

RESEARCH  
ARTICLE**Recreational Sports Activities and Their Role in Enhancing Psychological Adjustment During Physical and Sports Education Classes: A Field Study of Third-Year Students at Mohamed Zine Ben-Madani Middle School - Biskra**

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Keywords

Recreational sports activities, psychological adjustment, physical and sports education, pupils.

**Abstract**

The present study aims to highlight the role of recreational sports activities in enhancing psychological adjustment among middle school pupils during physical and sports education classes. A descriptive method was employed in this research. The study population consisted of all third-year pupils (122 students) at Mohamed Zine Ben-Madani Middle School. A purposive sample was selected, represented by Class 3 Middle 3, comprising 45 pupils, divided into 30 pupils who participated in recreational sports activities (16 males, 14 females) during physical and sports education classes and 15 pupils who did not participate (exempted), serving as the study sample. The ages of the participants ranged from 13–14 years. Moreover, a pilot sample of 10 pupils was included. The Psychological Adjustment Scale, developed by Abdullah Haza'a Ali Al-Shafei and Tareq Nizar Majid Al-Talib (2007), was used for data collection. The statistical methods employed included the arithmetic mean, standard deviation, normality tests for variables (Kolmogorov–Smirnov and Shapiro–Wilk), the t test for independent samples, Guttman's lambda coefficient, and Cronbach's alpha coefficient, with the SPSS software package. The findings revealed that recreational sports activities play a significant role in enhancing psychological adjustment during physical and sports education classes among third-year pupils at Mohamed Zine Ben-Madani Middle School in Biskra Province.

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## 1. Introduction and Research Problem

Recreation is regarded as an internal emotional state that arises from feelings of well-being and satisfaction. This state is characterised by a sense of mastery, achievement, euphoria, acceptance, success, enjoyment, and personal value, all of which contribute to a positive self-image. Recreation is considered a response to positive experiences or the attainment of desired goals. It may also represent positive feedback from others. Importantly, it is independent of working hours and formal obligations and is typically practised during leisure time (Veal, 1992, p. 08).

Success in engaging in these activities, particularly sports games, is linked to satisfaction and enjoyment, which serve as motivating factors for interest in physical activity. Furthermore, participation in physical activity fosters continuity in engaging in recreational sports games and enhances feelings of contentment (Al-Hamahni, 1998, p. 21).

Recreational sports activities and games are considered integral parts of any culture, society, or local community. There is a growing body of evidence, whether in team sports or therapeutic recreation, that supports the use of sports as a platform for addressing physical and psychological health issues. These activities have been shown to contribute to improvements in both physical and mental health, in addition to promoting psychological and social cohesion, inclusivity, educational engagement, and academic achievement within educational institutions (Ware, 2013, p. 04).

According to Brightbill Mobley, the school is the educational institution best suited to preparing individuals for the effective use of their leisure time. When individuals select leisure activities that suit their interests, these activities should be utilised in ways that benefit both the individual and society. Thus, a fundamental criterion for future educational institutions is to prepare pupils for life in all its dimensions and to develop well-adjusted individuals with balanced personalities and a degree of psychological adjustment (Darwish & Al-Khouli, p. 162).

Psychological adjustment is considered a process comprising two dimensions: the individual's internal balance or harmony with oneself, reflected in their ability to confront internal conflicts and cope with frustrations, as well as their freedom from resulting tension and anxiety. It also involves the individual's success in reconciling competing drives and impulses and achieving harmony with the surrounding material environment (Talaat, 2016, p. 112).

In the school context, psychological adjustment refers to the pupil's ability to establish a balance between personal motives and psychological self-regulation, particularly during physical education classes. A well-adjusted pupil demonstrates effective behavioural responses, confronting various problems and pressures through constructive and satisfactory strategies. This leads to harmony with oneself, one's family, and the school environment, which is a fundamental principle in achieving personal goals and desires through participation in sports activities (Al-Dhafiri, 2017, p. 95).

Moreover, recreational sports activities conducted during physical education classes contribute to the creation of a stimulating environment that supports pupils' social interaction and stress relief. These activities offer pupils the opportunity to express themselves freely, which may positively affect their psychological adjustment within the school environment.

Given that the researchers possess sufficient experience in the middle school education phase, they were able to observe the general atmosphere of the study setting closely and to discern the psychological characteristics specific to pupils at this stage. They also identified the issue of psychological adjustment and the extent to which recreational sports activities contribute to it. Accordingly, the following general research question was posed:

### General Research Question

- To what extent does participation in recreational sports activities contribute to enhancing psychological adjustment among third-year middle school pupils during physical education classes?

#### **Subquestions**

- What is the level of psychological adjustment among pupils who participate in recreational sports activities during physical education classes?
- Are there statistically significant differences in the level of psychological adjustment between pupils who participate and those who do not participate in recreational sports activities?
- Are there statistically significant differences in the level of psychological adjustment between male and female pupils who participate in recreational sports activities?

#### **General Hypothesis**

- Participation in recreational sports activities leads to enhanced psychological adjustment among third-year middle school pupils during physical and sports education classes.

#### **Subhypotheses**

- The level of psychological adjustment is high among pupils who participate in recreational sports activities during physical education classes.
- There are statistically significant differences in the level of psychological adjustment between pupils (participants and nonparticipants), which is attributable to the variable of recreational sports activity participation.
- There are statistically significant differences in the level of psychological adjustment between male and female pupils who participate in recreational sports activities.

### **2. Objectives of the Study**

- To identify the role of recreational sports activities in enhancing psychological adjustment during physical education classes among pupils at the Mohamed Zine Ben-Madani Middle School in Biskra Province.
- To determine the level of psychological adjustment among third-year pupils enrolled in middle school who participate in recreational sports activities.
- To examine whether statistically significant differences exist in the level of psychological adjustment between third-year middle school pupils (participants and nonparticipants) in recreational sports activities.
- To examine whether statistically significant differences exist in the level of psychological adjustment between male and female third-year middle school pupils who participate in recreational sports activities.

### **3. Significance of the Study**

- The present study plays a significant role in drawing the attention of researchers to conduct further studies in the field of mental health, particularly concerning the variable of psychological adjustment among pupils in educational institutions.

- The novelty of the topic and the scarcity of prior research in this area, as the subject of recreational sports activities and their relationship to psychological adjustment, is of considerable importance and has attracted the interest of numerous researchers.
- To clarify the importance of recreational sports activities and their impact on the variable of psychological adjustment among pupils in educational institutions.
- The significance of this study lies in its focus on an age group that is particularly vulnerable to various pressures, including academic, familial, psychological, and social stressors.
- This study serves as an addition to the theoretical body of knowledge and may raise important questions for researchers to pursue further investigations in this domain.
- To contribute meaningfully to scientific and intellectual enrichment.

#### 4. Definitions of Concepts and Terms

##### 4.1 Recreational Sports Activities

- Recreational sports activities represent one of the main pillars of recreation programmes. They are highly important in providing comprehensive enjoyment for individuals and contribute significantly to the holistic development of personality across physical, health, mental, and social dimensions. These activities include small-scale recreational games, large-scale games, water sports, exercise, athletics, and outdoor sports (Samir, 2016, pp. 45–46).
- **Operationally:** A set of sports games practised by third-year middle school pupils during physical education classes, devoid of high-level competition and outside the framework of federal organisational structures. Recreational sports activities serve as a means of psychological relief and entertainment.

##### 4.2 Psychological Adjustment

- Mokhaimer (1979) defined psychological adjustment as a dynamic process that involves change or modification in an individual's behaviour, goals, needs, or all of these. It is accompanied by feelings of comfort and pleasure when the individual achieves desired goals and satisfies personal needs and by feelings of discomfort and dissatisfaction when goals are unmet and needs are thwarted (Al-Safasfeh & Arabiat, 2005, p. 38).
- **Operationally:** Defined by the researcher as the process of achieving a balance between pupils' needs, stimuli, and the opportunities available in their school and social environments. This depends on their willingness to fulfil their psychological needs and overcome various challenges encountered within or outside educational institutions.

##### 4.3 Middle School Stage

- According to the Algerian Education Orientation Law, this stage is defined as the intermediate link between primary and secondary education. It receives pupils from primary school following successful completion and spans four years. It is characterised by distinctive features requiring educational stakeholders to translate them into scientific and pedagogical programmes that realise aspirations and align with both national and international developments (Gharin & Maouch, 2017, pp. 203–204).

##### Operationally:

The researcher defines it as one of the educational stages under the supervision of the Ministry of National Education in Algeria, represented by Mohamed Zine Ben-Madani Middle School in Biskra Province.

#### 4.4 Physical and Sports Education

In terms, physical and sports education is defined as an educational process aimed at improving pupils' performance through a medium consisting of selected physical activities designed to achieve specific objectives. It is considered a component of the educational process that contributes to the development of physical, emotional, social, and cognitive education among pupils through the medium of physical activity (Bouafia, Ben Ghalia, & Driadi, 2024, p. 03).

##### Operationally

The researcher defines it as a school subject similar to other academic subjects, within which various programmed sports games and activities are practised across a range of sports fields. It serves as an educational tool within the formal educational curriculum.

#### 4.5 Pupil

The pupil is defined as a child or adolescent of a specific age who is enrolled in an educational institution and who possesses a desire for learning and training as a result of a relative lack of knowledge. This desire for learning is, in itself, a social need. The pupil's motivation to learn is often linked to the ambition of the family or the social environment to which the pupil belongs. It is also a societal demand. The relationship between the teacher and the pupil is based on the assumption that the teacher possesses the knowledge and is capable of delivering and transmitting it. In contrast, the pupil is presumed to lack knowledge and is therefore expected to receive it comprehending and retaining it in the role of a learner (Ben Mohamed, 2005, p. 52).

### 5. Previous and Related Studies

#### 5.1 Study by Ben Chemissa El-Aid (2023)

This study aimed to identify the level of adolescents' attitudes towards recreational sports activities. The researcher employed the descriptive comparative method. The study sample was selected purposively and included 201 male and female secondary school pupils from Tiaret Province. The researcher applied the "Adolescents' Attitudes Towards Recreational Sports Practice" scale. The statistical tools used included weighted arithmetic means, standard deviations, percentages, self-validity coefficients, t tests, and Spearman's correlation coefficients.

The study concluded that the level of adolescents' attitudes towards the practice of recreational sports activities was moderate. In addition, statistically significant differences were found in all dimensions of adolescents' attitudes towards recreational sports practices.

#### 5.2 Study by Ben Hnia Ouahiba and Haddouch Issa (2022)

This study aimed to examine the effect of proposed units in recreational physical sports activity on the level of psychological adjustment, in both its personal and social dimensions, among academically underperforming pupils at Akdi Middle School - Taouzianet - Khenchela. The researchers employed the experimental method and selected a purposive and homogeneous sample of eight academically underperforming male pupils aged 12-13 years. The Psychological Adjustment Scale developed by Dr. Zainab Shaqir (2003) was used, along with a set of recreational sports activity units, as the scientific tool of the study.

To analyse the data, the researchers used the Kolmogorov-Smirnov and Shapiro-Wilk tests for normally distributed data, as well as the t test to identify significant differences. The findings indicated that there were no statistically significant differences between pre- and post-measurements in terms of the level of psychological adjustment. The researchers attributed this to the preventive nature of the proposed units. However, statistically significant differences were observed in the level of social adjustment in favour of the post-measurement.

### 5.3 Study by Ben Ali Adda (2021)

This study aimed to determine the extent to which recreational sports activities contribute to the overall psychological adjustment of secondary school pupils. The researcher used the descriptive survey method. A randomly selected sample of 1,580 male and female pupils was drawn from a research population of 7,900 pupils, both participants and nonparticipants in recreational activities, across 57 secondary schools. The researcher employed a general psychological adjustment questionnaire as the data collection instrument.

The statistical methods included percentages, arithmetic means, standard deviations, and t tests for two unrelated and unequal samples.

Recreational sports activity positively contributes to improving the level of general psychological adjustment among secondary school pupils across all its dimensions. The contribution of recreational sports activity to enhancing general psychological adjustment was greater among female participants than among male participants.

### 5.4 Study by Abdel Rahim Dhiab (1994)

This study aimed to investigate the effect of sports practices on the psychological adjustment of secondary school students in the State of Kuwait. The researcher employed a descriptive analytical method. A random sample of approximately 368 pupils was selected, comprising two distinct groups: participants and nonparticipants in sports activities, as well as pupils involved in individual sports and those engaged in team sports.

For data collection, the researcher utilised Salah Mokhaimer's Social Status Measurement Form, which considers it one of the influential variables in psychological adjustment, along with the Personality Test for measuring psychological adjustment developed by Atiya Mahmoud. The statistical tools used included the arithmetic mean, standard deviation, and t test for differences between means.

There were statistically significant differences in the level of psychological adjustment between pupils who practised sports activities and those who did not, in favour of the sports participants. Furthermore, statistically significant differences were observed between pupils practising individual sports and those practising team sports.

## 5. Analysis of Previous and Related Studies

A set of previous studies related to the current research was reviewed, revealing both similarities and differences with the present study. These studies have demonstrated that the topic *"Recreational Sports Activities and Their Role in Enhancing Psychological Adjustment During Physical Education Classes"* has been explored previously, although not identically. This review provides a clear conceptual framework for our research and enables us to identify new variables that contribute to psychological adjustment among middle school pupils. Moreover, it opens the door for future research ideas. Below is a summary of the key points of similarity and difference among the reviewed studies:

### -Methodology:

Most of the previous studies employed descriptive methods, except for the studies by Ben Hnia Ouahiba and Haddouch Issa (2022), which adopted an experimental approach. In the current study, a descriptive analytical method is used, as it is deemed the most appropriate for the research objectives.

### -Objectives:

Ben Chemissa El-Aid (2023) aimed to assess adolescents' attitudes towards practising recreational sports activities. Ben Hnia Ouahiba and Haddouch Issa (2022) sought to examine the effect of proposed recreational physical activity units on the psychological adjustment (personal and social) of academically underperforming pupils.

The study by Ben Ali Adda (2021) aimed to investigate the contribution and impact of recreational sports activities on general psychological adjustment among secondary school pupils.

Abdel Rahim Dhiab's study (1994) explored the effect of sports practice on psychological adjustment among secondary school students.

In contrast, the present study focuses specifically on understanding the role of recreational sports activities in enhancing psychological adjustment during physical education classes among middle school pupils.

#### **-Samples:**

Previous studies varied in sample size depending on the research objectives and the nature of the population in which the studies were conducted. Some employed large samples, whereas others used smaller samples. For example, the studies by Ben Hnia Ouahiba and Haddouch Issa (2022) included a sample of 8 pupils. In the study by Ben Chemissa El-Aid (2023), the sample size was 201 pupils. Abdel Rahim Dhiab's (1994) study included 368 pupils, whereas the study by Ben Ali Adda (2021) involved a relatively large sample of 1,580 pupils.

In comparison, the present study focuses on a purposively selected sample comprising 30 pupils who participate in recreational sports activities during physical and sports education classes at Mohamed Zine Ben-Madani Middle School in Biskra and 15 nonparticipating (exempted) pupils, for a total of 45 pupils.

#### **-Instruments:**

Previous studies have employed various instruments, including the Psychological Adjustment Scale developed by Dr Zainab Shaqir (2003), along with a set of recreational sports units, as used in the studies by Ben Hnia Ouahiba and Haddouch Issa (2022). The Adolescents' Attitudes Towards Recreational Sports Scale was used in Ben Chemissa El-Aid's (2023) study. In Abdel Rahim Dhiab's (1994) research, Salah Mokhaimer's Social Status Measurement Form was used as one of the influencing variables for psychological adjustment, in addition to a personality test for psychological adjustment prepared by Atiya Mahmoud.

In the study by Ben Ali Adda (2021), a general psychological adjustment questionnaire was used to collect data. The current study adopts the Psychological Adjustment Scale developed by Dr. Abdullah Haza'a Ali Al-Shafei and Tareq Nizar Majid Al-Talib (2007).

#### **-Statistical tools:**

Previous studies have varied in their use of statistical tools, including the Kolmogorov-Smirnov and Shapiro-Wilk tests for normally distributed data, percentages, arithmetic means and weighted means, standard deviations, self-validity coefficients, t tests for differences between means, and Spearman's correlation coefficients. In the present study, the researchers employ the statistical tools most appropriate for their specific requirements.

#### **-Findings:**

The findings of previous studies on psychological adjustment and recreational sports practice varied, showing differences according to variables such as psychological adjustment and recreational physical activity. The researchers in the current study aim to produce findings that complement those of previous research and contribute a new addition to scientific knowledge and the academic literature.

## **6. Methodological Procedures of the Study**

### **6.1 Exploratory Study**



The exploratory study involved the researcher's ability to become acquainted with the study sample and assess how the participants interacted with the data collection instrument. It also included a review of the theoretical literature, comprising books, references, and articles addressing the topic of recreational sports activities and psychological adjustment among pupils. The aim was to ensure the pupils' understanding of the instrument's statements, identify potential challenges, determine the elements of the sample, estimate the time required to conduct the study, and form a preliminary idea about the research process.

## 6.2 Research methods

A research method is defined as the path leading to the discovery of truth in science through a set of general rules that guide the process of reasoning and regulate its operations to reach a known conclusion (Al-Samarrai, 2010, p. 171).

Since researchers are addressing a psychological issue among pupils, namely, the role of recreational sports activities in enhancing psychological adjustment during physical education classes, a descriptive analytical method was adopted. This method is defined as "a form of analysis based on sufficient and accurate information about a specific phenomenon or topic within a known time frame, in order to obtain practical results interpreted objectively and in line with actual requirements" (Obeidat, Abu Nassar, & Mubaideen, 1999, p. 46).

## 6.3 Study population

The population is defined as a finite or infinite group of predetermined elements on which observations are based. It consists of elements that share one or more common characteristics, distinguishing them from other elements under investigation (Younesi, Chinar, & Amari, 2021, p. 530).

The population of the present study consists of all third-year pupils enrolled at Mohamed Zine Ben-Madani Middle School, aged between 13 and 14 years, with a total of 122 male and female pupils.

## 6.4 Study Sample

The sample is defined as a statistical mechanism and technique based on selecting a small subset (a specific percentage) of the whole to understand the general and specific characteristics of the original population (Boussalem, 2024, p. 229).

The sample for the present study comprised all pupils who participated in recreational sports activities during physical and sports education classes, totaling 30 pupils (16 males and 14 females), as well as 15 nonparticipating pupils (exempted), for a total of 45 pupils, who formed the main sample of the study. In addition, a pilot sample of 10 third-year middle school pupils was selected. A purposive sampling technique was used, as the researchers considered this sample suitable for the objectives of the study.

**Table 1**

*Distribution of the Study Sample*

Sample Group	Number of Pupils	Percentage
Practising pupils - Males	16	34.78%
Practising pupils - Females	14	31.11%
Nonpractising pupils	15	33.33%



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Total	45	100%
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*Source: Prepared by the researcher (2025) via SPSS v28 outputs.*

## 6.5 Study limitations

### -Topical Delimitations:

This study examined the role of recreational sports activities (sports games) in enhancing psychological adjustment among pupils at Mohamed Zine Ben-Madani Middle School. The study also investigated the level of psychological adjustment among pupils who participate in recreational sports activities during class, as well as the differences in means between practicing and non-practizing pupils and between male and female pupils with respect to the psychological adjustment variable.

### -Spatial delimitations:

The study was conducted at Mohamed Zine Ben-Madani Middle School in Biskra Province, Algeria.

### -Human delimitations:

The main study was applied to 45 pupils, both practicing and nonpractizing recreational sports activities (sports games), with an additional 10 pupils selected for the pilot study. The total study population consisted of 122 male and female pupils.

### -Temporal delimitations:

The study was conducted between January and February, at the beginning of the second term of the 2024-2025 academic year.

## 6.6 Research instrument

To obtain the necessary data for this study, the researcher utilised a variety of tools and resources, including books; scientific articles; and prior local, Arab, and international studies that addressed the topics of recreational activities and psychological adjustment among pupils.

### The Scale:

A scale is defined as a measurement tool used to assign a numerical rank or quantitative score to a specific trait or behavioural characteristic, whether social, emotional, normative, or deviant. The examiner determines the score that applies to the examinee from among a set of graded responses. The examinee may complete the scale independently, or it may be administered by another individual (Montasser & Hassani, 2017, p. 197).

In this study, the Psychological Adjustment Scale developed by Dr. Abdullah Haza'a Ali Al-Shafei and Tareq Nizar Majid Al-Talib (2007) was adopted. The scale consists of 30 statements: 15 positive and 15 negative. Each item has three response options scored as follows: *Yes*, *Sometimes*, and *No*. For positive statements, scores are assigned in ascending order: Yes = 3, Sometimes = 2, and No = 1. For negative statements, scores are assigned in descending order: Yes = 1, Sometimes = 2, No = 3. This scale uses a Likert-type grading method.

## 6.7 Scientific Conditions of the Study

The psychometric properties of the study instrument were established by calculating its reliability and validity, which are defined as follows:

### 6.7.1 Scale Validity

Validity is one of the most important characteristics and essential conditions in the construction of scales and tests. It refers to the degree to which an instrument measures what it is intended to measure (Labwazda, 2011, p. 119).

In this study, the validity of the instrument was ensured through the following:

#### -Face Validity (Expert Judgment):

The study scale was distributed to five expert reviewers in the field of sports psychology. On the basis of their feedback, certain items were modified and adapted to suit the context and characteristics of the study sample.

### 6.7.2 Scale Reliability

**Reliability** refers to the degree of accuracy, consistency, or stability of an instrument's results when it is applied to a sample of individuals on two different occasions (Hussein, 2021, p. 150).

In this study, reliability was calculated via two methods:

#### A. Guttman's lambda coefficient:

**Table 2**

*Guttman's Lambda Reliability Coefficient for the Psychological Adjustment Scale*

Guttman's Lambda Coefficient	Number of Scale Items (N)
0.752	30

*Source: Prepared by the researcher (2025) via SPSS v27 outputs.*

As shown in Table 2, the reliability coefficient obtained via Guttman's lambda method was 0.752, a value close to one. This indicates a high level of reliability for the Psychological Adjustment Scale.

#### B. Cronbach's Alpha Method:

The reliability of the Psychological Adjustment Scale was also assessed via Cronbach's alpha coefficient, with the results presented below:

**Table 3**

*Cronbach's alpha reliability coefficient for the psychological adjustment scale*

Cronbach's Alpha ( $\alpha$ )	$\sqrt{\alpha}$ (Self-Validity Coefficient)	Number of Scale Items (N)
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0.717	0.84	30
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Source: Prepared by the researcher (2025) via SPSS v27 outputs.

This table shows that the Cronbach's alpha coefficient reached a value of 0.717, indicating a high level of internal consistency. Additionally, the square root of Cronbach's alpha was calculated to determine the self-validity coefficient of the scale, which yielded a value of 0.84. These results confirm that the scale used in this study has a high degree of reliability and validity.

## 6.8 Statistical tools used

After the data were collected, coded, and organised, the hypotheses of the study were tested and analysed in light of the research objectives and previous studies. The following statistical methods were employed:

- Arithmetic mean
- Standard deviation
- Regular distribution tests for variables
- Independent samples t test for mean differences
- Guttman's lambda coefficient
- Cronbach's alpha coefficient

All the statistical analyses were conducted via the Statistical Package for the Social Sciences (SPSS), specifically version 27, which is tailored for use in the fields of human and social sciences.

## 7. Presentation of Results and Interpretation

### 7.1 Presentation and discussion of the first hypothesis

The first hypothesis states that the level of psychological adjustment among pupils who participate in recreational sports activities during physical education classes is high. To test this hypothesis, we limited our analysis to the responses of the participating pupils, using measures of central tendency (arithmetic mean and standard deviation). The results are shown in the table below:

**Table 4**

*Results of the First Hypothesis concerning the Level of Psychological Adjustment among Pupils Participating in Recreational Sports Activities*

Variable	Sample Size (N)	Mean Score	Standard Deviation
Psychological adjustment (participants)	30	2.26	0.1790

Source: Prepared by the researcher (2025) via SPSS v27 outputs.

To test the first hypothesis, the mean ranges were defined to classify the level of psychological adjustment (Low, Medium, or High). Each pupil could obtain a total score between 1 and 3 on the scale on the basis of responses rated via a three-point Likert scale. The range of 2 (i.e.,  $3 - 1 = 2$ ) was divided by the number of scale points (3), resulting in a field length of 0.66. The classification ranges are shown in the following table:

**Table 5**

*Ranges of Means and Levels of Psychological Adjustment Among Pupils Participating in Recreational Sports Activities*

Ranges	[1 ; 1.66]	[1.67 ; 2.33]	[2.34 ; 3]
Level	Low	Medium	High

*Source: Prepared by the researcher (2025) via SPSS v27 outputs.*

According to Table 04, the arithmetic mean of psychological adjustment for the group of pupils participating in recreational sports activities was 2.26, with a standard deviation of 0.1790. On the basis of the scale in Table 05, this value falls within the medium level range [1.67 ; 2.33] and is close to the upper bound.

Thus, although the result does not fall within the “high” range as hypothesised, it approaches it. This suggests that pupils who participate in recreational sports activities during physical education classes demonstrate a relatively elevated level of psychological adjustment, lending partial support to the hypothesis.

Table 04 shows that the arithmetic mean of the psychological adjustment scores for the 30 pupils (16 males and 14 females) who participated in recreational sports activities during physical and sports education classes was 2.26, with a standard deviation of 0.179. This is a relatively significant value, suggesting that the level of psychological adjustment among these pupils is moderate, as the mean score (2.26) falls within the second range [1.67–2.33], as outlined in Table 05.

Accordingly, the first hypothesis is partially confirmed, as the level of psychological adjustment among third-year middle school pupils (aged 13–14) at Mohamed Zine Ben-Madani Middle School in Biskra, who engage in recreational sports activities, is moderate rather than high.

These findings align with those of the study conducted by Ben Chemissa El-Aid (2023) entitled *Measuring the Level of Adolescents’ Attitudes Towards the Practice of Recreational Sports Activities*. That study aimed to assess adolescents’ attitudes towards engaging in recreational sports and concluded that these attitudes were moderate, with statistically significant differences found across all dimensions of the variable.

## 7.2 Presentation and discussion of the second hypothesis

The second hypothesis states that there are statistically significant differences in the level of psychological adjustment between pupils (participants and nonparticipants) attributable to the variable of participation in recreational sports activities.

To verify this hypothesis, the responses from the study sample were analysed statistically via the independent samples t test, and the key results are summarised in the table below.

### Validity of the t test:

This test aims to determine whether the data follow a normal distribution, as normality is a precondition for the proper application of the t test. The normality test results are presented in the following table:

**Table 6**

*Normality Test of the Study Data*

Variable	Group	Sample Size	Kolmogorov-Smirnov Sig.	Shapiro-Wilk Sig.
Psychological Adjustment	Participants	30	0.171 *	0.151 *
	Nonparticipants	15	0.200 *	0.131 *

(\*) Data follow a normal distribution

*Source: Prepared by the researcher (2025) via SPSS v27 outputs*

As shown in Table 6, the significance values of the Kolmogorov-Smirnov test for both groups exceeded 0.05, indicating that the data for both the participant and nonparticipant groups followed a normal distribution. This is further confirmed by the Shapiro-Wilk test, which yielded similar significance levels for both groups.

Accordingly, the variables of the study can be considered to follow a normal distribution, which validates the use of the independent samples t test and ensures the reliability of its results. To test the study's hypotheses, the responses were statistically analysed by calculating the arithmetic mean and standard deviation and applying the t test for independent samples, as presented in the following table:

**Table 7**

*Results of the t test for the second hypothesis*

Psychological Adjustment	N	Mean	Standard Deviation	t value		df	p value	Significance Level
Participants	30	2.26	0.17	Calculated	Tabulated			0.05
Nonparticipants	15	1.97	0.26	4.28	2.016	43	0.000	Statistically significant

*Source: Prepared by the researcher (2025) via SPSS v27 outputs*

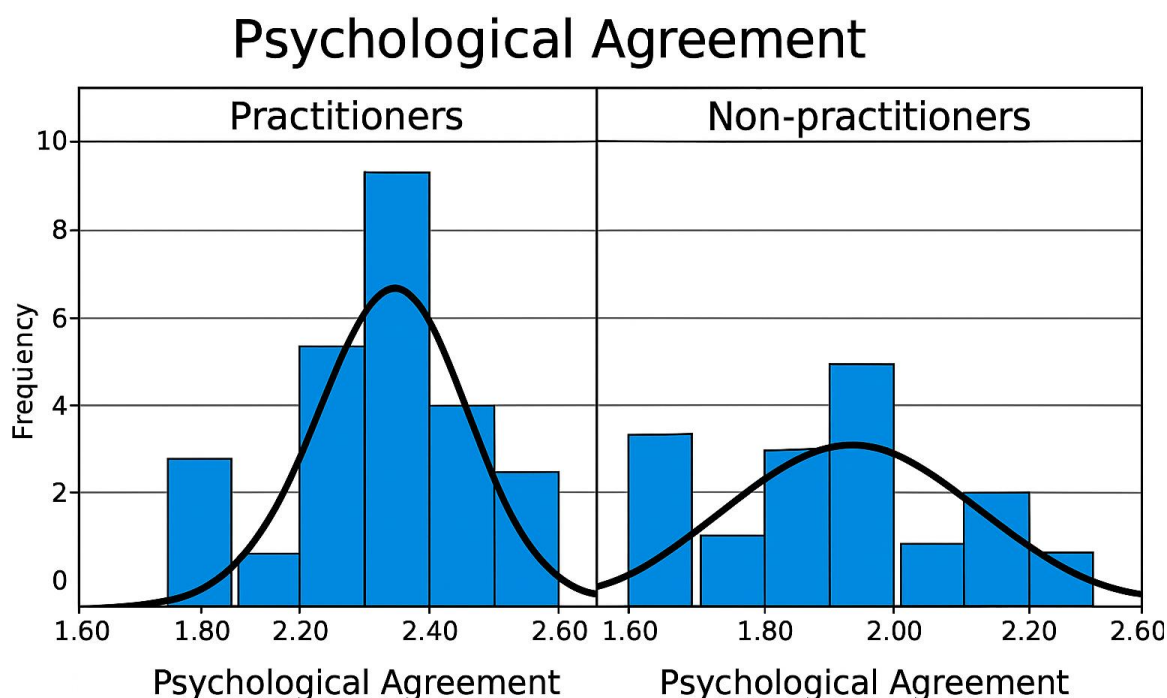
Table 7 clearly shows that the mean score of psychological adjustment for pupils who participate in recreational sports activities reached 2.26, with a standard deviation of 0.17. In contrast, the mean score for nonparticipating pupils was 1.97, with a standard deviation of 0.26.

Given that the p value is 0.000 and that the calculated t value is 4.28, which is greater than the tabulated t value of 2.016 at a significance level of 0.05 and 43 degrees of freedom, we accept the alternative hypothesis stating that there are statistically significant differences in the level of psychological adjustment between participating and nonparticipating pupils, attributable to the variable of recreational sports activity participation.

This is further illustrated in the following figure:

Figure 1:

*Differences in the Level of Psychological Adjustment between Pupils Who Participate and Those Who Do Not Participate in Recreational Activities*



## Sports Activities

This result is consistent with the findings of the study by Abdel Rahim Dhiab (1994), entitled *The Effect of Sports Practice on the Psychological Adjustment of Secondary School Students in the State of Kuwait*. This study aimed to determine the extent to which sports practices influence psychological adjustment among students at this level. The key findings indicated that there were statistically significant differences in the level of psychological adjustment between students who practised sports activities and those who did not, in favour of the sports participants. Also, significant differences were found between pupils who participated in individual sports and those involved in team sports. These findings support and confirm the validity of the second hypothesis.

## 7.3 Presentation and discussion of the third hypothesis

The third hypothesis states that there are statistically significant differences in the level of psychological adjustment between male and female pupils who participate in recreational sports activities. To test this hypothesis, the responses from the sample were analysed statistically via the independent samples t test, and the main results are summarised in the table below:

Table 8

*Results of the independent samples t test for the third hypothesis*

Variable	Group	N	Mean	Standard Deviation	t value (Calculated)	t value (Tabulated)	df	p value	Significance Level	Statistical Significance
Psychological Adjustment	Males	16	2.28	0.20					0.05	
	Females	14	2.24	0.14	0.59	2.048	28	0.555	0.05	Not statistically significant

Source: Prepared by the researcher (2025) via SPSS v27 outputs

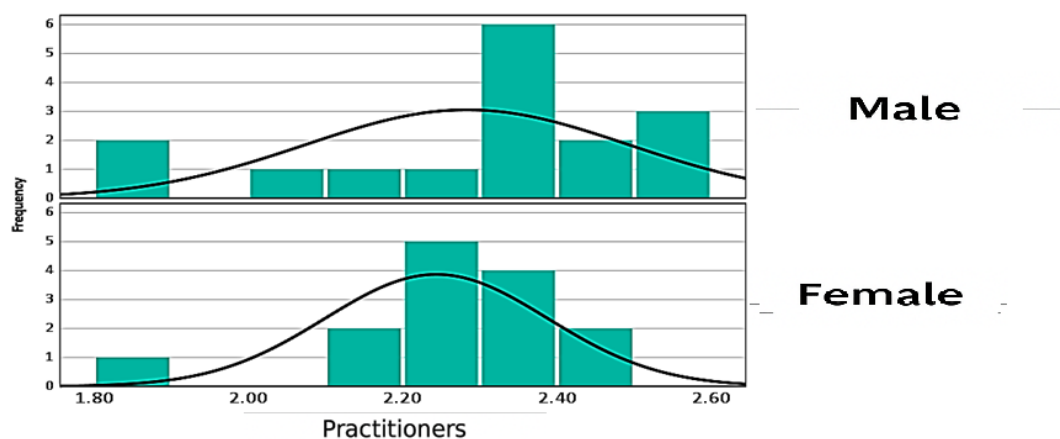
Table 8 clearly shows that the mean psychological adjustment score for male pupils who participate in recreational sports activities was 2.28, with a standard deviation of 0.20. Moreover, the mean score for female pupils was 2.24, with a standard deviation of 0.14.

Given that the p value equals 0.555 and that the calculated t value is 0.59, which is less than the tabulated t value of 2.048 at a significance level of 0.05 and 28 degrees of freedom, we accept the null hypothesis, which states that there are no statistically significant differences in the level of psychological adjustment between male and female pupils attributable to their participation in recreational sports activities.

This result is further illustrated in the following figure:

Figure 2

Differences in Psychological Adjustment Levels between Male and Female Pupils Participating in Recreational Sports Activities



This result contradicts the findings of the study conducted by Ben Ali Adda (2021), entitled *Recreational Sports Activity and Its Impact on the Degree of General Psychological Adjustment among Secondary School Pupils (Aged 15–17)*. This study aimed to assess the extent to which recreational sports activities contribute to general psychological adjustment among pupils.

The main findings were as follows:



Recreational sports activity positively contributes to improving the overall level of psychological adjustment among secondary school pupils across all its dimensions. Moreover, the contribution of recreational sports activity to enhancing psychological adjustment was greater among female participants than among male participants.

### Discussion of the General Hypothesis

The general hypothesis of this study was that the practice of recreational sports activities during physical and sports education classes contributes to enhancing psychological adjustment among third-year middle school pupils.

The results drawn from Tables 07, 08, and 09, which included the mean scores of psychological adjustment and the statistical significance derived from the independent samples t test, as well as the data visualisations in Figures 01 and 02, led to the following conclusions regarding the hypotheses:

- The level of psychological adjustment among pupils who participate in recreational sports activities during physical education classes is moderate.
- There are statistically significant differences in psychological adjustment between pupils who participate and those who do not, which is attributable to the variable of participation in recreational sports activities.
- There are no statistically significant differences in psychological adjustment between male and female pupils who participate in recreational sports activities.

On the basis of the empirical data and statistical results gathered from the study sample, in addition to the findings of previous studies, it can be concluded that most of the hypotheses proposed in this research have been confirmed.

In summary, the general hypothesis has also been confirmed. Therefore, practising recreational sports activities during physical and sports education classes contributes to enhancing psychological adjustment among third-year pupils at Mohamed Zine Ben-Madani Middle School in Biskra Province.

These findings align with those of the studies conducted by Ben-Hnia Wahiba and Hedouache Issa (2022), entitled *The Impact of Proposed Recreational Physical Activity Units on the Psychological Adjustment of Academically Delayed Pupils at Akdhi-Taouziant-Khenchela Middle School*. This study aimed to investigate the effects of proposed recreational physical activity units on the level of psychological adjustment, particularly in personal and social dimensions, among pupils experiencing academic delay. The results revealed no statistically significant differences between the pretest and posttest measurements regarding overall psychological adjustment. The researchers interpreted these units as preventive. However, statistically significant differences were found in the social adjustment dimension, favouring the posttest measurement.

### Conclusion

The primary objective of this study was to highlight the role of recreational sports activities in enhancing psychological adjustment among middle school pupils during physical and sports education classes. The study revealed that recreational sports games generally contribute to improving the psychological adjustment of practicing pupils, both male and female, in contrast to their non-practicing counterparts.

The absence of statistically significant differences in psychological adjustment levels between male and female pupils who engage in recreational sports activities could be attributed to an already elevated level of psychological

adjustment in both groups, possibly resulting from their regular participation in recreational sports during physical education classes.

### Recommendations

On the basis of these findings, the following recommendations are proposed:

- Teachers and all school personnel responsible for pupil welfare should be encouraged to pay greater attention to recreational activities, especially sports games.
- More opportunities are provided for a wider number of pupils to engage in recreational sports activities to promote their psychological adjustment.
- Students' psychological issues should be considered, they should be monitored consistently, and appropriate support should be provided.
- School health services can be reinforced by appointing specialists in both psychologically and sports-related fields.

### Suggestions for Future Research

- Further studies should focus on other types of recreational activities, such as theatre, school commutes, and exploratory outings, and their relationships with psychological adjustment.
- Comparative studies on psychological adjustment among pupils in primary and secondary education levels have been conducted.
- Research similar to that in this study was carried out to explore the level of psychological adjustment across other societal groups.

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