Scientific journal of physical and sports education(RSEPS)
(ISSN): 1135-1111 / EISSN 2661 - 7358
https://www.asjp.cerist.dz/en/PresentationRevue/452

Volume: 24/ N°: 01 (2025), p 380-387

A comparative study of the level blood pressure between practitioners and non-practitioners healthy sports physical activity with older women (50-60) years in Algeria

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Received: 06/06/2024 **Accepted: 30/12/2024**

Abstract :

This study aims to identify the importance of healthy sports physical activity in preventing various types of blood pressure disease. The study was conducted on a sample of (30) older women in the state of Guelma who were chosen intentionally. To collect data for the study and to verify its objectives, We used the descriptive approach because it is appropriate to the nature and subject of the study, but with regard to data collection tools, we relied on books and references, in addition to using a questionnaire form directed to the study sample. The statistical processing was done using the statistical packages program (Spss), and the results of the study were as follows:

- There are statistically significant differences in the level of systolic blood pressure value between practitioners and non-practitioners healthy sports physical activity, and is this in favor of the practices, and it is in favor of the practices.
- There are statistically significant differences in the level of diastolic blood pressure value between practitioners and non-practitioners healthy sports physical activity, and is this in favor of the practices, which is in favor of the female practitioners.

Keywords: Healthy sports physical activity - Blood pressure - older women

Article info

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1. Introduction

The benefits of physical activity and its positive effects on health were not new to this day, but many scientific studies and experimental observations whose results confirmed the strength of the relationship between lack of physical activity and health. This was done by studying the negative effects of physical inactivity, and based on the results of Studies conducted on a large number of people have confirmed the existence of a relationship between physical inactivity and the incidence of many contemporary diseases and demonstrated the preventive and therapeutic role that practicing physical activity contributes to combating many chronic diseases. **(Gweni Issa, 2023, p. 53)**

Healthy sports activity is a type of sports activity that is considered among the necessary social behaviors in the lives of individuals, and which is practiced in free time, which means "free time that is not exploited for work, meaning that it is isolated time with no work to be performed in it. It is also known as the time in which a sense of responsibility arrives." The individual has the lowest level, as it is the time remaining after the basic vital duties of a human being. **(Qorsi Jamal al-Din nd All, 2022, p. 180)** .

Sports activity is considered one of the foundations of general education that works to develop various basic aspects of an individual's personality and prepare a good individual by targeting the basic physical, psychological, social, and behavioral aspects and the individual's personality in general. Many studies have shown the role that the latter plays in improving the person who practices it in Various psychological and life aspects. Physical education and sports in general represent an important and influential element in the lives of people with special needs, as they have many benefits that affect many aspects, and sports have a direct relationship to the health of the individual with special needs. **(Serairi rabah and All, 2021, p. 39)**

Many studies also indicate that regular sports activity is an auxiliary treatment for mild and moderate cases of depression, especially in the elderly. These studies have proven that sports have a significant impact in treating depression. Participation in sports activities gives retirees psychological and physical comfort that helps them adapt to the new stage. (retirement) and pass it safely. **(Zayan Nasira, 2021, p. 75)**

High blood pressure is one of the modern diseases called "hypokentic diseases" resulting from contemporary life and the adoption of modern technology at work, as no society is free of this disease, and it is only a problem that is increasing and growing and we cannot ignore it, which has led to an increasing number of those infected. It occurs in the modern era due to the circumstances to which the individual is exposed during his life, the tensions of life and the problems of society as a whole, which negatively affect the patient's health and psychological condition, which prompted individuals to search for means to prevent and treat it. **(Ezzedine Rami and all, 2018, p. 6)**

In this context, it is necessary to work on raising awareness and highlighting the danger of lack of sports activity, which is linked to physical fitness and the psychological and mood state, in order to be able to maintain health and well-being from diseases by reducing the factors that cause them, as positive physiological changes come as a natural result of practicing physical sports activity. In light of what was mentioned above, it was necessary for us to work to find a way to protect the health of the elderly from developing blood pressure disease, which causes the patient to be accompanied by a disturbed psychological state and health problems secondary to the medications he takes. This may lead to the accumulation of a wrong culture that has been drawn up over time about this way. Maintaining health. Correct information is an effective tool in confronting the disease and reducing its risk factors. From this, we ask the following question:

Does healthy sports physical activity have a positive role in preventing blood pressure in older women (50-60 years) ?

- Partial questions:

- Are there statistically significant differences in the level of systolic blood pressure value between practitioners and non-practitioners healthy sports physical activity, and is this in favor of the practices ?

- Are there statistically significant differences in the level of diastolic blood pressure value between practitioners and non-practitioners healthy sports physical activity, and is this in favor of the practices ?

2- Research hypotheses:

2-1- General hypothesis:

- Healthy sports physical activity has a positive role in preventing blood pressure in older women (50-60 years).

2-2- Partial hypotheses:

- There are statistically significant differences in the level of systolic blood pressure value between practitioners and non-practitioners healthy sports physical activity, and is this in favor of the practices, and it is in favor of the practices.

- There are statistically significant differences in the level of diastolic blood pressure value between practitioners and non-practitioners healthy sports physical activity, and is this in favor of the practices, which is in favor of the female practitioners.

3- Research objectives:

- Identify the extent to which healthy sports physical activity contributes to the prevention of systolic blood pressure.

- Identify the positive role of healthy sports physical activity in preventing diastolic blood pressure.

4- The importance of research:

- A clear picture must be given of the importance of practicing healthy sports activities as a therapeutic and preventive method.

- An attempt to reveal the reality of healthy sports physical sports activity among society and for all ages because of its health benefits that protect it from chronic diseases (blood pressure) without resorting to a medical treatment protocol.

5- Defining the terms of the study:

5-1- Physical sports activity:

Sports physical activity is that integrated part of general education, and an experimental field whose goal is to form good citizens who are fit in the physical, mental, emotional, and social aspects, through the various types of physical activity that were chosen with the aim of achieving these tasks. **(Ziyouch Ahmed, 2010, p. 193)**.

5-2- High blood pressure:

Blood pressure is measured in a unit called millimeters of mercury, and is recorded as two numbers usually written one above the other (in the form of a fraction). The higher number indicates systolic blood pressure, which is the highest pressure in the blood vessels and occurs with the contraction or beating of the heart. The lower number indicates diastolic blood pressure, which is the lower pressure. In the blood vessels in the periods between the heartbeat and the relaxation of the heart muscle. Normal blood pressure in adults is defined when the systolic blood pressure is 120 mm Hg and the diastolic blood pressure is 80 mm Hg. The benefits of normal blood pressure extend to the heart and blood vessels, with systolic blood pressure decreasing to 105 mmHg and diastolic blood pressure reaching 60 mmHg. High blood pressure is defined when systolic blood pressure equals or exceeds 140 mmHg and when diastolic blood pressure equals or exceeds 90 mmHg. Normal levels of systolic and diastolic blood pressure are of particular

importance in ensuring that vital organs of the body, such as the heart, brain, and kidneys, perform their functions efficiently and in good health. Human health and well-being in general. **(Gweni Issa, 2023, p. 63)**.

5-3- The older women:

The word "older women" refers to a man or woman who has reached the age of sixty or the age of pension or retirement, or every person who is unable to care for or serve himself as a result of his advanced age. **(Nabaouia Ahmed Abdel Hafez Hamad, 2021, p. 43)**.

6- Field procedures for the study:

6-1- Exploratory study:

It is the first step that helps the researcher collect information about the field study aspects of his research. The exploratory study aims to ensure the suitability of the research study, ensure the validity of the tool used to collect information, and know the appropriate time to conduct the study.

6-2- Study variables:

A- Independent variable: healthy sports physical activity

B- Dependent variable: blood pressure

6-3- Study population and sample:

In our study, the study population is older women people in the state of Guelma.

6-4- Fields of study:

A- Temporal domain:

This study was conducted (from December 5, 2023 until January 5, 2024)

B- Spatial field:

This study was conducted in Guelma state

C- The human field:

The older women of the nursing home in Guelma.

6 -5- Data collection tools:

A questionnaire form was used in addition to theoretical sources and references

6-6- Statistical methods:

percentage

C-squared test

7- Analyzing, discussing and interpreting the results:

The first hypothesis: There are statistically significant differences in the level of systolic blood pressure value between practitioners and non-practitioners healthy sports physical activity, and it is in favor of the practices.

Table No. (01): Shows the sample members' answers to the first hypothesis.

the answers	iterations	percentage	K2	significance level	Sig	degrees of freedom	Statistical estimate
Yes	24	%80	8,4	α=0,05	0,00	n−1 =2	significant
No	06	%20					
the total	30	100%					

Table source: current study.

From Table No. 1: We notice that those who answered yes were (24) women, at a rate of 80%, and those who answered no were 06, at a rate. 20%, and the value of k2 = 8.4 was at the significance level of 0.05,

which is greater than sig = 0.00. Hence, there are statistically significant differences in the level of systolic blood pressure value between practitioners and non-practitioners healthy sports physical activity, which is in favor of the practices.

Figure No. (01): represents the circular representation of the percentage of individuals in the study sample for the first hypothesis.

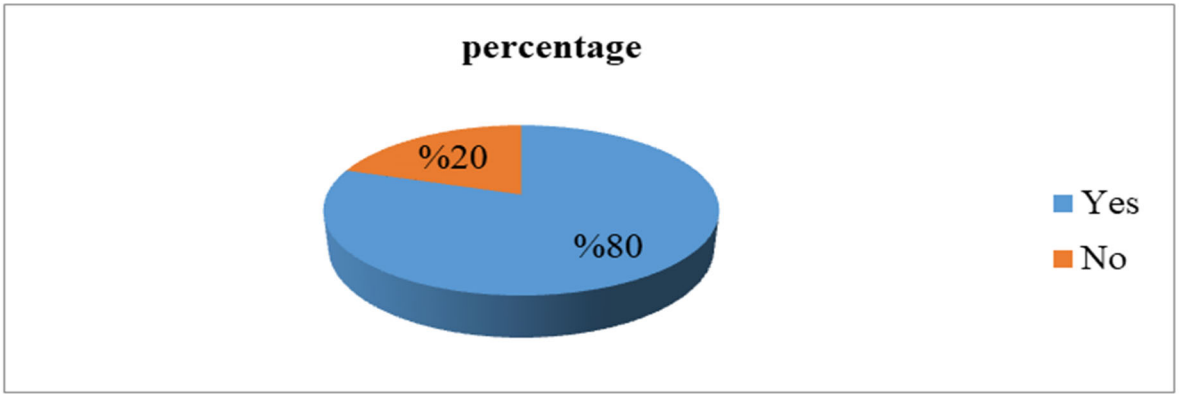


Figure source: current study.

The second hypothesis: There are statistically significant differences in the level of diastolic blood pressure value between practitioners and non-practitioners healthy sports physical activity, and this is in favor of the practices.

Table No. (02): Shows the sample members' answers to the second hypothesis.

the answers	iterations	percentage	K2	significance level	Sig	degrees of freedom	Statistical estimate
Yes	19	%63	7,2	α= 0,05	0,00	n−1 =2	significant
No	11	%37					
the total	30	%100					

Table source: current study

Through Table No. (02), we notice that those who answered yes were 19, at a rate of 63%, and those who answered no were 11, at a rate of 37%. The value of K2 = 07.2 at the significance level of 0.05, which is greater than sig = 0.00. Hence, there are statistically significant differences in the level of diastolic blood pressure value between practitioners and non-practitioners healthy sports physical activity, and it is in favor of the practices.

Figure No. (02): represents the circular representation of the percentage of individuals in the study sample for the second hypothesis.

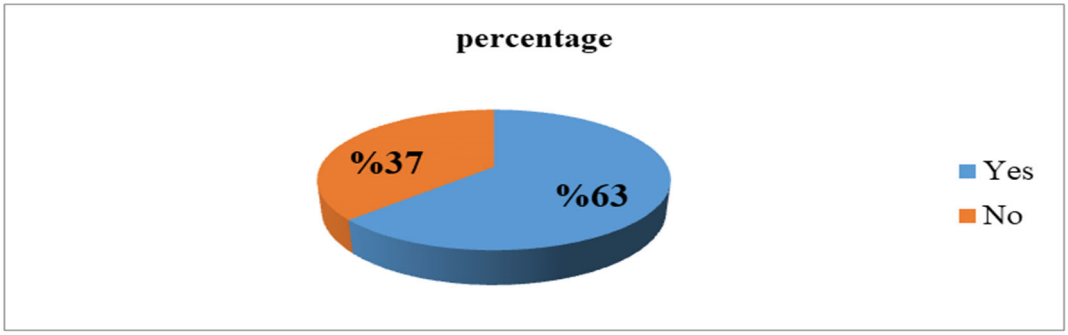


Figure source: current study.

8 - Discussing the results in light of the research hypotheses:

8-1- Discussing the results of the first hypothesis:

Through statistical treatment of the results obtained, and as required by the course of the research to ensure the validity of the hypothesis, the researcher found, through the results obtained in Table No. (01), that There are statistically significant differences in the level of systolic blood pressure value between practitioners and non-practitioners healthy sports physical activity, and it is in favor of the practices.

This is consistent with the study **(Hagberg 1993)**, in which he found the possibility of a decrease in systolic blood pressure by an average of (90) mmHg and diastolic (70) mmHg under the influence of an exercise training program in which the right conditions are met.

Brannon [1992] mentions that during effort, the systolic pressure increases with increasing effort, while the level of the systolic and diastolic pressures remains during rest and effort when practicing aerobic training. The reason may be that aerobic training may lead to a positive change in the smooth muscles of the walls of blood vessels or that The decrease in blood pressure may be a result of reducing risk factors during exercise, including body fat levels. **(Ezzedine Rami and all, 2018, p. 11)**

Concerning **(Bahaa Al-Din Salama 1998)**, he mentioned that in the case of high-intensity endurance training, there is an increase in systolic pressure, while diastolic pressure may change significantly, in contrast to the individual performing static muscle training, as both pressures increase. Experience has shown that training for (7) weeks and three times Weekly treatment has improved blood cholesterol and reduced blood pressure. **(Bahaa El-Din Salama, 1994, p. 196)**.

This is consistent with the results of the second hypothesis of our study. There are statistically significant differences in the level of systolic blood pressure value between those who practice healthy physical activity and those who do not practice healthy sports, which is in favor of the practices.

Mohamed Hassan Allawi (2000) believes that muscle exercises using constant muscle contraction lead to an increase in both systolic and diastolic pressure, but this increase quickly decreases immediately after the exercise, and this is what we observe during moving muscle work. Therefore, changes in blood pressure during muscle work are related to the degree of proportionality. The level of increased cardiac impulse and decreased resistance to blood flow. Therefore, increasing physical work leads to an increase in average pressure, but it is not significant, as systolic pressure increases with increasing training intensity, and the effect of cardiac impulse on increasing systolic pressure is greater than its effect on diastolic pressure. **(Mohamed Hassan Allawi and All, 1984, p. 261)**

This is consistent with the results of the first hypothesis of our study, which is There are statistically significant differences in the level of systolic blood pressure value between practitioners and non-practitioners healthy sports physical activity, and it is in favor of the practices.

8-2- Discussing the results of the second hypothesis:

Through statistical treatment of the results obtained, and as required by the course of the research to ensure the validity of the hypothesis, the researcher found, through the results obtained in Table No. (02), that There are statistically significant differences in the level of diastolic blood pressure value between practitioners and non-practitioners healthy sports physical activity, and this is in favor of the practices.

This is consistent with a study conducted by (**Norris & Jones**) that showed the possibility of positive effects occurring after about (6) weeks, and this is due to the decrease in peripheral vascular resistance that is accompanied by a decrease in the levels of noradrenaline hormones in plasma. The study conducted in laboratories also showed that Intensity walking exercises and treadmill programs are very beneficial in lowering blood pressure. Therefore, moderate aerobic training must be emphasized in order to restore normal blood pressure, as well as other types of programs that will have an effect in controlling blood pressure. These are relaxation exercises, such as meditation, breathing has great effects in lowering blood pressure, and aerobic exercises such as sitting, moving, and swimming, all of which help improve

blood pressure and return it to a moderate degree of low.

In another study conducted by **(Berkov)** patients with blood pressure, this study confirms that aerobic exercise and following an appropriate diet are among the best preventive and therapeutic methods at the same time, as this study emphasized following exercises continuously and for (30) minutes for (3) times a week, in moderation, helps reduce the level of initial blood pressure and mild hypertension. In addition, aerobic exercise, which is used at a certain intensity for patients with high blood pressure, does not have a positive effect on weight. **(Robert Berkow, 1987)**

In another study by (**Carroll**), she indicated that blood pressure patients who take medical drugs can completely dispense with them or reduce them after using an aerobic program on a regular basis. This study confirmed that regular aerobic exercises help improve blood pumping, expand blood vessels, and increase sensitivity. Insulin, and that it has a positive effect in reabsorbing water and sodium by the kidneys and thus reducing high blood pressure. The American Society of Sports Medicine (1993) confirmed that moderate-intensity physical activity (50-75) of the maximum heart rate leads to a significant reduction in blood pressure. Noticeable during rest time. **(American College of Sports Medicine, 1993, p. 25)**

This is consistent with the results of the second hypothesis of our study, which is that There are statistically significant differences in the level of diastolic blood pressure value between practitioners and non-practitioners healthy sports physical activity, and this is in favor of the practices.

9 - Conclusion:

Based on our study of this topic on knowing the importance of health preventive sports physical activity and its effective role in preventing blood pressure in the elderly, our study reached the following most important results:

- There are statistically significant differences in the level of systolic blood pressure value between practitioners and non-practitioners healthy sports physical activity, and is this in favor of the practices, and it is in favor of the practices.
- There are statistically significant differences in the level of diastolic blood pressure value between practitioners and non-practitioners healthy sports physical activity, and is this in favor of the practices, which is in favor of the female practitioners.

From the above, we can say that health preventive physical activity has a positive role in preventing high blood pressure among the elderly (50-60) years old in Algeria.

10 - Recommendations:

In light of the results, the study recommends the following:

- It is necessary to use moderate-intensity aerobic exercise to maintain normal blood pressure.
- It is necessary to regularly perform aerobic exercises three times a week, gradually increasing the prescribed duration during the weekly units to achieve better results.
- Educating people with high blood pressure about the importance of exercising for all ages.
- Publishing statistics and studies on blood pressure diseases and the effect of healthy sports physical activity in preventing them to increase the demand for exercise and everything related to healthy preventive sports physical activity.
- Conducting preventive courses and meetings to raise awareness about the risk of developing high blood pressure among the elderly.

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