

## The contribution of recreational sports activities to achieving academic achievement among students in the university community

الأنشطة الرياضية الترويحية كوسيلة لتحسين التحصيل الأكاديمي (المعرفي، النفس حركي) لدى  
الطلبة في الوسط الجامعي

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### Abstract

This study aimed to explore the role of recreational sports activities in improving academic achievement (cognitive and psychomotor) among students in the university community. The researchers employed a descriptive approach suited to the nature of the research. A questionnaire was used as a tool for data collection. The research sample was intentionally selected and included 230 students residing in five university residences in the state of Medea, all of whom practiced recreational sports activities. After applying appropriate statistical treatments to analyze the data, the researchers concluded that recreational sports activities enhance academic achievement (cognitive and psychomotor) among students in the university community.

**Keywords:** recreational sports activities, academic achievement, cognitive aspect, psychomotor aspect, university students.

### الملخص :

هدفت هذه الدراسة إلى معرفة دور الأنشطة الرياضية الترويحية كوسيلة تحسين التحصيل الأكاديمي (المعرفي، النفس حركي) لدى الطلبة في الوسط الجامعي، وقد استخدم الباحثان المنهج الوصفي وهذا حسب طبيعة

البحث، كما تمت الاستعانة بالاستبيان كأداة لجمع المعلومات، حيث تم اختيار عينة البحث بطريقة قصديه وشملت 230 طالب وطالبة مقيمين بخمس اقامتات جامعية بولاية المدية، يمارسون النشاط الرياضي الترويحي، وبعد الاستعانة ببعض المعالجات الإحصائية المناسبة لتحليل البيانات، توصل الباحثان إلى أن الأنشطة الرياضية الترويحية تحسن من التحصيل الأكاديمي (المعرفي، النفس حركي) لدى الطلبة في الوسط الجامعي.

- الكلمات المفتاحية : الأنشطة الرياضية الترويحية، التحصيل الأكاديمي، الجانب المعرفي، الجانب النفس حركي، الطلبة الجامعيين.

### \* Introduction and problematic of the study:

The university environment is one of the most important interactive environments for university students, where they spend a significant period of their lives seeking to build their personalities. This is achieved by expanding their knowledge and perceptions, developing their skills and performance, as well as shaping their attitudes, emotions, and values through exposure to various educational, training, and extracurricular activities, including sports. Momen Baqoush confirms this: "The university aims to carry out the process of education and training for its students of different disciplines, levels, and stages with the knowledge, skills, and attitudes they need to prepare themselves properly" (Baqoush, 2014, p.64)

Sports activities, in general, are considered educational, social, and psychological outlets that help individuals, especially university students, acquire many physical, moral, social, and cognitive values. Perhaps the most significant sports activity that achieves these variables and elevates them to the highest levels is recreational sports activity. Recreation is an activity chosen for personal motivation, where individuals spend their time as they wish and explore their

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interests freely. Leisure sports aim not only to achieve happiness and pleasure but also to combine enjoyment with real goals that reflect on students' behavior and academic achievement.

Taha Abdul Rahim Taha also supports this view: "Sports recreation is one of the cornerstones of recreation programs because of its comprehensive pleasure for the student, in addition to its importance in the comprehensive development of the personality in terms of physical, health, mental, and social aspects, (Taha, 2006, p.27).

Recreation is a fundamental part of recreation programs and includes small games such as fitness activities, running, small ball games, and others, as well as larger games such as football, individual, double, and collective competitions, and water games like swimming, water polo, and rowing, which are among the most popular forms of recreation in Nasreddin Dabal(2023/07/24) .

Academic achievement, in its limited classical concept, refers to what students demonstrate by absorbing the basic knowledge and concepts in a subject and recalling them during exams. However, academic achievement in its comprehensive sense is a learning performance in which students acquire a set of knowledge, skills, and attitudes that lead to behavioral modification to achieve self-compatibility, psychological, social, and professional well-being. This aligns with the view of Omar Al-Shaibani, who defines academic achievement as "all the student's achievements and desirable changes in his knowledge, skills, and attitudes as a result of the activities and experiences he has undergone" (Al-Fakhri, 2018,p.04).

Modern educational systems, in light of current developments, seek to form and prepare distinguished students whose effectiveness extends beyond work and production to include creativity and innovation. This is evident only when all dimensions of their personality are crystallized, whether cognitive, emotional, or psychomotor (skills). This is achieved after progressing through the aforementioned aspects, thus achieving the desired goal and efficiency.

Recent studies (Mercer, 2008) have shown that there are students with learning difficulties at the university level, including problems with memory, sensory perception, and motor coordination, which are the basic building blocks of personality development. For example, memory is a fundamental skill at the cognitive level, and this also applies to sensory perception and psychomotor skill levels.

In previous studies similar to our research, we mention a study by (Hamed, 2020) entitled "A study to identify the practice of sports activities and their relationship to the level of academic achievement among the students of Al-Ahfad University for Girls, Omdurman." This study, conducted on 120 students (both those who practice sports activities and those who do not), chosen randomly, found that practicing sports activities positively affects students' academic achievement. The study showed statistically significant differences between female students practicing sports activities and those not practicing them in the Faculties of Rural Development, Business Administration, Psychology, and Pharmacy and Health Sciences at Al-Ahfad University for Girls.

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On the other hand, the study by (Al-Safouri, 2022) entitled "The impact of practicing recreational sports activities in improving the level of academic achievement of female students of the Faculty of Physical Education - Zagazig University," which was applied to 400 students, concluded that recreational sports activities significantly impact the health, physical, psychological, social, and mental aspects of students. These activities reduce daily stress, help students regain their vitality, and enhance social relationships. Additionally, the practice of recreational sports activities helps increase the academic achievement of students.

This highlights the importance of our research. What distinguishes our study is its association with contemporary variables and concepts, such as modern academic achievement, taking it out of its classical scope by including both female and male students. Our study provides explanations related to how resident undergraduate students can enhance their academic achievement, which may contribute to modifying the behavior of resident university students. Based on these theoretical frameworks and the aforementioned backgrounds, we decided to ask the following question:

- Do recreational sports activities improve the academic achievement of students in the university community?

The following partial questions emanated from it:

- Do recreational sports activities improve the cognitive aspect of students in the university community?

- Do recreational sports activities improve the psychomotor aspect of students in the university community?

Therefore, the general hypothesis is as follows:

- Recreational sports activities improve academic achievement (cognitive and psychomotor) among students in the university community.

The partial hypotheses are:

- Recreational sports activities improve the cognitive aspect of students in the university community.
- Recreational sports activities improve the psychomotor aspect of students in the university community.

Based on this, the objectives of our study were:

- To highlight the role of recreational sports activities in improving the cognitive aspect of students in the university community.
- To highlight the role of recreational sports activities in improving the psychomotor aspect of students in the university community.

For clarity, we explain the key terms used in the study:

- **Sports Activities:**
  - **Idiomatically:** Fernand emphasizes that recreational sports activity is primarily based on play, offering social legitimacy, compatibility with all motives, and serving as a requirement for individual growth, entertainment, relaxation, and health for adults (Fernand, 1984).

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- **Procedurally:** It is an activity chosen for personal motivation, in which the individual is free from all restrictions and can freely engage in their world.
- **Academic Background:**
  - **Idiomatically:** Mohammed Prue defines it as "the estimated information, experience, and skills obtained by the student from the subjects prescribed in a subject or subjects of study, measured by the grades set by the professors after taking partial or general examinations, whether oral, written, or both" (Belkacem, 2014, p. 72)
  - **Procedurally:** It is a desirable change in the student's behavior cognitively, methodologically, and in terms of values.
- **Cognitive Aspect:**
  - **Terminologically:** Changes that concern thinking and mental processes (Elsayed, 2019)
  - **Procedurally:** Everything related to mental activities and processes.
- **Psychomotor Aspect:**
  - **Idiomatically:** The psychomotor field is concerned with the formation and development of skills that require the use or coordination of body muscles in movement, construction, work, and various educational experiences that are classified as physiological skills in creativity and the

practice of arts and sports (Kaddour Brahimi,Ben Si Kadour, 2017, p.456)

- **Procedurally:** It encompasses acquiring and developing motor skills.
- **Residence of Undergraduates:**
- **Idiomatically:** A university student is a person whose academic competence allows them to transition from the secondary level to the university level according to their sub-specialty by means of a qualifying certificate (Ghanem, 2008, p. 208).
- **Procedurally:** It refers to a student who has completed high school and obtained a baccalaureate degree.

## 1- Followed Methodologies :

### 1.1 Exploratory Study:

The exploratory study is a crucial stage in scientific research due to its association with the field. It allows for the crystallization and tight control of the research variables.

### 1.2. Methodology:

The nature of the topic requires the researcher to follow a specific approach to answer the questions raised and verify the research objectives. In our study, we relied on the descriptive analytical approach, which allows us to determine the characteristics, traits, and components of the studied phenomenon. This approach is considered to be the study of the prevailing reality associated with a specific phenomenon, situation, group of individuals, or group of events (Bouchouareb, 2023, p.394).

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## **1.3. Study Population:**

The research population consists of university students residing in the university neighborhoods of the state of Medea

## **1.4. Study Sample:**

The study sample is a technique that facilitates the research and study process, as conducting research on the entire population is difficult and nearly impossible. Choosing a sample provides results that are closer to reality and more generalizable. In this study, a random intentional sample was selected. We targeted university students residing in the state of Medea, and individuals were randomly selected. The research sample included 230 university students who practiced recreational sports activities.

## **1.5. Tools for collecting data and information:**

The questionnaire was adopted as the primary tool in this study. The questionnaire included two axes: the first axis represents the cognitive aspect, divided into five dimensions: remembering, understanding, applying, analyzing, and synthesizing. The second axis represents the psychomotor aspect, divided into five dimensions: perception, inclination, practice, mastery, and adaptation. The responses related to the questionnaire items were also distributed into three categories: always, sometimes, and never.

## 1.6. Scientific Conditions of the Instrument:

### 1.6.1. Face Validity:

After creating the initial questionnaire, it was distributed to arbitrators, including professors of science and techniques of physical and sports activities.

### 1.6.2. Construct Validity:

The tool's stability coefficient is 0.725. The tool's construct validity coefficient is the square root of the tool's stability coefficient and equals 0.851.

### 1.6.3. Tool Reliability:

Reliability was verified by Cronbach's alpha coefficient. "Test reliability is how accurate or consistent it is."

**Table 01: Reliability Coefficient for Each Axis of the Questionnaire and the Sum of the Axes**

Variables	Number of Items:	Cronbach's alpha coefficient
Theme 1: Cognitive Aspect	5	695
The second axis: Psychomotor	5	0.782
Questionnaire	10	.725

*Source: Prepared by us using SPSS software*

Through Table 01, the Cronbach's alpha coefficient for the questionnaire as a whole reached 0.725. This indicates a high value of stability, demonstrating that the research tool is very reliable, which gives us full confidence in the validity of our questionnaire and its suitability for studying and testing hypotheses.

## 1.7. Field Study Procedures:

### **1.7.1. Study Boundaries**

**1.7.1.1. Time Scope:** The study was conducted between October 2021 and May 2023.

**1.7.1.2. Spatial Scope:** The study was conducted at the following university residences in the state of Medea: Hassan bin Mawloud Residence, Wahiba Kabaili Residence, and Shawai Issa Residence.

### **1.8. Statistical Methods:**

- **Statistical Package for the Social Sciences (SPSS):** The researchers used the SPSS version 25 software.
- **Cronbach's Alpha Coefficient:** This was used to calculate the reliability of the study tool.
- **Percentage and Frequencies:** The percentage analysis of the results was used for all questions of the first and second hypotheses after calculating the frequencies for each question. This method helps in understanding the distribution percentage of the sample. The triple method, which is most common, determines numerical data to extract the percentages of each question.
- **Chi-Square (K2) Test:** This test allowed us to compare the various results obtained through the sample-oriented questionnaire to determine statistical significance and the differences between the answers to the questionnaire questions. It is used in surveys dealing with variables classified into categories, where data are expressed by calculating the frequencies in each classification category. The K2 test

aims to show the extent to which the observed frequency of a specific phenomenon in the sample matches the theoretical frequency in the population.

## 2- Exposure , analyses and result exam :

### 1.2. Presentation and Discussion of the Results of the First Hypothesis:

**Table 02: Comparison of Results with the First Hypothesis**

<i>Questions</i>	<i>Calculated K2</i>	<i>Scheduled K2</i>	<i>Sig</i>
Does the practice of recreational sporting activity make you familiar with the history of the games and national and international champions?	136,781 <sup>a</sup>	149	<i>Significant</i>
Does the practice of recreational sports activity make you distinguish the artistic aspects. Defensive and offensive play plans for the practiced activity?	136,781 <sup>a</sup>	149	<i>Significant</i>
Does the practice of recreational sports activity make you able to know the playing plan of the opposing team in a short time?	102,099a	149	<i>Significant</i>
Does the practice of recreational sports activity make you differentiate between the nature of the activity practiced in terms of means and tools?	63,795 <sup>a</sup>	149	<i>Significant</i>
Does the practice of recreational sports activity make you appreciate the appropriate position for a skill and can you correct it?	136,781 <sup>a</sup>	149	<i>Significant</i>

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*Source: Analysis using SPSS*

The first hypothesis states: The practice of recreational sports activities by resident university students contributes to the achievement of the cognitive aspect.

From the table above, we find that 83.4% of the resident students always agree that the practice of recreational sports activity makes them familiar with the history of games and national and international champions, while 16.6% answered "sometimes." We also found that 83.4% believe that the practice of recreational sports activity makes them familiar with the technical aspects and defensive and offensive play plans of the practiced activity. Furthermore, 77.3% always feel that the practice of recreational sports activity enables them to quickly understand the play plan of the opposing team, while 22.7% answered "sometimes." Additionally, 70.5% of the study sample confirmed that the practice of recreational sports activity always makes them differentiate between the nature of the activity in terms of means and tools, while 29.5% answered "sometimes." The majority of the study sample believes that the practice of recreational sports activity allows them to appreciate the appropriate position for a skill and correct it, with 83.6% answering "always" and 16.6% "sometimes."

Recreational physical activity enhances executive brain functions such as planning, organizing, and time management. These abilities directly contribute to improved academic performance. Engaging in sports activities can also increase students' motivation to learn by fostering a sense of achievement and belonging to a group.

Several field studies indicate a positive relationship between physical activity and academic achievement. For example, a study by the American Psychological Association found that physically active students score higher on academic tests.

Many researchers and scientific institutions have explored the impact of physical activity on cognitive abilities and neurological functions. Some examples include:

- **John Ratey**, an assistant professor of psychiatry at Harvard University, is known for his research on the impact of exercise on the brain. His book "Spark: The Revolutionary New Science of Exercise and the Brain" reviews several studies on how exercise affects mental function. Ratey explains that exercise can increase the production of BDNF (Brain-Derived Neurotrophic Factor), a protein that promotes neuronal growth and improves memory and learning.
- **Charles Hillman**, a professor at Northeastern University, has conducted several studies on the impact of physical activity on children's academic performance and cognitive function. His research showed that physical activity can improve executive functioning and memory. One study showed that children who participated in a regular exercise program exhibited significant improvements in executive thinking skills, such as planning, mental flexibility, and memory.
- **University of Illinois Center for the Study of Physical Activity and Health**: This research center has conducted numerous studies on the relationship between physical activity and neurological functions.

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Among the researchers at this center, Arthur Kramer has studied how physical activity affects cognitive abilities and memory in older adults. Kramer and colleagues found that physical activity boosts the size of the hippocampus, an area associated with learning and memory. This increase in volume is associated with improved performance on memory-related tasks.

Previous studies, such as those by (Al-Safouri, 2022) and (Amal Rasheed Ayesh, 2012), confirmed our findings. The results obtained from the questions of the first axis indicate that recreational sports activities practiced by resident university students enhance cognitive aspects such as the ability to remember, making them more familiar with the dates of games and the most important national and international champions. Additionally, these activities improve understanding and application through excellence in technical aspects and defensive and offensive play plans in a short time. They also contribute to making the students more analytical and capable of synthesizing by analyzing the appropriate position for a skill and establishing the most important positions for body activity. These findings align with part of the study by Issa and Majeed, which showed the role of recreational sports activities in stimulating motivation for achievement and satisfaction, thereby increasing the level of academic achievement among secondary school students.

By presenting, interpreting, and discussing the results, we confirm the validity of the first hypothesis, which states that the practice of recreational sports activities by resident university students contributes to the cognitive aspect.

## 2.2. Presentation and Discussion of the Results of the Second Hypothesis:

**Table 03: Comparison of Results with the Second Hypothesis**

<i>Questions</i>	<i>Calculated<sup>K2</sup></i>	<i>Scheduled<sup>K2</sup></i>	<i>Sig</i>
Does recreational exercise make you aware of your body's position in the air and control your movements?	155,952 <sup>a</sup>	149	<i>Significant</i>
Does doing recreational sports get you ready to learn increasingly difficult movements?	188,980 <sup>a</sup>	149	<i>Significant</i>
Does practicing recreational sports activity make you try again and again to learn new motor behaviors even if you make a mistake?	77,563 <sup>a</sup>	149	<i>Significant</i>
Does the practice of recreational sports activity make you control the positions during the tactical work of the activities programmed in your college?	108,745 <sup>a</sup>	149	<i>Significant</i>
Does the practice of recreational sports activity enable you to move from a motor position to another motor position smoothly with or without the tool?	155,952 <sup>a</sup>	149	<i>Significant</i>

*Source: Analysis using SPSS*

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The second hypothesis states: The practice of recreational sports activities by resident university students contributes to the achievement of the psychomotor aspect.

From the table, we find that 92% of the respondents confirmed that practicing recreational sports activity always makes them aware of their body's position in the air and in controlling their movements, while 8% answered "sometimes." Additionally, 95.6% of the respondents answered "always" that practicing recreational sports activity makes them ready to learn increasingly difficult movements, while 4.4% believe that they sometimes do. The analysis of the table data also showed that 83.6% of the respondents answered "always" that practicing recreational sports activity makes them repeatedly try to learn new motor behaviors even if they make mistakes, while 16.4% answered "sometimes". Furthermore, 86.9% of the study sample confirmed that when practicing recreational sports activity, they always feel more in control of the situations during tactical work of programmed activities in their colleges and universities. Similarly, 92% of the study sample answered "always" that practicing recreational sports activity makes the student able to move smoothly from one motor position to another, with or without the use of a tool.

Through the results obtained from the questions of the second axis, it is evident that recreational sports activities practiced by resident university students improve the psychomotor aspect through sensory perception. These activities make students aware of their body position in the air and how to control their movements, enable them to become more ready to learn increasingly difficult movements, encourage them to repeatedly try to learn new motor behaviors

even if they make mistakes, and enhance their control of positions during work, making them more proficient and adaptable to motor positions with fluidity, whether using tools or not. Athletic activity helps develop basic motor skills such as balance, coordination, and muscle strength, contributing to increased self-confidence and body control.

Research by (Schmidt, 2008) demonstrated that regular engagement in sports activities can improve learning and motor performance. Additionally, a study by (Payne, 2012) highlights the positive impact of physical activity on the development of motor skills in young adults.

Furthermore, previous studies by (Al-Safouri, 2022), (Amal Rasheed Ayesh, 2012), and (Hamed, 2020) have confirmed some of the results of the hypothesis. By presenting, interpreting, and discussing the second hypothesis, it is acknowledged that the practice of recreational sports activities by university students improves the psychomotor aspect.

### **3- Finding and propositions results**

We have reached the conclusion of this research, where our aim was to investigate the impact of recreational sports activities on academic achievement among students in the university community. After thorough examination, our research has yielded the following results:

- Engaging in recreational sports activities enhances cognitive achievement among students in the university community.
- Participating in recreational sports activities enhances psychomotor achievement among students in the university community.

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We hope that this research will serve as a valuable resource for researchers and all stakeholders interested in advancing education and knowledge. We recommend:

- Giving greater attention to the active segment of society and to the future makers of our university students by conducting comprehensive research on all variables that can improve their quality of life and subsequently enhance their academic achievement.
- Exploring methods to encourage students to adopt recreational sports activities as a supportive tool in both their academic and practical lives, as its importance in this regard has been demonstrated.
- Establishing a permanent monitoring committee in universities dedicated to assessing students' academic achievement in all its dimensions (cognitive, psychomotor, emotional) in order to address gaps in the educational system.

## **4- List of used sources and references in the study**

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