

## THE EFFECT OF 3 MONTHS DIET AND EXERCISE PROGRAM ON WEIGHT LOSS IN WOMEN

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### ABSTRACT

*Obesity is a disease that affects many people around the world. Obesity together with chronic diseases, psychological problems also occur. According to the data of the World Health Organization, in 2016, 18 years and over more than 1.9 billion stated that adults are overweight and that more than 650 million of these people are obese have been. Some of the causes of obesity are irregular diet, excessive calorie intake and sedentary lifestyle. is life. Methods of combating obesity also differ. These; surgical intervention, pharmacological drugs, exercises, diets, lifestyle modification It is expressed as. Exercise and diet are the most preferred method today between. Regular exercise and daily calorie calculation are also It is stated that it is possible to lose weight by doing it. The aim of this study was to investigate the effect of 3-month exercise and diet therapy in obese women. Material method; 20-60 years of age who applied to the Sports Medicine Outpatient Clinic and had a BMI 30 After the height measurements of 60 female volunteers were taken in the morning on an empty stomach. Body weight (VA), body mass index by bio impedance method (Tanita, Japan) (BMI), body fat mass (BMR) and basal metabolic rate (BMR) were measured. Diet for patients' program and 45-60 minutes of walking of 200 kcal five days a week or equivalent an aerobic exercise program covering large muscle groups was given. Patients It was calculated that they would lose 2-2.5 kg per week and the measurements were repeated every 4 weeks. A total of 12 weeks of follow-up was done. Result; in this study, the 3-month-old Significant results were obtained in diet and exercise program. Patients' Weight, BMI, Difference was detected in FAT (%), FAT Mass, FFM, BMR variables. With this work Together with long-term diet and exercise programs, overweight and obese It is thought that good results can be obtained.*

**Keywords:** Obesity, weight, diet, exercise, physical activity.

### 1. INTRODUCTION

Obesity as reported by the World Health Organization (WHO) is the main cause to impairs health. It is defined as excessive and abnormal fat accumulation. Obesity is usually the body mass index (BMI), which is the division of weight by the square of height in meters evaluated (Ali, & Mohammad, 2012). Obesity, environmental and it is a chronic and highly serious disease with genetic interactions. (Aydın, & Bulut, 2014). Excessive fat storage in the body leads to many diseases and often treatment is needed (Altunkaynak, & Özbek, 2000). Obesity leads to cardiovascular and endocrinological disease which can cause deadly cancerous cells. It stands out in many diseases (Öztora, 2005). Depression with obesity (Siegel, Yancedy, & McCarthy, 2000), mood, anxiety, somato form (Britz, Siegfried, & Ziegler, 2000; Mohammad, 2015a,b), as well as depression and anxiety their situation may also lead to an alienation from the social environment (Eren, & Erdi, 2003). Obese people may not like their

body or find it different. Around that people find themselves ugly for this reason, regard them as ridiculous, exclude them. They may even think that they find it unattractive (Aydın, & Yigit, 2003).

Obesity is a type of disease that can be prevented and treated, and the common point in treatments to maintain a negative energy balance. Purpose in treatment; either reducing the calories intake or It should be to increase the calories expended. Likewise, the calories taken and the calories burned. Keeping it in balance is also a solution (Baltac, 2008; National Heart Lung and Blood Institute 2000). Many different methods to eliminate obesity worldwide is implemented. In the treatment consisting of different stages; behavioral therapy, diet therapy, As pharmacological (drug) treatment, physical activity and exercise and their combination methods are applied (National Heart Lung and Blood Institute (2000)). The primary goal in diet treatments is to reduce the amount of calories taken. Today, low calorie diet, very low calorie diet, low carbohydrate diet, Many diet methods are used, such as a low-fat diet. In the long run the effects of diets are the same. Muscle atrophy and protein loss in dieters only weight loss by causing a decrease in basal metabolism makes it difficult. In addition, the most important problem in dietary treatments is patient compliance Most of the patients cannot continue the treatment for a long time (Kaila, & Raman, 2008).

Exercise; Although the calorie intake of the person does not increase, the reduction is thought to cause obesity (Mohammad, 2016 & 2017; Katzel et al., 1995). Hagan et al. (1986) and Ross, Dagnone, and Jones (2000) in the studies they have done, exercise and diet together, weight loss. It has been stated that there is more. The calorie requirement of the person per day. In addition to being calculated, foods high and low in calories should also be calculated (Öztora, 2005). Negative energy balance of 500 kcal per day in weight loss programs in general. It is tried to be provided. About two hours to achieve such a negative energy balance exercise is required. This exercise period is required by an obese person regularly. It is not possible to reach. Therefore, exercise and diet in obesity treatments. Combined treatment methods are the most effective programs (Jakicic, & Otto, 2005; Ahsan, & Mohammad, 2018). While the weight lost with diet is regained after a while, diet and exercise It has been determined that the weights given in the programs are constant (Fogelholm, Kukkonen-Harjula, Nenonen, & Pasanen, 2000). Regular physical activity and weight today. Reduced mortality rates are observed in obese patients who tend to give feeding programs (Peker, Çiloğlu, Buruk, & Bulca, 2000). For obese patients, exercise programs should be started three days a week with 20 minutes, then 30-60. It should be done in minutes and, if possible, every day of the week. 100-200 kcal per day. Exercises that consume a total of 1000 kcal energy per week should be chosen.

Exercise therapy; especially in patients with waist, knee or heel pain, so that no load is placed on the joints should be regulated. Physical activity for effective weight loss is necessarily with calorie restriction must be followed together. One or two sets of weights with 8-10 repetitions that work the main muscle groups lifting exercises should also be added one or two days a week. The best that can be done for the obese the easy activity is walking. Lifestyle changes must be made in patients, walking instead of using vehicles, climbing stairs instead of using elevators should be recommended. The walks should be increased gradually up to 12,000 steps per day. Increasing sports areas in schools is also important for children in the fight against obesity. Is a factor (National Heart Lung and Blood Institute, 2000). In exercise programs for obesity, the duration or intensity of the exercise. Rather, the total number of calories lost is important (Nicklas et al. 2009). Aerobics for 30-50 minutes by cycling at 70-75% of maximum heart rate 2-4 sets of 8-10 repetitions of exercise and 70-75% of the maximum weight that can be lifted. In the comparison of the two groups who underwent resistance exercise, the total. It is effective in fat loss, but resistance exercises in increasing lean body mass reported to be more effective (Donges, & Duffield, 2012). Our goal is to exercise and to reveal the effect of diet application on weight.

## 2. METHODS AND MATERIALS

### 2.1 Participants

Sixty (60) women aged 20-60 who applied to the Sports Medicine Outpatient Clinic and had a BMI of  $\geq 30$  was included in the volunteer work. ALT, AST, urea, creatinine, hemogram, those with normal fT3, fT4 and TSH values were included in the study. Cancer, uncontrolled diabetes, hypertension, coronary artery disease, thyroid function. Patients who are pregnant, breastfeeding, and allergic patients were not included in the study. A written consent form was obtained from all volunteers who were informed about the study and Helsinki Criteria were complied with. The ethics committee report about the study is from the Local Ethics Committee receipt.

### 2.2 Procedure

After the height measurements of the volunteers on an empty stomach in the morning, using the bioimpedance method (Tanita, Japan) body weight (VA), BMI, body fat mass (BMI) and basal metabolic rate (BMR) was measured. Basal metabolism value of six days for all patients' diet program as a meal and 200 kcal for 45-60 minutes five days a week aerobic exercise program involving walking or equivalent large muscle groups was given. It was calculated that the patients would lose 2-2.5 kg a week and every 4 weeks measurements were repeated. A total of 12 weeks of follow-up was done.

### 2.3 Statistical analysis:

Compliance of data to normal distribution histogram and QQ graphics and Shapiro-wilk test. Comparisons between measurements are repeated The measurements were evaluated by analysis of variance. Bonferroni for multiple comparisons test was applied. Data TURCOSA (Turcosa Analytical Analysis Ltd. Şti, www.turcosa.com.tr) was implemented in the statistics software. Significance level accepted as  $p < 0.05$ .

## 3. RESULTS

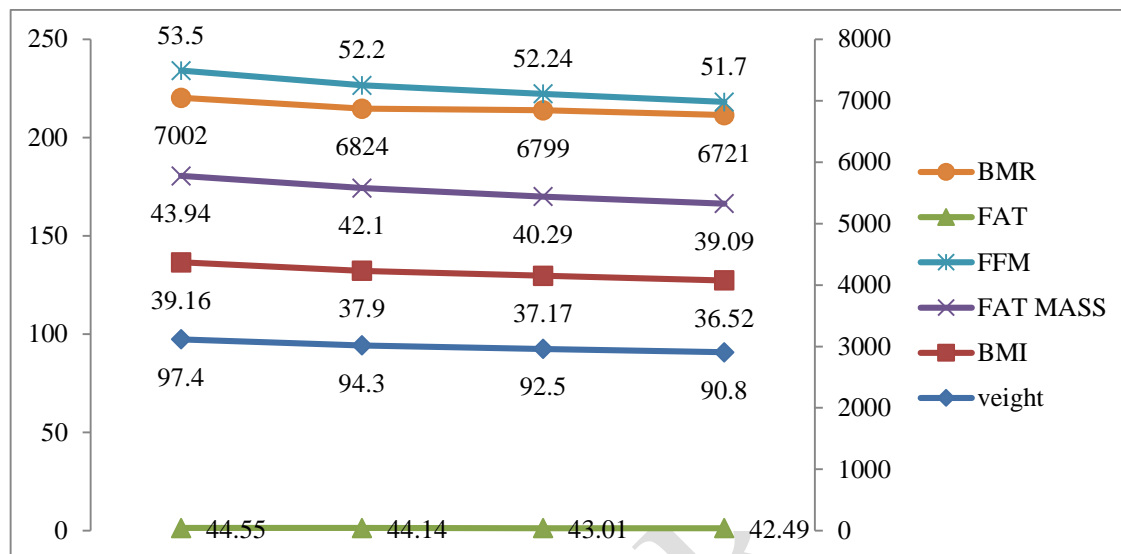
**Table 1: Change of variables over time Variables**

Değişkenler	0 (n=)	1 (n=)	2 (n=)	3 (n=)	p
<b>WEIGHT</b>	97.40±15.90 <sup>a</sup>	94.30±14.50 <sup>b</sup>	92.50±14.50 <sup>c</sup>	90.80±14.10 <sup>d</sup>	<0.001
<b>BMI</b>	39.16±6.76 <sup>a</sup>	37.90±6.17 <sup>b</sup>	37.17±6.20 <sup>c</sup>	36.52±6.02 <sup>d</sup>	<0.001
<b>FAT(%)</b>	44.55±5.32 <sup>a</sup>	44.14±5.44 <sup>a</sup>	43.00±5.92 <sup>b</sup>	42.49±5.83 <sup>b</sup>	<0.001
<b>FAT_Mass</b>	43.94±11.43 <sup>a</sup>	42.10±10.52 <sup>b</sup>	40.29±10.60 <sup>c</sup>	39.09±10.31 <sup>d</sup>	<0.001
<b>FFM</b>	53.50±6.90 <sup>a</sup>	52.20±6.50 <sup>b</sup>	52.24±6.92 <sup>b</sup>	51.70±6.50 <sup>b</sup>	<0.001
<b>BMR</b>	7002.00±939.00 <sup>a</sup>	6824.00±863.00 <sup>b</sup>	6799.00±901.00 <sup>b</sup>	6721.00±854.00 <sup>c</sup>	<0.001

Data are expressed as mean  $\pm$  standard deviation. The same letters on the same line indicate similarity between times, different letters indicate difference.

A total of 61 participants participated in the study. There was a significant difference between the baseline measurement and the 12<sup>th</sup> week measurements ( $p < 0.05$ ); a significant difference on weight between the baseline and the 4<sup>th</sup>, 8<sup>th</sup>, and 12<sup>th</sup> weeks ( $p < 0.05$ ); a significant difference was detected between baseline and 4<sup>th</sup>, 8<sup>th</sup>, and 12<sup>th</sup> weeks measurements on BMI ( $p < 0.05$ ); no significant difference between baseline and week 4 measurements on FAT; however, there was a significant difference between the 4<sup>th</sup> and 8<sup>th</sup> week measurement ( $p < 0.05$ ); a significant difference between the baseline and 12<sup>th</sup> week measurement on Fat Mass ( $p < 0.05$ ); a significant difference between the baseline and the 4<sup>th</sup> measurement on FFM

( $p<0.05$ ); however, there was no significant difference between the 4<sup>th</sup> week measurement and the 8<sup>th</sup> and 12<sup>th</sup> weeks. While a significant difference was detected between the baseline and the 4<sup>th</sup> week on BMR ( $p<0.05$ ); no significance difference between the week measurement and the 8<sup>th</sup> week measurement. Measure at 12<sup>th</sup> week with 8<sup>th</sup> week measurement there was a significant difference between the two ( $p<0.05$ ) (see Figure 1).



#### 4. DISCUSSION

Exercise is the most important method to support diet in preventing obesity and it is known to have positive effects on the complications of obesity (DeLateur, 2000). At the beginning and in patients with a very sedentary lifestyle, with very light exercises. It should be started, the intensity of the exercise should be increased according to the patient's compliance (Ergun, & Axeman, 2006; Hasbay, 2008). Every day of the week in this study average moderate physical activity for 30 minutes, 840 kj (200 kcal) energy consumption per day. It is stated that he had done (Jakicic, 2003; Oden, 2002). Similar to our study, Akkurt (2012) also performed obesity and similar results were obtained in the treatment of obesity in his study called exercise and the importance of exercise has been expressed (Akkurt, 2012) as well as calorie calculation is known to have an effect on weight loss (Özbek, 2006). Increased adipose tissue in similar studies. It is stated that the amount of obesity and the percentage of visceral fat also cause many diseases has been (Troiano, Frongillo, Stove, & Levitsky, 1996; Kelley, McKolanis, Hegazi, Kuller, & Kalhan, 2003; Finder, 2003). Low-calorie diets, supporting the studies in our study has been applied, thus increasing the amount of calories burned with exercise and increasing the calorie intake the amount has been reduced. However, some studies have shown that only exercise and diet can be used in the treatment of obesity. It was stated that different methods should also be used. Some of those during the diet; behavioral therapy (Erge, 2003) surgical treatment (Sağlam, & Güven, 2014). Combined Therapy, such as behavioral therapy (Eker, & Şahin, 2002) are methods.

#### 5. CONCLUSION

As a result, the 12-week diet and exercise applied in our study It has been found to have an effect on women. Raising the awareness of the participants and longer-term both by making exercise a lifestyle and obesity or being overweight is prevented by planning low-calorie nutrition programs. It is thought that it can be passed.



## 6. REFERENCES

- Ahsan, M. & Mohammad, A. (2018). Effects of different warm-up techniques on dynamic balance and muscular strength on players: A study. *European Journal of Physical Education and Sports Science*, 4(12), 29-38.
- Akkurt, S. (2012). Obesity and exercise therapy. *Journal of Sports Medicine*, 47(4), 123-130
- Ali, Z. & Mohammad, A. (2012). Anthropometric profile of children's of Himachal Pradesh, India. *International Journal of Physical Education, Health, & Sports Sciences*, 1(1), 47-53.
- Altunkaynak, B. Z., & Özbek, E. (2000). Obesity: causes and treatment options. *Van Medical Journal*, 13(4), 138-142.
- Aydın, E., & Bulut, H. (2014). Nursing care in bariatric surgery. *TAF Preventive Medicine Bulletin*, 13, 77-82.
- Aydın, İ., & Yiğit F. (2003). Examining the anxiety of fat students. *Nursing Forum Journal*, 6, 48-52.
- Baltacı, G. (2008). Obesity and Exercise. TR Ministry of Health Primary Health General Directorate of Services, Department of Nutrition and Physical Activities, 1<sup>st</sup> Edition, Klasmat Matbaacılık, February, Ankara, 7-15.
- Britz, B., Siegfried, W., & Ziegler, A. (2000). Rates of psychiatric disorders in a clinical study group of adolescents with extreme obesity and in obese adolescents ascertained via a population based study. *International Journal of Obesity Related Metabolic Disorders*, 2, 1707-1714.
- DeLateur, B. J. (2000). *Therapeutic exercise*. In: Braddom RL. *Physical Medicine & Rehabilitation*. Philadelphia: Saunders Company, 392-412.
- Donges, C. E., & Duffield, R. (2012). Effects of resistance or aerobic exercise training on total and regional body composition in sedentary overweight middle-aged adults. *Applied Physiology, Nutrition, and Metabolism*, 37, 499-509.
- Eker, E., & Şahin, M. (2002). Approach to obesity in primary care. *Continuous Medicine Education Journal*, 11(7), 246.
- Eren, İ., & Erdi, Ö. (2003). Frequency of psychiatric disorders in obese patients. *Clinic Psychiatry*, 6, 152-157.
- Erge, S. (2003). Behavioral supporting diet treatment in obesity treatment. *Turkish Journal of Endocrinology and Metabolism*, 2, 75-82.
- Ergun, N., & Baltacı, G. (2006). *Physiotherapy and in sports injuries rehabilitation principles* (2<sup>nd</sup> ed.). Pelin Ofset Publishing, Ankara.
- Finder, B. Z. (2003). *On the high-lipid diet on adult rat liver investigation of effects by histochemical and morphometric methods*. High License thesis. September 2003, Atatürk University Institute of Health Sciences Department of Histology and Embryology; Erzurum.
- Fogelholm, M., Kukkonen-Harjula, K., Nenonen, A., & Pasanen, M. (2000). Effect of walking training on weight maintenance after a very low energy diet in premenopausal obese women. *Archives of Internal Medicine*, 160, 2177-2184.
- Hagan, R. D., Upton, S. J., Wong, L., & James, W. (1986). The effects of aerobic conditioning and / or caloric restriction in overweight men and women. *Medicine & Science in Sports & Exercise*, 18, 87-94.
- Hasbay, A. (2008). The role of physical activity in weight management. (Ed. Baysal A, Baş M.), *Weight Management in Adults*, Turkish Dietetic Association Publication, Ekspres Baskı AS, Ankara, 138-151.
- Jakicic, J. M. (2003). Exercise in the treatment of obesity. *Endocrinology & Metabolism Clinics of North America*, 32(4), 967-980.
- Jakicic, J. M., & Otto, A. D. (2005). Physical activity considerations for the treatment and prevention of obesity. *American Journal of Clinical Nutrition*, 82(suppl), 226-229.
- Kaila, B., & Raman, M. (2008). Obesity: A review of pathogenesis and management. strategies. *Canadian Journal of Gastroenterology*, 22, 61-68.
- Katzel, L. I., Bleecker, E. R., Colman, E. G., Rogus, E. M., Sorkin, J. D., & Goldberg, A. P. (1995). Effects of weight loss vs aerobic exercise training on risk factors for coronary disease in healthy, obese, middle-aged and older men. A randomized controlled trial. *JAMA*, 274, 1915-1921.
- Kelley, D. E., McKolanis, T. M., Hegazi, R. A., Kuller, L. H., & Kalhan, S. C. (2003). Fatty liver in type 2 diabetes mellitus: relation to regional adiposity, fatty acids, and insulin resistance. *American Journal of Physiology-Endocrinology and Metabolism*, 285, 906-916.
- Mohammad, A. (2015a). Contribution of anthropometric characteristics as well as skinfold measurements to performance scores in sub-junior female gymnasts. *World Journal of Sport Sciences*, 10(4), 34-38.
- Mohammad, A. (2015b). Relationship of anthropometric characteristics with the performance score of gymnasts. *Academic Sports Scholar*, 4(12), 01-09.
- Mohammad, A. (2016). Effect of weight training exercises on the improvement of arm and leg strength of wrestlers. *International Journal of Sports and Physical Education*, 2(2), 8-11.
- Mohammad, A. (2017). Physical fitness variables required for pre-service teachers. *European Journal of Physical Education and Sports Science*, 3(11), 396-406.

- National Heart Lung and Blood Institute (2000). North American Association for the Study of Obesity: The practical guide for identification, evaluation, and treatment of overweight and obesity in adults. National Institute of Health.
- Nicklas, B.J., Wang, X., You, T., Lyles, M. F., Demons, J., Easter, L. ... & Carr, J. J. (2009). Effect of exercise intensity on abdominal fat loss during calorie restriction in overweight and obese postmeno-pausal women: a randomized, controlled trial. *The American Journal of Clinical Nutrition*, 89(4), 1043-1052.
- Oden, G. (2002). ACSM's resources for clinical exercise physiology: musculoskeletal, neuromuscular, neoplastic, immunologic and hematologic conditions. *Medicine and Science in Sports and Exercise*, 34(9), 1538.
- Öztora, S. (2005). *Obesity prevalence in primary school-age children determination and research of risk factors*. Specialization Thesis, Istanbul.
- Peker, I., Çiloğlu, F., Buruk, Ş., & Bulca, Z. (2000). *Exercise biochemistry and obesity*. Nobel Medical Bookstores, Istanbul.
- Ross, R., Dagnone, D., Jones, P. J., Smith, H., Paddags, A., Hudson, R., & Janssen, I. (2000). Reduction in obesity and related comorbid conditions after diet-induced weight loss or exercise-induced weight loss in men. A randomized, controlled trial. *Annals of Internal Medicine*, 133(2), 92-103.
- Sağlam, F., & Güven, H. (2014). Surgical treatment of obesity. *Okmeydanı Medicine Journal*, 30(1), 60-65.
- Siegel, J., Yancedy, A. K., & McCarthy, W. J. (2000). Overweight and depressive symptoms among African American women. *Preventive Medicine*, 31, 232-240.
- Troiano, R. P., Frongillo, E. A., Sobal, J., & Levitsky, D. A. (1996). The relationship between body weight and mortality: a quantitative analysis of combined information from existing studies. *International Journal of Obesity and Related Metabolic Disorders*, 20, 63-75.