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Original Article

The Efficacy of Cognitive behavioral Group Therapy on Body Mass Index (BMI) in Obese Patients

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Abstract

Background: Obesity implies a large body fat, because of the high prevalence and physical and psychological consequences, today it becomes a serious crisis and itself is involved health sector in most countries. Cognitive behavioral Therapy along with diet and exercise methods, considered as lifestyle modification techniques that are used in the treatment of obesity. It seems that change behavior eating and associated thought patterns are necessary as a positive health step in the country. The aim of present study was to investigate the efficacy of cognitive behavioral group therapy on body mass index (BMI) in obese patients.

Methods: This research is semi-experimental method with pre-test and post-test, experimental and control groups and follow up to a month, on 20 women suffering from obesity, Type A (BMI = 30-34.9), referred to an obesity clinic of Rasoul Akram Hospital in Tehran. Samples were randomly selected and divided into two experimental and control groups (each group, n = 10) assigned. The intervention consisted of 12 sessions of 2 hours of cognitive – behavioral group therapy, which the experimental group was given during 6 weeks. Data through of body mass index (BMI) were collected and follow-up one month after treatment variable BMI, have been done. Data was analyzed by SPSS-20 software and descriptive statistics and inferential statistics (analysis of covariance) was used for data analysis.

Results: Results of covariance analysis showed that the post-test and follow-up at one month compared with the control group not showed a significant decrease in the amount of BMI. And the average weight loss for both groups was closer together.

Conclusion: It seems that the effectiveness of this treatment in reducing the multi-month and multi-year long-term follow-up BMI should be examined.

Key Words: Cognitive behavioural Group Therapy, Body Mass Index, BMI, Obese Patients, CBGT

Introduction

Since obesity is a complex and multifaceted phenomenon that its causes are consequences of biological, psychological and social factors, control and treatment is beyond the scope of a single string. Indeed identify treatments with empirical support could further consolidate the role of psychological interventions, as part of a multidisciplinary approach to the management and treatment of obesity. In all the three existing approaches is for obesity treatments based on evidence are: medication therapy, surgery, and behavioral therapy(1). Most people take diet to lose weight; they back gradually over a year to reach the same weight, not affected by yoga and which have been the remains. Some medications and treatments can be effective in the short term, but after a while, slowly and unpleasant side effects and adverse effects on the individual and their harmful is over. Surgery related to obesity, severe obesity and ill, like any other surgical procedure, with a risk (2). Judith Beck has created a new step that is focused on changing attitudes and patterns of behavior and thinking. His found key deviations of the negative thoughts people the diet, and believes that they are prevented these people to achieve their desired weight and they want to remain weight, he has identified major negative thoughts for disturb dieters. Learning this kind of intellectual deviations, problems related to diet and non-related, learning and motivation the effective habits to choose the things that "Judith Beck" plan is distinct from the others, he created and has expanded this way more than two decades ago (2).

Obesity is a major and growing problem in Iran. The adverse social, psychological, economic and health for the individual and society are substantial. Obese people issue such as the problems of subjective well-being, self-efficacy, poor, unhealthy eating habits, depression, anxiety, low self-esteem, health and recurrence of disease in obesity after taking the diet (1). Historical figure, the treatment of obesity has been focused on eating and exer-

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cise, but the emergence of behavioral approaches creates a change at all. Behavioral therapy based on principles of social learning theory suggests that eating behavior can be learned through the techniques. Fundamental component of treatment involves self-assessment, stimulus control, cognitive restructuring and education in nutrition and exercise is the way (3). Studies have shown that cognitive - behavioral therapy (CBT) to individuals with various disorders including depression, anxiety, fear, nutritional disorders, obesity, smoking and other behavioral addictions and bad habits, helps and is effective in removing them (3). Among the methods proposed for the treatment of obesity with diet therapy, is cognitive-behavior method. Fundamental theory is that thoughts affect feelings and emotions directly affect our behavior control. The goal of cognitive-behavioral therapy, is identify negative thoughts that lead to negative behaviors, and they learn how to become with different ideas and challenge and change these negative thoughts into positive thoughts, this caused the emergence of positive feelings that result from a person's behavior is appropriate. According to this method of therapy, different programs have been conducted in various countries. However, although the cognitive-behavioral is well known in Iran and extensive studies have been done about it, but in the field of obesity, few studies of the effectiveness of psychological treatments in improving obesity and improving patients' psychological characteristics to check is performed (1). Interventions in the field of obesity in Iran have been primarily focused on the treatment regimen or medication; require that other non-nutritional intervention or complementary method of treatment regimen also be examined. Due to the lack of adequate research in this field in the interior, this study aims to examine the effectiveness of this treatment to lose weight in obese patients.

Methods

Semi-experimental research method was used with two experimental and control groups with pre-test-post-test and a monthly follow-up for BMI. Independent variable was intervention to cognitive-behavioral therapy which is performed for experimental group. Dependent variable was BMI.

The study sample consisted of obese women in the 2012-2013 years that referred to Obesity Clinic of Rasoul Akram Hospital, Tehran. Utilizes convenience sampling method, from population that referred to obesity clinic, women with obesity, type A (BMI= 30-34.9) based on initial screening criteria for selecting the sample was carried out. A criterion was as below:

- Age higher than 18 years old
- Education level at least diploma
- The absence of mental disorder
- The absence of borderline personality disorder (BPD)
- The absence of Bulimia nervosa (BN)
- Non-concurrent use of other psychological programs for weight loss
- Lack of menopause and pregnancy or planning pregnancy
- The ability to participate in group therapy sessions

They were divided randomly into control and experimental groups (each group n = 15). Of 15 patients the experimental group, 2 patients in the first and 3 patients were excluded due to inability to attend meetings. And so, for homogeneity, 5 patients were randomly removed from the control group and the number of subjects in each group was 10 patients and a total of 20 patients. Body mass index by dividing weight (in kilograms) to square of height (in meters) was calculated. Weight of the subjects was measured using a digital scale of Obesity Clinic.

Intervention sessions of group cognitive-behavioral therapy for 6 weeks, two days a week (with a gap of 3 days between sessions), each 2-hour session, held at the conference hall Obesity Clinic. Sessions in accordance with the "Judith Beck" treatment protocol (2008) is implemented as below:

Intervention Plan:

Session 1	Review Benefits of weight loss, diet plan and committing to sitting eating skills, get feedback, provide homework
Session 2	Reward system, slowly and with awareness and focus on eating, living environment and the selection of the coach and supporter, get feedback, provide homework
Session 3	Creating time and energy, planning for exercise, take good aim, feedback, homework presentation
Session 4	The difference between hunger, appetite and cravings, endure hunger and fitness regime, feedback, homework presentation
Session 5	Start regime; deal with overeating and change the meaning of satiety, monitor eating, abstaining from without programs. feedback, homework presentation
Session 6	Devoted to self-delusion, return to the previous track, ready to face the scales, feedback, homework presentation
Session 7	Skills "Okay ... Okay", tackle unfairness syndrome, coping with disappointment, feedback, homework presentation
Session 8	Identification of destructive thoughts and the correct way to respond to ideas, a willingness to scale, feedback, homework presentation
Session 9	Resistance to eat, drink, eating out, eating and Control, feedback, homework presentation
Session 10	When you go to a restaurant and vacation care regime, regulate emotions without resorting to food skills, problem solving, preparing for scale, feedback, homework presentation
Session11	Confidence and self-esteem, stress relief, weight management and consolidation, feedback, homework presentation
Session 12	Review homework, conclusion, tracking homework, a rich and fruitful life, feedback

After 12 sessions of group therapy over six weeks the post-test for control and experimental groups were performed.

Data analysis was conducted with descriptive & inference statistics. In descriptive statistics analysis, means & standard deviation & in inference statistics part of the analysis ANCOVA test was used to analyse research hypotheses. All analysis was done by SPSS 20 software.

Results

Gender characteristics, marital status and education level of employees showed in tables 1, 2, 3 and 4, respectively.

Table 1: Education level of participants

Education level	N	%
Diploma	8	40
Associate degree	2	10
Bachelor's degree	8	40
Master	1	5
PhD	1	5
Total	20	100

Table 2: Marital status of participants

Marital status	N	%
Single	6	30
Married	14	70
Total	20	100

Descriptive analysis of BMI of participants in pre, post and follow up stages showed in table 3. These results showed that maximum score is for pre-test stage, while lowest score was recorded for follow up stage.

Table 3: descriptive analysis of BMI in pre, post and follow up stages

Variable	*Stage*	*N*	*Min*	*Max*	*Mean*	*SD*
BMI	*Pre-test*	*20*	*30*	*35.25*	*32.35*	*1.84*
	Post-test	*20*	*28*	*34.40*	*31.06*	*1.93*
	Follow up	*20*	*26.7*	*34.23*	*30.38*	*1.98*

The results show that observed differences in BMI in the experimental test is not a result of occupational classification, and almost 87% of these differences can be attributed to differences in pre-test BMI (Table 4).

Table 4: ANCOVA analysis of BMI in post-test by group separation

	SS	*df*	*MS*	*F*	*Sig*	*Eta*
Pre-test BMI	*60.31*	*1*	*50.31*	*103.53*	*0.000*	*0.866*
Group	*0.313*	*1*	*0.313*	*0.538*	*0.474*	*0.033*
Error	*9.32*	*16*	*0.583*			
Total	*19376.81*	*20*				

Other results show that observed differences in BMI at follow up in the experimental test is not a result of occupational classification, and almost 75% of these differences can be attributed to differences in pre-test BMI (Table 5).

Table 5: ANCOVA analysis of BMI in post-test by group separation

	SS	*df*	*MS*	*F*	*Sig*	*Eta*
Pre-test BMI	*55.72*	*1*	*55.72*	*49.18*	*0.000*	*0.755*
Group	*1.02*	*1*	*1.02*	*0.902*	*0.356*	*0.053*
Error	*18.12*	*16*	*1.13*			
Total	*18539.49*	*20*				

Discussion and Conclusion

The results of this study indicate that there was no significant difference between BMI of post-test and one-month follow-up experimental group compared to the control group. These results are consistent with other studies such as Bulik et al (3), Butler et al (4), Wilson et al (5) and Vaderlinden et al (6). And showed an opposite result compare to studies of Stahre and Hallstrom (1) and Rodriguez et al (2). The results indicate that cognitive-behavioral treatment of obesity has similar results to other treatment in the short-term, and positive results are more sustainable in the long-term treatment. Long-term research about the effectiveness of the treatment they have followed up several months and several years. What was achieved in this study, weight loss after treatment group than the control group, but this difference was not enough to be meaningful. One-month follow-up showed that the mean weight loss in experimental group is higher than the control group, and has higher growth than post-test stage. It seems that the effectiveness of this treatment should be considered in long-term follow-up. The sample in this study is 20 patients. This limit may affect the generalizability of the results. The results of this study, it is possible for men and children with obesity may not be generalizable. We need to be handled the generalizability of the findings to people with severe obesity and overweight. It is recommended to repeat the treatment more groups so the results can be compared with each other. The approach used in the treatment of obesity has very little background. The treatment recommended for children and men with obesity in a higher sample. Obesity is a complex and multi-factorial problem and is influenced by many factors, weight loss will also need to take the time to evaluate, treat and track the results in the long term. Recommended in future studies, cognitive-behavioral therapy in combination with other treatments for obesity should be used, including medication and surgery. It is suggested other psychological variables in this study to be done.

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