



## Short Communication

# The effect on the weight loss of the diet consultancy applied on the 100 voluntaries who's overweight or obese: a pilot study

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## Abstract

*This study's aim was to evaluate the applying a healthy nutrition program specially prepared by the dietitians for the individuals to lose weight in a healthy way, on 100 healthy volunteers who live in Obesity Counseling Unit of the Bayrakli Community Health Center region, Izmir, Turkey. This study is an interventional research. The study was conducted between from November to December 2012, on the 100 voluntaries who's overweight. As the dependent variable of the study, it was accepted that at the end of three months, individuals had 5% reduction in body weight from baseline. For compare of categorical variables, Chi-square test was done. For statistical significance,  $p < 0.05$  was considered. 41.8% of these volunteers who continued to this study lost 5% or more of their body weight.  $\geq 5\%$  weight loss prevalence was higher in bad health perception than middle or good perception (65.0% vs 31.9%) ( $p < 0.05$ ). Weight loss ( $\geq 5\%$ ) prevalence was lower in the volunteers who compliance to dietitian recommendations than the others (25.5% vs 80.0%) ( $p < 0.05$ ). We can say that successful of this intervention study, because of achieving the targeted weight loss in 42% of the participants. But this success is not enough. It is recommended to give priority desire to be healthy in obese patients, in fighting obesity in the public health programs.*

**Keywords:** Overweight, obese, intervention, weight loss.

## Introduction

Obesity continues are accepted as a public health problems in the world, according to parameters such as prevalence, comorbidity and economic burden. According *Global Burden of Disease Study-2013*, worldwide prevalence of obesity as follows: The ratio of adults with obesity increased between 1980 and 2013 from 28.8% to 36.9% in males and from 29.8% to 38.0% in females. The other focus subject as follows: It is also observed that overweight or obesity is spreading in adolescence and childhood in developed countries<sup>1</sup>. With row D and Alter<sup>2</sup> examined 32 articles from 1990 to 2009, and wrote a review. They have the following opinion on the obesity's economic burden: The countries' total healthcare expenditures estimated between 0.7% and 2.8%. Addition, obese individuals were shown to have medical costs that were approximately 30% higher than their normal weight peers. Guhet al.<sup>3</sup> was reported results for sistematic review and meta-analysis studies. According to this, recent meta-analyses on obesity and comorbid diseases talked about the following diseases: Diabetes, cardiovascular diseases, coronary heart disease, hypertension, cancer, etc.

If we return to developing countries, like Turkey, for obesity we can say: In developing countries, up to this developed countries, the obesity prevalence is rapidly increasing, especially with the

western lifestyle becoming widespread<sup>4</sup>. *National Turkey Nutrition and Health Survey - 2010* reported that obesity / overweight prevalence was 30.3% n 34.6% respectively, among over 19 aged population in Turkey<sup>5</sup>. *Turkey Healthy Nutrition and Moving Life Program* were first implemented in 2010-2014 and today the same program is being extended for 2014-2017<sup>6</sup>. In *Turkish Republic Ministry of Health's Strategic Plan (2013-2017)*, ones a target as "Informing and educating the public about healthy nutrition, obesity and physical activity, and creating programs with supportive environments for healthy eating and regular physical activity habits" includes<sup>7</sup>. Despite all these efforts, we can say the intervention studies for obesity in Turkey are rather limited.

The study's aim was to determinate the applying a healthy nutrition program specially prepared by the dietitians for the individuals to lose weight in a healthy way, on 100 healthy volunteers who live in Obesity Counseling Unit of the Bayrakli Community Health Center region, Izmir, Turkey.

## Materials and methods

This study is an interventional research. The study was conducted between from November to December 2012, on the 100 voluntaries who's overweight.

The inclusion criteria for this study are as follows: Being a volunteer, being in the 19-65 age group, not having mentally and physically disabled, not having chronic disease and having a Body Mass Index (BMI)  $\geq 25$  kg / m<sup>2</sup>.

In the study period, two nutrition and dietetic specialists, a doctor, a nurse, a health officer, an expert psychologists, that they were stuffs in Public Health Directorate, have contributed to this study, and intern students of Department of Nutrition and Dietetic have also.

Proper appointment periods were determined by dieticians and healthy nutrition recommendations were given to the volunteer participants. Follow-up of volunteer participants was provided. Researchers made suggestions about physical activity to them.

As the dependent variable of the study, it was accepted that at the end of three months, individuals had 5% reduction in body weight from baseline. When this study is over, weight loss of 5% and over was considered as "success".

Independent variables are accepted as follows: age, educational status, marital status, working status, perception of health, regular physical activity, partner and child overweight, place of birth, amount of water consumed and food consumption before bedtime and regular dietitian attendance.

Body weight was measured on standard conditions using a digital weighing instrument (5). To ensure inter observer standardization, all body weight measurements (the first measurements and the last measurements, three months later) were made by one previously trained researcher, only.

During the study period, the researchers were in charge of administration in Izmir Public Health Directorate. Ethical approval of Izmir Public Health Directorate was obtained for the study.

Volunteers were informed about the study. The following explanation to them was given: "No drugs or chemicals will be given to your body. Blood or other substance from your body will not be taken as a research sample." Verbal approval was obtained from the volunteers.

The results of this study were presented as a poster at the 16th National Public Health Congress (Antalya, Turkey, 27-31 October 2013).

For compare of categorical variables, Chi-square test was done. In statistical analyses, SPSS 15.0 was used. For statistical significance,  $p < 0.05$  was considered.

## Results and discussion

During the three-month period, 33 volunteers were unable to continue their obesity-fighting program for various reasons, and

the follow-up of 67 people continued until the end of December and the findings of these individuals were presented. 41.8% of these volunteers who continued to this study lost 5% or more of their body weight.

**Table-1:** Effect of some variables on  $\geq 5\%$  weight loss.

	Variables (N=67)	$\geq 5\%$ weight loss (%)	p value
Age (year)	Under 40	43.1	>0.05
	40 and upper	37.5	
Educational level	Middle school or upper	47.4	>0.05
	First school or under	34.5	
Marital status	Single	50.0	>0.05
	Married	40.7	
Have a job	Employed	47.4	>0.05
	Unemployed	39.6	
Birthplace in Izmir	Yes	51.5	>0.05
	No	32.4	
Have obese or non-obese wife/husband	Obese	27.3	>0.05
	Non obese	48.9	
Regular physical exercise	Yes	43.1	>0.05
	No	33.3	
Daily water consumption	4 and over glasses per day	44.6	>0.05
	3 and less glasses per day	27.3	
Consuming meals before going to bed	Yes	37.0	>0.05
	No	52.4	
Health perception	Too bad-bad	65.0	<0.05
	Middle-good-very good	31.9	
Compliance with dietitian recommendations	Yes	25.5	<0.05
	No	80.0	

The success rate was 80% for volunteers who complied with the dietitian suggestions, whereas this rate was 25.5% for those who did not show compliance ( $p < 0.001$ ).

While weight loss at the targeted level was 65.0% in the volunteers who's very bad or bad perception of the level of health, the same target was 31.9% in the volunteers who's middle or good or very good perception of the level of health ( $p < 0.05$ ).

The frequencies (%) of weight loss at the targeted level by the some variables as follows: 43.1% in under 40 aged group; 47.4% in middle school or upper educational level; 50.0% in singles; 47.4% in volunteers whose having any job; 51.5% volunteers whose birthplace is different from İzmir; 48.9% in volunteers that have non-obese wife/husband; 43.1% in volunteers who regularly exercise; 44.6% in volunteers who consume at least 4 glasses a day; 52.4% in volunteers who do not consume meals before going to bed were found. The results of other groups compared with the above are as follows: 37.5% in 40 and over aged group, 34.5% in first school or under educational level; 40.7% in married volunteers; 39.6% in unemployed or housewife volunteers; 32.4% in volunteers born in İzmir; 27.3% in volunteers that have obese wife/husband; 33.3% in volunteers who do not exercise regularly; 27.3% in volunteers who consume water 3 cups or less per day; 37.0 in volunteers who consume meals before going to bed were found. Statistically significant difference was not found between the comparison groups (for each one  $p > 0.05$ ).

In contrast, we had two variables that gave statistically significant results: Health perception and Compliance with dietitian recommendations.

$\geq 5\%$  weight loss prevalence was higher in bad health perception than middle or good perception (65.0% vs 31.9%) ( $p < 0.05$ ).

$\geq 5\%$  weight loss prevalence was lower in the volunteers who compliance to dietitian recommendations than the others (25.5% vs 80.0%) ( $p < 0.05$ ).

**Discussion:** Some studies from Turkey report that obesity prevalence increases with age<sup>8,9</sup>. For this reason, we were expecting a weight loss of  $\geq 5\%$  at older overweight volunteers. But we could not reach this result ( $P > 0.05$ ). WHO MONICA PROJECT included almost 35.000 males and females aged from 35 to 64 years in the final study (1989-1996). This project reported that obesity frequency decreases while educational level increasing<sup>10</sup>. We could not find between weight loss and education level ( $p > 0.05$ ). In individuals who married, we expected that adequate and balanced nutrition was better level than singles. But our expectation did not reflect on targeted weight loss ( $p > 0.05$ ). Having a job can be seen as a high socio-economic situation in Turkey's conditions, compared to the unemployed. By meta-analysis results of McLaren<sup>11</sup>. In highly developed countries, socioeconomic level decreased while body size was increasing. Conversely, positive associations were shown between body size and socioeconomic level in medium and low-development countries. Turkey is like medium development countries. But there was no significance differ

between have a job and have not any job in terms of weight loss in our study ( $p > 0.05$ ).

Mediterranean cuisine is dominant in İzmir. For this reason, healthy eating habits are expected more frequently in İzmir than the other provinces. However, the overweight İzmir people were not able to lose weight more often than the others ( $P > 0.05$ ). When a family is thought to have common eating habits, we hoped to lose weight, more often in individuals who have weaker husbands and wives than the others, at the end of this study. But we could not obtain any evidence in this direction ( $p > 0.05$ ). It is well known that there is a negative association between obesity and physical activity, and it is a topic that is often studied in a wide range of researches<sup>12-14</sup>. But we have not found a higher frequency of weight loss in volunteers with regular physical activity.

In the middle-aged and older adults, meal energy intake (EI) reduces acutely with water consumption. Dennis et al.<sup>15</sup> studied two groups that were fed diets to lose weight for 12 weeks. One group's diet included "500 ml water prior to each daily meal". They called this grub as "water group". At the end of the study, they reported as the water group showed a 44% greater decline in weight over the 12 weeks than the non-water group.

Dennis et al.<sup>15</sup> studied two groups that were fed diets to lose weight for 12 weeks. One group's diet included "500 ml water prior to each daily meal". I called this grub "water group". For this reason, we questioned water consumption in our own research. But we could not find the targeted weight loss higher in volunteers who consume enough water ( $p > 0.05$ ).

Weight gain and life stress periods are important time periods for occurring "night-eating syndrome", by the results of some studies<sup>16-18</sup>. In patients with night eating syndrome, psychiatric disorders, such as substance use, are at a high frequency. It is reported that night eating syndrome is seen more frequently in obese than non-obese. Night eating syndrome is also more common in men. For this reason, we were asked about "consuming meals before going to bed" in our study. However there was not a relation at the end of the study, between "consuming meals before going to bed" and "weight loss" ( $p > 0.05$ ).

Two variables with a statistically significant relationship in our study were "Health perception" and "Compliance with dietitian recommendations". The volunteers with bad health perception.

The individuals with bad health perception agreed to volunteer. Because they were open to any kind of intervention and treatment because they accepted health conditions and want to be healthier. When it is added that they are overweight people, it is easier to lose weight to them. At the end of the study, it was observed that these volunteers were to be successful in terms of weight loss. The volunteers with compliance with dietitian recommendations have a not successful in the comparison to the

others (25.5% vs 80.0%). Is this a conflict? We can say something like this for explain as those who adapt to the proposals were not willing enough to lose weight. According to their own evaluations, they really did not need to lose weight.

After all these discussions, we can say that it is a weak possibility that health care delivered without the desire to heal, lose weight and be healthy will be successful. Finally, the results we achieved have caused me to reach this belief.

**Limitations:** 100 volunteers participated in this study, 67 volunteers completed the study, only. The number of participants seems insufficient. Intra-observation standardization was not determined in the study.

## Conclusion

We can say that successful of this intervention study, because of achieving the targeted weight loss in 42% of the participants. But this success is not enough. At the end of this study, it is recommended to give priority desire to be healthy in obese patients, in fighting obesity in the public health programs. The findings of this research will provide guidance for similar initiatives to be undertaken in the future.

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