The excellence Journal in Sciences Techniques Of Physical Activity And Sports
Volume: -11 N°01 -2026 P:206 -218
ISSN: 2507-7201 EISSN: 2602-6899 NDL: 787-2016
ASJP: https://www.asjp.cerist.dz/en/PresentationRevue/208

The Effect of a Proposed Physical Activity Program on Weight Loss During the Month of Ramadan

Heddouche Aissa*[1], Kadri Abdelhafid [2] Boucharebe Rafahiya[3]

[1] University of batna2, Alegria, a.heddouche@univ-batna2

[2] University of batna2, Alegria , a.kadri@univ-batna2.

[3]University of batna2, Alegria ,r.boucharebe@univ-batna2.dz

Received: 27/03 /2026 ***Accepted***: 12/05 /2026 ***Published***: 06/06 /2026

Abstract:

This study aimed to determine the effect of a proposed exercise program based on regular physical activity for weight loss during Ramadan. The researcher employed an experimental approach and a purposive sampling method. The results showed that the program had a positive effect on several anthropometric indicators associated with obesity. The results also demonstrated a significant improvement in body weight reduction. These findings reflect the effectiveness of moderate-intensity physical exercise in influencing body composition, even under fasting conditions. The researcher recommended the use of moderate-intensity aerobic exercises, as they are suitable for the athlete's condition and fasting and provide satisfactory results in weight loss.

KEY WORDS : physical activity; weight loss; fasting; Ramadan

الملخص:

هدفت هذه الدراسة إلى تحديد أثر برنامج رياضي مقترح قائم على النشاط البدني المنتظم في إنقاص الوزن خلال شهر رمضان. استخدم الباحث المنهج التجريبي بعينة قصدية. أظهرت النتائج أن البرنامج كان له أثر إيجابي على العديد من المؤشرات الأنثروبومترية المرتبطة بالسمنة. تعكس هذه النتائج فعالية التمارين الرياضية متوسطة الشدة في التأثير على تكوين الجسم، حتى في ظروف الصيام ومدى فعالية البرنامج المقترح.

الكلمات المفتاحية: النشاط البدني ؛ الصيام ؛ انقاص الوزن؛ رمضان.

* *Corresponding Author.*

1-Introduction:

The holy month of Ramadan is characterized by a unique dietary and behavioral pattern, as those fasting abstain from food and drink for extended periods during the day, directly impacting metabolism and energy levels. This raises an important question about the role of physical activity during this month in weight loss, and whether fasting hinders exercise or enhances its effectiveness.

Ramadan presents a unique opportunity to readjust dietary and exercise habits, as fasting alters eating patterns and physical activity levels. Many individuals aim to lose weight during this month by adopting a balanced diet and engaging in physical activity. However, the effectiveness of this approach depends on several factors, including the type of exercise, its intensity, timing, and dietary habits during Iftar (breaking the fast) and Suhoor (pre-dawn meal).

Numerous scientific studies have investigated the impact of physical activity on weight loss during Ramadan. For example, Kirkendall 's study found that intermittent fasting during Ramadan was effective in reducing body weight, specifically focusing on fat mass. Intense physical activity patterns, total calorie intake, and food consumption (excluding fluids and fats) were all reduced during Ramadan. (Kirkendall DT, 2008:26) Consequently, moderate-intensity physical activity is recommended during Ramadan due to its positive effects on body composition.

The month of Ramadan is a special period spiritually and socially, but it also represents a physical and health challenge due to prolonged fasting and changes in eating habits. This shift in lifestyle affects several health indicators such as body weight, Body Mass Index (BMI), and overall body composition.

A study by Michalsen and all(2003) also showed that moderate physical activity during fasting helps improve metabolism, but it can be strenuous if fluids and nutrients are not replenished after breaking the fast. (Michalsen , 2003 :47)

This study aims to highlight the role of physical activity in weight loss during Ramadan by analyzing the effects of different types of exercise on weight and body composition. It will also draw on previous studies to clarify the relationship between fasting, physical activity, and the physiological changes the body undergoes during this blessed month.

Physical activity is considered an important factor in weight control and improving general health. However, during Ramadan, questions arise about the possibility of practicing it and its actual effects on the body under long fasting conditions. (Bolton, 2014:9) Some studies indicate that practicing physical activity during Ramadan may help maintain or even reduce weight, while others suggest that fasting may limit the ability to exercise or reduce the body's energy expenditure.
the main research question is:
What is the effect of a proposed physical activity program on weight loss during Ramadan?
Sub-questions:
- What is the effect of the proposed physical activity program on body weight?
- What is the effect of the proposed physical activity program on BMI?
- What is the effect of the proposed physical activity program on waist circumference?

Research Hypotheses

General Hypothesis:

The proposed physical activity program has an effect on weight loss during Ramadan.

Partial Hypotheses:

- The proposed physical activity program reduces body weight.

- The proposed physical activity program improves BMI.

- The proposed physical activity program reduces waist circumference.

2- General objective of the study

The general objective of this study is to assess the effectiveness of the proposed program in improving participants' anthropometric indicators. Specifically, the study aims to determine whether the program contributes to a reduction in body weight, to examine its impact on Body Mass Index (BMI), and to evaluate its effect on waist circumference as an indicator of central adiposity.

Importance of the Study

Scientific Importance:

This study contributes to filling a knowledge gap regarding the effect of physical activity on energy balance and weight during fasting, which is a unique condition compared to other diets.

Health Importance:

Obesity and overweight are major health issues in Arab and Muslim societies. Ramadan can be an opportunity to adopt a healthier lifestyle. Understanding the role of exercise during this month helps achieve weight loss safely.

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

Physical Activity:

Any body movement produced by skeletal muscles that increases energy expenditure, including exercise, walking, running, or any physical effort during Ramadan.

Weight Loss:

A quantitative change in body mass measured before and after Ramadan.

Ramadan:

A period of 29 or 30 days during which fasting is observed and physical and weight changes are monitored.

Fasting:

Abstaining from food and drink from dawn until sunset.

Body Mass Index (BMI):

A measure used to assess weight status:

BMI = weight (kg) ÷ height² (m^2)

Aerobic Exercises:

Exercises relying on oxygen such as walking, running, cycling, and swimming.

4- The methodological procedures used in the study:

4-1 Method and tools:

This study adopts an experimental research method to evaluate the effectiveness of the proposed program. This approach allows for the measurement of changes in participants' outcomes following the implementation of the intervention, particularly in terms of body weight, Body Mass Index (BMI), and waist circumference. By comparing measurements before and after the program, the study seeks to determine the causal effect of the intervention on the targeted anthropometric indicators.

Population and Sample:

The individual was selected due to their obesity, as indicated by the International Body Mass Index (BMI), which reflects overweight and obesity.

- To determine the individual's degree of obesity, their BMI was calculated. BMI = 32.9

Table N°01: Shows the anthropometric measurements and BMI of the research sample

Number of sample	Age (years)	Weight	Height	Waist Circumference	**(BMI)**
01	25	95 kg	170 cm	110 cm	32.9

Source: Prepared by the researcher

By comparing the individual's body mass index with the international body mass index, which indicates overweight or obesity, we note that the individual's body mass index exceeds the international body mass index for adults. That is, the experimental sample falls within the first degree of desire, between (30 - 34.9). BMI = 32.9 (Obesity Class I).

Data Collection Tools

- Anthropometric Measurements

- Anthropometric Measurements: Anthropometric measurements were used as a data collection tool from the study sample, and they consisted of the following:

- Measuring Body Weight: Weight was measured while the person was wearing only light underwear and without shoes, and the weight was recorded in kilograms.

- Measuring body height: Height is measured with the person standing upright, without shoes, by pressing down on the hair with a measuring device. The height is recorded either in meters and their fractions, or in centimeters rounded to the nearest 1.0 cm.
- Measuring Body Mass Index (BMI): This is a technical method for expressing body weight in relation to height, and is therefore a good indicator of the degree of obesity.

Measurements:

* Age: 25 years
* Weight: 95 kg
* Height: 170 cm
* Waist circumference: 110 cm

Physical Activity Program

- Duration: 4 weeks (10 sessions)
- Intensity: Moderate
- Timing: 1.5 hours before iftar

Activities:

- Walking (30–60 minutes)
- Strength exercises (bodyweight)
- Running in place
- Football matches

Time and place

- We implemented our proposed program in: the city, the forest, the stadium, and the hall during Ramadan 2025 in the city of Batna.

4-2 Presentation and Analysis of Results

First Hypothesis:

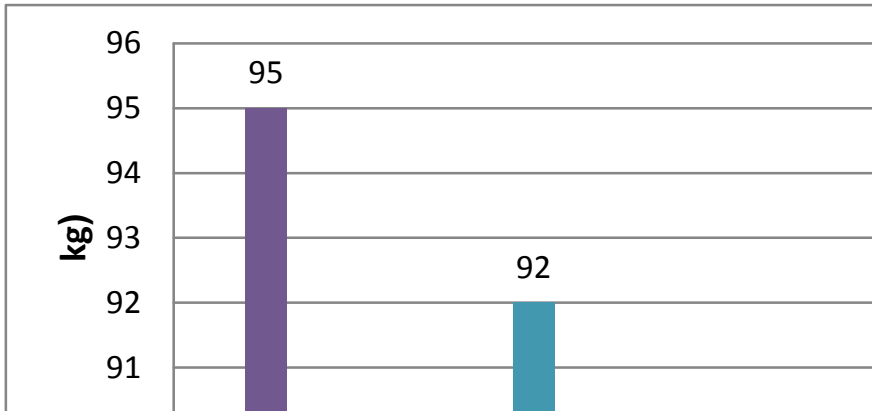
- The proposed physical activity program has an effect on body weight loss during Ramadan.

Table N°2: Shows the results between the beginning and end of the study according to the weight index**.**

Body Index	Before Physical Activity	After Physical Activity	Difference
weight	95 kg	92 kg	-3 kg

Source: Prepared by the researcher

***Graph N° 1. A graph showing weight before and after Ramadan**



Source: Prepared by the researcher

Comment:

Through Table No. 4 and the bar graphs of Figure No. 1, the results of the applied study showed that the physical program consisting of walking exercises, strength exercises, and football matches, which was carried out regularly during the month of Ramadan, led to a clear improvement in obesity indicators, represented by a weight loss of 3 kg.

Second Hypothesis:

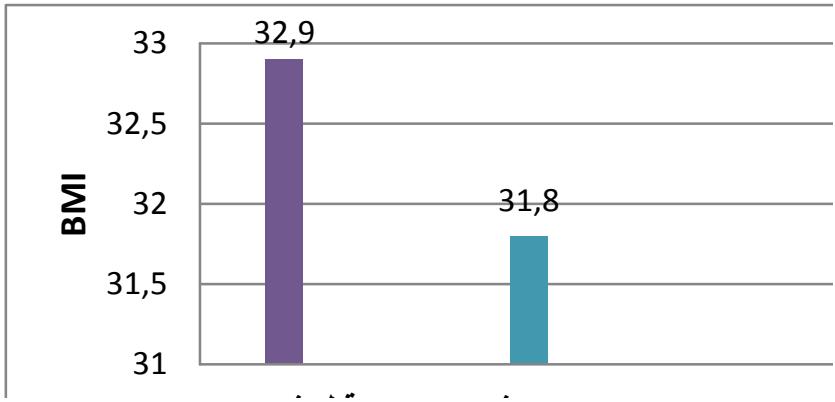
- The proposed physical activity program has an effect on Body Mass Index (BMI).

Table N°3: Shows the results between the beginning and end of the study according to BMI.

Index	Before Physical Activity	After Physical Activity	Difference
Body Mass Index (BMI)	32.9	31.8	-1.1

Source: Prepared by the researcher

***Graph N° 2.A graph showing BMI before and after Ramadan**



Source: Prepared by the researcher

Comment:

Through Table 5 and the bar graphs in Figure 2, the results of the applied study showed that the physical program consisting of walking exercises, strength training, and football matches, implemented regularly during Ramadan, led to a clear improvement in obesity indicators, represented by a decrease in BMI of 1.1.

Third Hypothesis:

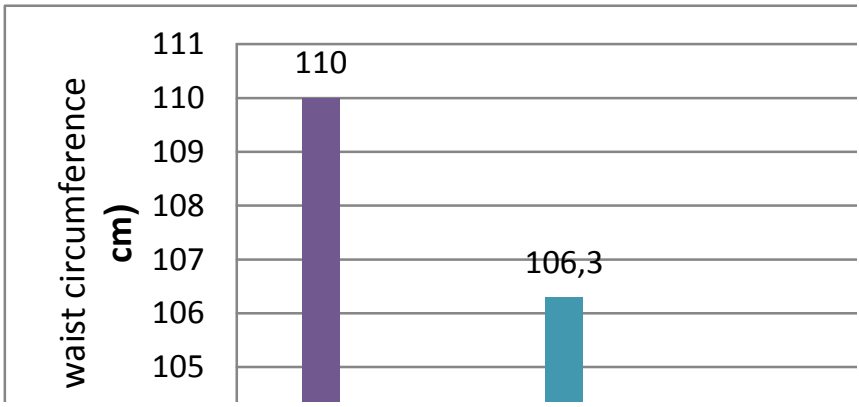
- The proposed physical activity program has an effect on Waist circumference.

Table (4): Shows the results between the beginning and end of the study according to the waist circumference index.

Index	Before Physical Activity	After Physical Activity	Difference
Waist Circumference	110 cm	106.3 cm	-3.7 cm

Source: Prepared by the researcher

***Graph N° 3. A graph showing waist circumference before and after Ramadan**



Source: Prepared by the researcher

Commentary:

Based on Table 06 and the bar graphs in Figure 03, the results of the applied study showed that the physical program consisting of walking exercises, strength training, and football matches, implemented regularly during Ramadan, led to a clear improvement in waist circumference, represented by a decrease of 3.7 cm.

4-3-Discussion of Results in Light of Hypotheses

Hypothesis 1: The proposed physical activity program has an effect on body weight loss during Ramadan.

According to the results, the individual's weight before implementing the program was 95 kg, and it became 92 kg after completing the program, representing a decrease of 3 kg during the month of Ramadan.

This change indicates an actual decrease in body weight after implementing the physical activity program, demonstrating a positive effect of the proposed physical activity. Although the amount of weight loss may vary from person to person depending on several

factors (such as adherence, diet, and metabolic factors), the recorded weight loss confirms the hypothesis.

Therefore, it can be said that the first hypothesis is true, as the physical program contributed to reducing body weight during the month of Ramadan, which supports what was stated in the book of (Puchalska, 2017:25)(Physical Activity and Public Health), which explained that moderate exercise during fasting contributes to reducing weight and improving body composition.

- Second Hypothesis: The proposed physical activity program has an effect on body mass index (BMI).
According to the results, the BMI decreased from 32.9 before the program to 31.8 afterward, a decrease of 1.1 points during Ramadan.
This decrease is considered evidence of an improvement in the individual's overall health, as BMI is a common measure used to assess how well weight is related to height and is often used as an indicator of obesity or underweight. Since the index decreased but remained within the overweight (25–29.9) or obese (over 30) range, this means that the program effectively contributed to moving towards a healthy range, even if it did not completely remove the individual from the obese category.
Therefore, the second hypothesis can be considered valid, as the program demonstrated a positive effect on body mass index (BMI). This is further supported by a 2009 study by Gabel, which showed that regular physical activity during Ramadan led to a decrease in weight and body fat, reflecting an improvement in BMI. (Gabel K, 2018 :04)

- The third hypothesis: The proposed physical activity program has an effect on hip circumference.
From the results, we observe that waist circumference decreased from 110 cm before the program to 106.3 cm afterward, a reduction of 3.7 cm during Ramadan.
This decrease is a significant indicator of improved fat distribution in the body, particularly in the abdominal area, which is one of the most dangerous areas for fat accumulation due to its association with health risks such as heart disease and diabetes.

Waist circumference is considered a key indicator for assessing the risk of central obesity; therefore, any decrease in it is considered positive.

Accordingly, the third hypothesis can be confirmed, as the results demonstrated a positive effect of the physical activity program on reducing waist circumference. This was also confirmed by Zubrzycki (2015) in their study on weight loss during Ramadan among obese individuals, specifically regarding visceral fat loss. (Zubrzycki, 2018 :69)

This is further supported by the principles of physiological analysis in Liubingli's 2005 book, Energy supply and physiological changes under starvation, which highlights the relationship between anthropometric measurements and physical activity. (Liubingli, 2005 :08)

Conclusion

By analyzing the results related to the three hypotheses, it becomes clear that the proposed physical activity program during Ramadan achieved its objectives remarkably. It contributed to a significant reduction in body weight, demonstrating its positive impact on energy balance during the fasting period. This was confirmed by Silva 's study in his book (Regulation of adaptive behaviour during fasting) (Silva and others, 2009:264), where he emphasized that physical activity before breaking the fast effectively increases fat burning. It was also mentioned in Hussin 's book (2012), (Physical Activity and Public Health), which explained that moderate exercise during fasting contributes to weight reduction and improved body composition. (Hussin, 2012:17)

The program also demonstrated effectiveness in reducing body mass index (BMI), reflecting an improvement in overall health and a move towards a less risky range in terms of obesity. This was confirmed by a study showing that regular physical activity during Ramadan led to a decrease in weight and body fat, resulting in an improved BMI.

Furthermore, a significant reduction in waist circumference was observed, indicating a decrease in abdominal fat, which is one of the most dangerous types of fat associated with chronic diseases. This was also noted in the 2019 study by Wallis and the 2017 book by Abdel Trepanowski. (Wallis , 2019 :78)

These results confirm that incorporating regular, well-planned physical activity, even during Ramadan, can yield clear health benefits and contribute to improved core body measurements. Therefore, the proposed program can be considered an effective way to support weight management and obesity prevention efforts, reinforcing the importance of physical activity at all times, including during fasting periods.

This study highlights that:

- Regular and well-planned physical activity during Ramadan can be an effective strategy for weight management and improving overall health, even under fasting conditions.
- The proposed physical activity program during Ramadan proved effective in improving health indicators related to obesity. Despite fasting conditions, moderate and regular exercise contributed to weight loss, BMI improvement, and reduction in waist circumference.
- Physical activity during Ramadan is beneficial.
- Moderate exercise before iftar enhances fat burning.
- Simple, adaptable programs can produce meaningful results.

Bibliographie

Bolton H. M., B. P. (2014). Increased set shifting costs in fasted healthy volunteers. PLoS One . .

Gabel K., H. K. (2018). Effects of 8-hour time restricted feeding on body weight and metabolic disease risk factors in obese adults: a pilot study. The Journal of Nutrition, Health and Aging.

Horowitz. (1997).

Hussin N. M., S. S. (2012). Efficacy of fasting and calorie restriction (FCR) on mood and depression among ageing men. The Journal of Nutrition, Health & Aging.

J., L. B. (2005). Energy supply and physiological changes under starvation. Chinese Journal of Coal Industry Medicine .

Kirkendall DT, L. J. (2008). The influence of Ramadan on physical performance measures in young Muslim footballers.

Michalsen A., S. F. (2003). Effects of short-term modified fasting on sleep patterns and daytime vigilance in non-obese subjects: results of a pilot study. Nutrition and Metabolism . .

Puchalska P. C. P., C. P. (2017). Multi-dimensional Roles of Ketone Bodies in Fuel Metabolism, Signaling, and Therapeutics. Cell Metabolism.

Silva J. P., v. M. (2009). Regulation of adaptive behaviour during fasting by hypothalamic Foxa2. Nature .

Wallis GA, G. J. (2019). Is exercise best served on an empty stomach? Proc Nutr Soc.

Zubrzycki , C.-K. K. (2018). The role of low-calorie diets and intermittent fasting in the treatment of obesity and type-2 diabetes. Journal of Physiology and Pharmacology .