

Gender Role Behaviors Differences Between Verbal Adolescents' Males and Females With Autism Spectrum Disorder

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Received 7 December 2024; accepted 19 February 2025

Published online 26 March 2025

Abstract

The current study aimed to study differences between verbal males and females with autism spectrum disorder in gender-specific role behaviors. The study consisted of 76 verbal adolescents with autism spectrum disorder (50 males and 26 females). A scale of awareness of gender role behaviors was built and its validity and reliability were verified and proven. The results indicated that females showed more awareness and knowledge of behaviors related to gender roles compared to males. The study recommended using larger samples and non-verbal persons, as well as including children.

Key words: Gender behaviors; Verbal adolescents' males and females; Autism spectrum disorder

Mohammad Sweidan; Ibrahim El-Zraigat (2025). Gender Role Behaviors Differences Between Verbal Adolescents' Males and Females With Autism Spectrum Disorder. *Cross-Cultural Communication*, 21(1), 32-37. Available from: <http://www.cscanada.net/index.php/ccc/article/view/13727>
DOI: <http://dx.doi.org/10.3968/13727>

AN INTRODUCTION

Autism spectrum disorder (ASD) is a neurodevelopmental disorder that appears in early childhood. It is characterized by deficits in communication and social interaction, as well as patterns of repetitive behavior (Rippon, 2024). The relationship between differences between males and females with autism spectrum disorder has attracted the attention

of researchers in order to understand behavioral differences between the gender of persons. Especially this disorder is more common among males (Lai et al., 2015). Due to the nature of the symptoms, this disorder negatively affects the quality of life, and its impact continues throughout life. Despite this, effective and targeted therapeutic interventions reduce the severity of symptoms, help acquire the necessary life skills, and help achieve optimal adjustment (El-Zraigat, 2020).

Persons with autism spectrum disorder may not participate in play or imitate others actions, and most of them suffer from learning difficulties, linguistic and speech challenges, and problems with organization skills. The specific deficit in the application of language appears in difficulties in communication, joint attention, and the use of communicative symbols. Joint attention includes being interested in what another person is doing, paying attention to him, sharing emotional expressions with another person, monitoring the shift in another person's view of something important, and some of the manifestations of behavioral challenges are showing tantrums, crying and screaming, aggression and self-harm. The severity of these behaviors varies from one person to another and is different in early childhood than in adolescence (El-Zraigat, 2016). Persons with autism spectrum disorder show a wide variety of behaviors and social interactions. In addition to a different range of psychological disorders such as sleep disorders, depression, learning disorders, and eating disorders (Keski-Rahkonen & Ruusunen, 2023). The study by George and Stokes (2018) indicated that the special behavioral interests of persons with autism spectrum disorder are linked to their special experiences and interests.

The concept of gender roles in society refers to a person acting in accordance with what is expected of him or her in society. The behavior here is affected by factors

of culture, social values and traditions. These roles vary from one society to another and from one group to another. Gender role behaviors appear in the person's behavior and often determine the responsibilities he carries out (Planned Parenthood Federation of America, 2025). These roles are often learned early in life and develop over time, and family upbringing, community culture, values and traditions play a prominent role in learning and crystalizing them (Martinez et al., 2020).

Both males and females diagnosed with autism spectrum disorder show diversity in social interactions and distinct behaviors in childhood and adolescence (Manjra & Masic, 2022). Autism spectrum disorder in females is characterized by behavioral, social, cognitive, and biological characteristics that are somewhat different from autistic males (Hervás, 2022). The results of Lai et al. (2015) indicated that the diagnostic evaluation of autism spectrum disorder in males and females is often influenced by factors related to the behavioral characteristics of both males and females and developmental factors. The study by Lai and Szatmari (2020) confirmed that females with autism spectrum disorder showed less repetitive behaviors than males. Rippon (2024) asserted that females with autism spectrum disorder exhibit camouflage behavior to conceal symptoms associated with the disorder.

Wood-Downie et al. (2021) found that females with autism spectrum disorder show higher social interactions than males with autism, but this is often linked to camouflage behavior in females, and this behavior leads to difficulties in diagnosing the disorder, causing delays in providing appropriate care and support. McQuaid et al. (2022) explained that females with autism spectrum disorder showed higher camouflage social behaviors than males during adolescence, which was higher compared to childhood. In addition, the study by Rynkiewicz et al. (2016) reported that females diagnosed with the disorder use nonverbal communicative behavior, such as interactive communicative gestures, more than males with autism. On the other hand, the study of Edwards et al. (2024) found that males diagnosed with autism spectrum disorder show significantly higher aversive behaviors and specific interests than do females with autism. The study of Van Wijngaarden-Cremers et al. (2014) also showed that males with autism spectrum disorder exhibited more repetitive behavior compared to females with the same disorder, but communicative interactions were a problem for both genders.

Understanding differences in gender-related behavior enhances understanding of the behaviors used as indicators in judging a person and meeting diagnostic criteria. This understanding enables accurate diagnosis. Accurate diagnosis is also an important step in planning

effective treatment aimed at promoting growth and learning among individuals with autism spectrum disorder. Thus, it is clear that gender roles for individuals with autism spectrum disorder differ between males and females. Perhaps some of the differences are due to the nature of social behavior, the social environment, and culture. Females often engage in camouflage behaviors, and this plays a significant role in a person's social acceptance. Hence, the current study sought to explore the nature of these differences between male and female adolescents diagnosed with autism spectrum disorder by measuring a specific number of gender role behaviors.

THE RATIONALE OF STUDY AND ITS QUESTIONS

Adolescence is characterized by a wide range of social and cognitive behaviors that arise as a result of the nature of biological developmental change. Persons with autism spectrum disorder, like everyone else, are affected by developmental changes and environmental interactions. Perhaps adolescence is one of the most important stages of life because it directs the person to practice various behaviors based on group experiences and the emergence of other behavioral interests specific to males and females. The behaviors associated with males and females are often learned and developed as a result of family upbringing factors and the surrounding environment. In this study, we seek to find out how gender role behaviors differences between verbal adolescents male and female diagnosed with autism spectrum disorder. Therefore, the study sought to answer the following questions:

- What is the degree of knowledge and awareness of verbal adolescent males and females diagnosed with autism spectrum disorder about gender role-specific behaviors?
- Are there statistically significant differences ($\alpha = 0.05$) in the level of awareness of the gender role of verbal adolescents with autism spectrum disorder due to the gender variable?

STUDY OBJECTIVE

The current study aims to increase awareness of potential differences in awareness of social behavior requirements and practices for verbal adolescents male and female with autism spectrum disorder. The results help to understand the impact of gender on the behavior of gender of those diagnosed with this disorder, which helps to achieve a better understanding of the nature of behaviors specific to adolescence in both males and females with autism.

METHODOLOGY

To answer the study questions, a descriptive survey method was used. The arithmetic means, standard deviation, and t-test were used to analyze the data and achieve the results.

Participants were selected from a group of verbal adolescents with autism spectrum disorder (ASD) from Amman, Jordan. They were chosen as verbal because their communication skills helped them achieve optimal responses on the scale used in the study. The scale was administered to the participants after obtaining permission from the child's caregivers. Caregivers also assisted in the application and clarification of the behaviors targeted for assessment. After data collection, it was coded and analyzed using SPSS system.

PARTICIPANTS

The study included 76 participants with verbal adolescents diagnosed with autism spectrum disorder from Amman, Jordan. Table 1. shows frequencies and percentages according to study variables.

Table 1
Frequencies and percentages according to study variables

	Category	Frequencies	Percentages
Gender	male	50	65.8
	female	26	34.2
Total		76	100.0

SCALE OF AWARENESS OF GENDER ROLE BEHAVIORS

A scale of awareness of gender role behaviors was prepared based on previous relevant literature among persons with autism spectrum disorder (Planned Parenthood Federation of America, 2025; Martinez et al., 2020; Manjra & Masic, 2022; Hervás, 2022; Lai et al., 2015; Lai & Szatmari, 2020; Rippon, 2024; & Wood-Downie et al., 2021). The scale included 13 items.

CONSTRUCT VALIDITY

To extract the implications of the construct validity of the scale, the correlation coefficients of the item with the total score of the scale were extracted in a pilot sample consisting of (30) persons. The correlation coefficients of the item with the total score of the scale ranged between (0.64-0.88), and the following table shows this.

Table 2
Correlation coefficients between the item and the total score of the scale

Items	Correlation coefficient
He/ she knows and understands gender-specific rules of conduct	0.84**
He/ she completely follows the instructions for his role	0.66**
He/ she has ideas that fit his gender	0.77**
He/ she is known for his social and family roles	0.79**
He/ she knows the careers suitable for him/ her	0.88**
He/ she knows for his personal supplies	0.87**
He/ she defends his behavior	0.64**
He/ she fulfills the role expected of him in his family and society	0.77**
He/ she uses vocabulary and pronouns according to his gender	0.71**
He/ she knows self-care skills specific to his gender	0.75**
He/ she knows his legal rights	0.81**
He/ she knows that what he/ she is doing is appropriate for his gender	0.83**
He/ she knows how to deal with abuse	0.88**

*Statistically significant at the significance level (0.05).

** Statistically significant at the significance level (0.01).

It should be noted that all correlation coefficients were of acceptable and statistically significant degrees, and therefore none of these items were deleted.

RELIABILITY OF THE SCALE

To ensure the reliability of the study tool, it was verified using the test-retest method by applying the scale, and re-applying it after two weeks to a group outside the study sample consisting of (30) persons, and then the Pearson correlation coefficient was calculated between their estimates on the two occasions if it was (0.87). The reliability coefficient was also calculated using the internal consistency method according to the Cronbach Alpha equation, if it reached (0.82), and these values were considered appropriate for the purposes of this study.

RESULTS

This part presents the findings of the study and is organized according to its questions.

STATISTICAL CRITERION

The four-point Likert scale was adopted to correct the study tools, by giving each of its items one score out of four (high, medium, low, not at all), which is represented numerically (4, 3, 2, 1), respectively. The following scale was adopted for the purposes of analyzing the results:

From 1.00-2.00 a low

From 2.01-3.00 a medium

From 3.01-4.00 a high

The measure was calculated using the following equation:

$$\frac{(\text{The upper limit of the scale (4)} - \text{The lower limit of the scale (1)})}{\text{Number of required categories (3)}} = \frac{(4-1)}{3} = 1.00$$

Then add the answer (1.00) to the end of each category.

• **What is the degree of knowledge and awareness of verbal adolescent males and females diagnosed with autism spectrum disorder about gender role-specific behaviors?**

To answer this question, the arithmetic means and standard deviations for the level of awareness of the gender role of adolescents with autism spectrum disorder were extracted, and the Table 3 shows this.

Table 3
Arithmetic means and standard deviations for the level of gender role awareness for adolescents with autism spectrum disorder, arranged in descending order according to the arithmetic means.

Rank	No.	Items	M	S.D.	Level
1	12	He/ she knows that what he/ she is doing is appropriate for his gender	2.89	0.59	medium
2	10	He/ she knows self-care skills specific to his gender	2.81	0.62	medium
3	4	He/ she is known for his social and family roles	2.79	0.64	medium
4	9	He/ she uses vocabulary and pronouns according to his gender	2.76	0.64	medium
5	7	He/ she defends his behavior	2.71	0.77	medium
6	8	He/ she fulfills the role expected of him in his family and society	2.70	0.62	medium
7	1	He/ she knows and understands gender-specific rules of conduct	2.64	0.63	medium
8	2	He/ she completely follows the instructions for his role	2.63	0.69	medium
9	3	He/ she has ideas that fit his gender	2.62	0.69	medium
10	13	He/ she knows how to deal with abuse	2.59	0.68	medium
11	5	He/ she knows the careers suitable for him/ her	2.58	0.75	medium
12	11	He/ she knows his legal rights	2.57	0.57	medium
13	6	He/ she knows for his personal supplies	2.55	0.60	medium

Table 3. shows that the arithmetic averages ranged between (2.55-2.89), where paragraph No. (12), which states “Knows when to ask for help,” came in first place, with an arithmetic average of (2.89), while paragraph No. (6) came in first place, with an arithmetic average of (2.89). The text, “The adolescent with autism spectrum disorder is aware of his personal supplies,” ranked last, with a mean of (2.55). The arithmetic average of the level of awareness of the gender role of adolescents with autism spectrum disorder as a whole was (2.68).

• Are there statistically significant differences ($\alpha = 0.05$) in the level of awareness of the gender role of adolescents with autism spectrum disorder due to the gender variable?

To answer this question, the arithmetic means and standard deviations were extracted for the level of awareness of the gender role of adolescents with autism spectrum disorder according to the gender variable, and to show the statistical differences between the arithmetic means, the “t” test was used, and the tables below show this.

Table 4
Arithmetic means, standard deviations, and a t-test for the effect of gender on the level of gender role awareness for adolescents with autism spectrum disorder

Items	Gender	No.	M.	S.D.	t value	df	Sig.
He/ she knows and understands gender-specific rules of conduct	male	50	2.41	.57	-4.97	74	.000
	female	26	3.08	.48			
He/ she completely follows the instructions for his role	male	50	2.43	.73	-3.76	74	.000
	female	26	3.00	.40			
He/ she has ideas that fit his gender	male	50	2.37	.64	-4.72	74	.000
	female	26	3.08	.56			
He/ she is known for his social and family roles	male	50	2.56	.58	-4.76	74	.000
	female	26	3.19	.49			
He/ she knows the careers suitable for him/ her	male	50	2.27	.63	-6.12	74	.000
	female	26	3.15	.54			
He/ she knows for his personal supplies	male	50	2.30	.51	-6.27	74	.000
	female	26	3.04	.45			
He/ she defends his behavior	male	50	2.48	.76	-3.71	74	.000
	female	26	3.13	.59			
He/ she fulfills the role expected of him in his family and society	male	50	2.56	.64	-2.84	74	.006
	female	26	2.96	.45			
He/ she uses vocabulary and pronouns according to his gender	male	50	2.58	.61	-3.82	74	.000
	female	26	3.12	.52			
He/ she knows self-care skills specific to his gender	male	50	2.67	.59	-2.97	74	.004
	female	26	3.08	.56			
He/ she knows his legal rights	male	50	2.37	.53	-4.36	74	.000
	female	26	2.92	.48			
He/ she knows that what he/ she is doing is appropriate for his gender	male	50	2.80	.61	-2.01	74	.047
	female	26	3.08	.48			
He/ she knows how to deal with abuse	male	50	2.30	.58	-6.04	74	.000
	female	26	3.12	.52			
Total	male	50	2.48	.22	-10.41	74	.000
	female	26	3.07	.28			

It is clear from Table 4. that there are statistically significant differences ($\alpha = 0.05$) due to the effect of gender, and the differences were in favor of females.

LIMITATIONS AND DELIMITATIONS

The study included verbal adolescents diagnosed with autism spectrum disorder. 13 items (behaviors) were used in the scale, and the degree of awareness and knowledge of it was measured among the study participants.

DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

The results indicated that females showed more awareness and knowledge of behaviors related to gender roles. Although females had more awareness, this may be a camouflage they resort to cope with the effects of autism spectrum disorder. It attempts to hide the symptoms of autism in interactive social contexts. Of course, displaying such behavior increases the difficulty of identifying female candidates for diagnosis with the disorder. Perhaps such results give importance to the need to take into account camouflage behaviors in females, especially when diagnosing the disorder.

Understanding gender roles differences in a way that males and females with autism spectrum disorder are perceived can help us better understand and support them in educational settings and provide therapeutic programs. For example, females tend to speak more, and also engage in more camouflaging behaviors than males. This impacts diagnosis of the disorder, and understanding these behaviors can help us support them and provide effective treatments according to their needs. Various studies have confirmed the difference in social interaction behaviors and repetitive behaviors between males and females with autism spectrum disorder (Manjra & Masic, 2022; Hervás, 2022; Lai et al., 2015; Lai & Szatmari, 2020; Rippon, 2024; and Wood-Downie). et al., 2021).

Understanding the nature of gender-specific behaviors in verbal adolescents with autism spectrum disorder contributes to understanding the differences between males and females diagnosed with this disorder. Understanding the nature of these behaviors also enables us to provide appropriate support and assistance for learning and growth. Based on the results, the study recommends the following:

- The current study was limited to verbal adolescents with autism spectrum disorder, and it would also be appropriate to conduct it on non-verbal adolescents with same disorder.

- The study used a sample of adolescent participants, and it would also be appropriate to conduct it on children with autism spectrum disorder.

- Using broader samples and other variables, such as the effect of the family's educational level on educating the gender role of this group of children.

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