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Comparing the Effectiveness of the Lifestyle Training and the Diet Therapy on the Body Mass Index in Obese Adolescents of Yasuj High Schools.

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ABSTRACT

The aim of this study was to compare the effectiveness of the affecting weight lifestyle training and the diet therapy on the body mass index (BMI) in obese adolescents of Yasuj city. Forty five female high school students of Yasuj city who had received a diagnosis of overweight and obesity participated in this study.Subjects were randomly selected and divided into three groups, and their body mass indexes were assessed. Two intervention groups were exposed to the affecting weight lifestyle training and the diet therapy, and the third group (control) did not receive any intervention. Following the treatment period, body mass indexes of the three groups were reassessed. The data were analyzed by implementing Univariate analysis of covariance and Bonferroni post hoc tests. The findings showed that although interventional techniques such as the diet therapy and the affecting weight lifestyle training were effective for weight loss, but the affecting weight lifestyle training was more effective for weight loss.

Keywords: Diet therapy, Lifestyle training, Obesity, Adolescents

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INTRODUCTION

Until several decades ago, the increasing prevalence of the overweight and obesity in the world has been limited to adults, but over the two recent decadeshasgripped children and adolescents(Kelishadi et al, 2003).Adolescents, particularly females adolescent have particular attention to the weight and shape of their bodies for various reasons such as the cultural, social and racial factors (Striegleet al, 2002).

Obesity is a chronic disorder which involves a complex interaction of environmental, cultural, social psychological, metabolic and genetic factors. Obesity is associated with the nutrition and physical activities, and these two factors together with the inheritance, in spite of the great attention of the media to the obesity problem, intensify this major public health problem(Turneret al, 2008).To prevent over weight and obesity, the causes of this phenomenon should be understood. Obesity which is excess slipped of body in principle is multidimensional phenomenon that involves hereditary and environmental causes and effects. For example, some of the environmental impacts associated with the obesity include affecting weight lifestyle and nutrition. Adolescences a critical period in which the physical, emotional, mental, and developmental changes occur, and prepares individual to enter the adultstage and thus set of the changes and their impact on the adolescent behavior, constitute her lifestyle (Yarcheskiet al, 2002).Many of the healthy and/or unhealthy habits which formed in adolescence will extend into the next stages of life(Maduet al, 2003).

Iran is one of the youngest countries in the worldwith15million teens. Unfortunately, according to survey conducted by the Youth National Organization of Iran, 51 percent of teenssurveyedhave had not a good lifestyle (Youth National Organization, 2002).

In today's world, the fitted body shape for women is associated with attractive, success and happiness(Smolak& Levine, 1994). Styles that people take in their lives, sometimes consisting of the healthy eating and exercise, but there are some lifestyles in which people are inactive and pursue inappropriate eating policies. From such a perspective, the Wayans style of a person life affect the creating of thought health and incidence of the mental disorders(Hosseini, 2008).In an overview, the factors influencing the lifestyle include the nutrition, activities (such as hobbies and how to spend leisure time), interests, attachments, views and thoughts of people. Following of the feeding, activity, and thought habits that constitute the essential elements of a healthy lifestyle, is quite difficult, because it is believed that the positive outcomes of these habits in healthy form appears in the long term. At a glance, it can be found that the basic elements of the lifestyle like food, activities and thoughts are associated with obesity and overweight with various forms; even people's beliefs about life and health, constitute part of the people's lives(Golparvarandet al, 2007).

Nowadays, there are different ways to reduce obesity; although finding a way appropriate for the needs of individuals is difficult. In recent years, developments in the field of treatment of psychological disorders and reducing obesity caused the novel methods to be presented by clinical psychologists(Powellet al, 2007).This study emphasized on intervening in some environmental variables associated with obesity such as the affecting weight lifestyle and dietfor weight loss and comparison of the effectiveness of the lifestyle training and diet therapy treatment methods. Rapid changes of lifestyle lead to the alteration of nutrition patterns and physical activities of children and adolescents, and expose them to risk of becoming overweight and obese (Ebbelinget al, 2002).This problem is rapidly increasing especially in developing countries such as Iran (Kelishadiet al, 2003).

A study which was conducted in Canada on the children and adolescents also showed that the daily intake energy and fat is higher in obese individuals than non-obese individuals (Gillis, 2002).Back(2005) in his study showed that body mass index plays a mediator role in relation to eating a bits and eating problems and It seems that BMI is a key factor in eating habits and is effective in childhood eating a bits. However, it is possible that eating a bits affect the body mass index. Body mass index is related with encouraging and prohibiting rules. This means that people who have higher BMI(obese people), recall encouraging and prohibiting rules more in their life history. Eating prohibition may also lead to a preference for foods that are likely to cause weight gain, and these rules apply to the girls mostly, because being thin is important for both the mothers and the girls(Striegle et al, 2002). The present study aimed at comparing the effectiveness of affecting weight lifestyle training and diet therapy to reduce body mass index.

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METHOD

This study wasa quasi-experim entalpre-test-pos-test with a control group. Forty five students who had a body mass indexof25or higher, were selected as the sample and were studied by randomly replacement. In this study, the statistical population consisted of all the high school students who received a diagnosis of the obesity and overweight(BMI greater than25). The subjects were randomly divided into three groups of15 subjects(two intervention groups and one control group), and the interventions were performed separately on the groups. The data were analyzed using SPSS software and descriptive statistics of the mean and standard deviation, and the Inferential Statistics of the one-way covariance analysis and the Bonferoni post hoc test.

Tools

BMI: is calculated by dividing weigh tin kilograms by the square of heightin meters(Williamson, Newton & Walden,2006).

Weight efficacy lifestyle questionnaire: The questionnaire was originally developed by Clarket al(1991). In this tool, total score and subscales cores are calculated separately. The questions were answered on a ten-point Likert scale ranging from zero(unreliable) to 9(very reliable), and include subscales such as negative emotions, availability, social pressure, physical discomfort, and positive activities.

In order to obtainan overall score of this questionnaire, thescores of all questions weresummedtogetheranddivided by20, and in order to obtaina scoreforeach subscale, thesum of questions of the subscale wasdivided by4. Eachsubscalescorecanbebetween10 to40,andhigher scoresindicateless confidesnce(Clarket al, 1991, quoted byBabaieet al, 2008).Structural analysisof the questionnairewas conductedby Clarket al(1991).The five subscales showed good internal consistency: Negative Emotions (0.88), Availability (0.83), Social Pressure (0.89), Physical Discomfort (0.84), and Positive Activities (0.79); see Clark et al (1991). About the concurrent validity, it also showed good convergent validity, demonstrating a significant correlation with the Eating Self-Efficacy Scale (ESES), r (19) = 0.67, p <0.001.The availability subscale ofthe Weight Efficacy Lifestyle Questionnaire and thesocial conditions acceptable subscale of the Eating Self-Efficacy ability scale was correlatedwith a rate of0.75 before treatment, and with a rate of 0.51 after treatment; and the negative emotions subscale of the Weight Efficacy Lifestyle Questionnaire and the negative affects subscale of the Eating Self-Efficacy ability scale was correlated with a rate of0.80 before treatment, and with a rate of 0.50 after treatment(Berman (2006), quoted by Babaieet al, 2008).

RESULTS

Descriptive statistics of the body mass index is presented in table 1, according to the groups and the type of test.

Table1: Descriptive statistics of the obesity in the interventional and control groups and in the pre-test and post-test

Phase	Group	Mean	Standarddeviation	Number
Pre-test	Control	27.999	2.3927619	15
	Lifestyle training	28.560	2.7872845	15
	Diet therapy	28.604	2.1371406	15
Post-test	Control	28.025	2.4239695	15
	Lifestyle training	27.613	2.8110873	15
	Diet therapy	27.694	2.1798848	15

In this study, the variable of the pre-test scores of the body mass index was controlled using the one-way covariance analysis, and the data obtained from the two intervention method (the affecting weight Lifestyle training and the diet therapy) were analyzed in order to evaluating of the body mass index reduction.Also, at

first, the Leven'stestof variance error homogeneity was conducted for the dependent variable (body massindex) which showed nosignificant differences inthevariances(P>0.05 andF=0.478).According to table 2, the results of the covariance analysis, considering the body mass index scores of the subjects before intervention (pre-test) as the covariate variable, showed the significant difference in weight reduction between the control and intervention groups (P=0.000).

Table 2: comparison of the univariatecovariance analysis of (ancova) on the post-test scores in the intervention and control groups

Source	Sum of squares	Degree of freedom	F	Significance Level	Effect size
Obesity Pre-test	256.910	1	4203.343	0.000	0.990
Group	7.136	2	58.372	0.000	0.740
Error	2.06	41			

To determine which of the treatment methods had a significant effect on the body mass index, paired comparisons ofthe Bonferoni post hoc test were presented in Table (3).

Table 3: The results of the Bonferoni post hoc test and paired comparisons of the body mass index scores

Fist group	Second group	Adjusted Mean of first group	Adjusted Mean of second group	Mean difference	Standard error	Significance Level
Lifestyle training	Diet therapy	27.301	27.752	-0.451	0.090	0.000
	Control	27.301	28.280	-0.979	0.091	0.000
Diet therapy	Control	27.752	280.280	-0.528	0.090	0.000

As shown in table 3, in body mass index post-test (with controlling the pre-test as the covariate), there was a significant difference between the affecting weight lifestyle training and diet therapy in body mass index reduction (P=0.000). Since the adjusted mean of the lifestyle training (27.301) is lower than that of the diet therapy (27.752), therefore, the lifestyle training approach was more effective. There was a significant difference between the lifestyle training and control groups in body mass index reduction (P=0.000). The adjusted mean of the lifestyle training group (27.301) was lower than the control group (28.280). So, the lifestyle training has more effectiveness. There was a significant difference between the diet therapy and control groups in body mass index reduction (P=0.000), too, and the comparison of the adjusted means of the two groups indicated that the diet therapy approach was more effective.The results of Mean difference and significance level depicted that although the two treatment methods were effective in body mass index reduction, the affecting weight lifestyle training method has more effectiveness (table 3).

DISCUSSION

The aim of this study was to compare effectiveness ofthe diet therapy and the affecting weight lifestyle training for decreasing of the body mass index. The results of the study showed that at the post-test phase, body mass index of the lifestyle training and diet therapy groups decreased substantially compared with the control group. Thus, this study indicated that the two proposed methods were effective in reducing body mass index.

Based on the research results, the affecting weight lifestyle training approach is effective in the decrease of the body mass index. This result is in line with those of studies carried out in this area by Back (2005), and Gillis (2002). About the effectiveness of the diet therapy approach, the findings of this study support the results of the research conducted by Rew (2000).

Since the One-Way covariance analysis only indicated the significance difference between three research groups according to the studied variables, thusin order to preciselydetermine which treatment methods were more effective and had a more significant effect on the body mass index reduction, paired comparisons of the Bonferoni post hoc test wasconducted. The results of this test showed that although the two treatment methods in the current research were effective in body mass index reduction (compared with control group), but the lifestyle training method has more effectiveness. About the explanation of the results, it can be said that rapidly changes of lifestyle leads to alteration of the dietary patterns and physical activity of children and adolescents and exposes them to risk of overweight and obesity (Ebbelinget al, 2002).This problem is rapidly increasing especially indeveloping countries such as Iran (Kelishadiet al, 2003).By dieting, dietperson want to put the eatingbehavior under the cognitive control instead of physiological control (For example, “I want toeatthis muchandat this time”, instead of “I will *eat* in due time *whenever* I get *hungry*") (Reeve, 2008).

Body mass index plays a mediator role inrelation to eating habits and eating disorders, and it seems that BMI is a key factor in eating habits and is effective on the childhood eating habits. However, it is also possible that eating habits affect the body mass index. Body mass index is related with encouraging and prohibiting rules. This means that individuals who have higher BMI(obese people), recall encouraging and prohibiting rules more in their life history. Eating prohibition may also leadto a preference for foods that are likely to cause weight increase, and these rules apply to the girls mostly, because this fact that being thin is important for both the mothers and the girls(Striegleet al, 2002).

Further experimentation is clearly required in this area. This study was conducted with limited number of only female participants. Therefore, future research could address psychological problems such as eating disorders with more participants of both genders to obtain interesting and generalizable.

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