

The Degree of Prevalence of Anxiety Symptoms Among a Sample of Verbal Adolescents With Autism Spectrum Disorder in The Kingdom of Saudi Arabia

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Abstract

The current study aimed to describe the degree of prevalence of anxiety symptoms among a sample of verbal adolescents with autism spectrum disorder. The study included 60 verbal adolescents with autism spectrum disorder in Riyadh City, the Kingdom Saudi Arabia. To achieve the objectives of the study, the researchers constructed anxiety symptoms associated with autism spectrum disorder scale and verified its validity and reliability. The scale included 40 items distributed on 5 dimensions that describe the anxiety associated with autism spectrum disorder, which are the dimensions of physical and physiological symptoms, cognitive symptoms, social symptoms, emotional symptoms, and behavioral symptoms. To answer the study questions, a descriptive survey method was used, and the percentage of prevalence score on each item of the scale was calculated. The results indicated that the physical and physiological symptoms were moderate, while the cognitive, social, emotional, and behavioral symptoms ranged from moderate to high. The study recommended comparing the prevalence of anxiety between females and males with autism spectrum disorder, and studying the prevalence rates of anxiety according to the level of severity of autism spectrum disorder.

key words: Anxiety symptoms; Verbal adolescents with autism spectrum disorder; The Kingdom of Saudi Arabia

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AN INTRODUCTION

Autism spectrum disorder is characterized by two basic characteristics that are necessary for diagnosis: persistent deficits in communication and social interaction, repetitive behaviors, and restricted interests (American Psychiatric Association, 2022). In the latest statistics, according to estimates by the Autism and Developmental Disabilities Monitoring Network (ADDM) of the Centers for Disease Control and Prevention (CDC). (2023). The prevalence has been determined to be approximately 1 in 36 children with autism spectrum disorder (ASD). Autism spectrum disorder is approximately 4 times more common among boys than girls (CDC, 2023).

Feeling anxious is seen as normal behavior, especially when the situation is stressful, difficult, or challenging. In the case of a person with autism spectrum disorder, feelings of anxiety may result from many factors, perhaps the most important of which is navigating social and sensory environments that may be difficult or challenging (The National Autistic Society, 2024). While anxiety is not considered a core feature of ASD, 40% of youth with ASD have clinically elevated levels of anxiety or at least one anxiety disorder, including obsessive-compulsive disorder (Hollander & Burchi, 2018). Symptoms associated with anxiety disorders affect persons with autism spectrum disorder in a variety of areas, including academic performance, opportunities for inclusion within school, activities of daily living, and social relationships (Stockall, & Blackwell, 2022).

Anxiety is characterized by an intense emotional response to a source of threat or stress. The most common symptoms of anxiety disorders include: feelings of fear,

insomnia, increased heart rate, difficulty concentrating, muscle tension, and disturbed sleep and eating (Autism Research Institute, 2024). Typically, persons with autism spectrum disorder show anxiety in different ways and at different times in response to some demands of the environment in which they are present (Holner & Burchi, 2018). A study of Kuzminskaite, Begeer, Hoekstra, and Grove (2020) indicated that difficulties in social communication or restricted repetitive behaviors are contributing factors and indicators of anxiety symptoms in adults with autism spectrum disorder. Perhaps one of the most common types of anxiety among them is specific phobia, where a person experiences severe distress when exposed to a specific situation (Autism Research Institute, 2024). Also, some may exhibit obsessive-compulsive disorder, which includes unwanted thoughts and resulting compulsive behaviors, and severe anxiety or fear of negative evaluation in a social situation or performance, which in turn leads to avoiding social situations. Another common type is social anxiety, which limits opportunities to practice social skills (Holner & Burchi, 2018).

Anxiety behavior in persons with autism spectrum disorder may be explained by several factors. These factors are also related to the characteristics of autism spectrum disorder. For example, persons with autism spectrum disorder tend to focus more on details, and although this is an important skill, it can make transitions and changes in routine more difficult and thus anxiety may result (Autism Research Institute, 2024). Communication difficulties may also be the reason. Persons with autism spectrum disorder may not be able to express feelings of anxiety and instead show anxiety through disruptive behaviors, while others may be good at verbalizing but have difficulties understanding feelings of anxiety and expressing them verbally. This is due to the nature of the characteristics of the disorder, which is characterized by communication and social difficulties and maladaptive behaviors (Hollander & Burchi, 2018).

On the other hand, increased sensitivity may be one of the reasons explaining the spread of anxiety in persons with autism spectrum disorder, as some of them show high sensitivity to noise, touch, sight, smell, taste, temperature, and other sensory factors. This extreme sensitivity may lead to an increase in sensory overload, which may lead to anxiety (Autism Research Institute, 2024). The study by MacLennan, Rossow, and Tavassoli, (2021) indicated a relationship between hypersensitivity and anxiety in children with autism disorder. Also, social stress related to the necessity of behaving according to what the social situation requires can often lead to increased anxiety in persons with autism spectrum disorder (Autism Research Institute, 2024). Sukhodolsky, Lecavalier, Johnson, Smith, Swiezy, Bearss, Kalvin, and Scahill, (2020) have suggested higher levels of anxiety are associated with the severity of challenging behavior and social difficulties.

On the other hand, anxiety may increase when they find it difficult to express their desires or needs or when others fail to understand them. This is in addition to the frustration they experience due to weak motor skills or executive function (Autism Research Institute, 2024).

The anxiety associated with autism spectrum disorder has been targeted in a number of studies. For example, the study by Jenkinson, Milne, and Thompson (2020) demonstrated the existence of a correlation between intolerance of uncertainty and anxiety in persons with autism spectrum disorder, given the high prevalence of anxiety in these persons. and the limited effectiveness of treatments currently used to treat anxiety in autism spectrum disorder. The Selles, Arnold, Phares, Lewin, Murphy, and Storch (2015) study assessed anxiety symptoms in youth 10 to 26 months after completing treatment. Compared with baseline, follow-up scores were associated with significant effects of treatment. For the post-treatment period there was a small effect of the return of symptoms. In the study by Maddox, Lecavalier, Miller, Pritchett, Hollway, White, Gillespie, Evans, Schultz, Herrington, Bearss, and Scahill (2020) associations between the Child Anxiety Rating Scale for youth with ASD and parent ratings of ASD symptoms were, social withdrawal, stereotyped behaviors, hyperactivity, inappropriate speech, and repetitive behaviors are low.

The study of Bearss, Taylor, Aman, Whittemore, Lecavalier, Miller, Pritchett, Green, and Scahill (2016) identified a broad range of situations and events that elicit anxiety in children with autism spectrum disorder, and behavioral manifestations of anxiety, the parent-child response to anxiety, and the broad behavioral patterns that can be associated with anxiety. Lau et al.'s (2020) study indicated that the participants' caregivers expressed that they were strongly affected by the symptoms of autism spectrum disorder and that they showed more anxiety related to autism, compared to common additional fears. The results of the study by Williams, Stein Duker, Vigen, Wylde, and Cermak (2022) indicated that parents have a moderate to high level of confidence in assessing anxiety symptoms in their children and that parents' confidence was related to the number of anxiety symptoms in their child and the severity of autism spectrum disorder.

Perhaps one of the most effective treatments in reducing the symptoms of anxiety associated with autism spectrum disorder is cognitive behavioral therapy (El-Zraigat, 2020). Gaigg et al. (2020) noted that cognitive behavioral therapies and mindfulness-based therapies can alleviate anxiety in persons with autism spectrum disorder, but cost-effective implementation remains a challenge. The study by Sweidan, and El-Zraigat, (2023) indicated the effectiveness of relaxation therapy in reducing anxiety and tension among a sample of verbal adolescents with

autism spectrum disorder in the Kingdom of Saudi Arabia. The study by Zeiton and El-Zraigat (2022) confirmed the effectiveness of a program based on cognitive behavioral therapy in reducing anxiety symptoms and improving emotion regulation among a sample of verbal adolescents with autism spectrum disorder in Jordan. Gaigg et al. 2020 findings indicate that online self-help cognitive behavioral therapy and mindfulness-based treatment tools may provide a cost-effective way to provide mental health support to those adults with ASD who can effectively engage with online support tools.

From the previous review of scientific literature, the importance of studying anxiety behavior associated with autism spectrum disorder is clear. Hence the main aim of the current study was to describe the degree of prevalence of anxiety symptoms among a sample of verbal adolescents in the city of Riyadh, the Kingdom of Saudi Arabia.

THE IMPORTANCE OF STUDY AND ITS QUESTIONS

Anxiety is considered one of the most common disorders associated with autism spectrum disorder (El-Zraigat, 2016). Until now, studies aimed at understanding anxiety in ASD, its severity, and prevalence are still few. While anxiety is not an essential feature in diagnosing autism spectrum disorder, it is particularly important to recognize its prevalence and level of severity in persons with autism spectrum disorder and treat it because it has a significant impact on quality of life, as it exacerbates social withdrawal as well as repetitive behaviors. This, in addition, leads to the emergence of other problems, such as depression, aggression, and self-injuries. So, early identification of anxiety provides accurate diagnosis, provides appropriate treatments, and prevents the progress of other problems (Holner & Burchi, 2018). Therefore, understanding the basic features of anxiety with this disorder is crucial for its prevention and efficient treatment (Kuzminskaite, Begeer, Hoekstra, & Grove, 2020). Thus, anxiety associated with autism spectrum disorder is an important therapeutic target due to its consequences on quality of life and well-being (Gaigg et al. 2020). Hence, the current study aimed to describe the symptoms of anxiety disorder among a sample of verbal adolescents with autism spectrum disorder in Riyadh City, The Kingdom of Saudi Arabia. Specifically, the current study sought to answer the following questions:

- What are the physical and physiological symptoms of anxiety among a sample of verbal adolescents with autism spectrum disorder in Riyadh, Kingdom of Saudi Arabia?
- What are the cognitive symptoms of anxiety among a sample of verbal adolescents with autism spectrum disorder in Riyadh, the Kingdom of Saudi Arabia?

- What are the social symptoms of anxiety among a sample of verbal adolescents with autism spectrum disorder in Riyadh, the Kingdom of Saudi Arabia?

- What are the emotional symptoms of among a sample of verbal adolescents with autism spectrum disorder in Riyadh, Saudi Arabia?

- What are the behavioral symptoms of anxiety among a sample of verbal adolescents with autism spectrum disorder in Riyadh, Kingdom of Saudi Arabia?

METHODOLOGY

To answer the study questions, a descriptive survey method was used, and the percentage of prevalence score was calculated on each item of the scale that was built specifically for this goal.

Participants

The study included 60 verbal adolescents with autism spectrum disorder in Riyadh City, the Kingdom of Saudi Arabia.

ANXIETY SYMPTOMS ASSOCIATED WITH AUTISM SPECTRUM DISORDER SCALE

The scale was constructed with reference to relevant literature such as; Arzt (2022), Cleveland Clinic (2023), Mind (2023), Montijo (2021), Jenkinson, Milne, & Thompson (2020), Maddox, Lecavalier, Miller, Pritchett, Hollway, White, Gillespie, Evans, Schultz, Herrington, Bearss & Scahill (2020), Selles, Arnold, Phares, Lewin, Murphy, & Storch (2015), MacLennan, Rossow, & Tavassoli (2021), Autism Research Institute (2024), Hollander & Burchi (2018), El-Zraigat (2016, 2020), Sweidan & El-Zraigat (2023), and Zeiton. & El-Zraigat (2022).

The scale included 40 items divided into 5 dimensions describing the anxiety associated with autism spectrum disorder, as follows:

- Physical and physiological symptoms: It includes 8 items
- Cognitive symptoms: It contains 9 items
- Social symptoms: It includes 7 items
- Emotional symptoms: It consists of 9 items
- Behavioral symptoms: It consists of 7 items

The evaluation was carried out by the teacher, therapist supervising the person's condition, and caregiver, by estimating the degree of severity of the symptoms according to the following ratings for each item: high, moderate, low, and not at all. The construct validity indicators for the correlation of the item with the dimension were verified on a sample of 30 persons with autism spectrum disorder, and the correlation coefficients ranged between 0.81 - 0.86. As for the reliability, it was

verified through the reliability of the two estimators, where a correlation coefficient was calculated for the first estimator and with the second estimator for the anxiety symptoms associated with autism spectrum disorder, and it ranged between 0.79 - 0.83, which is acceptable for the purposes of the study.

RESULTS

The results were organized according to questions as follows:

- **What are the physical and physiological symptoms of anxiety among a sample of verbal adolescents with autism spectrum disorder in Riyadh, Kingdom of Saudi Arabia?**

Table 1
Physical and physiological symptoms of anxiety among a sample of verbal adolescents with autism spectrum disorder in Riyadh, Kingdom of Saudi Arabia

Physical and physiological symptoms	Prevalence rate			
	High	Moderate	Low	Not at all
He/ She complains of nausea or stomach pain when communicating with others	30%	20%	40%	10%
He/ She shows difficulty breathing in social situations	20%	20%	40%	20%
He/ She complains symptoms of a rapid heartbeat in social situations	10%	20%	50%	20%
He/ She appears to be sweating when he/ her is in an interactive or communicative in social situation	30%	30%	30%	10%
He/ She suffers from headaches on social occasions	20%	20%	40%	20%
He/ She appears tense when others communicate with him	30%	20%	30%	20%
He/ She feels dizzy in social situations	10%	10%	60%	20%
He/ She suffers from stress and tantrums in social situations	50%	30%	10%	10%

It appears from the percentages that physiological symptoms appeared to an approximately moderate degree.

- **What are the cognitive symptoms of anxiety among a sample of verbal adolescents with autism spectrum disorder in Riyadh, the Kingdom of Saudi Arabia?**

Table 2
Cognitive symptoms of anxiety among a sample of verbal adolescents with autism spectrum disorder in Riyadh, Kingdom of Saudi Arabia

Cognitive symptoms	Prevalence rate			
	High	Moderate	Low	Not at all
He/ She shows a severe weakness in understanding the social or communicative situation	70%	20%	10%	0%
He/ She cannot remember any important information in a social situation when it is discussed	50%	20%	10%	20%
He/ She has difficulties understanding feelings of anxiety and expressing them verbally	70%	20%	10%	0%
He/ She doesn't know what to say when he/ her is around others	50%	30%	10%	10%
He/ She suffers from negative thoughts about himself	40%	30%	20%	10%
He/ She often thinks about experiences of failure in situations he/ her has been exposed to	30%	20%	30%	20%
He/ She thinks about the consequences of failure, so he/ her does avoid social situations	50%	30%	20%	10%
He/ She shows distracted thoughts when communicating with others	60%	20%	10%	10%
He/ She has low concentration and attention in social interactive situations	40%	40%	10%	10%

It appears from the percentages in the table above that cognitive symptoms appeared to an approximately moderate to high degree.

- **What are the social symptoms of anxiety among a sample of verbal adolescents with autism spectrum disorder in Riyadh, the Kingdom of Saudi Arabia?**

Table 3
Social symptoms of anxiety among a sample of verbal adolescents with autism spectrum disorder in Riyadh, Kingdom of Saudi Arabia

Social symptoms	Prevalence rate			
	High	Moderate	Low	Not at all
He/ She shows withdrawal in social situations	70%	20%	5%	5%
He/ She avoids interactive or social communication situations	60%	20%	10%	10%
He/ She does not participate in family social events	60%	20%	10%	10%
He/ She does not answer a question in front of persons	70%	10%	10%	10%
He/ She responds by escaping the situation if he/ her does not know how to act according to what the social situation requires	30%	20%	40%	10%
He/ She does not eat in front of persons	50%	20%	20%	10%
He/ She avoids participating in interviews with others	70%	20%	5%	5%

It appears from the percentages in the table above that social symptoms appeared to an approximately moderate to high degree.

• **What are the emotional symptoms of among a sample of verbal adolescents with autism spectrum disorder in Riyadh, Saudi Arabia?**

Table 4
Emotional symptoms of anxiety among a sample of verbal adolescents with autism spectrum disorder in Riyadh, Kingdom of Saudi Arabia

Emotional symptoms	Prevalence rate			
	High	Moderate	Low	Not at all
He/ She shows irritation or anger in communicative situations	60%	20%	10%	10%
He excessive fear appears in social situations	70%	20%	10%	0%
He/ She has shyness appears in social occasions	60%	20%	10%	10%
He/ She appears sad and depressed in social situations	30%	20%	40%	10%
He/ She shows noticeable fear and confusion when meeting new persons	30%	30%	30%	10%
He/ She suffers from low self-confidence in social occasions	40%	35%	20%	5%
He/ She shows tension and anger when he/ her is around unfamiliar persons	50%	20%	20%	10%
He/ She appears frustrated when he/ her does not refrain from behaving in a way that suits the social situation	40%	30%	10%	20%
He/ She shows anxiety and fear when expressing his/ her desires or needs to others or when others fail to understand them	70%	20%	10%	0%

It appears from the percentages in the table above that emotional symptoms appeared to an approximately moderate to high degree.

• **What are the behavioral symptoms of anxiety among a sample of verbal adolescents with autism spectrum disorder in Riyadh, Kingdom of Saudi Arabia?**

Table 5
Behavioral symptoms of anxiety among a sample of verbal adolescents with autism spectrum disorder in Riyadh, Kingdom of Saudi Arabia

Behavioral symptoms	Prevalence rate			
	High	Moderate	Low	Not at all
He/ She has difficulties being able to stay calm in social events	80%	10%	10%	0%
He/ She engages in repetitive behaviors when he/ she is in social situations	60%	30%	10%	0%
In social situations, he/ she shows high sensitivity to some stimuli such as noise, touch, sight, sounds, etc	40%	30%	20%	10%
On family or social occasions, he/ she exhibits ritualistic behavior	40%	40%	10%	10%
When he/ she is with others, he/ she shows an insistence on similarity	30%	40%	20%	10%
On family or social occasions, he/ she exhibits noticeably disruptive behaviors	60%	30%	10%	0%
He/ She shows trouble getting to sleep	30%	40%	20%	10%

It appears from the percentages in the table above that behavioral symptoms appeared on a sequential basis, but most of their prevalence was approximately moderate to high.

of persons is more accustomed to routine experiences in their lives and familiar persons in their family or social environment. When they are exposed to new experiences or new persons, they respond with unusual types of behavior, perhaps as a way to express their feelings of anxiety (El-Zaraigat, 2020). Therefore, we can say that feelings of anxiety in persons with autism spectrum disorder are feelings related more to specific new situations or new persons. Perhaps these feelings are also a basic result of the personal characteristics they possess, through which they are described as persons with autism spectrum disorder.

DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Anxiety is seen as the most prevalent disorder in persons with ASD, and approximately 40% of youth with ASD have clinically elevated levels of anxiety (Hollander & Burchi, 2018). It is noted that feelings of anxiety among persons with autism spectrum disorder are more related to the nature of communication or social interaction situations. Whenever the situation or social experience is new, anxiety levels rise. This may be because this group

A person with autism spectrum disorder is a person who is characterized by significant difficulties in communicating with others and challenges in establishing or participating in social relationships. In addition, he

practices various types of unusual behaviors, such as stereotypical, repetitive, and ritualistic behaviors (El-Zraigat, 2016). Naturally, these characteristics restrict a person's ability to interact with the surrounding environment and carry out daily life activities. This limitation in interaction with the surrounding social environment determines a person's experiences and causes noticeable adaptive problems in his daily life. Anxiety may be one of the most important of these problems. This calls for a comprehensive evaluation of the person with autism spectrum disorder, including an assessment of feelings of anxiety and its effects on daily life and adjustment. Therefore, comprehensive treatment for persons with autism spectrum disorder must also be based on a comprehensive assessment of aspects of internal psychological life, including anxiety, which will lead to the provision of specialized psychological therapeutic services from specialists, aimed at achieving optimal level of adaptation and mental health.

The study by MacLennan, Rossow, & Tavassoli, (2021) indicated a relationship between hypersensitivity and anxiety in children with autism disorder. Also, special social pressures often lead to increased anxiety in persons with autism spectrum disorder (Autism Research Institute, 2024). Sukhodolsky, Lecavalier, Johnson, Smith, Swiezy, Bearss, Kalvin, & Scahill (2020) noted that anxiety is associated with the severity of challenging behavior and social difficulties. Some researchers have indicated a correlation between intolerance of uncertainty and anxiety in persons with autism spectrum disorder (Jenkinson, Milne, & Thompson, 2020).

In light of the results, the researchers recommend the following:

- Study the degree of prevalence of anxiety according to the severity levels of autism spectrum disorder.
- Comparing the degree of prevalence of anxiety between females and males with autism spectrum disorder.
- Study the prevalence of anxiety among children and adults with autism spectrum disorder.

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