Weight loss diet on adult female and body composition exercise application with weight loss

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Abstract

This study aims to evaluate the physical effects of sport activities and diet programmes to lose weight in their free times on female with weight problem and living in Sakarya. Anthropometric measurements were conducted on 16 individuals with weight problem and the effects of diet on individuals are examined. These evaluations were obtained with value and percentage analysis conducted via the SPSS program. The results showed significant differences when the time for free time to participate in the sport activities and effects of these activities on individuals with the weight problem. Individuals selected diet and exercise programmes as they desired. The participants were examined based on average age, anthropometric measurements, food habits and physical activity. Also, changes in their metabolisms were examined. Female patients were randomly selected among volunteered plump and overweight female with over 27 kg/m² Body Mass Index and came with the recommendation of a Physician and willingly.

Keywords: Sport, women, diet

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1. Introduction

Nowadays, Adiposity is among the most important health issues of the developed and developing countries (Dunitz & Kopelman, 2003). Prevalence of adiposity varies according to the age, gender, geographical features and socioeconomic status (Baysal, 1999; Pekcan, 1988). Bodyweight, composition and fat distribution have to be evaluated in order to identify the adiposity or muscle mass surplus for an individual. Anthropometric measurements and laboratory methods are being used at the site and clinic with this aim (Pekcan, 2001). Analysis is related to the body composition, body shape, type, appearance and physical features. Different measurement methods are being used for this purpose (Pekcan, 2001).

Bodyweight of the person was identified by weighing with thick clothes and without shoes using a scale, and the height was measured. Body mass index (BMI) was first calculated by Quatelet in 1835. This index is being used more than a century widely. Nowadays, it is one of the most frequently used methods. Its correlation with body fat amount measured by densitometer directly is high. High BMI values may be encountered on persons with high muscle mass (for example; athletes), by the way just BMI, may mislead for these persons. BMI value, the most practical and basic method for clinical application, is calculated by dividing body weight (KG) to the square of the height (m²). The complications of adiposity are mostly related to the abdominal body fat (Segal et al., 1988).

Anthropometric measurements are important because they are the indicator of protein (muscle mass) and fat storage on identifying the nutritional status. When these measurements are used continuously and regularly, the nutritional status of the individual evaluated correctly (Pekcan, 2008). Amounts of body fat and fatless body tissue that are required for the identification of adiposity can be identified by anthropometric measurements.

Bodyweight, body composition and fat distribution in the body must be identified in order to determine the individual as fat or excess on muscle mass. Anthropometric and laboratory methods are being used in the site and clinic with this aim (Pekcan, 2001). The most valid method on the determination of adiposity is the identification of fat amount in the body.

In this study, body weight (kg), height (m), chest circumference, waist circumference, hip circumference and belly circumference were measured by the researcher every 4 weeks. Waist/hip rate was identified by these measurements.

Body Weight (kg): Body weight was measured with light clothes and without shoes.

Height (m): A mobile height metre controlled by experts and fixed on the wall was used for the height measurement. For the measurement of the height, it was considered that feet must be side by side, naked, heels must be adjacent, arms must be free at the sides and shoulders and back must be at the same level.

Waist/Hip Rate (cm): Waist circumference were measured while the belly was released, arms at the sides and legs were adjacent. Measurement was conducted standing in front of the individual with an inflexible metre from the narrow part of the body without compressing the skin and parallel to the ground. Then, the hip circumference was measured while arms were at the sides and legs were adjacent with a very thin cloth (tight trousers, etc.). Measurements were performed on the largest part of the hip and without compressing the skin and measurements were recorded as cm.

2. Materials and methods

This study was conducted in Sakarya Pilates Palas Sport Hall in 2018 by the researcher. The reason for conducting a study in this hall is operation possibility and easiness because of the researcher is working here. The study was conducted with volunteered members and tracking of the researcher.

The study was conducted on 16 individuals who vary between 24 and 53 years old in Sakarya. The female patients were selected randomly who were coming to the sport hall either with doctor recommendation or with their own desire and with BMI over 27 kg/m² and accepted as light adipose and adipose. Individuals in the study are in two groups; the ones going to dietician and ones who are not going to a dietician. Volunteered members do sport on various numbers of days.

Volunteered members were controlled for 2 months in every 4 weeks of the sport and diet change programmes by the researcher. Body compositions of the participants were identified with anthropometric measurement methods

General features of the individuals in the research are the following:

✓ Women are between 24- and 53-year old.
✓ Women do not have any chronic disease instead of overweight.
✓ Pump and overweight female who are over 27 kg/m² BMI were included in the study.

3. Findings

Table 1. Anthropometric measurements of the individual

	1st Measurement	2nd Measurement	3rd Measurement
Weight	66.5	64.3	63.00
Lipoidosis	32.8	31.7	30.5
Internal lipoidosis	5	5	4
Water rate	36	38	40
Chest	88	85	84
Waist	76	74	70
Hip	107	105	102
Abdomen	90	88	84

The measurements were repeated every 3 weeks and measurements in this process were recorded. The individual exercises 3 days a week. But she does not apply any diet programme. The measurements and weight in the beginning and at the end of 8 weeks showed that the person lost 3.5% weight and it was identified that the weight was caused by lipoidosis. The water rate in the body of the individual increased with the rate of 3.1%. The individual lost weight from the chest with the rate of 4.5%, from the waist with the rate of 5%, from the hip with the rate of 3.2% and from the abdomen with the rate of 4.8% and regional thinning was seen.

Table 2. Anthropometric measurements of the individual

	1st measurement	2nd measurement	3rd measurement
Weight	90	87	85.6
Lipoidosis	43.6	42.3	41.5
Internal lipoidosis	10	9	9
Water rate	35	37	37
Chest	104	100	98
Waist	92	90	88
Hip	119	115	112
Abdomen	118	117	114

The measurements were repeated every 3 weeks and measurements in this process were recorded. The individual exercises 3 days a week and applies a diet programme. The measurements and weight in the beginning and at the end of 8 weeks showed that the person lost 4.9% weight and it was identified that the weight was caused by lipoidosis. The water rate in the body of the individual increased with the rate of 1.5%. The individual lost weight from the chest with the rate of 5.3%, from

the waist with the rate of 3.4%, from the hip with the rate of 3.2% and from the abdomen with the rate of 2.8% and regional thinning was seen.

Table 3. Anthropometric measurements of the individual

	1st measurement	2nd measurement	3rd measurement
Weight	64.5	62.3	60
Lipoidosis	35.2	33	31
Internal lipoidosis	6	6	5
Water rate	36	42	43
Chest	87	84	84
Waist	76	73	72
Hip	108	105	99
Abdomen	93	89	85

The measurements were repeated every 3 weeks and measurements in this process were recorded. The individual exercises 3 days a week but does not apply any diet programme. The measurements and weight in the beginning and at the end of 8 weeks showed that the person lost 5.5% weight and it was identified that the weight was caused by lipoidosis. The water rate in the body of the individual increased with the rate of 4.6%. The individual lost weight from the chest with the rate of 2.5%, from the waist with the rate of 3.8%, from the hip with the rate of 5.2% and from the abdomen with the rate of 5.8% and regional thinning was seen.

Table 4. Anthropometric measurements of the individual

	1st measurement	2nd measurement	3rd measurement
Weight	73.3	72	74
Lipoidosis	36	35	36
Internal Lipoidosis	7	7	7
Water rate	39	40	38
Chest	100	99	99
Waist	90	88	89
Hip	108	107	106
Abdomen	100	99	101

The measurements were repeated every 3 weeks and measurements in this process were recorded. The individual exercises 3 days a week but does not apply any diet programme. The measurements and weight in the beginning and at the end of 8 weeks showed that the person lost 1.5% weight and it was identified that the weight was caused by lipoidosis. The water rate in the body of the individual increased with the rate of 2.1%. The individual lost weight from the chest with the rate of 0.5%, from the waist with the rate of 1.1%, from the hip with the rate of 1.2% and from the abdomen with the rate of 0.8% and regional thinning was seen. But it was seen that the weight and lipoidosis of the person were regained and regional thinning was lost.

Table 5. Anthropometric measurements of the individual

	1st measurement	2nd measurement	3rd measurement
Weight	51.5	51	51
Lipoidosis	18.6	18.6	18.6
Internal lipoidosis	1	1	1
Water Rate	48	48	50
Chest	78	75	75
Waist	72	69	67
Hip	98	94	90
Abdomen	89	83	80

The measurements were repeated every 3 weeks and measurements in this process were recorded. The individual exercises 3 days a week but does not apply any diet programme. The measurements and weight in the beginning and at the end of 8 weeks showed that the person lost 0.5% weight and it was identified that the weight was caused by lipoidosis. The water rate in the body of the individual increased with the rate of 0.9%. The individual lost weight from the chest with the rate of 1.5%, from the waist with the rate of 3.1%, from the hip with the rate of 3.2% and from the abdomen with the rate of 3.8% and regional thinning was seen.

Table 6. Anthropometric measurements of the individual

	1st measurement	2nd measurement	3rd measurement
Weight	56.6	54.6	56.2
Lipoidosis	20.9	20	21.4
Internal lipoidosis	3	3	3
Water rate	38.1	39.5	39
Chest	82	80	79
Waist	69	67	70
Hip	96	93	93
Abdomen	80	76	77

The measurements were repeated every 4 weeks and measurements in this process were recorded. The individual exercises 4 days a week. But she does not apply any diet programme. The measurements and weight in the beginning and at the end of 8 weeks showed that the person lost 2.2% weight and it was identified that the weight was caused by lipoidosis. The water rate in the body of the individual increased with the rate of 3.1%. The individual lost weight from the chest with the rate of 3.2%, from the waist with the rate of 4.3%, from the hip with the rate of 2.5% and from the abdomen with the rate of 4.8% and regional thinning was seen.

Table 7. Anthropometric measurements of the individual

	1st measurement	2nd measurement	3rd measurement
Weight	71	69.8	68
Lipoidosis	42.2	41.4	39.6
Internal lipoidosis	7	7	6
Water rate	38	41	43
Chest	98	94	94
Waist	82	82	79
Hip	109	106	102
Abdomen	100	94	94

The measurements were repeated every 4 weeks and measurements in this process were recorded. The individual exercises 3 days a week and applies a diet programme. The measurements and weight in the beginning and at the end of 8 weeks showed that the person lost 3.5% weight and it was identified that the weight was caused by lipoidosis. The water rate in the body of the individual increased with the rate of 4.3%. The individual lost weight from the chest with the rate of 2.5%, from the waist with the rate of 3.1%, from the hip with the rate of 3.8% and from the abdomen with the rate of 4.4% and regional thinning was seen.

Table 8. Anthropometric measurements of the individual

	1st measurement	2nd measurement	3rd measurement
Weight	79.4	78.9	76
Lipoidosis	36.8	36	33.1
Internal lipoidosis	7	7	6
Water rate	39	39	42
Chest	95	92	91
Waist	83	82	80
Hip	113	109	108
Abdomen	97	96	93

The measurements were repeated every 4 weeks and measurements in this process were recorded. The individual exercises 4 days a week. But she does not apply any diet programme. The measurements and weight in the beginning and at the end of 8 weeks showed that the person lost 3.9% weight and it was identified that the weight was caused by lipoidosis. The water rate in the body of the individual increased with the rate of 3.1%. The individual lost weight from the chest with the rate of 2.5%, from the waist with the rate of 1.2%, from the hip with the rate of 4.2% and from the abdomen with the rate of 2.8% and regional thinning was seen.

Table 9. Anthropometric measurements of the individual

	1st measurement	2nd measurement	3rd measurement
Weight	69.8	68	66
Lipoidosis	37.6	35.6	34
Internal lipoidosis	8	7	7
Water rate	38	41	45
Chest	97	95	94
Waist	90	85	80
Hip	108	104	100
Abdomen	103	101	97

The measurements were repeated every 4 weeks and measurements in this process were recorded. The individual exercises 4 days a week. But she does not apply any diet programme. The measurements and weight in the beginning and at the end of 8 weeks showed that the person lost 3.5% weight and it was identified that the weight was caused by lipoidosis. The water rate in the body of the individual increased with the rate of 5.1%. The individual lost weight from the chest with the rate of 2.5%, from the waist with the rate of 6.1%, from the hip with the rate of 4.3% and from the abdomen with the rate of 2.8% and regional thinning was seen.

Table 10. Anthropometric measurements of the individual

	1st measurement	2nd measurement	3rd measurement
Weight	80.4	79	76
Lipoidosis	39.7	39	36
Internal lipoidosis	5.5	5.5	5
Water rate	40	41	43
Chest	94	92	92
Waist	80	79	76
Hip	118	115	110
Abdomen	100	98	95

The measurements were repeated every 4 weeks and measurements in this process were recorded. The individual exercises 2 days a week and applies a diet programme. The measurements and weight in the beginning and at the end of 8 weeks showed that the person lost 3.5% weight and it was

identified that the weight was caused by lipoidosis. The water rate in the body of the individual increased with the rate of 2.1%. The individual lost weight from the chest with the rate of 1.5%, from the waist with the rate of 2.1%, from the hip with the rate of 4.2% and from the abdomen with the rate of 3.8% and regional thinning was seen.

Table 11. Anthropometric measurements of the individual

	1st measurement	2nd measurement	3rd measurement
Weight	59.4	59	57.5
Lipoidosis	24.1	24	22.5
Internal lipoidosis	2	2	2
Water rate	45	45	46
Chest	84	83	81
Waist	71	69	67
Hip	98	97	93
Abdomen	84	82	79

The measurements were repeated every 4 weeks and measurements in this process were recorded. The individual exercises 2 days a week but she does not apply any diet programme. The measurements and weight in the beginning and at the end of 8 weeks showed that the person lost 3.5% weight and it was identified that the weight was caused by lipoidosis. The water rate in the body of the individual increased with the rate of 0.8%. The individual lost weight from the chest with the rate of 1.5%, from the waist with the rate of 3.1%, from the hip with the rate of 2.8% and from the abdomen with the rate of 2.8% and regional thinning was seen.

Table 12. Anthropometric measurements of the individual

	1st measurement	2nd measurement	3rd measurement
Weight	60	60	58.7
Lipoidosis	29.9	29.9	28.6
Internal lipoidosis	4	4	4
Water rate	41	42	45
Chest	87	85	85
Waist	68	68	67
Hip	98	96	93
Abdomen	85	85	81

The measurements were repeated every 4 weeks and measurements in this process were recorded. The individual exercises 3 days a week but she does not apply any diet programme. The measurements and weight in the beginning and at the end of 8 weeks showed that the person lost 2.5% weight and it was identified that the weight was caused by lipoidosis. The water rate in the body of the individual increased with the rate of 3.1%. The individual lost weight from the chest with the rate of 1.5%, from the waist with the rate of 0.9%, from the hip with the rate of 1.9% and from the abdomen with the rate of 1.1% and regional thinning was seen.

4. Results and recommendations

General aim of the members on doing sport is losing weight. The general problem of members on gaining weight is caused by malnutrition. The other reasons for the members to lose weight are parental and social pressure. Minority of the members do sport because of the health issues.

It was also seen that participants were applied a diet both with and without doctor control. Some of them applied diets to support losing weight and some of them applied diets for healthy life.

It was monitored that members gained weight because they work and spent most of the day at home. It was monitored that participants found sport activities pleasing, energetic, pleasure and funny. It was also monitored that the members were preferred popular activities as sport activities.

As a result, the participation status of the members participating into the sport activities demonstrates differences. It was monitored that the members with weight problem generally do sport for visuality. The individuals working sedentarily should apply a healthy nutrition programme and stay away from the food as carbohydrate, sugar, salt, etc. Individual should do sport not only for losing weight but also for a healthy life regularly. It was seen that the body functions of the individuals doing sport regularly works better. Individuals doing sport regularly get rid of stress and decrease the risk of permanent diseases in the future (diabetes, blood pressure, joint aches, etc.)

According to Peker, it was identified that in accordance with the results of this research, a balanced nutrition programme provided significant decreases in body weight loss and body circumference measurements and caused positive changes on biochemical blood findings. It was also identified that physical exercise in addition to a balanced weight-loss diet had effect on hip circumference measurements, modification of blood pressure and in some blood findings.

According to the results of 1993, Turkish Population and Health Research (TNSA) conducted in Turkey, 32% of the female is slightly overweight (BMI: 25–29.9 kg/m²), 18.7% is overweight (BMI > 30 kg/m²) (TNSA, 1994). 33.4% of the female is slightly overweight, 18.8% is overweight according to the results of 1993 Turkish Population and Health Research (TNSA, 1999) and 23.9% of the female is overweight according to TNSA 2008 results (TNSA, 2008).

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