

"قَالُوا سُبْحَانَكَ لَا عِلْمَ لَنَا إِلَّا
مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ الْعَلِيمُ
الْحَكِيمُ"

البقرة (٣٢)

**EFFECT OF AEROBIC EXERCISE VERSUS LOW
CARBOHYDRATE DIET ON WEIGHT
REDUCTION AFTER VERTICAL
BANDED GASTROPLASTY**

تأثير التمرينات الهوائية مقابل النظام الغذائي منخفض
الكربوهيدرات على نقص الوزن بعد
رأب المعدة رأسي النطاق

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INTRODUCTION

Statement of the problem:

Obesity is a serious problem that faces the medical team especially the plastic surgeon, physical therapists and other health care providers, Therefore, from the rehabilitative point of view the problem of this study was stated in questioner form:

- Did aerobic exercise have a significant effect on weight reduction after vertical banded gastroplasty?
- Did low carbohydrate diet have a significant effect on weight reduction after vertical banded gastroplasty?
- Which one of them (aerobic exercise or low carbohydrate diet) was better in reducing weight after vertical banded gastroplasty?

Purpose of the study

- The aim of this study was to compare between the effect of aerobic exercise and low carbohydrate diet as physical therapy approaches on weight reduction after vertical banded gastroplasty.

Vertical banded gastroplasty (VBG), also known as stomach stapling, is a restrictive operation for weight control. Although restrictive operations lead to weight loss in almost all patients, they are less successful than malabsorptive operations in achieving substantial, long-term weight loss. About 30 percent of those who undergo VBG achieve normal weight, and about 80 percent achieve some degree of weight loss. Successful results depend on the patient's willingness to adopt a long-term plan of healthy eating and regular physical activity (Lin et al., 2003).

Therefore, this research aims to investigate the effect of aerobic exercise versus low carbohydrate diet on weight reduction after vertical banded gastroplasty, and which is more effective in reducing weight and improve results of vertical banded gastrectomy.

Hypothesis:

It was hypothesized that aerobic exercise and low carbohydrate diet as a physical therapy intervention are not an effective treatment approach on weight reduction after vertical banded gastroplasty.

subjects and methods

SUBJECTS

- **Forty female patients who underwent vertical banding gastroplasty least since 1 months ago were selected and recruited randomly from Police Academy Hospitals. Patient's ages ranged from 20-40 years.**

Groups Design of the study:

These patients were divided into two equal groups in number:

Group A (Aerobic exercise group):

In this group of the study, twenty female patients who underwent vertical banding gastroplasty received aerobic exercise on treadmill device for 30 minutes 3 times per week for 8 week.

Group B (low carbohydrate diet group):

In this group, twenty female patients who underwent vertical banding gastroplasty received low carbohydrate diet for 8 weeks.

Materials:

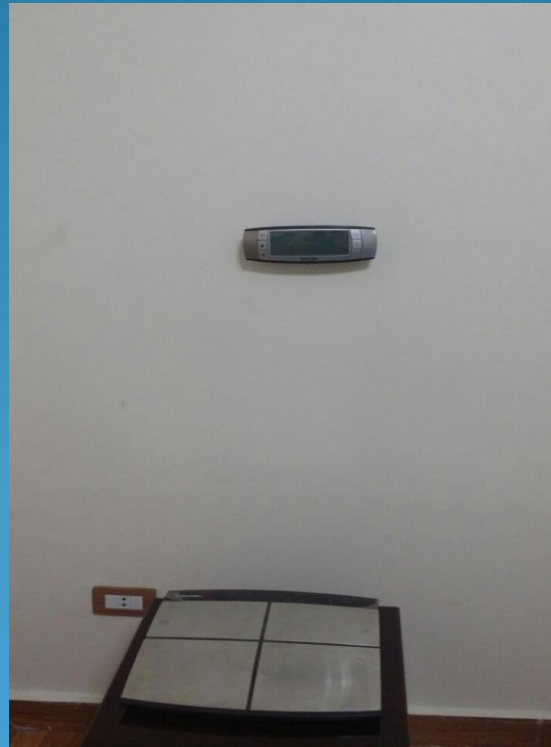
- **Weight and Height scale (Floor type model ZT-120):**

- That was used to measure the weight and height for detection of BMI= Weight (kg) (height square (m²))



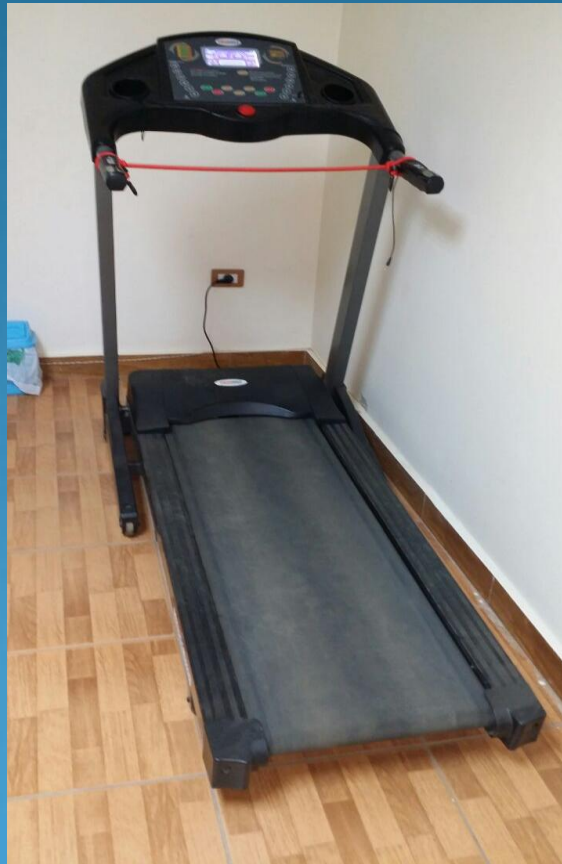
- **Bioelectrical impedance analysis (BIA):**

- **Hanson body fat scale.**



- **Therapeutic equipment:**

- **Treadmill device:**



- **Low- carbohydrate diet:**

-Low-carbohydrate/high-protein (LC/HP) diets have become popular as an aid to weight loss. Significant weight loss on a LC/HP diet without significant elevations of serum cholesterol has been reported.

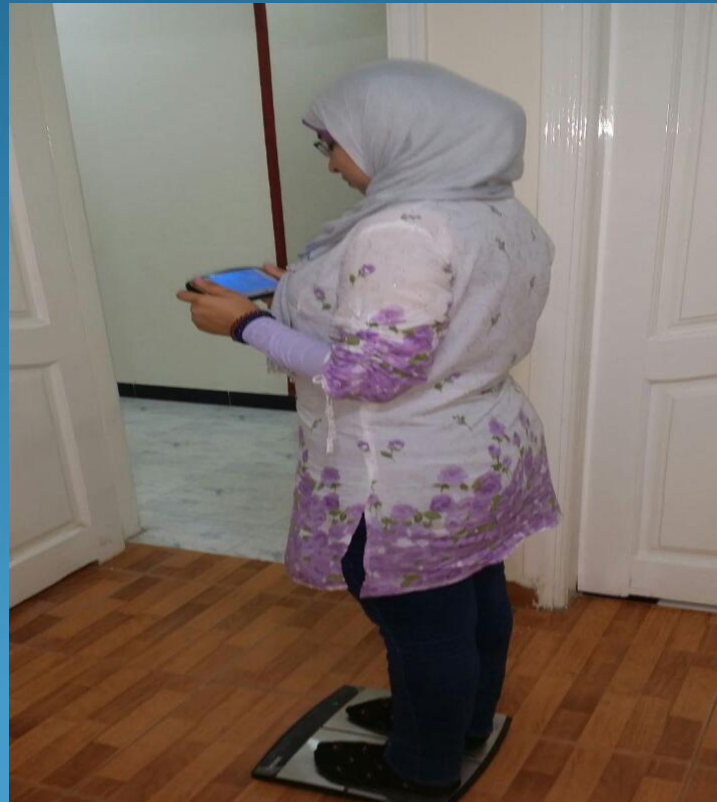
Methods:

-Body mass index (BMI) or Quetelet's index:



Measuring of weight and height

-Bioelectrical impedance analysis (BIA):



Measuring of body fat percentage

**-Therapeutic Procedures:
Group A (aerobic exercise group):**



Aerobic exercise on treadmill device

Group B (low carbohydrate group):

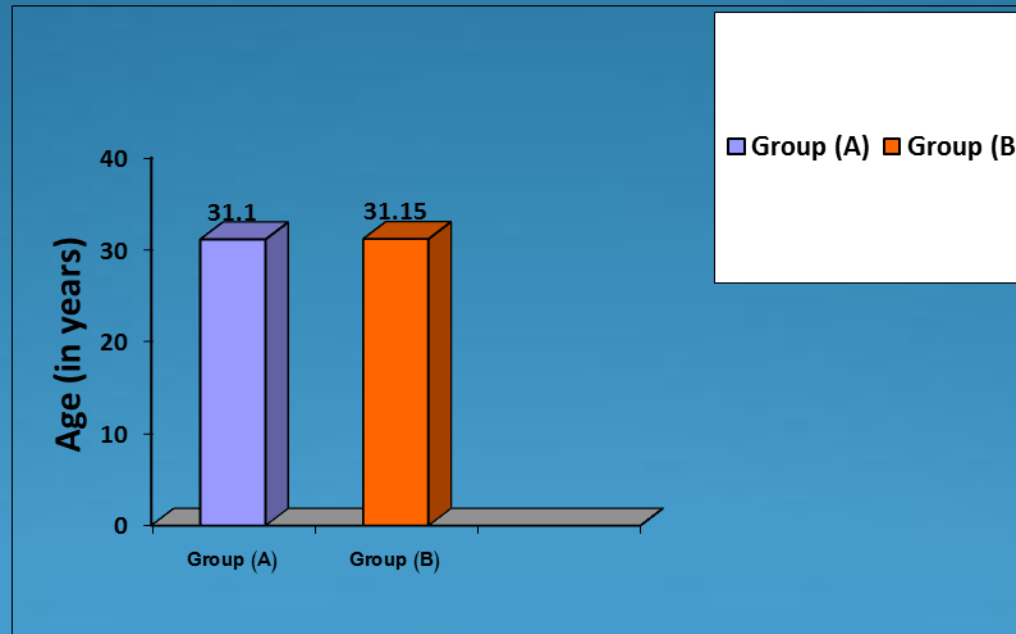
Twenty patients followed a supervised low caloric diet program for 8 weeks.

Low- carbohydrate diet models including beef (hamburger and steak), poultry (chicken and turkey), fish, oils, various nuts\ seeds and peanut butter, moderate amount of cheese, eggs, protein powder, and water or low- carbohydrate diet drinks.

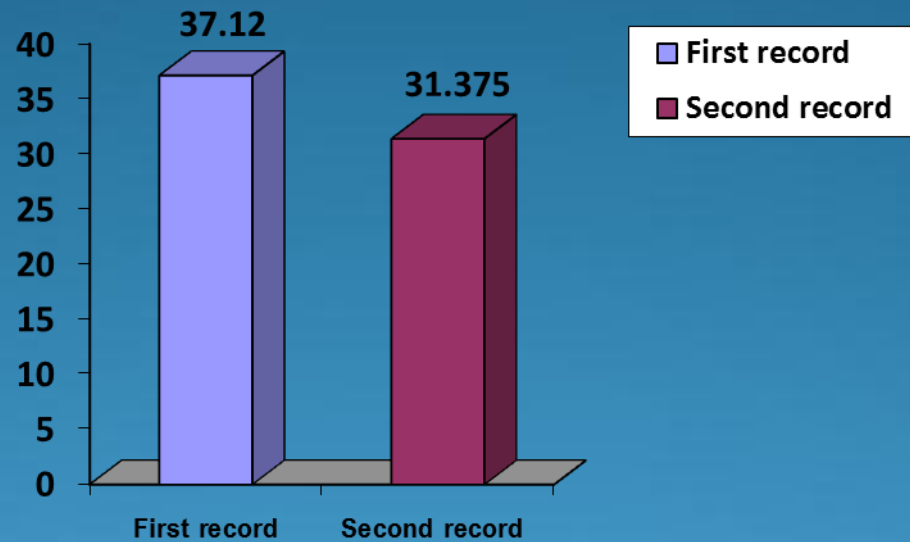
Results

❖ Demographic data of both groups.

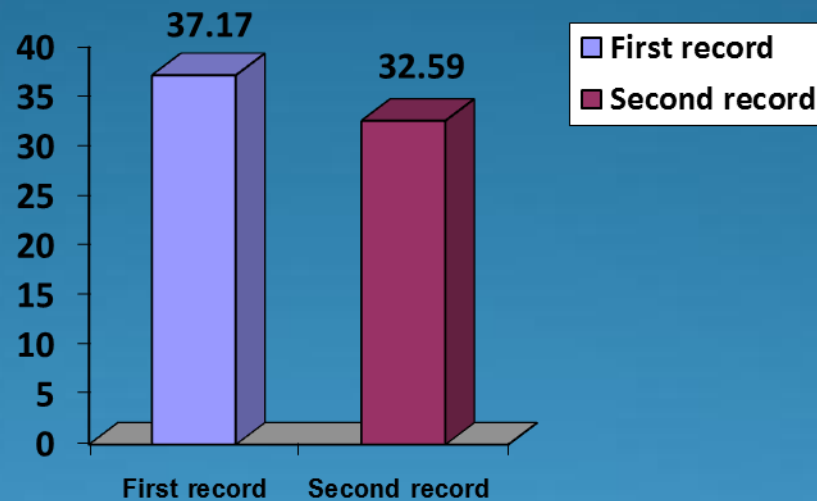
There were no significant difference between both groups in their ages, weights, and heights.



Mean value of age in both groups.

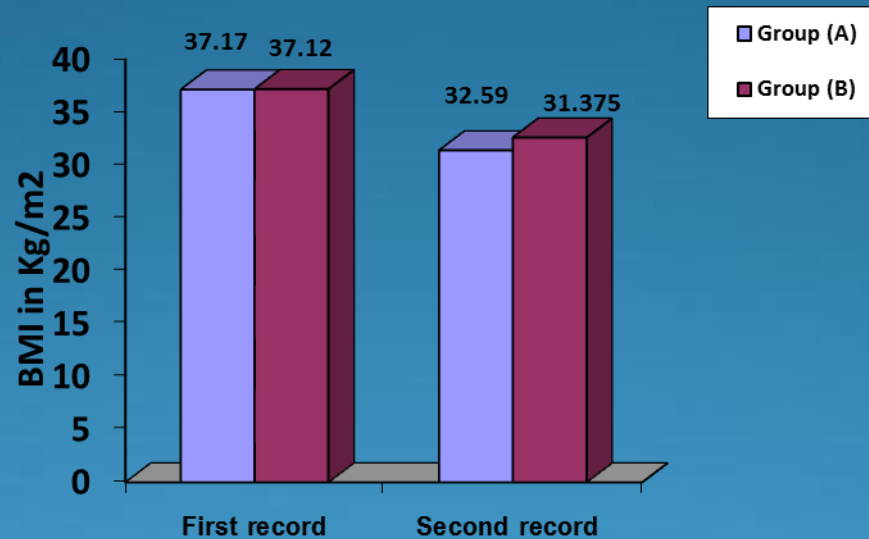


Mean values of the body mass index in Kg/m² of the study group (A) (Aerobic exercise group).

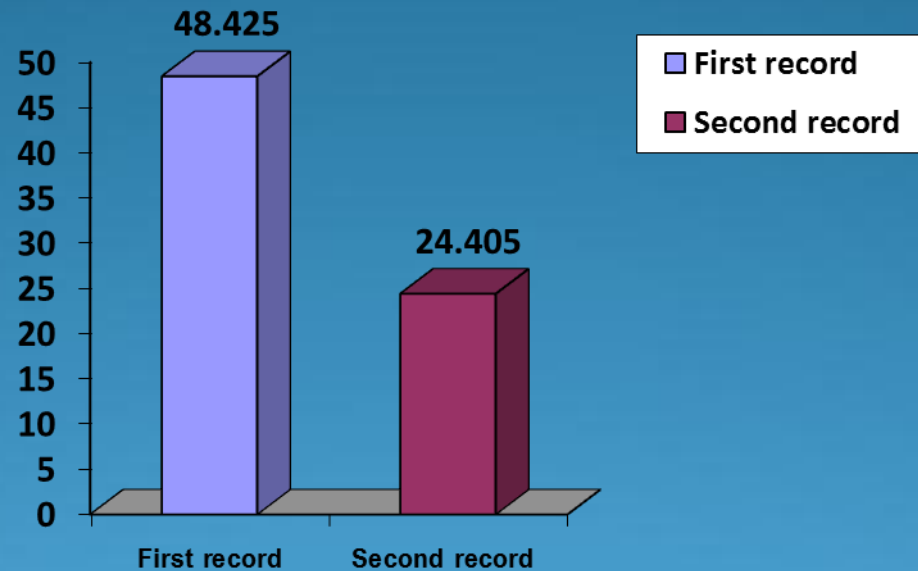


**Mean values of the body mass index in
Kg/m² of the group (B)
(Low carbohydrate diet group).**

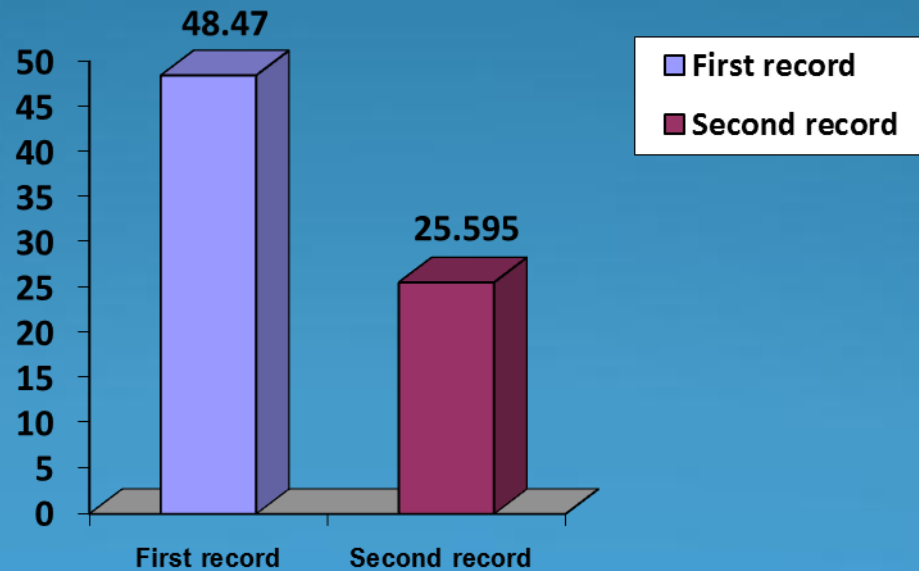
Mean values of body mass index in Kg/m² of the 2 records of the 2 groups.



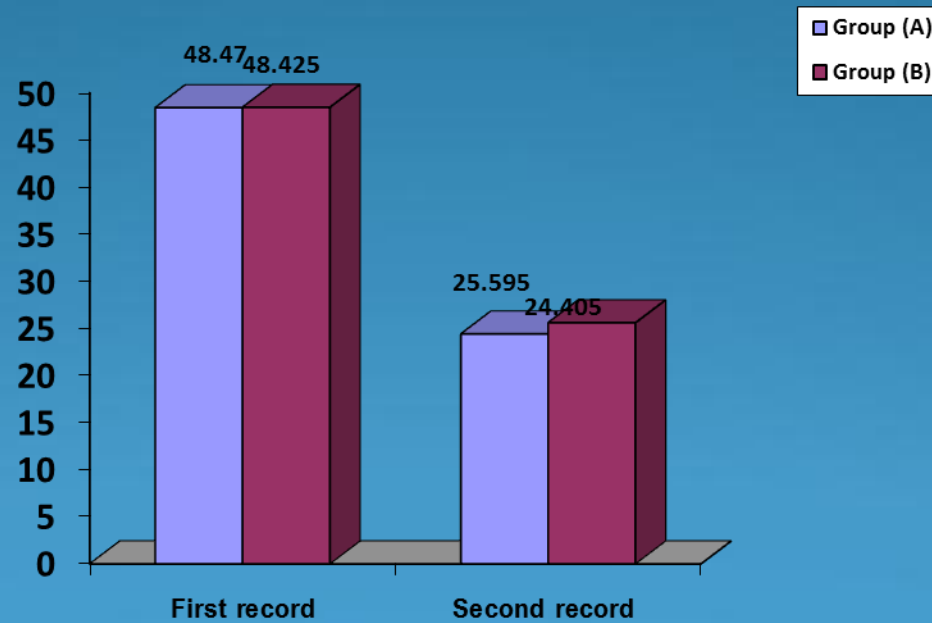
Mean values of the body fat % in group (A) (Aerobic exercise group).



Mean values of the body fat % in group (B) (Low carbohydrate diet group).



Mean values of body fat % in the 2 records of the 2 groups.



Final Findings

Statistical analysis revealed a significant decrease in body weight, body mass index and body fat percentage in both groups (A) and (B) but group A that use aerobic exercise on treadmill device has more significant effect on body weight, body mass index and body fat percentage than group B that use low caloric diet only. Statistical significance was established at the conventional 0.05 level.

Aerobic training on treadmill and low carbohydrate diet have positive influence upon obese subject's body mass index and body fat percentage after vertical banded gastropasty.

Recommendations

The results of this study considered the following recommendations:

- 1-The aerobic training and low carbohydrate diet should be recommended for obese women after vertical banded gastroplasty.
- 2-More researches are recommended to study the effect of aerobic exercise and low carbohydrate diet on lipid profiles and abdominal circumference after vertical banded gastroplasty.
- 3-Further studies are needed to differentiate between the effect of aerobic exercise and low carbohydrate diet on body weight, body mass index and percentage of body fat in obese men and women.
- 4-Increase the size of the sample and the period of training.

Thank you