

## The Effect of Relaxation Therapy in Reducing Anxiety and Tension Among Verbal Persons With Autism Spectrum Disorder in the Kingdom of Saudi Arabia

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Received 17 November 2023; accepted 13 December 2023

Published online 26 December 2023

### Abstract

The current study aimed to investigate the effect of relaxation therapy in reducing anxiety and tension among verbal persons with autism spectrum disorder. The study included 3 cases (2 males and 1 female) in the city of Riyadh, kingdom of Saudi Arabia. To achieve the goal of the study, the researchers designed an anxiety and tension scale and verified its validity and reliability, in addition to construct a relaxation therapy program. To answer the study question, a single-case design approach was used. The results indicated that relaxation therapy helped reduce anxiety and tension. The study recommended using relaxation therapy also with non-verbal persons with autism spectrum disorder, as well as targeting younger ages.

**Key words:** Relaxation therapy; Anxiety and tension; Verbal persons with autism spectrum disorder

Sweidan, M., & El-Zraigat, I. (2023). The Effect of Relaxation Therapy in Reducing Anxiety and Tension Among Verbal Persons With Autism Spectrum Disorder in the Kingdom of Saudi Arabia. *Canadian Social Science*, 19(6), 54-59. Available from: <http://www.cscanada.net/index.php/css/article/view/13243>  
DOI: <http://dx.doi.org/10.3968/13243>

### INTRODUCTION

Persons with autism spectrum disorder are characterized by persistent deficits in communication, social interaction, repetitive behaviors, and limited interests (APA, 2022). These characteristics negatively affect the implementation of daily life activities, and thus the process of adapting

to the requirements of the surrounding environment in which the person lives and responding to its requirements is affected (Al-Smadi & El-Zraigat, 2016). In fact, anyone can suffer from anxiety, as it is common to feel anxious when you are in an embarrassing, difficult, or challenging situation. Likewise, some persons with autism spectrum disorder may feel anxious in their daily lives due to navigating social and sensory environments that may be difficult for them due to the characteristics of the disorder and the resulting problems in communication, social interaction, and behavioral challenges (The National Autistic Society, 2023). Anxiety disorders are common among persons with autism spectrum disorder (Lynch, 2019), and as a trait or condition can negatively affect their lives (Emerson & Adams, 2023). Research indicates that persons with autism spectrum disorder are more likely to suffer from anxiety, and it is estimated that up to half of persons with autism spectrum disorder experience high levels of anxiety on a regular basis (The National Autistic Society, 2023). Anxiety is now considered one of the most common comorbid conditions in youth with autism spectrum disorder (Moskowitz & Braconnier, 2023).

Anxiety is a special personal state of feelings of discomfort, such as worry or fear, and it ranges in severity from mild to profound, and is characterized by a group of physiological, cognitive, social, and emotional symptoms. Examples of these symptoms include: feeling uncomfortable, stomach problems, rapid heartbeat, rapid breathing, sweating, avoidance of social interaction, confused behaviors, and others. While these symptoms are not part of the diagnostic criteria for persons with autism spectrum disorder, many of them experience high levels of anxiety (The National Autistic Society, 2023). According to the criteria for diagnosing autism spectrum disorder, anxiety is not considered a core feature of autism spectrum disorder. However, 40% of youth with autism spectrum disorder have clinically elevated levels of anxiety. Therefore, It is especially important to

recognize and treat anxiety in autism spectrum disorder because it has a significant impact on communication and social interaction (Hollander & Burchi, 2018). In fact, many factors can lead to anxiety in persons with autism spectrum disorder, perhaps among them: difficult social situations, an unstructured environment, and difficulty understanding the feelings of others and problems in responding to sensory stimuli. This can increase stress and increase anxiety among these persons (The National Autistic Society, 2023). On the other hand, many of the symptoms of anxiety in autism spectrum disorder are consistent with the Diagnostic and Statistical Manual of Mental Disorders (5th ed.), there are other symptoms that may characterize anxiety as a condition accompanying autism spectrum disorder, and here they are called autism-related anxiety (Lau, Leong, Uljarevic, Lerh, Rodgers, Hollocks, South, McConachie, Ozsivadjian, Van Hecke, Libove, Hardan, Leekam, Simonoff, & Magiati, 2020).

Emerson and Adams (2023) indicated that family residence is linked to the impact of the child's anxiety, in addition to the severity of the anxiety of the child and the parents, and they stressed the importance of parental participation in psychological and social support for children with autism spectrum disorder who suffer from anxiety. Cooper, Russell, Lei, and Smith (2023) showed that higher satisfaction among persons with autism spectrum disorder was associated with higher psychological well-being and lower social anxiety. Youth who had a higher level of solidarity with those with ASD had higher psychological well-being, but there was no statistically significant relationship between solidarity and social anxiety, so it is important to support youth with ASD to develop an autistic social identity. While the results of White, Livingston, Taylor, Close, Shah, and Callan (2023) indicate that severe avoidance demands are associated with autism and are consistent with the theory that demand avoidance behaviors are likely driven by anxiety in adults. Lau et al. (2020) indicated that caregivers reported more autism-related anxiety, compared to common additional fears.

Given the high prevalence of anxiety in persons with autism, it is important to provide children with coping tools they can use when feeling overwhelmed (Lynch, 2019). Evidence regarding the impact of anxiety on autism spectrum disorder highlights the importance of treating anxiety problems in a timely manner to improve the overall functioning of individuals with autism spectrum disorder (Hollander & Burchi, 2018). Behavioral interventions have shown effectiveness in reducing anxiety in persons with autism spectrum disorder (Norris, Rabner, Storch, Wood, Kerns, Lewin, Small, & Kendall, 2023). Effective relaxation skills help in preventing the nervous system from entering a state of anxiety. Once we interrupt this chain of events, we can then begin to redirect the nervous system from a state of anxious arousal to a

state of calm (Lynch, 2019). Relaxation techniques are considered a very useful method in managing stress and anxiety, as it is a process that reduces the effects of stress on the mind and body. Thus, relaxation therapy refers to a group of exercises that include the process of tightening and relaxing the body's muscles with the aim of bringing these muscles to a state of relaxation for the person targeted by the training. This training process is subject to regular instructions administered by the therapist and who trains the person on it. These techniques help in overcoming long-term anxiety or tension associated with various health problems, such as reducing the activity of stress hormones, increasing blood flow to major muscles, reducing muscle tension, improving concentration and mood, improving sleep quality, reducing fatigue, reducing anger and frustration, and other health problems (Mayo Clinic Staff, 2023).

Studies have indicated the effectiveness of relaxation therapy in reducing anxiety and tension in persons with autism spectrum disorder. The results of a study Mullins and Christian (2001) indicated the effectiveness of progressive relaxation training in reducing the disruptive behaviors of a 12-year-old boy with autism. Also, the results of the study by Reese, Sherman, and Sheldon (1998) suggested the use of a treatment package consisting of differential reinforcement of other behavior (DRO), symbolic fines, and relaxation to reduce disruptive behavior in a young adult with autism and mental disability. While, the results of the study by Laxman (2022) showed that practicing yoga regularly can have many benefits for children with autism spectrum disorder, such as improvement in their levels of flexibility, general physical health, and a feeling of calm and relaxation. Hence, the justification for the current study to reveal the effect of relaxation therapy in reducing anxiety and tension among verbal persons with autism spectrum disorder.

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## THE IMPORTANCE OF THE STUDY AND ITS QUESTIONS

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A related literature review of the prevalence of anxiety among persons with autism spectrum disorder has shown that this group of persons suffer from anxiety, and this in turn negatively affects their adjustment, performance of their daily life activities, and response to the requirements of their environments. Hence, it is necessary to provide these persons with basic skills that enable them to adapt and respond to the requirements of their social environments. Relaxation therapy is seen as an effective technique in reducing anxiety and tension. It helps with self-regulation and then respond appropriately to the requirements of their communication and social interaction. Hence, the current study sought to answer the following main question:

• What is the effectiveness of relaxation therapy in reducing anxiety and tension in verbal persons with autism spectrum disorder?

## STUDY OBJECTIVE

Reducing anxiety and tension through training to tighten and relax muscles.

## OPERATIONAL DEFINITION OF THE STUDY CONCEPTS

Verbal persons with autism spectrum disorder: They are the persons participating in the study. Their age ranges between 20-24 years and they are characterized by a noticeable weakness in communication and social interaction, in addition to repetitive behaviors and restricted activities.

Relaxation therapy: It is a group of activities, training and exercises that are based on tightening and relaxing the body's muscles and lead to physical and mental relaxation and reduce anxiety and tension.

Anxiety and tension: a state of fear, panic, and non-specific anticipation accompanied by physiological, cognitive, behavioral, social, and emotional symptoms, such as increased heart rate, sweating, stomach and sleep problems, confusion, difficulties in self-regulation, and others.

## RESEARCH METHODOLOGY

To answer the study question, a single case study design approach (ABA) was used (pre-measurement - treatment - post-measurement).

## PARTICIPANTS

The study included three cases (2 males and 1 female) whose ages ranged from 20-24 years in the city of Riyadh, kingdom of Saudi Arabia. These cases were diagnosed with autism spectrum disorder, level 1.

## ANXIETY AND TENSION SCALE

The two researchers constructed a scale specifically for anxiety and tension for person with autism spectrum disorder, by referring to the relevant literature (Arzt, 2022; Cleveland Clinic, 2023; Mind, 2023; Montijo, 2021). The scale measures physiological, cognitive, social, emotional and behavioral symptoms. The severity of anxiety and tension was measured according to four ratings: high, moderate, low, and not at all.

The validity of the scale was verified through construct validity, and the validity coefficients ranged between 0.81-0.89. While the reliability was achieved through test-

retest reliability, and the reliability coefficients for the scale ranged from 0.83-0.91.

## RELAXATION THERAPY PROGRAM

The goal of the program was to train the muscles to relax, reaching a state of complete relaxation of the body, reducing anxiety and tension. The program included 25 training sessions, each lasting 30 minutes. The program included exercises to tighten and relax the muscles, which ultimately lead to muscle relaxation for the body and mind. The program was constructed by referring to the relevant scientific literature (Bernstein & Borkovec, 2000; Hazlett-Stevens, Bernstein, & Borkovec, 2022; HelpGuide.org., 2023; HelpGuide.org., 2023; Lovering, 2022; Stanley, 2023).

## RESULTS

**Case 1:** 23-year-old female. After applying the anxiety and stress symptoms scale to persons with autism spectrum disorder, it was found that she suffered from severe anxiety and tension, and this is evident through their physical, emotional, cognitive, social, and behavioral symptoms. After implementing a relaxation program to treat anxiety and tension, which included 25 sessions of 30 minutes the therapist combined all the sessions into exercises that helped the case to relax and meditate on her own later. The therapist trained the student on how to breathe correctly in terms of Inhale and exhale, and the duration of taking the correct breath in most cases does not exceed five seconds, then after that it moves to the muscle stage and begins in the upper part of the body, such as the arms, shoulders, chest, stomach, back, face, forehead, and eyebrows, and then moves to the lower part of the body, such as the buttocks, hips, thighs, and feet. legs and toes. Finally, the therapist moved to the parts of the body as a whole. After these exercises, the teacher began to engage in mental meditation and visualization, as she gave the student yoga exercises to relieve her stress. Upon completion of these exercises, a clear change and improvement was noted in the student's behavior, such that she became a calmer person and decreased tension and anxiety.

**Case 2:** A 24-year-old male. After applying the anxiety and stress symptoms scale for person with autism spectrum disorder, it was found that he suffers from moderate anxiety and stress, and this was evident through their physical, emotional, cognitive, social, and behavioral symptoms. The case in the pre-measurement showed strong breathing during stress and fear, and this breathing occurs very quickly. After training, he started breathing through the nose and slowly. At first he had difficulty breathing, but after applying the session he was able to focus more on the breathing rhythm. At first,

the case had difficulty controlling her muscles, which increased his tension, but after continuous training, he was able to control the muscles of her right and left feet. The therapist had difficulty finding an appropriate position for the condition, but after a period of time had passed and another activity was applied with the case, he was able to find the appropriate position for him, and after training in muscle relaxation, she noticed a clear improvement in the condition.

The relaxation program included six dimensions detailed as follows: deep breathing, progressive muscle relaxation, body scan meditation, visualization, self-relaxation, and mindfulness meditation. The training included 25 sessions of 30 minutes each. Upon completion of these exercises, a clear change and improvement was noted in the case behavior, such that she became a calmer person and decreased tension and anxiety.

**Case 3:** A 22-year-old male. After applying a measure of anxiety and tension symptoms for persons with autism spectrum disorder, it was found that he suffers from severe anxiety and tension, and this was evident through the estimates on a scale that showed his physical, emotional, cognitive, social, and behavioral symptoms. At first, the person had difficulty controlling his muscles, causing his tension to increase, but after continuous training, he was able to control the muscles of his right and left feet. The therapist had difficulty finding a suitable position for the person, but after a period of time and applying another activity with the person, he was able to find the appropriate position for him, and after training in muscle relaxation, he noticed a clear improvement in the person. After that, training was done on the upper part of the body (the right arm), and the strategy of tightening and loosening the arm and then completely relaxing it was used. Here, the person was able to get rid of pointless play with the hands by satisfying her sensation by pressing the arm. Then the training was continued to tighten and relax the upper body.

To focus on the forehead, the therapist used glasses to draw the person's attention to the forehead and eyebrows. She made movements that indicated both tension and relaxation, and asked him to imitate them. He also made some gestures in the cheeks that helped her train the person to relax, and here the person was able to differentiate between tension and relaxation in the forehead, cheeks, and eyes. Then he moved to his jaw and mouth and asked him to open his mouth as if he was yawning to feel the tension and then relax after gradually closing the mouth. After that, I directed the person's attention to tightening the neck muscles through stretching exercises by having the person move her neck back so that she looks at the ceiling or lowers her head to the side. Bottom so that you look at the ground, and at this stage the person becomes aware of how relaxed his neck muscles

are. This was then followed by training on the person's shoulders, raising them to the top and then relaxing them to the bottom, while inhaling and exhaling each time. Then, focusing on the chest area was followed, so as to tighten the rib cage and upper back while continuing to breathe. The therapist found a clear improvement in tightening, relaxing, and taking the breath. In the same way, all other muscles of the body were targeted.

In progressive muscle relaxation training, the session begins with the person's feet and then progresses upward. But instead of tensing and relaxing the muscles, we simply focus on the way each part of his body feels, without labeling the sensations as "good" or "bad." Here the therapist asked the person to lie on his back with his legs uncrossed, and his arms relaxed at his sides. With his eyes open or closed. He focused on having the person breathe for about two minutes until he began to feel relaxed. He began to focus on all the areas that she had previously trained the person on, from the lower body to the upper body. When she finished training the session, a noticeable change was evident in the person's behavior, as she became calmer than before.

After that, we moved on to training in guided imagination, where the therapist adapted the environment for the person in terms of calm and comfort, and asked him to close his eyes and start imagining, and began telling a story about nature, waves, and the sea, while putting on calm music. The person and the therapist encountered great difficulty in this exercise, so the exercise was repeated over a period of time. Over the course of three days until the person masters it. This exercise was practiced during the person's daily classes, so that the therapist gives the person time to relax, especially when she feels that the person is starting to get bored and stressed out by the academic environment.

The person's relaxation program included six dimensions detailed as follows: deep breathing, progressive muscle relaxation, body scan meditation, visualization, self-relaxation, and mindfulness meditation. The training included 25 sessions of 30 minutes each. Upon completion of these exercises, a clear change and improvement was noted in the person's behavior, such that the person became calmer, stress and anxiety decreased, and his self-regulation and communication skills improved.

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## STUDY LIMITATIONS

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The study included three cases of verbal adults with autism spectrum disorder. Relaxation therapy also includes exercises specific to this category and taking into account its characteristics. In addition, the anxiety and tension scale was designed to suit those with autism spectrum disorder.

## DISCUSSION, CONCLUSIONS, AND RECOMMENDATION

The cases participating in the study showed that they suffer from anxiety and tension, and this anxiety and tension are different in their symptoms from the anxiety that ordinary people suffer from. Anxiety and tension for persons with autism spectrum disorder results from a variety of factors, including changes in the person's surrounding environment, confusion in responding to the various types of sensory stimuli to which they are exposed, and difficulties in communication and social interaction. In addition, behavioral problems such as repetitive behaviors and limited activities pose challenges in adjusting to daily demands.

Relaxation therapy was a suitable behavioral treatment to reduce anxiety and stress. After applying this treatment with people with autism spectrum disorder, it became clear that this type of treatment is effective in reducing anxiety and tension and bringing the person to a state of calm. Relaxation therapy, through tightening and relaxing the muscles, helps achieve muscle relaxation for the body and mind. This, in turn, improves the functioning of brain functions, thus improving emotions, self-regulation, and improving the ability to solve daily problems. All of this ultimately leads to an improvement in the level of adaptation and achieving a better level of psychological health.

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

- Evaluating levels of anxiety and tension as conditions associated with people with autism spectrum disorder.
- The current study used a single-case design approach, and it would be appropriate to use a two-group design approach (experimental and control group).
- Using relaxation therapy with persons with autism spectrum disorder is an essential part of comprehensive therapeutic interventions.
- The study used relaxation therapy to reduce anxiety and tension with adults with autism spectrum disorder, and it would also be appropriate to target younger ages with autism spectrum disorder.
- The study participants were verbal persons with autism spectrum disorder, and it would also be appropriate to target non-verbal persons as well

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