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The effect of educational physical activities on psychological exhaustion among students in the final stage of secondary school.

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Abstract:
The current study aims to discover and determine the extent of the impact of educational physical activities on the levels of psychological exhaustion among adolescents in the final stage of secondary school. For this purpose, we relied on a descriptive approach for a sample consisting of secondary school students, who were selected randomly. After analyzing and enriching the research variables theoretically, the research tool was applied to collect data on adolescents who practice and do not practice physical and sports education activities in some secondary schools in the province of Djelfa. After collecting, statistically processing, presenting, analyzing, interpreting, and discussing the data based on the theoretical approach and previous or similar studies, we aimed to shed light on the impact of physical and sports education activities on the levels of psychological exhaustion among adolescents and the role played by physical and educational sports activities, which led us to raise several questions about the study's hypotheses.
Keywords: educational physical activities; psychological exhaustion; adolescents

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1. Introduction and problem of the study:

Physical and educational sports activities are considered an important factor in achieving psychological balance for students by guiding certain behaviors through exercises designed for that purpose. This has been confirmed by several studies, most of which have concluded that physical and educational sports activities play a major role in reducing certain psychological factors. Adolescence is a stage characterized by many physical and psychological changes that affect an individual's life, marked by the emergence of emotions and behaviors characterized by violence, impulsiveness, and excessive sensitivity. and from time to time, they may experience feelings of psychological stress associated with these changes. We observe that there are various types of psychological pressures, and the methods and approaches that individuals resort to in order to adapt to and deal with these pressures differ according to the source of the psychological pressure and the nature and personality traits of the individual. Some individuals tend to withdraw, become introverted, and isolate themselves, while others tend to feel psychological violation due to physical fatigue and psychological withdrawal, which is an admission that it is impossible to resolve the crisis. This is the case of the exhausted person who has lost all hope of improving their situation, so they escape from their crisis and seek comfort in daydreaming or in working to the point of exhaustion. We find that many adolescents tend to express their discontent with the orders and demands they are subjected to by resorting to negative behaviors that lead to severe fatigue and, consequently, deterioration of their health. The behavior of adolescents is characterized by exhaustion, aggression, and rebellion against others.

The sources of psychological stress associated with certain symptoms in adolescents are more important and comprehensive than significant life events in their lives. Therefore, crises arise from the frustration of one or more strong motivations, and this frustration arises from material, social, or personal obstacles resulting from the conflict between motivations. Numerous studies have shown that the daily sources of stress associated with certain symptoms in adolescents are more important and comprehensive than significant life events in their lives.

Exhaustion is an issue that concerns everyone, young and old alike, especially given its effects on individual and collective health. Therefore, its study becomes increasingly important with every technological, scientific, and environmental shift. This concept has been addressed from several angles, biological, psychological, behavioral, and social, and there have been many

scientific explanations for it. We find that physical and educational sports activities are an important factor in achieving psychological balance for students. This study was highlighted through this. and based on this, the following question comes to mind: **Does the practice of physical and educational sports activities have an impact on psychological exhaustion among students in the final stage of secondary school?**

2. Sub-questions:

- Are there statistically significant differences in the levels of stress and emotional strain among final-stage students who participate in physical education activities and those who do not?
- Are there statistically significant differences in the level of apathy towards others among final-stage students who participate in educational physical activity and those who do not?
- Are there statistically significant differences in the level of lack of personal achievement among final-stage students who participate and do not participate in educational physical and sports activities?

3. Study hypotheses:

3.1 General hypothesis:

The practice of physical and educational sports activities has an impact on psychological exhaustion among students in the final stage of secondary school.

3.2 Sub-hypotheses:

There are statistically significant differences in the level of stress and emotional strain among final-stage students who participate in physical education activities and those who do not.

- There are statistically significant differences in the level of apathy towards others among final-stage students who participate in and do not participate in educational physical activity.
- There are statistically significant differences in the level of lack of personal achievement among final-stage students who practice and do not practice educational physical sports activities.

4. Importance of the study:

- The results of this study help to highlight psychological exhaustion and its relationship to physical activity in education, as well as the role of the latter in reducing it.
- The results of the study can then be used to guide teachers so that they can fulfill their role and achieve the healthy development of children.
- What increases the importance of this study is that it is conducted in the Algerian environment, especially in the sports and psychological fields.
- The importance of the study lies in highlighting the role and impact of educational physical activity in reducing levels of psychological exhaustion among adolescents in secondary school.
- The results of the research can also be useful in some psychological counseling designs and programs in secondary school.
- The scientific addition in this field, especially in the Algerian environment, which lacks such psychological studies.
- Defining psychological exhaustion and its impact on secondary school students, as well as its impact on the smooth running of physical education and sports classes.
- Identifying the extent to which educational physical and sports activities contribute to psychological factors.
- Highlighting the nature of psychological exhaustion among adolescents.

5. Objectives of the study:

The current study aims to identify:

- Recognizing features of psychological exhaustion and its relationship to educational physical activity.
- The extent to which educational physical activity can affect levels of psychological exhaustion.
- Describe the effects of educational physical activity on levels of psychological exhaustion among students who are stressed in the educational field.
- Define educational physical activity as physical movements that serve as therapy for psychologically agitated individuals.
- Identify levels of psychological exhaustion among secondary school students and manifestations among students who engage in educational physical activity.
- Seeking to verify the validity of the hypotheses formulated in order to arrive at scientific results and identify methods of treating psychological exhaustion. There are also few studies that have addressed this topic and examined it.

6. Definition of study terms:

6.1 Psychological exhaustion: The term psychological exhaustion was first used in psychology by **Freud** to describe healthcare workers suffering from physical and psychological exhaustion. It is now commonly associated with professions that provide humanitarian services, such as teachers, nurses, and social workers.

Psychological exhaustion is a lack of energy resulting from extreme fatigue from getting up in the morning and difficulty at work, and it also appears as a lack of willpower and lethargy. It also becomes impossible for the person to concentrate and they feel empty. Psychological exhaustion often involves many signs of depression. (Awni, 2001)

Components of psychological exhaustion: Psychological exhaustion appears through three components in the individual, namely:

First: Emotional stress and strain: This represents the depletion of the individual's psychological energy resources to the point where they are unable to work creatively.

Second: Emotional numbness towards others: This represents the individual's feeling of introversion and isolation from others, accompanied by a hostile disregard for the feelings of others.

Third: Lack of personal accomplishment: This represents the individual's feeling of inferiority, weakness, and inability to achieve, create, succeed, and influence others. (Salem & Salema, 2012)

6.2 Activity: It is an educational method that includes guided practices through which the individual's needs and motivations are satisfied by creating situations that the individual encounters in their daily life. (Mohammed & Anwar, 1990)

6.3 Physical and sportive activity: In this day and age, physical and sportive activity has become an element of solidarity among athletic groups, and an opportunity for young people around the world to get to know each other in the service of society. In addition, it contributes to the fulfillment of the individual by giving him the opportunity to prove his natural qualities and achieve self-fulfillment through struggle and effort. It is considered a factor in social progress and, in some cases, professional advancement. (Ali, 1971)

6.4 Adolescence: Mustafa Fahmy defines it as follows: "The word ADOLESCENCE is derived from the Latin verb ADOLESERE, which means the gradual progression toward physical, sexual, emotional, and mental maturity. Here, the difference between the words adolescence and puberty becomes clear, as the latter is limited to one aspect of growth, namely sexual development. We can define puberty as the maturation of the reproductive glands and the acquisition of sexual characteristics that mark a child's transition from childhood to the onset of maturity." (Mustafa, 1986)

7. Studies associated with research:

- **First study:** Psychological burnout and its relationship to certain variables among educational counselors in the Amman Governorate
  By: Omar Al-Saud Al-Khamasiy,University of Amman

- **Second study:** Psychological burnout among teachers working with students with learning difficulties in resource rooms.
  By: Omar Muhammad Al-Kharabsheh - Ahmad Habib Al-Hamid Aribat, University of Jordan
- **Third study**: The relationship between physical and sports activities and the physical and psychological health of those who practice them.
  By: Hussein Bin Zayed, Article Al-Asr Magazine
- **Fourth study:** School stress and its relationship to psychological exhaustion among adolescents enrolled in secondary education who suffer from disorders (asthma, diabetes, eczema, epilepsy, obesity Field study in some middle schools in the province of Tizi Ouzou
  By: Chaâlal Fatima, University of Tizi Ouzou.

Critiques: Previous studies have shown the importance of psychological exhaustion during adolescence through physical activity, given its impact on various aspects of an adolescent's personality and life. Despite the findings of previous studies, most of which focused on university students, workers, and other groups, I did not find any studies that addressed the variable of physical activity and secondary school students. The objectives of previous studies varied and differed according to each study. Previous studies also focused on different samples, as mentioned earlier, except for the secondary school sample, which did not receive any attention in previous studies. Previous studies also varied in their use of research procedures in terms of methodology and tools used to collect information. As for statistical methods, they varied and were similar in many studies, depending on the objective and hypotheses of the study.

8. Method and tools:

8.1 Exploratory study: An exploratory study was conducted on some secondary schools in the province of Djelfa in order to identify our study sample, examine all working conditions, and plan for them. Some important points were noted, as well as prior knowledge of the conditions for conducting the basic field study, This allowed us to avoid difficulties and obstacles that we might encounter in the future, as we were able to determine the size of the original community and its characteristics, while clarifying the items and their suitability for the sample level and characteristics.

8.2 Methodology: Due to the nature of our subject, and in order to diagnose the phenomenon and reveal its aspects, i.e., to identify the differences between variables, we adopted a descriptive approach, which we consider appropriate for this type of study.

The descriptive approach is defined as a set of research procedures that complement each other in describing the phenomenon or subject based on collecting, classifying, processing, and analyzing facts and data sufficiently and accurately to extract their meaning and reach conclusions or generalizations about the phenomenon or subject under study. (Bashir, 2000)

8.3 Study population: For the research to be acceptable and feasible, we must define the research population we want to examine and clarify the criteria used to identify this population. (Maurice, 2006)

This consists of a group of secondary school students in the province of Djelfa who participate and do not participate in physical and educational sports activities in some secondary schools in the province of Djelfa.

8.4 Study sample: If the sample is the model on which the researcher is working, we chose the random sample model, in which the selection is made on a random basis by giving all the study items the same equal opportunities to appear in the sample. This type of sample is applied if the studied community is homogeneous and equal in all its characteristics.

Our study sample consists of a group of 230 students, to identify the differences between those who practice physical activity and those who do not in terms of psychological exhaustion.

8.5 Data collection tools:

The questionnaire: This method is characterized by its ability to collect new information directly from the source and information obtained by the researcher that cannot be found in books. However, this method of collecting information and the type of questions asked: Of course, the following questions are used: closed questions, semi-open questions, and multiple-choice questions, where the questionnaire as a whole is divided into three sections consisting of 24 questions.

8.6 Psychometric Characteristics: Validity and reliability were calculated by applying and reapplying the split-half method. Methods of splitting or classification are available to estimate the reliability of the entire test and the consistency between its items. (Bashir M. , 2007)

a. Reliability of the judges: To ensure the reliability of the study tool, we used the reliability of the judges as a means of ensuring that the questionnaire measured what it was intended to measure. We distributed the questionnaire to a group of professors at the Institute of Physical and Sports Sciences and Technologies at the University of Djelfa. Based on the comments and guidance provided by the judges, we made the adjustments agreed upon by most of the judges, deleting some phrases and rephrasing others.

b. Stability: We used **Cronbach's alpha coefficient** to assess the internal consistency of the tests and multiple-test scales. This method calculates the total stability coefficient of the measurement tool and identifies the phrases or words that lower or raise the total stability coefficient of the measurement tool when deleted. **Cronbach's alpha** is used when the responses are binary or multiple responses.

Table 1. Stability coefficients for each dimension using Cronbach's alpha method.

Dimensions of psychological exhaustion	Cronbach's alpha coefficient
Emotional stress and tension	**0.66**
Emotional numbness toward others	**0.72**
Sense of personal achievement	**0.80**
Total	**0.78**

Cronbach's alpha coefficient = **0.78** Based on the final result of the stability coefficient calculated for the total sample using the root of the stability coefficient, where the stability coefficient **α** Cronbach was **0.78**, we obtained a reliability coefficient of **0.88**.

8.7 Statistical methods:

a. Descriptive statistics: This includes the following methods:

- Mean.
- Standard deviation.
- Percentage.

The mean and standard deviation are calculated in order according to the following equations:

Mean: $\bar{x} = \frac{\sum F_i x_i}{N}$

Standard deviation: $s = \sqrt{\frac{\sum F_i (x_i - \bar{x})^2}{N}}$

b. Inferential statistics: This includes the following methods:

- Pearson's correlation coefficient.
- Chi-square (X2)
- Stability coefficient (Cronbach's α)

The correlation coefficient is used to measure the stability of the various dimensions in the scale by applying the values in the following equation:

$$\alpha = \frac{2r}{1+r}$$

$\begin{cases} \alpha: \text{Stability coefficient} \\ r: \text{correlation coefficient} \\ \mathbf{1 \ and \ 2}: \text{Constants} \end{cases}$

Note: Statistical analysis is performed using the SPSS statistical software.

9. Results and discussion:

9.1 First hypothesis: There are statistically significant differences in the level of tension and emotional stress among students in the final stage of secondary school who practice and do not practice physical and educational sports activities.

Table 2. differences between students who practice and those who do not, and the significance value at 0.05.

Type	Mean	S	Calculated T-	sig	df	α	Significance
Practitioners	12.56	3.42	6.13	0.00	228	0.05	significant
Non-Practitioners	13.91	1.64					

- **Analysis of the results in Table 2**: The results obtained in **Table 2** show that the mean for practicing students was **12.56** and the standard deviation was **3.42**. For non-practicing students, the mean was **13.91**. while the standard deviation was **1.64**. By comparing the results, we find that the mean for practicing students was lower than that for non-practicing students **(12.56 < 13.91),** and the standard deviation for practicing students was greater than that for non-practicing students **(3.52 > 1.64).** As for the significance value, estimated at **0.00**, it was smaller than the significance

level, i.e. **(0.00 < 0.05),** which proves that there are statistically significant differences between practicing and non-practicing students in terms of stress and emotional strain, and that the difference between the two averages is statistically significant at the same level and in favor of the practicing sample.

First conclusion: Based on the results obtained through statistical analysis shown in **Table 2**, we can see that there is a statistical significance in terms of stress and emotional strain between students who practice physical and educational sports activities and those who do not. This result can be interpreted in favor of students who engage in physical and educational sports activities, which explains the contribution of physical and educational sports activities in reducing the level of stress and emotional strain among students who are about to take their baccalaureate exams while engaging in these activities. This is consistent with numerous studies that have confirmed the positive role of physical and educational sports activities in treating certain personality traits, strengthening and boosting self-confidence, helping patients understand their potential, and preventing feelings of exhaustion, low morale, pessimism, and discouragement, weak ambition, and not exhausting the individual's psychological energy to the point of making them incapable of creative work and not feeling inadequate, weak, and helpless, while paying attention to developing and maturing their personality. From this, we conclude that engaging in physical and educational sports activities has a positive effect on reducing tension and emotional stress. According to the first hypothesis, which states that "there are statistically significant differences in the level of tension and emotional stress among those who practice and those who do not practice educational physical activity in favor of the practicing sample." , **the first hypothesis is therefore proven.**

9.2 Second hypothesis: There are statistically significant differences in the level of apathy towards others among final-stage students who participate in and do not participate in educational physical activity.

Table 3. differences between students who practice and those who do not, and the significance value at 0.05.

Type	Mean	S	Calculated T-	sig	df	α	Significance
Practitioners	09.06	5.76	8.25	0.00	228	0.05	significant
Non-Practitioners	11.84	3.39					

- **Analysis of the results in Table 3:** The results obtained in **Table 3** show that the mean for practicing students was **9.06** and the standard deviation was **5.76**, while for non-practicing students, the mean was **11.84**. while the standard deviation was **3.39**. By comparing the results, we find that the mean for practicing students was lower than that for non-practicing students **(09.06 < 11.84),** and the standard deviation for practicing students was greater than that for non-practicing students **(5.76 > 3.39).** As for the significance value, estimated **at 0.00**, it was smaller than the significance level, i.e. **(0.00 < 0.05),** which proves that there are statistically significant differences between practicing and non-practicing students in terms of their level of apathy towards others, and that the difference between the two means is statistically significant at the same level and in favor of the practicing sample.

Second conclusion: Based on the results obtained through statistical analysis shown in **Table 3**, we can see that there is statistical significance in the level of apathy towards others among students who practice and do not practice physical and educational sports activities. This result can be interpreted in favor of students who engage in physical and educational sports activities, which explains the contribution of physical and educational sports activities in reducing apathy towards others among students approaching their baccalaureate exams in light of the practice, This is consistent with numerous studies that show that physical and educational sports activities contribute to reducing individuals' feelings of introversion and isolation from others, which are accompanied by hostile disregard for the feelings of others. They also contribute to building social relationships and a sense of belonging by establishing group bonds that promote cooperation and friendship through participation others in their work and

eliminating feelings of loneliness and isolation, while developing and nurturing social maturity. We can therefore conclude that engaging in physical and educational sports activities reduces feelings of indifference towards others. According to the second hypothesis, which states that " there are statistically significant differences in the level of apathy towards others among those who practice and those who do not practice educational physical activity in favor of the practicing sample." and therefore **the second hypothesis is proven**.

9.3 Third hypothesis: There are statistically significant differences in the level of lack of personal achievement among final-stage students who practice and do not practice educational physical sports activities.

Table 4. differences between students who practice and those who do not, and the significance value at 0.05.

Type	Mean	S	Calculated T-	sig	df	α	Significance
Practitioners	15.36	4.32	4.22	0.00	228	0.05	significant
Non-Practitioners	16.21	2.54					

- **Analysis of the results in Table 4:** The results obtained in **Table 4** show that the mean for practicing students was **15.36** and the standard deviation was 4.32. For non-practicing students, the mean was **16.21**. while the standard deviation was **2.54**. By comparing the results, we find that the mean for practicing students was lower than that for non-practicing students **(15.36 < 16.21),** and the standard deviation for practicing students was greater than that for non-practicing students **(4.32 > 2.54).**

  As for the significance value, estimated at **0.00**, it was smaller than the significance level, i.e. **(0.00 < 0.05),** which proves that there are statistically significant differences between practicing and non-practicing students in terms of their level of lack of personal achievement, and that the difference between the two averages is statistically significant at the same level and in favor of the practicing sample.

Third conclusion: Based on the results obtained through statistical analysis shown in **Table 4**, we can see that there is statistical significance in terms of a lack of personal achievement among students who do and do not participate in physical educational sports activities. This result can be interpreted in favor of

students who engage in physical activity, which explains the contribution of physical and educational sports activities in reducing the lack of personal achievement among students who are about to take their baccalaureate exams, in line with numerous studies that have confirmed the important role played by physical and educational sports activities in contributing to the individual's lack of aggression, weakness, inability to achieve, create, succeed, and influence others, and to avoid focusing on things that are more likely to cause tension and feelings of repression and suffocation. Exhaustion is the stage that follows stress, i.e., the continuation of stress or the continued existence of excessive pressure and burdens on the student. From this, we conclude that engaging in educational physical activity contributes to reducing the lack of personal achievement,
according to the third hypothesis, which states that "there are statistically significant differences in the level of lack of personal achievement
among high school seniors who participate in educational physical activity and those who do not, in favor of the sample that participates. Therefore, **the third hypothesis is confirmed.**

10. CONCLUSION

After presenting, analyzing, and discussing the results, we drew several important conclusions and confirmed the validity of the hypotheses we had proposed during the construction of this research. We found that physical and educational sports activities have an impact on reducing psychological exhaustion among students in the final stage of secondary school, as we found that there is a difference between those who practice and those who do not, and that physical and educational sports activities contribute significantly to reducing psychological exhaustion among adolescents at this sensitive stage of their lives. as we found that there are statistically significant differences in the levels of psychological exhaustion among students who practice and do not practice physical and sports activities in education. This is confirmed by the results obtained and **the first hypothesis:** "There are statistically significant differences in the levels of tension and emotional stress among final-stage students who practice and do not practice physical and educational sports activities. The level of tension and emotional stress among those who practice was very low compared to students who do not practice educational physical sports activities.

As for **the second hypothesis**, “There are statistically significant differences in the level of apathy towards others among final-stage students who practice and do

not practice educational physical and sports activities," the degree of apathy towards others among those who practice was low compared to students who do not practice educational physical activity. As for **the third hypothesis**, "there are statistically significant differences in the level of lack of personal achievement among final-stage students who practice and do not practice educational physical and sports activities." The lack of a sense of personal achievement among practitioners was low compared to students who did not participate in educational physical activity. **Therefore, we can say that the general hypothesis, which states that educational physical activity contributes to reducing levels of psychological exhaustion among students who participate and those who do not, has been proven**.

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