (Official Gazette, 1980). These institutions focus on developing the intellectual and physical abilities of children with disabilities through organized educational and therapeutic programs. They provide health, psychological, social, and educational services, as well as training in adaptive social behaviors to support their adjustment and integration into society (Qasimi & Amour, 2021, p. 725).

2- Method and Tools:

2.1. Study Methodology

This study adopted a descriptive-analytical approach aimed at objectively and systematically describing and analyzing the level of communication skills in children with Autism Spectrum Disorder, with a specific focus on gender-based differences.

2.2. Study Limitations

• **Subject Scope:** This study focused on assessing the level of communication skills in children with Autism Spectrum Disorder (ASD) from the perspective of their caregivers. The evaluation centered on three core dimensions of communication: verbal, non-verbal, and social interaction.

• **Population Scope**: The study was conducted on a sample of children with ASD aged between 6 and 10 years, enrolled at the Psycho-Pedagogical Center for Children with Disabilities in Mazagran, Mostaganem. Therefore, the findings may not be generalizable to children outside this age range or those enrolled in other types of institutions or care settings.

• **Geographical Scope**: The research was limited to one center located in Mazagran, Mostaganem Province, which may not reflect the realities or institutional conditions in other regions of Algeria.

• **Time Scope**: Data collection was carried out during April 2025. As a result, the observations may reflect specific conditions or developmental stages present during that particular time period, and may not account for variations over the academic year.

2.3. Participants

The study sample consisted of 50 children diagnosed with Autism Spectrum Disorder (ASD), aged between 6 and 10 years, who were enrolled at the Psycho-Pedagogical Center for Children with Disabilities in Mazagran, Mostaganem Province (Algeria) during April 2025. The selection was based on accessibility and the availability of complete caregiver reports.

The evaluation was carried out from the perspective of the children's caregivers (educators) working directly with them. The demographic distribution of the children was as follows:

• By gender: 28 males (56%) and 22 females (44%)

• By age group: 18 children aged 6–7 years (36%), 17 children aged 8–9 years (34%), and 15 children aged 10 years (30%)

2.4. Instrument

The following instrument was used to assess communication skills in children with Autism Spectrum Disorder:

• ***Communicative Skills Scale for Autistic Children (Abdelghani, 2013):***

This scale, developed by Abdelghani (2013), is designed to assess communicative abilities in children with autism from the perspective of caregivers and educators. It consists of 36 items covering three main dimensions:

• *Verbal Communication*: Assesses the child's use of spoken language, vocabulary, and sentence structure.

• *Non-Verbal Communication*: Evaluates non-verbal behaviors such as eye contact, facial expressions, gestures, and body posture.

• *Social Communication*: Measures the child's ability to initiate interaction, take conversational turns, and understand implicit social rules.

Each item is rated using a 3-point Likert scale: Always (3), Sometimes (2), Rarely (1) Higher total scores indicate a higher level of communication skills.

In the current study, the scale demonstrated satisfactory internal consistency:

Verbal Communication: $\alpha = 0.89$

Non-Verbal Communication: $\alpha = 0.80$

Social Communication: $\alpha = 0.86$

Overall Reliability: $\alpha = 0.87$

2.5. Procedure

Following official authorization from the administration of the Psycho-Pedagogical Center for Children with Disabilities in Mazagran (Mostaganem Province), the researcher initiated the data collection process. In coordination with the center's director and special education staff, appropriate times were arranged to administer the communication skills assessment.

Caregivers and educators working directly with children diagnosed with Autism Spectrum Disorder were selected to complete the scale. Prior to participation, they were fully informed about the purpose of the study and assured that their involvement was voluntary. They were also informed that all responses would remain anonymous and that the data would be used strictly for academic research purposes.

3. Results and Discussion:

3.1- Results:

Hypothesis 1: "The level of communication skills among the participants is low."

To test the validity of this hypothesis, a one-sample t-test was conducted to compare the sample's mean score on the Communication Skills Scale with the theoretical mean of the scale.

The theoretical mean was calculated based on a three-point Likert scale (1–2–3), with the midpoint (2) considered the theoretical value for each item. Since the total number of items in the scale is 36, then:

Table (2) One Sample t-test for Total Communication Skills

Variable	N	Mean	SD	Theoretical Mean	t	df	p	Significance
Total Communication Skills	50	73.20	10.55	72	0.80	49	0.42	Not Significant

The results indicate that the difference between the mean score of the sample (73.20) and the theoretical mean (72) is not statistically significant, as the significance value ($p = 0.42$) is greater than the accepted significance level ($\alpha = 0.05$). Additionally, the t-value (0.80) does not reach the level of statistical significance.

Based on these results, the hypothesis stating that the level of communication skills is low cannot be accepted. It is concluded that the sample members of children with Autism Spectrum Disorder (ASD) possess an average level of communication skills in general and do not show a clear weakness in this area.

To further explore the first hypothesis, the three dimensions of communication skills were analyzed separately using a One Sample t-test for each dimension, by comparing the mean scores of the sample with the theoretical mean for each dimension (24), based on the three-point Likert scale and the number of items (12 items per dimension).

Table (3) Results of the T-test for Communication Skills Dimensions

Dimension	Mean	SD	Theoretical Mean	t	df	p	Significance	Skill Level
Verbal Communication	25.26	6.81	24	1.30	49	0.19	Not Significant	Moderate
Non-verbal Communication	28.14	3.54	24	8.25	49	0.000	Significant at 0.01	High
Social Communication	24.32	3.90	24	0.58	49	0.56	Not Significant	Moderate

Table 3 shows the results of the communication skills dimensions as follows:

• Verbal Communication Skills: No statistically significant difference was found between the actual mean and the theoretical mean ($p = 0.19 > 0.05$), indicating that the sample members have an average level of verbal communication skills.

• Nonverbal Communication Skills: This dimension showed a highly significant difference ($p = 0.000 < 0.01$) in favor of the actual mean, meaning that the children in the sample possess a high level of nonverbal communication skills.

• Social Communication Skills: No statistically significant differences were found ($p = 0.56 > 0.05$), indicating that the level of social communication among the sample is classified as average.

The results indicate that the children with Autism Spectrum Disorder in the studied sample have an average level in both verbal and social communication, while they show a notable superiority in nonverbal communication. This is consistent with some studies that suggest their greater reliance on gestures and nonverbal behavior in interaction with others.

Hypothesis 2: "There are statistically significant differences in the level of communication skills attributable to gender (males – females)."

To examine this hypothesis, an Independent Samples t-test was used to compare the mean scores of males and females on the communication skills scale.

Table (4) Independent Samples t-Test by Gender

Gender	N	Mean	SD	t	p	Significance
Male	28	70.64	11.52	-2.14	0.03	Significant at 0.05
Female	22	76.68	8.15			

Prior to conducting the test, the assumptions of the Independent Samples t-test were verified, including normality and homogeneity of variance. The test was conducted using a significance level of $\alpha = 0.05$.

The results reveal a statistically significant difference in communication skill scores between males and females, with a p-value of $0.03 < 0.05$. The higher mean score observed among females ($M = 76.68$) compared to males ($M = 70.64$) indicates that:
Females exhibit higher levels of communication skills than males in this sample.

Based on the statistical results, Hypothesis 2 is accepted, confirming that gender has a significant impact on communication skills, with the differences favoring females.

3.2- Discussion:

The results indicated that the overall level of communication skills among children with Autism Spectrum Disorder (ASD) was average, with a mean score of 73.20, which did not significantly differ from the hypothetical mean ($p = 0.42$). This suggests that the sample does not suffer from a severe deficit in communication skills but rather possesses an average level. This may reflect the effectiveness of certain interventions or training programs provided to them.

This finding is consistent with recent studies which have indicated that children with ASD often exhibit moderate levels of overall communication skills, with clear differences depending on the type of early interventions and family support. For example, Brahimi (2023) found that children who received early intervention demonstrated significant improvements in communication skills compared to those who did not, supporting the current study's results regarding the effectiveness of training programs in enhancing communication.

Ibrahimagic et al. (2021) confirmed that children with Autism Spectrum Disorder have noticeable delays in both verbal and nonverbal communication skills, and that the development of these skills is associated with improvements in their social interactions and parental feelings towards them.

Dimensions of Communication Skills

Verbal Communication: The results showed an average level ($p = 0.19$), confirming the persistence of challenges in this domain, particularly in language initiation and the use of expressive language. This aligns with recent studies indicating that children with autism often face difficulties in verbal expression and participation in conversations. For instance, Brahimi (2023) reported statistically significant differences in verbal communication skills in favor of children who underwent early interventions, highlighting the importance of specialized interventions to improve this dimension.

Nonverbal Communication: The results revealed a high level with statistical significance ($p = 0.000$), reflecting the children's relatively good ability to use gestures, eye contact, and alternative signals. This can be explained by the presence of training programs that focus on developing nonverbal communication, which is supported by recent literature emphasizing the importance of such interventions. Recent research has shown that training in nonverbal communication skills, such as gestures and eye contact, significantly enhances the competence of children with autism in this area. For example, Logrieco et al. (2024) demonstrated the effectiveness of interventions focusing on the use of signs and alternative means in enhancing nonverbal communication among children with autism.

Social Communication: The results indicated an average level ($p = 0.56$), suggesting ongoing challenges in building social relationships, despite some improvement when targeted social interventions are implemented. Recent literature indicates that children with autism

continue to face persistent difficulties in building social relationships, although there is relative improvement with the application of targeted social intervention programs. Brahimi (2023) also noted that the level of social communication skills remains average for most children, with improvement observed when appropriate family and educational support is provided.

Gender Differences in Communication Skills

The results showed a significant difference in favor of females ($p = 0.03$), with females demonstrating better performance in overall communication skills. This is consistent with recent research indicating that females with ASD often exhibit better communication skills than males, which is attributed to biological, social, and educational factors. Numerous recent studies support the existence of gender differences in certain dimensions of communication skills. For instance, Price et al. (2024) found that females with autism often display relatively higher linguistic and social abilities compared to males, which is linked to biological, social, and educational factors. Hoong et al. (2025) also confirmed that gender differences are due to genetic and neurobiological factors, highlighting the importance of considering gender differences when designing intervention programs.

5. Conclusion:

This study concluded that the level of communication skills among children with ASD in the studied sample was generally average, with a particular strength in nonverbal communication skills compared to verbal and social communication. The results also revealed significant differences in favor of females in some dimensions of communication skills. These findings underscore the importance of early interventions and family and educational support in improving communication skills among children with autism, and highlight the need to develop comprehensive training programs that take into account individual and gender differences.

Based on the above findings, the study recommends the following:

Developing comprehensive training programs focused on enhancing all dimensions of communication skills (verbal, nonverbal, and social), with an emphasis on specialized interventions in verbal and social communication to address the weaknesses identified by the results.

•Involving educators and parents in the design and implementation of training programs to ensure continuity of support, thereby contributing to the generalization of intervention effects.

• Taking gender differences into account by designing interventions that address gender-specific needs, with a focus on supporting males who may face greater challenges in certain aspects of communication, based on the differences revealed by the results.

• Conducting future studies on larger and more diverse samples, utilizing longitudinal designs to monitor the development of communication skills and the effectiveness of intervention programs over time.

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