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# Effect of a Proposed Recreational Physical Activity Program on Enhancing Conversational Skills in Children with Attention Deficit Hyperactivity Disorder (ADHD)

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**Abstract:**

This study aimed to assess the effect of a proposed recreational sports program on the development of dialogue skills in children with hyperactivity disorders. The study employed a quasi-experimental method on a sample consisting of 12 boys suffering from hyperactivity. The program was applied over a period of 8 weeks. Data was collected using an expert-approved questionnaire administered to parents and reviewed by experts. Following statistical analysis, the results showed that the proposed recreational sports program for children with hyperactivity disorders has a positive impact on enhancing dialogue skills.

**KEY WORDS :** Recreational sports program; dialogue skills; hyperactive children; motor education.

**الملخص:**

هدفت الدراسة إلى قياس تأثير برنامج ترويحي رياضي مقترح على تنمية مهارات الحوار لدى أطفال ذوي اضطرابات فرط الحركة. استخدمت الدراسة المنهج الشبه التجريبي على عينة من أطفال متكونة من 12 طفلا يعانون من فرط الحركة (ذكور)، حيث طبق البرنامج خلال 8 أسابيع، لجمع البيانات استخدمنا استبيان محكم من طرف الخبراء، وموجه الى الاباء، وبعد المعالجة الإحصائية تم التوصل إلى أن للبرنامج الترويحي الرياضي المقترح لأطفال ذوي اضطرابات فرط الحركة تأثير إيجابي على تنمية مهارات الحوار.

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**الكلمات المفتاحية:** برنامج ترويحي رياضي؛ مهارات الحوار؛ أطفال فرط الحركة؛ تربية حركية.

## 1-Introduction:

Autism Spectrum Disorder (ASD) is the most common type of developmental disorder. It is a group of disorders characterized by qualitative differences in reciprocal social interactions, communication patterns, interests, and stereotyped and restricted activities. These qualitative differences are a common feature of the individual's behavior across all situations. According to statistics from the American Autism Association, the prevalence rate of autism in 1999, was five children per 10,000 births (Landa, R., & Garrett, M., 2006: 629-638), while in 2021, this rate reached one in every 127 individuals affected by autism (World Health Organization, 2025).

Attention Deficit Hyperactivity Disorder (ADHD) poses a global developmental challenge, extending beyond mere behavioral and motor dimensions to include notable deficits in social and cognitive skills, particularly the ability to manage dialogue and constructive interaction (American Psychiatric Association, 2022: 68-70). Although traditional pharmacological and behavioral interventions are effective in treating the core symptoms of ADHD, there is an urgent need for innovative adjunct intervention programs that focus on developing qualitative aspects and social behavior, leveraging the latent potential of physical and recreational activities (Safren et al., 2005: 487-501).

Attention Deficit Hyperactivity Disorder (ADHD) is one of the most common neurodevelopmental disorders in childhood, characterized by a persistent pattern of impulsive behaviors, difficulties in attention, and high levels of motor activity (American Psychiatric Association, 2022: 68-70).

Pharmacological interventions and cognitive-behavioral therapies have long dominated the primary treatment landscape for Attention Deficit Hyperactivity Disorder (Safren et al., 2005: 487-501). While these approaches are effective in controlling core symptoms, there is

now an urgent need for innovative adjunct intervention programs that focus on developing personality qualities and social behavior, especially those harnessing the latent potential of physical and recreational activities. Previous literature has demonstrated that regular physical activity has multiple positive effects on executive functions of the brain and psychological support for children with special needs (Hillman et al., 2008: 58-65). Physical exercise improves blood flow to brain regions responsible for attention, planning, and emotion regulation, thereby providing a better neurobiological environment for acquiring complex social skills.

Previous literature has confirmed that regular physical activity has multiple positive effects on executive functions and psychological support for children with special needs (Hillman et al., 2008: 58-65). In this context, the current study proposes a specifically designed sports recreational program as an intervention variable aimed at investigating its impact on improving communication skills among a sample of children diagnosed with Attention Deficit Hyperactivity Disorder.

Study: Maamar Riad, Qudour Bay Belkheir, 2024, The Role of a Proposed Recreational Sports Program in Reducing Behavioral Problems in Children with Autism (7-12 Years Old)

The study aimed to investigate the role of a proposed recreational sports program in reducing behavioral problems among children with autism. It employed the experimental approach, with the research sample consisting of 14 children suffering from these problems, aged between 7-12 years, selected purposively. The research tools included the Behavioral Disorders Scale for Children with ASD and the proposed recreational sports program based on play. After implementing the program for eight weeks at a rate of four sessions per week, the results were collected and analyzed. The conclusions indicated that the proposed recreational sports program contributed to reducing behavioral problems among children with autism spectrum disorder.

Study: Bouras Sabah, Mourad Khalil, 2023, The Contribution of Recreational Physical Activity to Improving Attention Deficit and Hyperactivity in Children with Intellectual Disabilities from the Perspective of Pedagogical Psychological Center Educators

The study aimed to identify the extent to which recreational physical activities contribute to improving attention deficit and hyperactivity in children with intellectual disabilities, from the perspective of educators in pedagogical psychological centers. The study sample consisted of 48 male and female educators selected purposively. The descriptive approach was adopted, with a questionnaire form used as a tool for data collection, comprising two dimensions: attention deficit and hyperactivity. SPSS was used for data analysis. The results showed that recreational sports physical activities effectively contribute to improving attention deficit and reducing hyperactivity in children with intellectual disabilities.

Study: Gharbi Jihad, Chafiq Said, 2024, Attention Deficit Hyperactivity Disorder in Children: A Theoretical Approach

The study focused on one of the most important psychological and behavioral topics in children, namely attention deficit hyperactivity disorder, which appears in childhood and persists into adolescence and adulthood in varying and more complex forms and symptoms. Hence, the importance of conducting this study arose through presenting a comprehensive theoretical approach that included various medical, psychological, and educational aspects of attention deficit hyperactivity disorder. It discussed concepts, definitions, types, explanatory theories, and other important points related to this disorder, up to diagnosis and treatment. Through this study, the researchers concluded that attention deficit hyperactivity disorder is a complex disorder affecting children, with multiple causes and types, and its prevalence has recently increased. Therefore, early intervention and accurate diagnosis to provide diverse treatment options—most importantly medical and behavioral therapy—are the most crucial step needed for children affected by this disorder to limit its spread and alleviate its symptoms in early stages.

Study: Abdel Qader Lekhal, Ali Hadi, 2022, The Impact of a Proposed Recreational Sports Program on Developing Social Interaction in Children with Hearing Impairments (11-13 Years Old)

The study aimed to highlight the extent of the impact of a proposed recreational sports program on developing social interaction among children with hearing impairments aged 11-13 years. For this purpose, the experimental approach was used on a sample of 20 male children with hearing impairments affiliated with the School for Hearing-

Impaired Children in Chlef Province, selected purposively from the hearing-impaired children's school in Nasr neighborhood, Chlef Province. The Social Interaction Scale was used to collect data. After statistical processing, it was found that the proposed recreational sports program had a positive impact on developing social interaction among children with hearing impairments (11-13 years old). Based on this, the study recommended adopting the proposed recreational sports program for children with hearing impairments to enhance their social interaction, conducting more similar research in this field on different age groups to discover the talents and abilities of these children (with hearing impairments), as they possess significant buried talents.

**The general question of the study and the hypotheses under study.**

Attention Deficit Hyperactivity Disorder (ADHD) is one of the most prominent neurodevelopmental disorders in children, affecting approximately 5 to 7% of school-aged children and impeding the development of their social skills, such as dialogue and effective communication, as it impacts cognitive, behavioral, and social aspects, including deficits in dialogue and communication skills (Bouras Sabah, Mourad Khalil, 2023: 756). These children often face difficulties in active listening, organized verbal expression, and keeping pace with conversation rhythm due to their hyperactivity (Faraone et al. 2021, April 1). Recent studies have shown that recreational physical activity effectively contributes to improving attention deficits and reducing hyperactivity in children with special needs, including intellectual disabilities, and has proven effective in developing social skills such as peer communication and self-regulation, opening avenues to expand its impact on dialogue skills in children with ADHD (Attafah Muhammad Al-Amin, Si Al-Arabi Sharif, 2022 : 42-60). Recreational sports programs emerge as a non-pharmacological yet effective tool for enhancing the social aspect, as physical activity stimulates focus and social interaction. Despite evidence of the benefits of recreational sports programs in promoting social and cognitive skills, there remains a clear research gap regarding their direct contribution to developing dialogue skills specifically in children with ADHD, Therefore, based on the findings of previous studies, the problem at hand is as follows:

**Study Question**

Can a recreational sports program contribute to developing dialogue skills in children with Attention Deficit Hyperactivity Disorder?

**Study Hypothesis**

A recreational sports program can contribute to developing dialogue skills in children with Attention Deficit Hyperactivity Disorder.

## 2- General objective of the study:

-This study aimed to measure the effectiveness of a recreational sports program in developing communication skills among children diagnosed with Attention Deficit Hyperactivity Disorder (ADHD).

- To demonstrate that the goals of the recreational sports program are not limited to the physical and behavioral aspects of these children, but encompass all aspects, whether physical, mental, or social.

- To determine the role of the proposed recreational sports activity in reducing communication problems in children with ADHD.

- To demonstrate that recreational physical education programs include developing dialogue skills in children with ADHD, through the support provided to this group, to ensure the success of these programs.

## 3- Procedural definition of the concepts mentioned in the research:

**- Recreational Sports Program**: Defined by (Amriou Zouhair and Yaakoubi Fateh, 2014: 396), recreation encompasses a range of activities undertaken by individuals for their own enjoyment during leisure time, stemming from an intrinsic desire for entertainment, relaxation, and social integration.

The researcher concludes that most children possess a greater capacity for imagination compared to originality, a finding consistent with numerous scientific studies and research in this field.

**- Dialogue Skills**: Defined by (Al-Fifi, 2006: 30), dialogue requires at least two participants, involving an exchange of words, provided that neither party monopolizes the conversation. It is characterized by calmness and is free from hostility and anger.

The researcher concludes that dialogue is of paramount importance in our lives, both personally and within our families and communities. It strives to achieve diverse objectives, ranging from establishing balance to achieving stability.

**- Attention Deficit Hyperactivity Disorder (ADHD)**: Defined by (Abdelkader Al-Aib and Zeinab Houdachi, 2022: 4), ADHD is a behavioral disorder diagnosed in children and adolescents. It is characterized by a range of symptoms that appear in childhood and persist into adolescence and adulthood. These symptoms can lead to difficulties in adapting to family, social, and personal life in general if left undiagnosed and untreated.

The researcher concludes that hyperactivity poses a significant challenge, particularly for parents and teachers, due to the difficulty in managing the behavior of these children, especially their academic performance. To date, no effective treatment or cure has been found for this disorder, and research is ongoing.

## 4- The methodological procedures used in the study:

### 4-1 Method and Tools:

- **Methodology**: The study employed a quasi-experimental approach, combining pre- and post-tests. This is a common approach in studies related to sports interventions for children with ADHD.
- **Exploratory Study**: The exploratory study constituted the first stage to determine the characteristics of the population, such as the prevalence of ADHD and the level of communication skills, through a questionnaire administered to parents. This aimed to formulate the study hypotheses and select the sample. The researcher used the questionnaire (a questionnaire directed at parents to assess daily communication) as the instrument, along with a descriptive statistical analysis of the results.
- **Study Population and Sample**: The study population consisted of children with ADHD (aged 10-12 years) at the Martyr Marfoua Samahi Psycho-Pedagogical Center in Laghouat. The study sample comprised 12 children with ADHD, selected purposively, excluding those with severe co-occurring disorders.
- **Study Areas:**

**A- Timeframe**: The main experiment (distribution of the questionnaire and implementation of the proposed program) was conducted between February 4, 2023, and March 29, 2023.

**B- Location**: This study was conducted at the Psycho-Pedagogical Center in Laghouat - Martyr Marfoua Samahi.

**- Study Procedures:**

Variables Identification and Measurement:

Independent Variable: The recreational sports program (group physical activities, 8 weeks), measured by the number of sessions implemented, with adherence (daily attendance record).

Dependent Variable: Communication skills.

**- Research Instrument:**

In light of the objectives and nature of this study, and in order to test the proposed hypothesis and determine its validity, we used a questionnaire, validated by experts, that measures communication skills. The questionnaire was developed by the researchers and directed to the parents of students with hyperactivity. It was administered: before the program (week 0) and after (week 8).

**- Proposed Program:**

The recreational sports program will run for 8 weeks, with controlled environments (open sports field, divided into small groups of 3-4 children).

Procedures: 1) Partial randomization, 2) Implementation of the program (2 sessions/week).

Conditions: Evening session (2:00-3:30 PM), with a 5-minute warm-up, followed by a 5-minute cool-down.

Implementation Format: Weekly schedule (Sunday: ball games, Wednesday: cooperative, free movement).

**- The scientific foundations of the tool:**

**Parental Questionnaire**

**A- Reliability:**

Reliability refers to the dependability of a measurement tool or test. This means that a test is reliable if it consistently produces the same results when used multiple times under similar conditions. (Mohammed Sarhan Ali Al-Mahmoudi, 2019: 136)

Therefore, the reliability of the instrument was calculated using Cronbach's alpha with the Statistical Package for the Social Sciences (SPSS). The researcher calculated the instrument's alpha coefficient to

test its reliability. The alpha value ranges from 0 to 1; the closer it is to 1, the higher the reliability, and the closer it is to 0, the lower the reliability.

Table N°1: Shows the reliability coefficients (application-test and test-retest) for the questionnaire directed at parents.

| axis | Sample | stability coefficient | Sig. (bilatéral) |
|---|---|---|---|
| Dialogue focus (tribal) | 12 | 0,75 | 0,00 |
| Dialogue focus (after) | | | |

**Source:** Hadj Aissa Taha (2026)

The reliability coefficient shown in the table was calculated using the test-retest method for the two hyperactivity variables. A correlation coefficient of 0.75 was obtained, with a statistical significance level of 0.00, for a sample of 12 participants. This indicates high reliability and strong validity of the scales.

Interpretation of Results: A correlation coefficient of 0.75 is considered an indicator of good to excellent reliability (according to psychological standards such as Cohen's study), particularly in the context of test-retest reliability. The bipartite significance level is 0.00.

**B- Expert Validity:**

The instrument was presented to a panel of experts, professors specializing in the field of social psychology from the University of Laghouat. Following the review process, some modifications were made based on the professors' feedback, including:

- Amendments to some sections.

- Removal of some questions that were outside the scope of the study's hypothesis.
- Linguistic revisions.
- **Statistical tools**: SPSS was used: paired samples t-test (pre/post) and independent samples t-test, at a significance level of 0.00.

## 4-2 Presentation and Analysis of Results:

In this element, the researcher presents the results in a quantitative way

Table N°2: Arithmetic mean and standard deviation (T-test) of dialogue skills between the pre-test and post-test of the effect of the proposed recreational program on the verbal communication skills of children with ADHD

| axis | Recreational activity | Sample | arithmetic mean | Standard deviation | Difference between | t-test | Degree of freedom | Probability value |
|---|---|---|---|---|---|---|---|---|
| Dialogue skills | Pre-test | 18,25 | 12 | 2,56 | 4,58 | 7,86 | 11 | 0,00 |
| | Post-test | 13,67 | 12 | 3,03 | | | | |

**Source:** Hadj Aissa Taha (2026)

Table (2) shows the differences in the pre-test scores for dialogue skills among deaf-mute children. The mean score was (18.25) with a standard deviation of (2.56), while the mean score for the pre-test was (13.67) with a standard deviation of (3.03). The difference between the pre-test and post-test mean was (4.58), which is supported by the t-test value of (7.86) at a p-value of (0.00), less than the p-value of (0.05).

This supports the hypothesis that there are statistically significant differences in dialogue skills between the pre-test and post-test scores for children with ADHD, attributable to the proposed recreational program.

## 4-3 Discussion and interpretation of the results:

Table 2 shows statistically significant differences in the dialogue skills of deaf-mute children between the pre-test (mean 18.25, standard deviation 2.56) and the post-test (mean 13.67, standard deviation 3.03), with a mean difference of 4.58, a t-value of 7.86, and $p = 0.00$ ($<0.05$), confirming the effectiveness of the proposed recreational program.

The positive difference in means explains the decrease from relatively high pre-test scores (possibly reflecting initial skill weaknesses) to improvement in the post-test. The t-test indicates a high degree of significance attributable to the intervention of the recreational sports program, which promotes social communication and dialogue through group interactions. This improvement is consistent with studies confirming that physical activity improves executive functions and pragmatic communication in children with ADHD. The study "The Impact of a Proposed Recreational Sports Program on the Development of Social Interaction in Children with Hearing Impairments (11-13 Years Old)" (Abdelkader Al-Aib and Zeinab Houdachi, 2022: 17) aligns with the findings of this study, concluding that the proposed recreational sports program had a positive impact on the development of social interaction in children with hearing impairments (11-13 years old), with significant pre- and post-test differences. Similarly, the study "A Study of Social Skills in Children with ADHD" (Ben Chouk Asma, Assia Abdellah, 2023: 202) found significant differences at the 0.01 level between children with and without ADHD, indicating the potential for improvement through interventions.

However, our study partially contradicts the study "The Level of Social Skills in Children with ADHD" (Soualmia Rafida, Boudhri'a Manal, 2025: 82), which focused on non-significant differences between genders without clearly indicating significant post-test improvement, despite acknowledging weaknesses in basic skills. However, the study published by (Arzu Koçak Uyaroğlu, 2021: 29) in

the Baltic Journal of Health and Physical Activity, which contradicted our findings, concluded that there was no statistically significant difference in the "inappropriate social behaviors" dimension between the pre- and post-tests ($p>0.05$), despite the overall improvement in individuals with ADHD.

This improvement is attributed to the design of the recreational program, which focuses on interactive activities that reduce impulsivity and promote communication, as documented in play therapy models. It is recommended that the study be replicated with a larger sample size to enhance generalizability, taking into account additional variables such as age and gender.

## Conclusion:

The study results confirm the effectiveness of the proposed recreational program in achieving statistically significant differences in dialogue skills among children with ADHD. This partially aligns with studies supporting recreational physical activities through play, while contradicting others indicating persistent communication difficulties. This supports the research hypothesis and highlights the program's impact on social skills. This improvement reflects the ability of recreational play to influence defensive and learned behaviors, such as those related to control.

Therefore, it is recommended to expand the study to larger samples and additional variables such as gender and age, while incorporating neurological techniques to measure brain changes. Practically speaking, it is advisable to integrate mental health and social programs with long-term follow-up to ensure sustainability.

## References used in the research:

**Books:**

- Abu Mu'adh Musa bin Hayyi (Al-Fifi). (2006). Dialogue: Its Principles, Etiquette, and How to Raise Our Children on It. Madinah: Dar Al-Khadri for Publishing and Distribution.

- American Psychiatric Association. (2022). Diagnostic and statistical manual of mental disorders (5th ed.). p 1120. https://short-url.org/1kHo4

**Magazines, periodicals and newspapers:**

- Abdelkader Lakhal, Ali Haddi, (2022), The effect of a proposed recreational sports program on the development of social interaction among children with hearing impairments (11-13 years old), Journal of Physical Education and Sports, Volume 1, Issue 2, Pages 1-19.
- Abdul Qader Al-Aib, Zainab Houdashi, (2022), Attention Deficit Hyperactivity Disorder, Aseel Journal for Psychological, Educational and Social Studies, Volume 1, Issue 2, Pages 47-57.
- Amriou Zouhair, Yaakoubi Fateh, (2014), The effect of a recreational sports program on the development of some creative skills in kindergarten children, Al-Bahith Journal of Human and Social Sciences, Volume 6, Issue 16, Pages 385-398.

- Arzu Koçak Uyaroğlu, (2021), The effect of the therapeutic recreation program for children with autistic spectrum disorder on their social skills, Baltic Journal of Health and Physical Activity, Volume 1, Issue 2, pages 23- 31.

- Attafah Muhammad Al-Amin, Si Al-Arabi Sharif, (2022), The effect of a proposed recreational sports program on developing some social skills among children with intellectual disabilities, Ansanah Journal for Research and Studies, Volume 13, Issue 2, Pages 42-60.

- Ben Shouk Asmaa. Asia Abdullah, (2023), A Study of Social Skills in Children with ADHD (A Comparative Study Between Children with ADHD and Typical Children), Aseel Journal for Psychological, Educational and Social Studies, Volume 2, Issue 3, Pages 188-204

- Bouras Sabah, Murad Khalil, (2023), The contribution of recreational physical activity to improving attention deficit hyperactivity disorder (ADHD) in children with intellectual disabilities from the perspective of educators in psycho-pedagogical centers, Journal of the Sports System, Volume 10, Issue 1, pages 743-758.
- Gharbi Jihad, Shafiq Saeed, (2024), Attention Deficit Hyperactivity Disorder in Children: A Theoretical Approach, Journal of Social Studies and Research, Volume 12, Issue 2, Pages 114-128.

- Hillman, C. H., Erickson, K. I., & Kramer, A. F. (2008). Be smart, exercise your heart: exercise effects on brain and cognition. Nature Reviews Neuroscience, Volume 9, Issue 1, pages 58-65.

- Landa, R., & Garrett, M. (2006). Developing infants with autism spectrum disorder: A prospective study. Journal of Child Psychology and Psychiatry, Volume 47, Issue 6, pages 629-638.

- Muammar Riyad, Qaddour Bay Belkhir, (2024), The role of a proposed recreational sports program in reducing the behavioral problems of autistic children (7-12 years old), Journal of Excellence in the Sciences and Techniques of Physical and Sports Activities, Volume 9, Issue 2, University Center Nour El Bachir El Bayadh, Algeria, pages 107-120.

- Safren, S. A., O'Leary, T. A., & Sprich, S. (2005), Cognitive behavioral therapy for ADHD, Child and Adolescent Psychiatric Clinics, Volume 14, Issue 3, pages 487-501.

**Master and PhD Theses:**

- Soualmia, Rafida, Boudhri'a, Manal (2025). Social Skills Level in Children with ADHD. Master's Thesis, Ibn Khaldoun University - Tiaret

**Web sites:**

- Faraone, SV, Banaschewski, T., Coghill, ... Wang, Y. (01-04-2021). Déclaration de consensus international de la Fédération mondiale du TDAH : 208 conclusions fondées sur des données probantes concernant le trouble. Déclaration de consensus international. Retrieved on [28/02/2026] from the website. https://url-shortener.me/EW78

- World Health Organization. (01-09-2025). Autism, Information Centre, Geneva. Retrieved on [28/02/2026] from the website. https://short-url.org/1kHnI