

Investigating the Effect of Lifestyle Change Programs on the Improvement of Subjective Wellbeing of Obese Females

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Abstract

Introduction: Obesity causes multiple problems that may potentially lead into physical diseases and mental health problems. The present study aims at investigating the effect of lifestyle change programs on the improvement of subjective well-being of obese females.

Method: This study is a quasi-experimental research and falls into a pre-test and post-test design with a control group. The statistical population of the study includes all the obese females who had attended diet and nutrition clinics in Sanandaj during 2016. Convenience sampling was used in order to select the total 20 sufferers who were randomly assigned into experimental and control groups (each one with 10 patients). The experimental group participated in 10 sessions of lifestyle change program, whereas the control group received no intervention. Subjective Well-being Scales were administered to both groups before and after the implementation of the program. Multivariate covariance test was applied in order to analyze the data.

Results: The findings show a decrease in negative emotions and an increase in life satisfaction and also positive emotions are significant ($P \leq 0.01$). It suggests that changing the individuals' lifestyles significantly affects such factors.

Conclusion: It is worth mentioning that the findings of the present study have practical implications as far as decreasing mental health problems and increasing the mental health of obese people are concerned.

Keywords: Lifestyle, Subjective Well-being, Obesity

Introduction

Overweight and obesity are considered as serious health hazards [1]. Obesity includes excessive adiposity, although it is usually considered as overweight of the body. It is not always a rule. Thin people with a muscular body may be considered as overweight based on the standards, despite the fact that their adiposity may not increase [2]. Obesity is not considered as a disease by itself, but it may aggravate numerous diseases. It is also considered as a dangerous factor for developing chronic illness [3].

Obesity is a chronic disorder which involves a complex interaction of environmental, cultural, psycho-social, metabolic and genetic factors. Obesity is also linked with physical activities and diets. This is while heredity increases its severity [4]. The obesity rate has been reported to be 5.21% among the Iranians over 18 years old. This rate is higher among Iranian women than the men, 27.3% and 13.7% respectively [5]. Furthermore, obesity has adverse effects on our health. For instance an increased death rate of 50-100% exists among overweight individuals, compared to non-obese people. This issue is mainly due to cardiovascular reasons. Obesity is associated with many medical problems, including insulin resistance in type 2 diabetes, reproductive organs, cardiovascular diseases, lung disease, gall-stone, and cancer [2]. Obesity is not a psychological disorder,

and in many cases, not considered to be a consequence of abnormal psychological processes. However, this issue causes intense anxiety among many sufferers. One of the reasons to this anxiety is the reaction of the contemporary communities regarding obesity. The increasing prevalence of obesity leads researchers to focus on the mutual interaction of mental, cognitive and overweight. Therefore, obesity is a major health concern [6]. It ends in numerous adverse psychological effects and dissatisfaction of life [7]. Obesity is treated as a problem which seriously affects the physical and psychological well-being of individuals [8].

Well-being is an important concept within the context of life quality and positive psychological attitude. Historically, philosophers have focused on wide aspects of happiness and well-being, in ethical theories, particularly in Epicure. In 1980, for the first time, Diener systematically investigated mental well-being and introduced it as a synonym for happiness [9]. Mental well-being refers to the individual's judgment about his ideal degree of life quality [10]. Rif considers mental well-being as an attempt to obtain perfection aiming to fulfill one's full potential. Accordingly, well-being means an attempt to promote and upgrade oneself. Health is a multi-dimensional concept not only being sick and incapable, but also it is also considered to be a sense of happiness and well-being [11]. Numerous factors reduce individuals' psychological well-being such as chronic illnesses, different types of cancer, diabetes and obesity. Besides, those who suffer from obesity have difficulty with their acceptance factor, personal development and forming positive relationships with others. Since they do not accept their overweight body, they gradually lose their self-respect and they have a low acceptance factor of themselves. People with low self-respect have difficulty in forming relationships with others [8]. Low self-respect may also be a negative consequence of obesity [12].

Latest research shows that despite increased use of energetic foods on one hand, and inactivity, on the other hand, due to transportation change and urbanization, the main cause of obesity is imbalance between the input energy and consumed energy in individuals' lifestyles [13]. Based on a report by the American Heart Association in 2001, lifestyle is an important disposing factor of different illnesses and deaths in the United States, and it accounts for approximately 70% of all psychophysiological diseases [14]. Lifestyle is defined as an individual's or a group's specific way of life [15].

The term lifestyle, as defined by Adler, reflects the individual's unique way of living, which covers all general processes of life. Adler believes that lifestyle is a brief pattern and perception of the world. He mentions that it is a personal and unique way of life and a way of achieving goals; some type of creativity resulting from

it is coping with the environment and its limitations. It is actually not considered as a behavior but it is a matter which controls all the human behaviors and experiences, and is formed through individual unique moods and attitudes [16].

Several studies have proven the relationship between BMI and different general factors of lifestyle, which indicates that there is a significant link between BMI and sedentary jobs and alcohol use, and also between BMI and physical activity and education [17]. A study conducted by Mushtaq shows that diet behavior, physical activity and inactive lifestyle are predictive factors of being overweight and of high BMI among primary school students in Pakistan [18]. Also, a study conducted by Tartibian and Baghaiee shows that inactive lifestyle leads to an increased blood pressure, reduced vasodilatation, and increased subcutaneous fat among men [19].

Further research proved that through changing the individual's lifestyle, it is possible to prevent 90% and 80% of type 2 diabetes and heart diseases, respectively. Meanwhile, it is possible to prevent one third of cancer types through improved nutrition, body weight control, physical activity, quitting smoking and changing lifestyle [20]. Despite the fact that adopting a healthy lifestyle should ideally begin before conception, research shows that it is never late to change our lifestyle to a healthy one. [21]. So far, different possible treatments for obesity have been proposed. Most of these treatments focus on the reduction of input energy and increase of physical activity [22]. Since obesity is a complex and multifactorial health issue, biological, psychological and social factors are also involved. Consequently, treating this condition is not restricted to just a single field [23]. Also, disappointing results of traditional therapies have led some experts to focus less on reducing weight, and more on positive psychological changes using psychological therapy [24].

One important reason for using psychological management of body weight is its enduring and recognized effect as well as preventing the return of obesity [25]. In a study, Moradi found that teaching weight management and obesity prevention have an important effect on their awareness [26].

Furthermore, since the lifestyle of obese individuals has an important effect on the development and progress of obesity, one effective way of controlling it is regulating the patient's lifestyle-specific behaviors (e.g. Diet programs and physical activities). However, changing people's lifestyles is not directly considered as a therapy stage.

It should be added that exploiting efficient and systematic methods proves to be influential in changing risky behaviors of obese individuals [27]. It can also be claimed that since unhealthy lifestyle and inactive jobs

may cause obesity and psychophysiological diseases, changing lifestyle may help reduce the weight and psychophysiological problems of the sufferers. Therefore, the present study aims at investigating that whether changes in lifestyles (e.g. diets and physical activities along with psychological intervention) can reduce the physical and mental problems of obese individuals.

Method

The statistical population of the present study includes all the sufferers in Sanandaj nutritional counselling centers. The subjects were selected using voluntary and convenience sampling method. They were selected based on entrance criteria (e.g. literacy, non-pregnancy, femaleness, non-hypothyroidism, and non-diabetes) and exit criteria (e.g. non-participation in the program and absence from classes for at least 2 consecutive sessions). The 20 subjects were randomly assigned into experiment and control groups (each having 10 participants).

Following the initial assessment, all the participants were given a mental well-being questionnaire to complete before and after the intervention. Also, the height, weight, and BMI of the subjects were all calculated prior to the intervention for the purpose of determining overweight. At the next level, the sufferers in the control group underwent training, based on the lifestyle change program.

The training program focused on reforming the individuals' lifestyles (e.g. changing food diets, exercise, sleeping program, stress control, social communication skills, and also awareness of negative thoughts and reaction to such thoughts and how to cope with the unpleasant feeling of hunger, dealing with depression

and frustration, and weight management). The program consisted of 10 sessions (60 minutes for each session) on a weekly basis, in which healthy eating behavioral skills, skill of reaction to negative thoughts, error prevention skills and management were taught. The programs outline is shown in table 1.

Subjective Welfare Questionnaire

Diner et al.'s (1980) Subjective Welfare Questionnaire was used to measure the sufferers' subjective well-being. The research instrument consisted of 5 items for the subscale of satisfaction with life, with each item containing 7 options, ranging from 1 (absolutely disagree) to 7 (absolutely agree). In the present sample, the Cronbach's alpha coefficient for satisfaction with life scale was calculated to be 0.84. Based on the Positive and Negative Affect Schedules (PANAS), 10 positive affect adjectives (e.g. Interested) and 10 negative affect adjectives (e.g. upset) were used in order to measure the affect dimension of well-being (i.e., the mood) of the patients in the study. The items in the questionnaire tend to describe different types of excitements and feelings, and are categorized into either positive or negative scales. The completed questionnaires were analyzed based on the Likert Scale, with 1 indicating the zero level of experience of affect, and 5 referring to the extreme level of experience of affect.

In the present sample, the Cronbach's alpha coefficient was calculated to be 0.80 and 0.77, for the positive and negative affect, respectively.

Table 1. Lifestyle Change Program

Sessions	Objectives of each session based on lifestyle changing program
1	Familiarizing the sufferers with the program and motivating them and providing them with a suitable food diet and teaching them healthy ways of eating
2	Raising awareness among the sufferers regarding the negative effect of sleep on obesity, and providing them with sleeping as well as with physical activity plans
3	Raising awareness among the sufferers regarding the complications of stress and its negative effect on obesity, and teaching stress management strategies
4	Raising awareness regarding negative thoughts and ways to trace such thoughts as linked with dieting
5	Teaching how to react to negative thoughts
6	Coping with excitement without resorting to food and teaching social skills (problem solving)
7	Teaching how to distinguish hunger from desire and craving
8	Teaching how to cope with irritation resulting from craving and hunger
9	Teaching how to deal with frustration and depression
10	Teaching how to manage weight

Table 2. Mean & SD for Factors of subjective Welfare in Pre- & Post Tests

Groups	Variables	Pre-test		Post-test	
		Mean	SD	Mean	SD
Experimental group	Negative affect	29.60		3.74	4.00
	Positive affect	35.50		4.5	3.72
	Satisfaction with life	18.80		4.57	5.31
Control group	Negative affect	30.10	5.55	32.50	4.60
	Positive affect	29.70	4.81	29.60	4.67
	Satisfaction with life	14.70	6.57	15.30	6.81

Results

Table 2 shows the means and SD for the factors of

subjective welfare in the experimental and control groups. In the pre-test, the means for the variables in

both groups are similar; however, in the post-test, they are not. The negative affect is shown to have clearly decreased and increased in the experimental and control groups, respectively (Table 2). The factors of positive affect and satisfaction with life has increased in the experiment group in the pre-test, but no obvious change is noticed in the control group. MANCOVA was used to investigate the significance of such differences. During this analysis, the means during the post-test for the experimental group were compared with those of the control group, and the pre-test scores were used as the slack variable. It should be added that the assumptions of the experiment, that is, data normality, error variance homogeneity, dataset linearity, and variance-covariance matrix were already taken care of.

The reason of using MANCOVA in the present study was the assumption of normality by using Kolmogorov-Smirnov test (negative affect: $z = .718$, $P > 0.05$; positive affect: $Z = .704$, $P > 0.05$; satisfaction with life: $Z = .689$, $P > 0.05$). The homogeneity of variances was tested using Levene's test (negative affect: $F = 2.663$, $P > 0.05$; positive affect: $F = 1.462$, $P > 0.05$; satisfaction with life: $F = .537$,

$P > 0.05$). Also, meeting the assumption of normality between slack and dependent variables, and also homogeneity of variance-covariance matrix were considered by using Box's M-test ($M = 0.020/7$, $F = .956$, $P > 0.05$).

Table 3 shows the results of Wilks' Lambda test used in order to investigate the means of the dependent variables. As shown in table 2, after the adjustment of the pre-test scores, a significant difference was observed between the mean scores of both control and experiment groups in the factors of negative affect ($F = 117/311$, $P \leq 0.001$), positive affect ($F = 18/168$, $P \leq 0.001$), and satisfaction with life ($F = 273/18$, $P \leq 0.001$). This suggests that changing the individuals' lifestyles significantly affects such factors.

As shown in Table 4, after adjusting the pre-test scores, a significant difference was observed between the mean scores of both control and experiment groups in the factors of negative affect ($F = 117/311$, $P \leq 0.001$), positive affect ($F = 18/168$, $P \leq 0.001$), and satisfaction with life ($F = 273/18$, $P \leq 0.001$).

Table 3. Wilks' Lambda tests findings regarding the measurement of mean scores of well-being variables in the post test

Test type	value	F	DF hypothesis	DF error	sig
Wilks' Lambda test	0.59	69.11	3.00	13.00	00.1

Table 4. MANCOVA findings regarding the measurement of the mean scores of the variables under the study in both control & experiment groups in the pre-test

Sources of change	Sum of squares	DF	Mean squares	F	Sig	
Negative affect	2.59	1	2.59	.515	.484	
Positive affect	15.97	1	15.97	3.59	.078	
Satisfaction with life	27.19	1	27.19	2.10	.177	
Group	Negative affect	590.35	1	590.35	117.31	.001
	Positive affect	80.84	1	80.84	18.17	.001
	Satisfaction with life	247.39	1	247.39	18.27	.001
Error	Negative affect	75.49	15	5.1		
	Positive affect	66.75	15	4.45		
	Satisfaction with life	203.1	15	13.54		
Sum	Negative affect	14302.00	20			
	Positive affect	24551.00	20			
	Satisfaction with life	10023.00	20			

Discussion

The finding of MANCOVA show a significant decrease in the negative affect of the control group in the pre-test. The findings also show a significant increase in the factors of positive affect and satisfaction with life in the experiment group in the post-test. Such findings indicate the effectiveness of the lifestyle change program regarding the subjective well-being of the patients under study. The present findings are consistent with those of other studies by Dymek et al. [28], Louxa et al. [29], Rhys-Williams and Koloktin, Crosby [30], and Koloktin [31], which all point to the positive effect of losing weight by changing lifestyles and surgery on life quality. Similarly, the present findings are consistent with those of another study by Fontain et al. [32] based on a 13-weeks program of lifestyle reform, which shows that in addition to maintaining suitable weight, the program improves physical activities, liveliness,

playing physical roles, public health and, in general, life quality as linked with health. Also, Ross et al. [33] believe that losing weight and physical fitness may lead to an increase in well-being, social action and excitement, liveliness and mental health. Obese individuals have difficulty with their obesity acceptance factor, personal development and forming relationships with others [8].

What makes it even worse is that the focus of social context is on the value of physical attraction and fitness. This, in turn, leads to negative thoughts and self-criticism on behalf of such individuals in a way that they feel irritated and confused, and feel guilty and depressed in their joyless life. Numerous studies have shown that most of our health care problems and psychological, and emotional disorders have psychosocial backgrounds. As one of the most important mental processes, problem solving serves the purpose of helping individuals deal with life problems and challenges, and in this way, it plays a pivotal role in their psychosocial health [34].

In their study, Boyers et al. [35] revealed that there is a positive and significant relationship between problem-focused coping strategies as efficient ones, and psychological well-being.

Regarding the findings of the present study, as problem solving skills are related with all life areas, stress control, techniques of reaction to negative thoughts, and motivation were taught in the program. Such cognitive techniques may lead to an increase in positive affect, as well as a decrease in negative affect because the interventions were related to the individuals' daily routine and obliged them to involve their thoughts and cognition. Relaxing skills for the treatment of anxiety disorders such as panic, social anxiety disorder are widely used [36].

Conclusion

Since obesity can not only be reduced in terms of energy intake and energy consumption, psychological interventions are also needed. The findings of this study were based on psychological interventions (stress management and relaxation skills) included in this program. Also, various strategies are used to promote health behaviors, moreover explanations can be given considering people's learning about responding to malicious beliefs associated about diet. By learning these skills, people can recognize and calm their muscular tension and thereby reduce their anger, distress, worry and anxiety (negative emotions) and experience more positive emotions and perform better. .

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