CLINICAL EFFECTIVENESS OF GROUP-BASED EDUCATION WITH INDIVIDUAL COUNSELING IN OBESE WOMEN

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ABSTRACT

***Aims**: The aim of this study was to demonstrate the effectiveness of group education with individual counseling face-to-face compared to current practice in the treatment of obese women.*

***Materials and methods**: This was a randomized controlled intervention study. It was performed between March and June 2013. After baseline testing, eligible patients were randomized either to intervention group (n= 38, receiving three group seminars and individual counseling face-to-face in every 15 days) or control group (n= 39, receiving one counseling sessions face-to-face). All patients were followed up for three months. Seminars to the intervention group included medical complication of obesity, nutrition education, physical activity education and behavioral therapy. Women's weights, heights, body mass index (BMI), body fat percentage (BFP) and waist circumference (WC) were measured at baseline and after three months. Primary outcome of the study was the change of weight and BMI. Changes in BFP and WC were used as secondary outcome measures.*

***Results**: Results for 77 obese women were analyzed. The mean age was 40.0±11.0 years, and the mean weight 87.3±9.5 kg. Patients randomized to the intervention group lost more weight compared to the control group (mean weight loss 2.0±3.3kg vs. 0.4±2.1 kg respectively) at the end of three months (t= 2.471, p= 0.016). Furthermore, group education was more effective, when analyzed in two groups in terms of the difference in BMI, WC, BFP by using paired comparisons (p< 0.05).*

***Conclusion**: Group counseling and education that emphasizes a health-promoting lifestyle with individual counseling offers an effective mode of therapy to treat obese women.*

***Key words**: obesity, obese women, group education, individual counseling.*

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Introduction

Obesity is a complex, multifactorial disease that emerges with the interaction of genetic and environmental factors[1,2]. The prevalence is increasing all the time, and obesity is known to be associated with many diseases, such as diabetes, hypertension, cardiovascular diseases, sleep apnea and osteoarthritis[3,4]. Obesity and obesity-related diseases have an adverse direct or indirect effect on national economies[5]. In addition, obesity is a disease requiring a multidisciplinary therapeutic approach. Low-calorie diets, exercise programs, drug therapies, surgical procedures and cognitive behavioral therapies are among the most effective treatment options. Individually tailored and combined use of these represents the basis of contemporary obesity treatment[6].

Although advances in obesity treatment can be observed, the long-term outcome is still unsatisfactory for most patients[7]. Obesity treatment is a long and difficult process, and it may not always be possible to ensure that patients persist with treatment without losing motivation.

Some studies in recent years have shown that group-based programs is more effective than individual therapy[8,9,10]. The most satisfactory results in obesity treatment are reported from therapeutic approaches that alter behavior, such as healthy eating and exercise.

In order to bring that change about, measures are needed to increase patients' awareness of obesity, obesity-related diseases and healthy nutrition[11].

Also, the existing data show that obese patients do not receive sufficient advice from physicians regarding weight control[12,13].

Limited physician time may be the main factor involved in this condition. We hypothesized that group-based education may be an effective method to increase their awareness in a short time for patients with the same problem, thus enabling patients to interact with one another.

The aim of this study was to demonstrate the effectiveness of group-based education with individual counseling in the treatment of obese women.

Materials and methods

Study design

This was a randomized controlled intervention study. It was performed between March and June 2013. Twenty-seven patients in each group provided a statistical power of 95% for determining a difference of 1 kg weight loss in the two study groups with an alpha error of 5%. Since we predicted there would be drop-outs, we finally included 80 patients. Patients were randomized into intervention (n= 40) and control groups (n= 40). All patients were monitored for three months. Both groups were given a low-calorie diet and exercise 30 minutes three times in a week. Additionally, patients in the intervention group attended group-based education seminars once a month.

These seminars included discussion of the medical complications of obesity, nutrition education, physical activity education and behavioral therapy. The date and time of the seminars was based on a joint decision. Patients in the intervention group were given the opportunity to be in the company of other patients during seminars, to communicate with one another and to share problems.

Further, individual meetings were also held once every 15 days, at which patients' questions about diet and exercise, were answered face-to-face in intervention group. Each meeting lasted 45 minutes. Control group received only one counseling face-to-face at the beginning of the study.

Patients

From all obese women patients referred to our clinic of Ataturk University Hospital for treatment from January 2013 to March 2013, 252 patients were recruited to this study. Out of the 90 patients who did not met inclusion criteria, 82 patients declined to join the study. Remaining 80 patients were randomized into the intervention and control group. Results from 77 patients were analyzed (Figure 1).

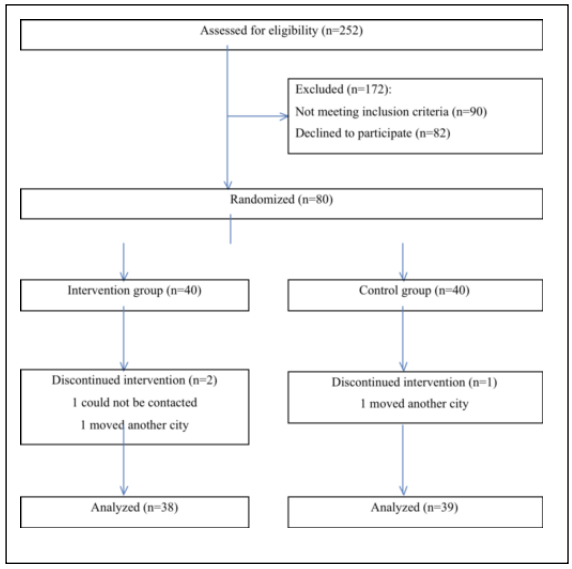

Figure 1: Flow of the patients.

Inclusion criteria were as follows: age ≥ 18 years; body mass index (BMI) ≥ 30 kg/m2, no evidence of cardiovascular disease or diabetes, no history of medication for weight loss.

Weight, height, BMI, body fat percentage (BFP) and waist circumference (WC) were measured at baseline and after three-months. The change of weight and BMI were used as the primary outcome measure. Changes in body fat percentage and waist circumference were secondary outcome measures. Height and weight were measured by the researcher using a standard protocol. The measurements were performed in the morning. Height was measured two times to the nearest 0.1cm using a Harpender Stadiometer and weight two times to nearest 0.1 kg using an electronic scale (Tanita®, Germany); the means of the measurements were recorded for analysis.

Informed written consent was taken from all participants before the starting of the study. The study protocol was approved by the ethics committee of Ataturk University Medical Faculty (2012/11).

Analyses

All analysis was carried out using the SPSS 18 software. Numerical variables were expressed as mean ± standard deviation, and categorical variables as n (%). Numerical data were checked for normal distribution. Paired samples t-test, and independent samples t-test were used in the comparisons. Significance level was set at $p<0.05$.

Results

Mean age of the women was 40.0±11.0 years. Mean weight was 87.3±9.5 kg. There were no significant differences in the baseline characteristics between the groups (p>0.05) (Table 1).

Characteristics	Intervention group	Control group
	n=38	n=39
Age (years)	41.2±10.9	38.8±11.2
Anthropometrics		
Height (cm)	158.9±5.2	158.2±5.2
Weight (kg)	88,6±9.8	86.1±9.2
BMI (kg/m^2)	35.2±3.2	34.3±2.8
WC (cm)	108.8±8.0	106.4±7.1
BFP (%)	42.5±5.4	42.2±4.2
Work Status		
Housewife	27 (71.1%)	28 (66.7%)
Professional	11 (28.9%)	11 (33.3%)

BMI, body mass index; WC, waist circumference; BFP, body fat percentage; Professional, has any job.

Table 1: Baseline characteristics of participants.

After three months mean weight decreased from 88.6 ± 9.8 to 86.3±9.1 kg in intervention group, while it decreased from 86.1±9.2 kg to 85.5±8.9 kg in control group. In analyses, women attending the intervention group lost more weight (on average, 2.0±3.3kg) than control group (on average, 0.4±2.1 kg) (t=2.471, p=0.016) at the end of the three months. Hence weight reduction about was 2.1%, while 0.5% in control group. Furthermore, group-based education with individual counseling was more effective, when analyzed in two groups in terms of the difference in BMI, WC, BFP by using paired comparisons (p<0.05) (Table 2).

Outcome measures (means)	Intervention group	Control group	p value
	n=38	n=39	
Change in weight, kg (S.D.) [95% CI]	2.0±3.3	0.4±2.1	0.010*
Change in BMI, kg/m^2 (S.D.) [95% CI]	0.8±1.3	0.2±0.7	0.008*
Change in WC, cm (S.D.) [95% CI]	3.5±4.0	1.7±2.9	0.030*
Change in BFP, % (S.D.) [95% CI]	2.4±3.4	1.2±1.8	0.024*

*BMI, body mass index; WC, waist circumference; BFP, body fat percentage; CI, confidence interval; S.D., standard deviation. Statistical significance: *Independent samples t-test.*

Table 2: Changes in anthropometrics between groups after three months .

Discussion

The main result of this study was that the group-based education which stressed a health-promoting lifestyle, consisted of three seminars with individual counseling during three months was more effective in a significant weight loss from baseline than the current practice in the treatment of obese women.

One study involving approximately 38000 individuals performed in a Health Promotion and Obesity Management Unit reported that weight loss was the most important factor in prevention against disease in 77.5% of individuals and healthy nutrition in 66.8%[14]. That study also found that obese individuals had a lower belief in the need to lose weight than people of normal weight. However, Canadian authors reported that fewer than half of obese subjects had asked their physicians about weight loss[15]. This shows that obese individuals' lack adequate awareness of losing weight compared to healthy subjects. Obese patients therefore need more education in order to lose weight.

Our hypothesis was group-based education can be given to obese patients in order to provide awareness about weight loss. Indeed, our study showed that obese women possessing more information about medical complications of obesity, nutrition education, physical activity education and behavioral therapy by group-based education was effective in weight loss.

Another study showed that taking a training course on weight management which included key messages on diet and physical activity, doing a behavioral assessment is effective in producing clinically significant weight loss[16].

Nowadays, researchers emphasize that group-based training for self-management strategies in patients with diabetes is effective for improving fasting blood glucose levels and diabetes knowledge. It was recommended due to being a cheaper method and the added advantages of having patient meet and discuss with each other[17,18]. Obesity treatment is a long process, and it is very difficult to increase their motivation during the therapy like diabetes. Obese patients need more motivation, interaction, and knowledge.

Our results showed that group-based education can be an effective method for weight loss. The essential causes of obesity are inappropriate eating habits and sedentary lifestyle. It is therefore important to seek to modify these habits[19].

However, bringing about life style changes is not easy for either physicians or patients. Life style modification and behavioral therapy aim to help subjects to continue and apply changes to eating and activity behavior. There is strong evidence that the most effective lifestyle approach involves com-

bining life style modification with dietary and activity advice for proper weight management[20,21,22].

Promotion of a healthy life style among the obese is very important, since this highlights the need to change undesirable health-related behaviors. The behavioral therapy measures applied to obese patients in our study during group seminars established a change in life style and were more effective in their losing weight at the end of three months.

The establishment of behavioral change in the monitoring of obese patients and patient education and awareness on this subject represents an important element of treatment. Face-to-face individual sessions in addition to group-based education should be regarded as an effective way of treating obesity. Future research should assess the generalizability, sustainably, and compatibility of group-based education with individual counseling within obesity treatment.

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