

# VERBAL INTERACTION STYLE AND ITS RELATIONSHIP TO COMMUNICATION SKILLS AND SOCIAL INTERACTION AMONG CHILDREN WITH AUTISM SPECTRUM DISORDER (4-8 YEARS) IN THE CAPITAL AMMAN GOVERNORATE

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## Abstract

The study aimed to identify the Verbal Interaction Style and its relationship to communication and social interaction skills among children with autism spectrum disorder (4-8 years old) in the Amman Governorate. The random sample consisted of 1636 parents of children with autism spectrum disorder in maternity and child care centers.

The results of the study showed an average level of Verbal Interaction Style, communication skills, and social interaction among children with autism spectrum disorder (4-8 years old) in the Amman Governorate. The study also demonstrated a statistically significant relationship at the significance level of 0.05 between Verbal Interaction Style, communication skills, and social interaction among children with autism spectrum disorder (4-8 years old).

The study recommended the implementation of interactive training programs to improve Verbal Interaction Style, communication skills, and social interaction among children with autism spectrum disorder.

**Keywords:** communication style, communication skills, social interaction, autism spectrum disorder.

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## INTRODUCTION

Communication and social interaction skills are among the most important components of children's psychological and social development, enabling them to express their needs and ideas and interact positively with others. However, children with autism spectrum disorder (ASD) suffer from significant deficits in these skills, negatively impacting their ability to integrate into society and interact with their surrounding environment. This disorder is a complex developmental disorder that appears in the early years of a child's life and is characterized by difficulties in verbal and nonverbal communication, weaknesses in building social relationships, and understanding social cues. Children aged 4–8 years are of particular importance, as they represent a critical stage in the development of language and social interaction (Al-Zuraiqat and Omar, 2019).

Autism Spectrum Disorder (ASD) is a developmental disorder that affects multiple aspects of a child's behavior, most notably communication and language skills. Children with this disorder experience difficulties in language expression, language comprehension, and verbal and nonverbal social interaction. Communication skills are among the most important indicators of linguistic and cognitive development, as they constitute a basic means of interacting with the surrounding environment and expressing needs and feelings. The importance of studying communication skills in early childhood (from 4 to 8 years) increases due to its crucial role in developing social and linguistic communication skills in the future. From this perspective, (Ahmed, 2018)

Hence, Verbal Interaction Style is one of the fundamental pillars in developing communication and social interaction skills in children. It is the primary tool through which individuals express their thoughts and feelings and build relationships with others. However, children with Autism Spectrum Disorder (ASD) suffer from clear difficulties in using language and employing it in social situations, which negatively impacts their ability to interact verbally and nonverbally with their surroundings (Al-Surur and Amira, 2018). It is noted that the weakness of Verbal Interaction Style in this group leads to limited relationship building and difficulty understanding social cues and emotional expressions. The importance of studying the relationship between Verbal Interaction Style and communication and social interaction skills is highlighted during the age group (4–8 years), as this is a critical stage for the development of language and social interaction. From this standpoint, this study aims to explore the

nature of the relationship between these two aspects and to reveal the extent to which communication skills influence the development of social communication abilities in children with ASD (Al-Mail, 2019). Hence, the idea of the current study came to identify the Verbal Interaction Style (VIS) and its relationship to communication skills and social interaction among children with Autism Spectrum Disorder (4-8 years) in the capital Amman Governorate.

**Study Problem:**

Despite the increasing interest in recent years in developing educational and therapeutic programs for children with autism spectrum disorder, communication and social interaction remain among the most significant challenges hindering their development and psychological and social integration. These children suffer from significant weaknesses in both verbal and nonverbal communication, negatively impacting their ability to interact socially and communicate with others. Studies indicate that Verbal Interaction Style is a key factor in developing communication skills, but the relationship between these two aspects has not been adequately studied in the Jordanian context, particularly in the capital, Amman, which includes a large number of specialized centers. Hence, the problem of this study stems from its attempt to uncover the nature of the relationship between Verbal Interaction Style and communication and social interaction skills among children with autism spectrum disorder (4-8 years old), and to determine the level of each individual. This will contribute to enriching educational knowledge and guiding educational practices towards developing effective programs that enhance this group's interaction and integration into society.

**Study Questions:**

The study will answer the following research questions:

- What is the level of Verbal Interaction Style among children with autism spectrum disorder (4-8 years old) in the Amman Governorate?
- What is the level of communication skills among children with autism spectrum disorder (4-8 years old) in the Amman Governorate?
- What is the level of social interaction skills among children with autism spectrum disorder (4-8 years old) in the Amman Governorate?
- Is there a statistically significant relationship at the 0.05 level between Verbal Interaction Style and communication and social interaction skills among children with autism spectrum disorder (4-8 years old) in the Amman Governorate?

**Significance of the Study**

**First: Theoretical Significance**

- This study contributes to enriching the educational and psychological literature related to autism spectrum disorder by shedding light on a fundamental aspect: communication and social interaction among children enrolled in special education centers in the local Jordanian context.
- The study provides a scientific framework that helps understand the social characteristics of children with autism spectrum disorder, adding to the theoretical knowledge associated with special education programs and developmental psychology.
- The expected results help bridge the research gap resulting from the scarcity of local studies addressing the social communication of children with autism spectrum disorder in Amman, making it a reference for researchers in the fields of special education and educational psychology.
- This study reinforces theoretical trends that view the educational and rehabilitation environment as playing a pivotal role in supporting the development of social interaction skills for children with autism spectrum disorder.

**Second: Practical Importance**

- This study provides teachers and specialists at special education centers in Amman with practical indicators regarding the level of communication and social interaction among children with autism spectrum disorder, helping them develop more accurate and appropriate individual educational plans.
- It enables decision-makers and planners in the Jordanian Ministry of Education and relevant special education agencies to utilize the results in designing training programs and practical interventions that contribute to improving the efficiency of services provided to this group.
- The study outcomes provide an important database that can be used to develop local assessment and diagnostic tools that take into account the cultural and social specificities of Jordanian society.
- This study supports families and guardians by providing them with reliable scientific information that helps them understand the nature of their children's social and communication difficulties and how to enhance their interactive skills in the home and community environments.

**Study terms**

- **Verbal Interaction.**

**Theoretical definition:** It is the method an individual uses to express language and interact verbally and nonverbally with others, with the aim of conveying ideas, feelings, and needs in an understandable and effective manner. This includes word choice, sentence structure, tone of voice, gestures, facial expressions, and everything that contributes to interpersonal communication.

For children with autism spectrum disorder, Verbal Interaction Style refers to the specific patterns they use in verbal and nonverbal communication, which may be characterized by rigidity, repetition, or limited interaction. This makes developing communication a key focus of language and educational intervention programs.

**Operational definition:** In this study, communication refers to the extent to which a child with autism spectrum disorder is able to communicate linguistically and express themselves, whether through spoken language or non-verbal means (signals, facial expressions, and body language), according to the responses of the study sample members.

#### 1. Communication:

- **Theoretical definition:** Communication is defined as the process by which thoughts, feelings, and information are exchanged between individuals using verbal and nonverbal means (American Psychological Association, 2020).

- **Procedural definition:** In this study, communication refers to the extent to which a child with autism spectrum disorder (ASD) is able to express and receive their needs, thoughts, and feelings from others, whether through spoken language or nonverbal means (signals, facial expressions, and body language), according to the responses of the study sample.

#### 2. Social Interaction:

- **Theoretical definition:** It is the set of behaviors and processes through which social relationships are built with others and the mutual influence between them in various social situations (Gresham & Elliott, 2011).

- **Procedural definition:** In this study, social interaction refers to the ability of children with autism spectrum disorder to participate in social situations and demonstrate behaviors such as shared play, cooperation, responsiveness to others, and integration into group activities within special education centers.

#### 3. Children with Autism Spectrum Disorder (ASD):

- **Theoretical definition:** Children with a neurodevelopmental disorder that impacts social, communication, and behavioral development, characterized by difficulties in social interaction and repetitive and restricted behavior patterns (American Psychiatric Association, 2013).

- **Operational definition:** Children officially diagnosed with ASD and registered in special education centers in Amman, aged 6-12 years, who will be included in the study sample.

**4. Autism Spectrum Disorder (ASD):** The concept of Autism Spectrum Disorder (ASD) has recently witnessed significant and significant development, with researchers and specialists increasingly focusing on individuals suffering from this disorder, considering it one of the most challenging and complex developmental disorders, especially in early childhood. Perhaps the reason lies in the ambiguity surrounding this disorder, whether in understanding its underlying causes, the optimal mechanism for early diagnosis and detection, or the most important interventions and treatment programs associated with it.

**Autism Spectrum Disorder (ASD) is defined as:** A neurodevelopmental disorder that affects development in three basic areas: communication, social skills, and imagination.

The most important behavioral symptoms that characterize this disorder include:

1. A specific impairment in social interaction, preventing the child from forming friendships with peers, as well as a deficiency in the use of a number of nonverbal behaviors, such as eye contact and facial expressions. This impairment may also be manifested by a loss of the ability to engage in emotional or social interactions.
2. A specific impairment in communication, represented by one of the following elements: delayed or complete loss of speech, repetitive and persistent use of language, or a loss of the ability to engage in spontaneous pretend play.
3. Stereotyped, repetitive behavior and a limited repertoire of interests and activities (American Psychiatric Association, 2000).

## THEORETICAL FRAMEWORK

The theoretical framework addresses four main themes related to the study's problem and variables. The first is autism spectrum disorder; the second is communication among individuals with autism spectrum disorder; the third is social interaction among individuals with autism spectrum disorder; the fourth is special education centers; and finally, previous studies that addressed the research variables are discussed. This is followed by a commentary on these studies and what distinguishes the current study from previous studies.

#### Autism Spectrum Disorder (ASD)

Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder that affects a child's social, communication, and behavioral development. It is characterized by difficulties in social interaction and repetitive and restricted behavior patterns (DSM-5, American Psychiatric Association, 2013).

This disorder manifests in varying degrees, making educational interventions tailored to each child's needs. Studies indicate that early diagnosis and appropriate intervention contribute to improving communication and social interaction skills and reducing behavioral difficulties (Heward, 2017).

#### Key Characteristics of Children with ASD:

1. **Communication Difficulties:** Impaired ability to express needs and feelings and receive information from others.
2. **Social Interaction Deficits:** Impaired ability to engage in group activities and understand others' signals.

**3. Stereotyped and Repetitive Behaviors:** Such as repetitive movements, restricted interests, and difficulties adapting to change (Kim, Song, Bong, Han, & Yoo, 2024).

**Verbal Interaction in Children with Autism Spectrum Disorder**

Verbal interaction is one of the most important aspects of children's linguistic and communicative development. It represents the primary means of expressing needs, feelings, and ideas, and contributes to building social relationships and interacting with the surrounding environment. However, children with Autism-Spectrum-Disorder (ASD) suffer from clear difficulties in this area, as they face challenges in using language effectively, both in verbal expression and in understanding the meanings and social contexts of communication (Al-Sahli, 2021). These difficulties are manifested in limited vocabulary, repetitive speech, and a weak ability to initiate language or respond appropriately to social stimuli (Al-Otaibi, 2023). Studying the Verbal Interaction Style of children with ASD is crucial for understanding the nature of their communication and identifying the strengths and weaknesses in their language skills. This enables specialists, teachers, and parents to design effective intervention programs that contribute to improving their communication abilities and enhancing their social and linguistic interaction, thus supporting their integration into the educational and community environment. (Al-Marzouki, 2022).

**Communication in Children with Autism Spectrum Disorder**

Communication is the process by which thoughts, feelings, and information are exchanged between individuals using verbal and nonverbal means (American Psychological Association, 2020).

In the context of children with autism spectrum disorder, communication includes the ability to express and receive needs, thoughts, and feelings from others, through spoken language or nonverbal means such as gestures, facial expressions, and body language.

**Forms of Communication:**

1. **Verbal Communication:** Using words and sentences to express desires and feelings.
2. **Nonverbal Communication:** Including gestures, pictures, body language, and facial expressions.

**Social Interaction:** The ability to initiate conversations, respond to others, and participate in group discussions (Muneeb, Al-Kilani, and Muhammad, 2013).

**Indicators for Measuring Communication Level:**

- The child responds to others when spoken to or asked a question.
- The child uses verbal language to express their desires.
- The child uses signs or nonverbal means to communicate.
- The child's ability to express their feelings and understand the feelings of others (Muneeb, Al-Kilani, and Muhammad, 2013).

Studies, such as Gresham & Elliott (2011), indicate that social skills programs for children with autism spectrum disorder increase cooperative play and social responsiveness, and that developing communication skills enhances children's opportunities for social engagement and improves their academic and behavioral performance.

**Social Interaction in Children with Autism Spectrum Disorder**

Social interaction is the set of behaviors and processes through which an individual builds relationship with and is influenced by others in various social situations (Gresham & Elliott, 2011).

**Characteristics of Social Interaction in Children with Autism Spectrum Disorder:**

1. **Social Isolation:** Avoiding direct contact or engaging in group activities.
2. **Poor Cooperative Play:** Difficulty participating in games and activities that require cooperation.
3. **Poor Understanding of Social Cues:** Difficulty reading the emotions and nonverbal behaviors of others (Al-Zuraiqat & Omar, 2019).

**Indicators Measuring Level of Social Interaction:**

- Participation in group games and activities.
- Responding to others in various social situations.
- Collaborating with peers or friends in shared activities.
- The ability to form social relationships with peers within the center.

Studies also indicate that enhancing social interaction through organized activities and rehabilitation programs in special education centers contributes to improving social participation and integration within the school and family community. This was confirmed by Heward's study, which emphasized the role of early intervention in communication skills, which improves the ability to express oneself and reduces stereotypical behaviors (Heward, 2017).

**The Role of Special Education Centers in Improving the Level of Social Interaction**

Special education centers are specialized educational institutions that provide educational and rehabilitation services to children with special needs, tailored to their individual abilities.

The role of these centers in enhancing communication, interaction, and social interaction includes:

1. Programs to develop communication skills.
2. Group activities and cooperative games to enhance social interaction.
3. A supportive and safe environment that allows children to experiment and learn with confidence (Heward, 2017).

Local and international studies have confirmed that child demographics, such as age, gender, and severity of the disorder, significantly affect levels of communication and social interaction, and that interventions provided in

these centers significantly improve communication and social interaction compared to children who did not receive appropriate intervention.

Among these studies (2023) are Ilan, Farey, Zachor, and Meiri, who conducted a comparative study between children with autism attending special education centers (SE) and children attending regular schools (ME). The results showed:

- Longitudinal changes in the Autism Spectrum Disorders Severity Scale (ADOS-2 CSS) did not differ significantly between the two settings over one to two years.
- However, the incidence of improvement in adaptive behaviors and social communication was related to the type of center. Children in special education centers demonstrated better performance in social behavior and adaptation compared to their counterparts in general education, although baseline autism scores did not differ. (Ilan, Farey, Zachor, Meiri, 2023).

#### **Previous studies**

The Venita (2024) study aimed to evaluate the effectiveness of early interventions in improving social communication skills in children with autism. The study included a systematic analysis of 29 studies, including 1,442 children with a mean age of 3.55 years. The study relied on a meta-analysis to evaluate the effect of early interventions on social communication outcomes. A random-effects model was used to analyze data extracted from the included studies. The results showed that early interventions led to significant improvements in social communication skills in children with autism, with an overall effect size of  $g = 0.36$ .

Al-Otaibi's study (2023) aimed to evaluate the impact of functional speech programs on the development of social communication skills among children with autism spectrum disorder in Saudi Arabia. The study used a quasi-experimental approach, including a sample of 20 children with autism. An intensive functional speech program was implemented for a specific period. Data were collected using a scale to measure social communication skills before and after the program was implemented. The results showed a significant improvement in the children's verbal and nonverbal communication skills, in addition to enhancing their ability to interact socially with their surrounding environment.

Abonoa et al.'s (2023) study aimed to explore the communication skills of a single child with autism spectrum disorder (ASD) and analyze the challenges and opportunities he faced in social and educational settings. The study adopted a qualitative case study approach, using interviews with parents and teachers, as well as direct observations of the child's behavior in multiple situations. The results revealed that the child demonstrated limited verbal communication, but was able to use gestures and nonverbal communication to express his needs and feelings.

Al-Marzouqi's (2022) study aimed to clarify the role of modern communication methods, such as communication supported by electronic devices and technological technologies, in enhancing the social communication skills of children with autism spectrum disorder in the UAE. The study used an experimental approach involving 15 children with autism, and modern communication programs were implemented for a specified period of time. The results showed a significant improvement in the children's abilities to initiate conversation, maintain interaction, and exchange social roles, which enhances effective communication with them.

Ashry's study (2022) aimed to examine the relationship between social interaction and language skills, and to identify differences in language skills (receptive and expressive language) and social skills (social interaction, participation and cooperation, friendship formation) between high- and low-functioning autistic children. The sample consisted of 87 children aged 8–12 years, divided into two groups based on intelligence scores: a high-functioning group (47 children) and a low-functioning group (40 children). The researcher's language and social skills scales were administered. The results showed a significant positive correlation between social interaction and language skills, and no statistically significant differences between the two groups on the language and social skills scales.

Salceanu & Lăcătuș (2022) aimed to analyze the relationship between social skills, communication, and independence in children with autism spectrum disorder (ASD), with a focus on gender differences. The study relied on a sample of 30 children (15 males and 15 females) aged 3–6 years, and used assessment tools such as the ABAS II system and the PEDa tests to measure the three aspects. The results showed a positive relationship between social skills, communication, and independence. They also revealed that females had higher social and communication skills than males, while males scored higher on independence, although the differences were not statistically significant.

Al-Sahli's (2021) study aimed to examine the relationship between the Verbal Interaction Style used by therapists and the level of social communication skills among children with autism spectrum disorder in Jordan. The study followed a descriptive and analytical field approach and included 30 children with autism and their therapists. Data were collected through interviews with therapists, direct observations of children's behavior during speech sessions, and questionnaires assessing social communication skills. The results showed that interactive and flexible Verbal Interaction Styles that take individual differences into account and utilize visual aids, gestures, and deliberate repetition significantly contribute to improving children's communication and social interaction skills. Youssef's study (2021) aimed to uncover the factor structure of verbal communication skills among these two groups, in addition to examining the differences between them. The study was conducted on a sample of 200 parents of children aged 4 to 12 years, half of whom had autism spectrum disorder and the other half had Apert syndrome. The researcher used a self-developed checklist to measure verbal communication skills, and the results

were analyzed using exploratory factor analysis. The results revealed three main factors representing verbal communication skills: awareness of language sounds, understanding and responding to what is heard, and verbal expression of thoughts and feelings.

Akhmet Zyanova et al.'s (2021) study aimed to assess the level of development of social and language skills in preschool children with autism spectrum disorder (ASD), with the goal of identifying areas of weakness and establishing the basis for individualized intervention programs. The study relied on a diagnostic methodology using the Verbal Behavior Stages Assessment and Placement (VSAP) program, which measures 16 skill categories across three developmental stages. The sample included eight children aged 4–7 years, who were assessed in kindergartens in Kazan, Russia. The results showed that most children had significant delays in social and language skills, particularly in areas such as naming objects, expressing requests, and social interaction. Some skills, such as listening behavior, imitation, and visual perception, were also found to be more developed than others.

Ibrahimagic et al.'s (2021) study aimed to understand the relationship between communication and language skills in children with autism spectrum disorder. The study included 80 parents of a child with autism. The researchers used a questionnaire to measure three sets of variables: parental feelings, the child's communication skills, and the child's language skills. The results showed that children with autism often communicate by allowing hugs, recognizing familiar faces, and expressing their needs or desires. In terms of language skills, the children were found to follow simple instructions, understand connected phrases, pronounce single words, and pay attention when called by their names.

## STUDY METHODOLOGY

This study employs two scientific research methods:

A. **The descriptive-analytical method:** This method was used to review the most important literature related to "Verbal Interaction Style and its relationship to communication skills and social interaction in children with autism spectrum disorder (4-8 years old)."

B. **The field research method:** This method was used to cover the applied aspect of this study, through which it attempts to answer the study's questions and extract its results by relying on a questionnaire developed for the study's purposes according to established scientific procedures.

### Study population and sample:

The study population consisted of parents visiting the maternity and childhood departments in the health centers of the central region. (186) health centers were established in the central region, which are visited by approximately (91,947) children, according to statistics from the Jordanian Ministry of Health, which indicate that children visit the maternity and childhood departments between the ages of (1-8) years.

### Study Sample:

A random sample was selected from the study population. The actual study sample was made up of children under the age of eight (50%) of the total 91,947 children attending health centers in the central region. The Ministry of Health statistics specifically target age groups from 1 to 8 years. After dividing by (2), the number of children attending reached 45,974. A random sample of 5% of the children's parents was drawn from the main study sample. The final study sample reached 2,298 children. The researcher was able to distribute 2,000 questionnaires, but was unable to distribute all of them due to the obstacles she faced, including the parents' refusal to cooperate with her by receiving the questionnaires at the maternal and child health department in the health centers. After the questionnaires were returned, (364) questionnaires were excluded for being unsuitable for statistical analysis. The final sample consisted of 1,636, representing 81.8% of the main sample. The following is a presentation of the distribution. Demographics of the study sample:

**Table (1): Distribution of study sample members according to demographic data**

Variable	Frequency	%
<b>Age</b>		
Less than 30 years	338	20.7
30 – 39 years	929	56.8
40 years & above	369	22.6
<b>Years of experience</b>		
10 years or less	1291	78.9
11 – 20 years	276	16.9
21 years and more	69	4.2
<b>Gender</b>		
Male	580	35.5
Female	1056	64.5
<b>Father education level</b>		
Secondary education or less	814	49.8
2 years college	540	33.0
B. A. or above	282	17.2

Variable	Frequency	%
<b>Mother education level</b>		
Secondary education or less	609	37.2
2 years college	531	32.5
B. A. or above	496	30.3
<b>Economical level</b>		
High	187	11.4
Mid.	1302	79.6
Low	147	9.0
<b>Total</b>	<b>1636</b>	<b>100.0</b>

**Study tool (questionnaire):**

The study tool consisted of the following study questions:

**Section One:** Demographic information, consisting of: age, number of years of experience, gender, father’s educational level, mother’s educational level, and economic level.

**Section Two:** This section measures the study's questions related to Verbal Interaction Style and its relationship to communication and social interaction skills, which are represented in the following axes:

- **Axis One:** Verbal Interaction Style in children with autism spectrum disorder (10 items).
- **Axis Two:** Communication skills in children with autism spectrum disorder (26 items).
- **Axis Three:** Social interaction skills in children with autism spectrum disorder (16 items).

**Validity of the study tool:**

The questionnaire was presented to a number of referees from faculty members at Jordanian universities to verify the validity of its items. Their opinions were taken into consideration, some items were reworded, and the required modifications were made in a precise manner to achieve a balance between the content of the questionnaire and its items. They expressed their desire to interact with its items, which confirms the validity of the tool.

**Stability of the study tool:**

To calculate the internal consistency of the questionnaire variables, the researcher used the Cronbach Alpha test. Table (2) shows the test results, where the Cronbach Alpha values for all study variables and for the questionnaire in general were higher than (0.60), which is an acceptable percentage in humanities research and studies.

**Table (2): Results of reliability coefficients using Cronbach's alpha test**

Study variables	Stability coefficient
Verbal Interaction Style	94.3
Reciprocal Social Interaction	94.2
Communication Skills	97.1
<b>Total Questionnaire Score</b>	<b>98.6</b>

**Study variables:**

The study included the following variables:

- **Independent variable:** Verbal Interaction Style.
- **Dependent variables:** communication skills and social interaction skills in children with autism spectrum disorder.

**Statistical Processing:**

To answer the study questions, descriptive and analytical statistical methods were used using SPSS version 27. Frequencies and percentages were extracted, while Mean and standard deviations were used to answer the study questions. Reliability was determined using the Cronbach's alpha test, and the Pearson Correlation Coefficient test was used.

The results of the descriptive statistical analysis of the data were relied upon, which included Means and standard deviations for all the axes of the independent study and the paragraphs that comprise each axis. The Likert scale used in the study was graded as follows:

Highly related	Moderately related	Slightly related	Not related
4	3	2	1

Based on the above, the Mean values obtained by the study will be treated as follows: (3.02 and above: high), (2.01-3.01: medium), (2.00 and below: low), according to the following equation:

Highest value - lowest value of the answer alternatives divided by the number of levels, i.e.,  $(4-1)3 = 3/3 = 1.00$ . This value equals the length of the category.

Thus, the low level is  $1.00 + 1.00 = 2.00$ , the medium level is  $2.01 + 1.00 = 3.01$ , and the high level is  $3.02-4.00$ .

**Results view:**

**Results of the first question:** What is the level of Verbal Interaction Style among children with autism spectrum disorder (4–8 years old) in the Amman Governorate?

To answer the first question, Means and Standard Deviations were extracted to identify the responses of the study sample members regarding the level of Verbal Interaction Style among children with autism spectrum disorder (4–8 years old). Table (3) illustrates this:

**Table (3): Means and Standard Deviations of the study sample members' responses regarding the "communication level" of children with autism spectrum disorder (4-8 years), arranged in descending order**

No.	Paragraph	Mean	SD	Order	Responses
2	The child uses understandable words to express their daily wants and needs.	2.13	0.98	1	medium
5	The child can form simple sentences to communicate with others.	2.12	0.97	2	medium
3	The child repeats words or phrases they hear without understanding their meaning.	2.11	1.00	3	medium
4	The child can pronounce words with relative clarity, making them easy for others to understand.	2.10	0.98	4	medium
1	The child shows a desire to talk or initiate conversations with others.	2.10	1.01	5	medium
6	The child uses signs or hand gestures to communicate their needs.	2.08	0.95	6	medium
8	The child uses facial expressions (such as smiling or frowning) to express their feelings.	2.07	0.95	7	medium
9	The child responds appropriately to facial expressions or gestures from others.	2.07	0.96	8	medium
7	The child responds to questions in a way that is appropriate to the content.	2.06	0.93	9	medium
10	The child uses speech to express their feelings (happy, sad, angry).	2.04	0.99	10	medium
	<b>Mean</b>	<b>2.08</b>	<b>0.75</b>		medium

It is clear from Table No. (3) that the Means of the level of communication level among children with autism spectrum disorder (4-8 years) ranged between (2.13 and 2.04), where the axis had a total Mean of (2.08), which is at the average level, and paragraph No. (2) had the highest Mean of (2.13), with a standard deviation of (0.98), which is at the average level. The paragraph stated that (the child uses understandable words to express his daily desires and needs). In second place came paragraph No. (5) with a Mean of (2.12) and a standard deviation of (0.97), which is at the average level. The paragraph stated that (the child is able to form simple sentences to communicate with those around him). In third place came paragraph No. (3) with a Mean of (2.11) and a standard deviation of (1.00), which is at the average level, where the paragraph stated that (the child repeats the words or phrases he hears without understanding their meaning).

In last place came Paragraph (10), with a Mean of (2.04) and a standard deviation of (0.99), which is at an average level. The paragraph stated, "The child uses speech to express his feelings (joy, sadness, anger)." In the penultimate place came Paragraph (7), with a Mean of (2.06) and a standard deviation of (0.93), which stated the disorder (the child responds to questions in a manner consistent with their content). **This explains that the Verbal Interaction Style is average in children with autism spectrum disorder (4-8 years old).**

**Results of the second question:** What is the level of communication skills among children with autism spectrum disorder (4-8 years) in the capital Amman Governorate?

To answer the second question, Means and standard deviations were extracted to identify the responses of the study sample members regarding the level of communication skills among children with autism spectrum disorder (4-8 years), and Table (4) shows this:

**Table (4): Means and standard deviations of the study sample members' responses regarding the "level of communication skills" of children with autism spectrum disorder (4-8) years old, arranged in descending order**

No.	Statement	Mean	SD	Order	Level
1	Mutual exchange of sounds, smiles, or other facial expressions.	2.16	1.02	1	Mid.
8	Speaks or gestures in a rigid, mechanical manner.	2.15	0.97	2	Mid.



No.	Statement	Mean	SD	Order	Level
23	Sensitizes to other people's facial expressions or feelings.	2.14	0.98	3	Mid.
9	Repeats words or phrases over and over.	2.13	0.97	4	Mid.
21	Uses gestures to get things they want. Does not have a social smile.	2.13	1.00	5	Mid.
2	Lacks spoken words.	2.11	0.98	6	Mid.
22	Follows simple commands given only once, such as "sit, come, stand."	2.11	1.01	7	Mid.
11	Turns to a person's name when called.	2.10	0.95	8	Mid.
7	Repeats words out of context (repeating words he heard earlier or repeating words he heard a minute ago).	2.08	0.95	9	Mid.
10	Responds inappropriately to simple commands (sit, stand).	2.08	0.96	10	Mid.
13	Responds to spoken words.	2.08	0.93	11	Mid.
3	Lacks eye contact (doesn't make eye contact with others, i.e., doesn't look the person in the eye).	2.07	0.99	12	Mid.
4	Lacks visual tracking of objects.	2.07	0.98	13	Mid.
6	Repeats words verbally (echoing) or with a gesture.	2.07	0.95	14	Mid.
26	Uses gestures instead of speech and pointing.	2.07	1.00	15	Mid.
15	Extends arms when someone extends their arms.	2.06	0.93	16	Mid.
20	Rarely uses "yes" or "no."	2.06	0.94	17	Mid.
24	Appears not to hear, even suspecting a hearing loss.	2.06	0.98	18	Mid.
12	Shares voices, smiles, or other facial expressions.	2.05	0.95	19	Mid.
18	Strenuously avoids eye contact.	2.03	0.92	20	Mid.
25	Lacks response to his name when called between two other people's names (Mohammed, Ahmed, Walid).	2.03	0.96	21	Mid.
5	Lacks language.	2.02	0.93	22	Mid.
14	Lacks execution of simple commands involving prepositions, such as "put the ball on the box." Or putting the ball in the box.	2.02	0.93	23	Mid.
16	He lacks a social smile.	2.01	0.95	24	Mid.
17	His speech is devoid of tone or rhythm.	1.99	0.94	25	Low
19	He inverts pronouns in his speech (he uses "you" instead of "I").	1.98	0.89	26	Low
	<b>Mean</b>	<b>2.07</b>	<b>0.73</b>		Mid

Table No. (9) shows that **the Means of the level of communication skills among children with autism spectrum disorder (4-8 years)** ranged between (2.16 and 1.98), where the axis had a total Mean of (2.07), which is at the average level. Paragraph No. (1) had the highest Mean of (2.16), with a standard deviation of (1.02), which is at the average level. The paragraph stated that (lacks the mutual exchange of sounds, smiles, or other facial expressions). Paragraph No. (8) came in second place with a Mean of (2.15) and a standard deviation of (0.97), which is at the average level. The paragraph stated that (speaks or gestures in a rigid, mechanical manner). Paragraph No. (23) came in third place with a Mean of (2.14) and a standard deviation of (0.98), which is at the average level. The paragraph stated that (lack of feeling for the expressions of others' faces or their feelings). In last place came paragraph (19), with a Mean of (1.98) and a standard deviation of (0.89), which is considered low-level, as the paragraph stated, "He reverses pronouns in his speech (uses 'you' instead of 'I')." In the penultimate place came paragraph (17), with a Mean of (1.99) and a standard deviation of (0.94), as the paragraph stated the disorder (his speech lacks tone or rhythm).

**This explains that communication skills are at an average level among children with autism spectrum disorder (4-8 years old).**

**Results of the third question: What is the level of social interaction skills among children with autism spectrum disorder (4-8 years) in the capital Amman Governorate?**

To answer the third question, Means and standard deviations were extracted to identify the responses of the study sample members regarding the level of social interaction skills among children with autism spectrum disorder (4-8 years), and Table (5) shows this:

**Table (5): Means and standard deviations of the study sample members' responses to the "level of social interaction skills" of children with autism spectrum disorder (4-8 years old), arranged in descending order**

No.	Statement	Mean	SD	Order	Level
1	Lack of a purposeful smile or any pleasant or warm expressions.	2.22	0.98	1	mid
3	Smiles when someone smiles at them (social smiling).	2.21	1.02	2	mid
2	Responds to their name when called.	2.17	0.99	3	mid
4	Pays attention to people around them or other children.	2.09	0.98	4	mid
15	Uses appropriate facial expressions in social interactions.	2.07	0.95	5	mid
16	Exhibits reactions indicating sadness, pleasure, or joy.	2.06	0.96	6	mid
14	Responds to simple commands.	2.05	0.97	7	mid
10	Laughs or cries inappropriately.	2.04	0.95	8	mid
13	Mimics the behaviors of others (parents).	2.04	0.92	9	mid
9	Stares or appears unhappy when noticed.	2.03	0.93	10	mid
7	Has emotional responses such as kissing or hugging.	2.02	0.96	11	mid
11	Cries constantly and is difficult to soothe.	2.00	0.91	12	Low
8	Reacts in ways that are incomprehensible to fear.	1.99	0.91	13	Low
12	Mimics the behaviors of others when asked.	1.99	0.93	14	Low
5	Lacks a desire to be picked up or held.	1.98	0.94	15	Low
6	Displays behaviors that anticipate being picked up by others, such as raising their hands to be picked up.	1.98	0.93	16	Low
	<b>Mean</b>	2.06	0.70		mid

It is clear from Table No. (5) that the Means of **the level of social interaction skills among children with autism spectrum disorder (4-8 years)** ranged between (2.22 and 1.98), where the axis had a total Mean of (2.06), which is at the average level, and paragraph No. (1) had the highest Mean of (2.22), with a standard deviation of (0.98), which is at the average level, and the paragraph stated (purposeful smile or any pleasant or warm expressions), and in second place came paragraph No. (3) with a Mean of (2.21) and a standard deviation of (1.02), which is at the average level, and the paragraph stated (smiling when someone smiles at him "the social smile", and in third place came paragraph No. (2) with a Mean of (2.17) and a standard deviation of (0.99), which is at the average level, where the paragraph stated (responding to the name when called).

In last place came paragraph (6), with a Mean of (1.98) and a standard deviation of (0.93), which is considered low. The paragraph stated, "Exhibiting behaviors that anticipate being picked up by others, such as raising one's hands to be picked up by others."

**This explains why social interaction skills among children with autism spectrum disorder (4-8 years) were average, from the perspective of the study sample.**

**Results of the fourth question:** Is there a statistically significant relationship at the significance level (0.05) between the style of communication and the skills of communication and social interaction among children with autism spectrum disorder (4-8 years) in the capital Amman Governorate?

To answer this question, the Pearson Correlation Coefficient test was used to identify the relationship between the Verbal Interaction Style and communication and social interaction skills of children with autism spectrum disorder (4-8 years) in the capital Amman Governorate, and Table (6) shows this.

**Table (6): Pearson Correlation Coefficient Test to Detect the Relationship between Verbal Interaction Style and Communication and Social Interaction Skills in Children with Autism Spectrum Disorder**

		Communication Skills	Social Interaction
Verbal Interaction Style	Correlation coefficient	0.777**	0.650**
	Statistical significance	0.000	0.000

\*\* : Statistically significant at the significance level (0.05).

The results of the study shown in Table (6) showed the existence of a positive, direct relationship with statistical significance at the level of (0.05) between the Verbal Interaction Style and communication skills and social interaction among children with autism spectrum disorder (4-8 years) in the capital Amman Governorate, where

the value of the correlation coefficient between the Verbal Interaction Style and communication skills reached (0.777), and the value of the correlation coefficient between the Verbal Interaction Style and social interaction reached (0.650).

## DISCUSSION OF THE RESULTS:

**First question discussion of the results:** What is the level of Verbal Interaction Style among children with autism spectrum disorder aged 4–8 years in the Amman Governorate?

The study results showed an average level of Verbal Interaction Style among children with autism spectrum disorder (4-8) years old in the Amman Governorate. The responses of the study sample members were focused on... This result may be attributed to the fact that autism spectrum disorder directly affects the development of language and communication skills, as these children suffer from difficulties in language processing and social interaction, which limits their ability to use language in an integrated and functional manner. Furthermore, weak joint attention and difficulty imitating linguistic models make vocabulary acquisition and sentence formation a slower process compared to typical children.

While, from an environmental perspective, this average level may reflect partial educational and therapeutic efforts that contribute to improving some children's verbal expression abilities, such as participation in speech and early intervention programs, but these efforts are still insufficient to achieve an advanced level of linguistic communication. Variations in family support and the extent of interaction within the educational environment may also be factors that influence the development of this skill.

Accordingly, it can be argued that this result reflects a transitional stage for children with autism spectrum disorder, where they possess basic linguistic abilities that allow them to express their needs to a limited extent. However, they require intensive and ongoing linguistic and communication programs to develop their ability to use language more flexibly and spontaneously in various social situations. The results of the current study are consistent with those of Al-Aibi (2023), Al-Marzouqi (2022), and Al-Sahli (2023).

**Second question discussion of the results:** What is the level of communication skills among children with autism spectrum disorder (4-8 years) in the capital Amman Governorate?

The study results showed that communication skills in children with autism spectrum disorder (4-8 years old) were average. It is well known that children with Autism-Spectrum-Disorder (ASD) suffer from difficulties with nonverbal social communication, such as using facial expressions, tone of voice, and gestures in a natural and contextual manner. Their emotional and expressive behavior often appears automatic, repetitive, and inflexible, as a result of their poor understanding of the social and emotional context that accompanies communication. The intermediate level also indicates partial attempts at social and emotional interaction. That is, some children can imitate or produce certain expressions without them being the result of a true emotional awareness of the meaning or social situation. This may be the result of prior behavioral or linguistic training that helped them perform these signals automatically, without reaching the stage of spontaneous interactive use as seen in typical children.

Thus, this level reflects limited, training-guided development rather than natural, spontaneous interaction, indicating the need to promote integrated social and emotional communication development programs that combine language, facial expression, and understanding emotions and social context, with the aim of helping these children use nonverbal communication in a more spontaneous and meaningful manner. The study's findings are consistent with those of Venita (2024), Al-Otaibi (2023), and Abonoa (2023).

**Third question discussion of the results:** What is the level of social interaction skills among children with autism spectrum disorder (4-8 years) in the capital Amman Governorate?

The study results showed an average level of social interaction skills among children with autism spectrum disorder (4–8 years old) in the Amman Governorate. This average level of social interaction skills among children with autism spectrum disorder (4–8 years old) can be explained by observations related to weak social-emotional responses, such as a lack of meaningful smiles or warm expressions, and weak social reciprocity when others smile at them.

This average level indicates that children have a limited ability to perceive and respond to social and emotional cues. They sometimes display some attempts at interaction—such as a fleeting smile or brief eye contact—but these are often irregular or not fully socially aware. This is attributed to the nature of autism spectrum disorder, which affects the social processing of emotional stimuli and limits the child's ability to understand and respond appropriately to the intentions and feelings of others.

This result may also reflect a disparity in opportunities for training and social interaction among children, as some have benefited from early intervention programs that helped them acquire simple social behaviors, while others are still in an early stage of social development.

Accordingly, the average level of social interaction skills indicates that children with autism spectrum disorder have some rudimentary abilities for social interaction and engagement. However, they require intensive development programs that focus on enhancing their understanding of social and emotional cues and encouraging natural, reciprocal responses such as smiling and eye contact, which contributes to the deeper and more stable development of their social skills. The study results are consistent with those of Ashry (2022) and Al-Sahli (2021).

**Fourth question discussion of the results:** Is there a statistically significant relationship at the significance level (0.05) between the style of communication and the skills of communication and social interaction among children with autism spectrum disorder (4-8 years) in the capital Amman Governorate?

The results of the study showed a statistically significant relationship at the significance level (0.05) between the Verbal Interaction Style and communication and social interaction skills of children with autism spectrum disorder (4-8 years) in the capital Amman Governorate. This result may be attributed to the fact that communication represents the cornerstone in building and developing the social communication process. The better a child's skills in using language and verbal and nonverbal expression, the greater his ability to interact with others, understand social situations, and participate in group activities more effectively.

Communication is a primary means of expressing feelings and desires and interacting with the surrounding environment. Therefore, any development in this style positively impacts a child's ability to establish social relationships and take turns in dialogue and interaction. Children with better communication skills are better able to understand social cues and respond appropriately, which contributes to enhancing their communication with their peers and families.

This relationship is also attributed to the fact that speech and social interaction are two complementary processes. Verbal communication enhances social interaction, and vice versa. Social interaction helps children practice language in natural situations, gradually developing their communicative abilities. Thus, the results reflect the interconnected nature of these two aspects and confirm that improving Verbal Interaction Style leads to the development of social communication skills. This calls for educational and therapeutic programs to focus on integrating these two aspects in training children with autism spectrum disorder. The study's results are consistent with those of Ibrahimagic (2021) and Al-Sahli (2021).

#### **Recommendations:**

After reviewing and discussing the study results, the following recommendations were reached:

- Develop specialized training programs aimed at developing communication and social interaction skills in children with autism spectrum disorder, with a focus on integrating verbal and nonverbal communication.
- Integrate Alternative & Augmentative Communication (AAC) strategies, such as pictures, gestures, and visual symbols, to support children with language impairments.
- Activate the role of speech and language therapists within schools and special education centers, and provide periodic sessions tailored to each child's needs.
- Train teachers and parents on using effective communication methods with children, through specialized workshops aimed at standardizing approaches at home and school.
- Design an interactive classroom environment that encourages children's verbal and social participation through group activities and guided interactive play.

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