

The Importance of Adapted Physical Activities in Modifying Disorders in Children with Autism Spectrum Disorder

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Received: 01/07/2024

Published: 04/02/2025

Abstract

This study aims to investigate the role of practicing adapted physical exercises and activity programs in modifying certain behavioural disorders exhibited by children with autism in their interactions with others, whether in centres, families or communities. The researchers used a descriptive analysis method appropriate for such studies. A questionnaire was distributed to a purposive sample of 12 pedagogical supervisors responsible for the care and security of children with autism in the Pedagogical Rehabilitation Centre in the province of Chlef. The study yielded several results, the most important of which was that adapted physical exercises increased the self-confidence of children with autism, facilitated their communication with others and reduced their feelings of anxiety. The main recommendations were to ensure that specialists in adapted physical activity receive thorough training and to apply what they have learned to address disabilities in children with autism.

Keywords: Adapted physical activity, Disabilities in children with autism spectrum disorder.

1- Introduction and Research Problem:

Adapted sports activities are considered important tools that have proven effective in the field of rehabilitation for individuals with disorders or disabilities, whether motor, sensory, or cognitive. Children with autism are among the special needs groups that require protection, attention and care. One of the main symptoms of autism is communication difficulties and challenges in social relationships, along with narrow and limited interests. Many doctors have attempted to understand the causes of this disorder, attributing much of it to organic rather than psychological reasons, although these causes are still not fully defined and no specific medication has been established.

Despite this ambiguity, the use of certain medical, behavioral, and educational interventions has shown significant progress with these children. The best programs should involve these individuals with other children, their families, and their communities, avoiding isolation, which increases their withdrawal. Adapted physical activities include exercises that play a crucial role in building the personality of the disabled individual-psychologically, socially, and physically. They include guided practices that fulfill the individual's psychological, physical, and social desires.

However, autism remains surrounded by much ambiguity and lack of awareness, despite the fact that autistic children are among the special needs groups that require heightened attention. Autism is a developmental disorder that is not rare, representing a significant proportion that cannot be ignored. Based on the aforementioned points, several questions arise that this research seeks to answer: Does adapted physical activity play a role in improving some symptoms of autism in children?

Research hypotheses:

1. Does adapted physical activity contribute to the improvement of self-related symptoms in autistic children?
2. Does adapted physical activity contribute to improving other-related symptoms in children with autism?

2- Aims and significance of the study:

- To test the role of adapted physical activity in reducing and improving specific symptoms in autistic children.
- To increase interest in the group of autistic children, as they are one of the populations that require comprehensive study and support within the community.
- To continue research on autism, especially in Algeria.

- To highlight the importance of this study as it scientifically addresses a disorder that significantly hinders the normal development of autistic children.

3- Definition of Terms in Adaptive Physical Activities Research:

A set of sports and exercises modified to enable individuals with disabilities to participate in sports activities. This includes various developmental and preventive programs that include sports activities and games that are adapted to the nature and severity of the disability. These modifications are made according to the interests and abilities of persons with disabilities. (Halim, p. 8)

Operational Definition: In this study, adaptive physical activities refer to any activity modified according to the capabilities of individuals with motor disabilities (lower limbs) to practice wheelchair basketball, aiming to develop and improve certain personal characteristics in individuals with motor disabilities.

Autism:

- **Linguistic Concept:** The term “autism” is derived from Greek and means isolation or withdrawal. In Arabic, it is referred to as “selfhood” (a term not widely used). Autism is not simply introversion; it is a pathological condition characterized by rejection of interaction with others, along with varying behaviors and problems from one individual to another. (Ramadan Muhammad Al-Qadhafi, p. 28)

- **Terminological Concept:** A pervasive developmental disorder characterized by a pattern of impairments, including various communication skills, failure to develop relationships, and repetitive stereotyped behaviors. Although nearly half of children with autism have some degree of intellectual disability, this is often difficult to assess in early childhood due to overlapping self-directed behaviors with precise cognitive evaluation. The disorder was first described by Kanner, and it is now recognized as a neurobiological disorder of the brain accompanied by diverse symptoms, affecting approximately 2% of the population. The causes of autism are largely unknown, but increased attention to autistic children may help identify factors associated with the occurrence of these cases.

Operational Definition: A neurobiological self-regulatory disorder manifesting as a halt in development across linguistic, cognitive, emotional, and social dimensions, or the loss of these abilities after their development, negatively impacting the personality of the autistic child. This is referred to as Autism Spectrum Disorder. (Awfik, p. 8)

4- Methodological Procedures Followed:

Research Methodology: The descriptive method aims to discover facts and accurately describe phenomena, defining their qualitative or quantitative characteristics. It investigates the previous state of phenomena and how they reached their current form, attempting to predict their future states by focusing on their past, present, and future. (Marwan Abdul Majid Ibrahim, 2000, p. 157)

5- Exploratory Study: The primary purpose of conducting an exploratory study is to explore and observe the immediate field of study. Through this, one can:

- Accurately identify and define the study sample.
- Choose the appropriate methodology and tools for the sample.
- Select suitable statistical tools.

6- Study Population

The study population consists of the supervisors at the rehabilitation center in Chlef, numbering 12 educators. Due to the small size of the research community, the researcher employed a comprehensive survey method, treating the entire population as the study sample, which comprised 12 individuals.

7- Tools Used

In this study, a questionnaire was used to collect field data. It can be defined as a model that includes a set of questions directed at respondents to obtain information regarding a topic, problem, or situation. The questionnaire is filled out directly by the respondents, and it may also be sent by mail, in which case it is referred to as a mailed questionnaire (Alawi, p. 44).

The questionnaire was divided into two sections:

1. Section One: Contains questions related to improving certain symptoms of autism concerning the self, comprising 6 questions.

2. Section Two: Contains questions regarding the improvement of certain symptoms of autism concerning others, also comprising 6 questions.

To verify the validity of the tool, the questionnaire was presented to 10 specialized professors for evaluation regarding the appropriateness of its items for the purposes of the study and their linguistic accuracy. After reviewing the opinions and comments of the evaluating professors, the results indicated that most items achieved an agreement level among the evaluators exceeding 95%.

To ensure a scientific and objective analysis of the data, the researchers employed various descriptive and inferential statistical methods using the Statistical Package for Social Sciences (SPSS). Among the methods used were: percentages, correlation coefficients, Cronbach's alpha, and analysis of variance (ANOVA).

8- Presentation, Analysis, and Discussion of Results

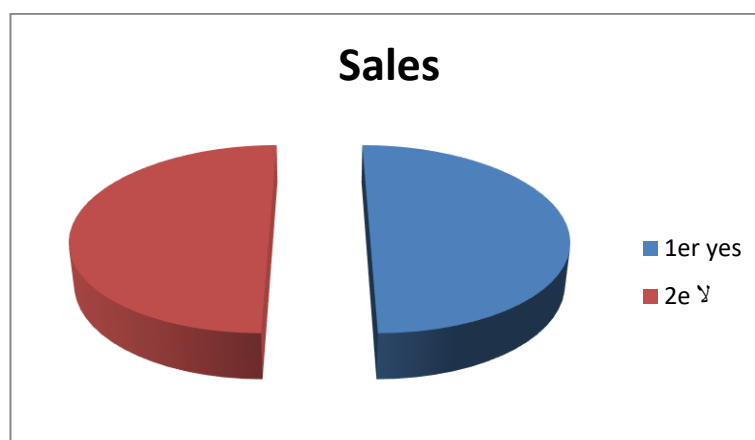
Section One: The contribution of adapted physical activity in improving certain symptoms concerning the self in children with autism.

First Question: Do children hurt themselves when angry while engaging in physical activities?

Based on the statistical analysis, since the degrees of freedom are 2 and the tabulated chi-square value is 5.99, the calculated chi-square value is 38.31, which is greater than the tabulated value at the 0.05 significance level. This indicates that there are statistically significant differences

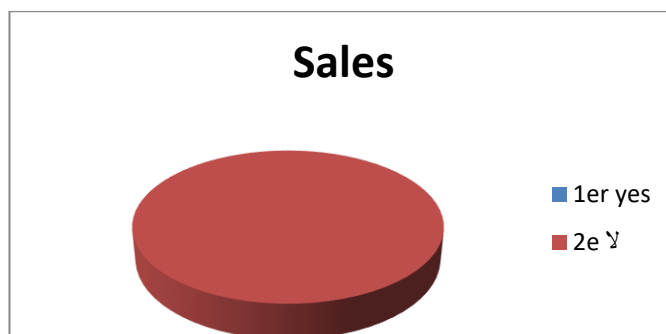
Table 1:

Responses	Frequency	Percentage	Calculated Chi-square (χ^2)	Tabulated Chi-square (χ^2)	Degrees of Freedom	Level of Significance
Yes	0	100%	38.31	5.99	02	Statistically Significant
No	12	0%				



Question Two: Does the child bite their fingers when angry during physical activity?

Responses	Frequency	Percentage	Calculated Chi-square (χ^2)	Tabulated Chi-square (χ^2)	Degrees of Freedom	Level of Significance
Yes	6	50%	30.97	5.99	02	Statistically Significant
No	6	50%				



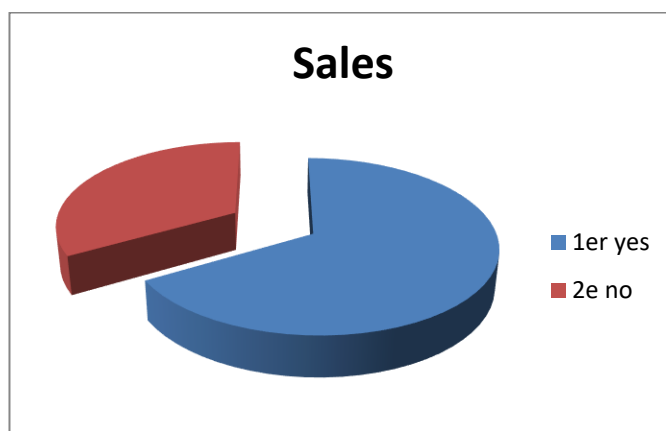
The statistical analysis indicates that, with a degree of freedom of 2, the critical value of χ^2 (chi-squared) is 5.99. The calculated χ^2 value is 30.97, which is greater than the critical value at the 0.05 significance level. This suggests that there are statistically significant differences.

Section Two: Adapted physical activity helps improve some symptoms associated with other symptoms.

Question one: Does the child participate in sports with peers?

Responses	Frequency	Percentage	Calculated Chi-square (χ^2)	Tabulated Chi-square (χ^2)	Degrees of Freedom	Level of Significance
Yes	8	66.2%	29.31	5.99	02	Statistically Significant
No	04	33.1%				

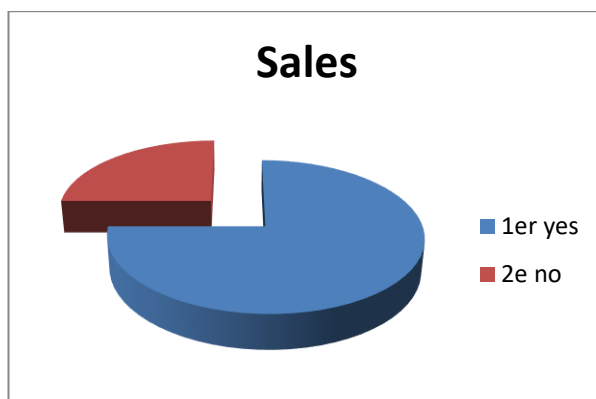
According to the statistical analysis, since the degrees of freedom are 2 and the critical chi-square value (χ^2) is 5.99, the calculated chi-square value (χ^2) is 29.31, which is greater than the critical value at the 0.05 level. This indicates that there are statistically significant differences.



Question Two: Does the child help his or her peers with sports exercises?

Responses	Frequency	Percentage	Calculated Chi-square (χ^2)	Tabulated Chi-square (χ^2)	Degrees of Freedom	Level of Significance
Yes	9	75.6%	32.97	5.99	02	Statistically Significant
No	3	25.2%				

Based on the statistical analysis, given that the degrees of freedom are 2 and the tabulated chi-square value is 5.99, the calculated chi-square value is 29.31, which is greater than the tabulated chi-square at the 0.05 significance level. This indicates that there are statistically significant differences.



9- Conclusion:

In conclusion, this study confirms the effective role of adapted physical exercises and programs in reducing impairments in children with autism. This, in turn, facilitates the child's social communication with family members, rehabilitation centers, and the broader community. Caregivers who participated in this study noted that children with autism felt more comfortable interacting with others and participating in adapted sports activities.

10- Findings

From this study, several conclusions can be drawn:

- Adapted physical exercises strengthen the weaknesses of children with autism, such as difficulties in controlling their movements.
- These exercises enhance the self-confidence of children with autism, enabling them to communicate better with their environment and gradually reduce feelings of fear, which facilitates their integration into society.
- There is positive energy and enthusiasm among children with autism towards participating in adapted sports activities.
- Caregivers of children with autism are aware of the necessity of engaging in physical exercises to mitigate the disorders these children experience.

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